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„A Framework for Managing Diversity in ICT Projects –
Processes and Techniques for Explicating Soft Facts and
Dealing with Behavioral Differences”

verfasst von / submitted by

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STATUTORY DECLARATION

I declare that I have authored this dissertation independently, that I have not used other than the declared sources / resources, and that I have explicitly marked all sources, which has been quoted either literally or by content from the used sources.

„Projects are executed by humans. And humans must interact.”

(Sliger & Broderick, 2008, p. 159)

ABSTRACT

Diversity aspects are of high relevance for ICT (Information and Communication Technology) projects to succeed. Diverse work styles and cultural-based behavioral differences can have a major impact on a project team and the work that is done. Although the need for an appropriate method to managing diversity in ICT project management is evident, no standardized or hands-on approach exists so far to the best of the author's knowledge.

Therefore, this dissertation aims at creating a comprehensive, structured, and practical approach that explicates implicit aspects of diversity in ICT projects. The research results provide an innovative, knowledge-based diversity framework that includes relevant features of diversity that so far have only been implicit or scattered, unclear or vague and hence not available for well-founded and systematic support. The three essential components of the framework – diversity features, diversity techniques, and the diversity workflow – are based on insights from literature and empirical research. Furthermore, the generic framework considers human-centered management principles and is conceptually integrated into the Rational Unified Process.

Multiple research methods that are accommodated in an overall design-based research methodology were used to build up and validate the diversity framework. In the validation process, a quantitative online survey, qualitative expert interviews, and focus group workshops were performed to collect data about the relevance, applicability, efficiency, and usability of the framework's components.

An empirically validated, normative, and conceptual model that embeds complex, fuzzy knowledge about diversity into ICT projects is the core result of this research and contributes to the field of knowledge-based project management.

ZUSAMMENFASSUNG

Der richtige Umgang mit Diversität zwischen den Projektteammitgliedern kann ausschlaggebend für den Erfolg von Projekten im Bereich der Informations- und Kommunikationstechnologie (IKT) sein. Unterschiedliche Arbeitsstile und kulturell geprägte Verhaltensweisen können einen wesentlichen Einfluss auf das Projektteam und dessen Effektivität und Effizienz haben. Trotz des bestehenden Bedarfs für eine angemessene Methode zur Steuerung von Diversitätsfaktoren in IKT-Projekten gibt es bislang weder Standards noch praxis-orientierte Ansätze.

Diese Dissertation fokussiert auf die Erarbeitung eines umfassenden, strukturierten und praxis-orientierten Frameworks, welches ProjektmanagerInnen unterstützt, implizite Diversitätsaspekte in IKT-Projekten zu explizieren. In dieser Arbeit werden jene Diversitätsaspekte betrachtet, die besonders für IKT-Projekte relevant sind, bislang aber nur implizit oder sehr unklar waren und daher nicht systematisch unterstützt werden konnten. Das wissensbasierte „Diversity Framework“ besteht aus drei wesentlichen Komponenten; den sogenannten „Diversity Features“, den „Diversity Techniques“ und dem „Diversity Workflow“. Diese Komponenten basieren auf Erkenntnissen aus Literaturstudien sowie empirischer Forschung. Darüber hinaus bindet das generische Framework personenzentrierte Management-Prinzipien ein und bietet eine konzeptionelle Integration in den Rational Unified Process.

Im Rahmen einer übergreifenden Design-Based-Research-Methodologie wurden unterschiedliche Forschungsmethoden für das Design und die Validierung des Diversity Frameworks verwendet. Eine quantitative Online-Studie, qualitative Interviews mit ExpertInnen sowie Fokusgruppen-Workshops wurden während des Validierungsprozesses durchgeführt. Die daraus generierten Daten geben Einblicke hinsichtlich Relevanz, Anwendbarkeit, Effizienz und Benutzerfreundlichkeit der einzelnen Komponenten des Frameworks.

Das Kernstück dieser Forschungsarbeit ist ein empirisch validiertes, normatives und konzeptionelles Modell, welches komplexe, unscharfe Informationen über Diversität in IKT-Projekten expliziert und dadurch zum Bereich des wissensbasierten Projektmanagements beiträgt.

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1 INTRODUCTION

1.1 CONTEXT AND MOTIVATION

Projects often fail due to people issues rather than technical issues (Böhm, 2009; Standish Group, 1994). Hence, an initial question was what can be done to improve the people factor. As this people factor is often fuzzy and in part below the threshold of consciousness, and gets increasingly complex in large and diverse teams, it seemed interesting to find ways that make this factor more explicit, and create a framework to deal with it systematically by using means that are familiar to Information and Communication Technology (ICT) project managers such as process models, visualizations, knowledge management, and abstractions.

The initial idea was to provide an innovative, knowledge-based approach to ICT project work by including highly relevant knowledge about diversity that so far has been only implicit and hence not available to well-founded, pre-mediated and systematic support. Therefore, this work aimed at creating a generic framework that explicates implicit aspects of diversity in ICT projects based on human-centered design principles. In particular, the objective was to develop a complete diversity framework by following a generic, human-centered knowledge explication and design-based research process.

The whole work is highly interdisciplinary. Figure 1 illustrates the high level of complexity of the research through the many influences on the diversity framework that were (partly) considered for this work. The five main influence fields are software engineering (regarding ICT projects, the Rational Unified process and UML as modeling language, and human-centered design (HCD) approaches), diversity and cultural science (in particular diversity management and cross-cultural studies), knowledge management, project management, and finally psychology (in particular group dynamics and team theories). Nevertheless, this work emphasizes the computer science contribution and research perspective of the whole, aiming to develop and validate the first version of the framework.

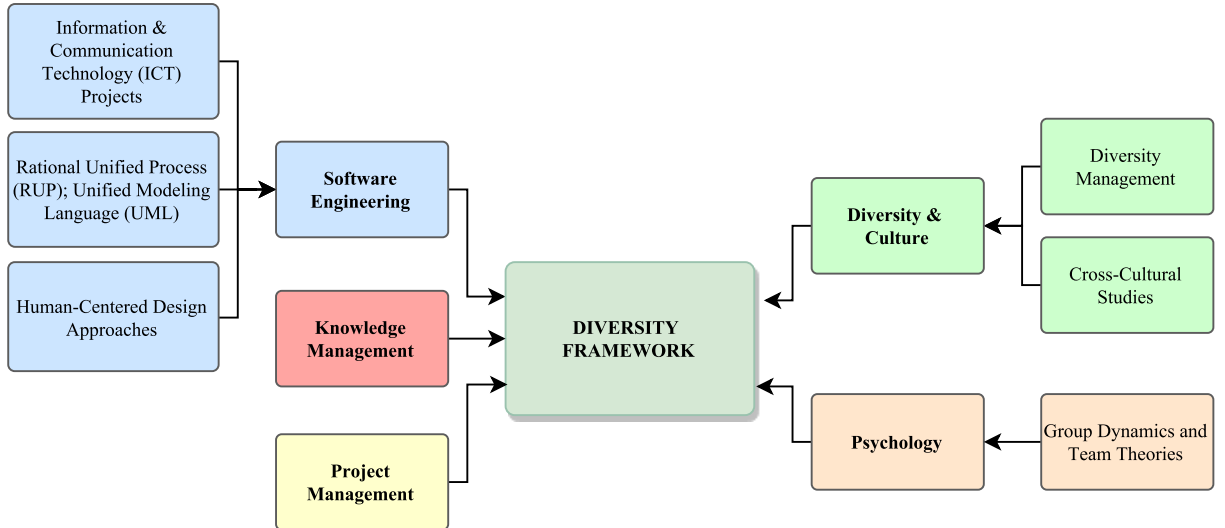


Figure 1: Disciplines influencing the diversity framework

This work was furthermore highly influenced by the two EU-projects: “iCom” (Constructive International Communication in the Context of ICT) and “LITERACY” (Online Portal for E-Learning and Supporting Social Inclusion of People with Dyslexia). While the findings from the iCom project clearly indicate the need for a comprehensive, structured, and knowledge-based approach towards diversity in ICT projects, such an approach taking human-centered principles into account did not exist. The research conducted in the iCom-project provided the diversity-focused, socio-cultural basis and essential input for this dissertation while the LITERACY-project facilitated the focus on concepts of Computer Science and their application to ICT projects.

1.2 BASIC CONCEPTS

1.2.1 DEFINITION OF DIVERSITY AND CULTURAL DIVERSITY

For the purpose of this dissertation the term ‘diversity’ is defined as the variety of different behaviors (and their underlying values and beliefs) that individuals face when collaborating in project teams. This definition substantially extends the traditional association with differences in age, gender, education, ethics, religion, and physical abilities with alterations that arise when diverse individuals from diverse cultural backgrounds work together in project. These differences could for instance manifest in the way team members prefer to plan, schedule and implement projects. Hence, the individuals’ cultural impacts are not only country or regional cultures, but can also be corporate or department cultures as well as management approaches and attitudes.

This definition does not automatically imply international or locally distributed teams, although such team compositions tend to be characterized by a high diversity degree. Still, highly diverse teams can be also found in intra-organizational projects. Nevertheless, obviously the topic of culture and cross-cultural differences plays an important role for this work and is therefore intensively investigated and defined in Chapters 2.2.2.1. In brief, *cultural diversity in the context of this work mainly refers to the different behaviors of people within a social system, and their underlying values and beliefs.*

The most abstract generic term used in this thesis is *diversity aspects*. It includes any thinkable – visible and non-visible – entity that is connected to diversity. Visible aspects of diversity such as ethnicity, race, age, or gender are already externalized information and can be taken into account. Less visible or observable aspects such as values, attitudes, skills, or knowledge, but also educational and functional background, often are not obvious due to their implicit, soft characterization (Beise, 2004; Lambert & Bell, 2013; Milliken & Martins, 1996; Triandis, 1972). This dissertation focuses on one particular type of diversity aspects that are addressed with the diversity framework: aspects that are not visible or not directly observable.

Furthermore, *diversity behaviors* are typically an observable manifestation of non-visible or visible diversity aspects (see Figure 2). In addition, the term *behavioral patterns* is used to describe reoccurring diversity behaviors. In this dissertation, diversity behaviors that express certain non-visible diversity aspects are the main source for explication; visible diversity aspects such as gender are not in the focus of this thesis.

Moreover, *diversity features* are categories of special diversity-related behaviors that have been found logically related. For example, the diversity behaviors ‘being very persistent in discussions’ and ‘never contradicting with the manager’ characterize the diversity feature ‘communication’. Those diversity features and the linked behaviors help to explicate implicit diversity aspects (see Figure 2), representing them and making them manageable.

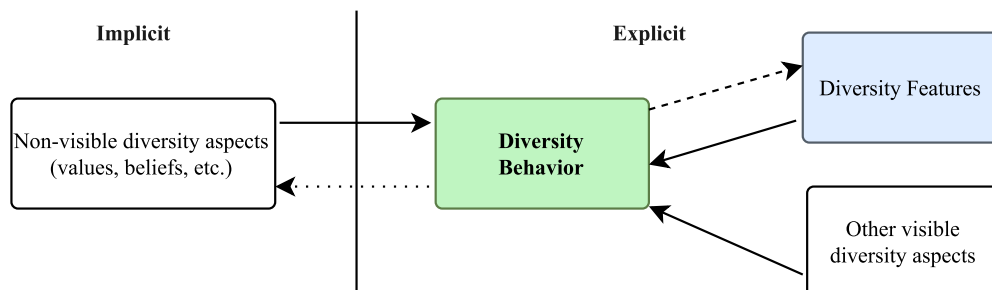


Figure 2: Behaviors as link for explicating implicit, non-visible diversity aspects¹

¹ Created in personal communication with Em.Univ.-Prof Dipl.-Ing.Dr. Gerhard Chroust, M.S., 9th of February, 2016.

Finally, the term *diversity workflow* describes the systematic procedure of how to deal with diversity in ICT project and explicate diversity features by using *diversity techniques*. Both terms and the entire diversity framework are described in Chapter 1.3.2.

1.2.2 INFORMATION AND COMMUNICATION TECHNOLOGY PROJECTS

The term Information and Communication Technology (ICT) includes a wide range of technologies (Weigel & Waldburger, 2004) including software that support all kinds of communication. Furthermore, more recent definitions also incorporate the application of the technology or software as well as the design of policies for its use (Dutton, 2013). This dissertation primarily deals with ICT projects as this term comprises the entire spectrum of possible projects in the computer science world – from software development and implementation projects, to change projects, research projects, or organizational development projects that include an information technology component.

1.2.3 DEFINITION OF THE DIVERSITY FRAMEWORK

In the course of this thesis a conceptual ‘diversity framework’ was developed. A conceptual framework “explains, either graphically or in narrative form, the main things to be studied – the key factors, constructs or variables – and the presumed relationships among them” (Miles & Huberman, 1994, p. 18). In this work both forms – visuals and text – were used for presenting the framework, which is a collection of techniques, processes, tools. Furthermore, the framework describes the embedment of these processes in a certain context and, moreover, provides content-related information such as particular behaviors and roles. This accumulation of different parts supports various levels of abstraction and allows practical application. In particular, the diversity workflow contains detailed descriptions of each workflow step and provides practical templates and examples. An overview of the diversity framework is presented in Chapter 1.3 and the concrete components are defined in the Chapter 4.

1.3 RESEARCH OVERVIEW

1.3.1 RESEARCH GAP AND RESEARCH QUESTIONS

Implicit and soft factors influencing ICT (Information and Communication Technology) project processes are currently severely underrepresented in the research and practice of ICT projects. In particular the aspect of diversity is a highly relevant and significant topic in an ICT context, however lacking systematic support (Böhm, 2015). Being aware of differences and commonalities, creating an understanding for diversity as well as supporting respectful cooperation reduces the risks for conflicts and can make projects more efficient (Böhm & Motschnig-Pitrik, 2015).

Although cultural and managerial studies provide a socio-cultural foundation for the topic (e.g. Hofstede, Hofstede, & Minkov, 2010; Trompenaars & Hampden-Turner, 2012), a suitable, generic framework that would provide the conceptual and technological foundations for effectively dealing with diversity in dynamic ICT project environments is still missing (Böhm, 2013a, 2015).

Therefore, this dissertation aimed at creating a generic framework that enables an inclusion of soft or implicit diversity factors in ICT project management. Implicit in this sense means diffuse, unclear, vague aspects that are on the edge of being conscious and/or hard to capture precisely. For instance, some people prefer to follow orders, while others like to create their own style of working in order to reach a solution.

In addition, it was of interest how the explication, representation and support of diversity aspects could serve as a case for applying explication techniques in ICT projects. Hence, the leading question for this research was formulated as follows:

How can relevant diversity features be explicated, represented, and proactively supported in international ICT projects?

This leading question was further specified with the following set of sub-questions:

- I) Which diversity features are relevant for the success of ICT projects?
- II) What techniques are available and can be adapted to assess, explicate, and capture relevant diversity features and differences between them?
- III) How can the diversity framework for ICT projects be modeled conceptually? How can a generic diversity framework be technically supported?
- IV) How can a diversity framework for ICT projects be integrated into a workflow of the Rational Unified Process? How can diversity features and techniques be arranged to make up a usable, practice-oriented diversity workflow?
- V) How can the generic diversity framework be validated?

1.3.2 RESEARCH OBJECTIVES AND CONTRIBUTIONS

The primary goal of this dissertation was to develop a comprehensive, generic framework supporting an active, knowledge-based approach to dealing with diversity in international ICT projects (diversity framework). This framework is flexibly applicable, adaptable to different situations, and oriented towards improving project efficiency and effectiveness. The framework incorporates three major components as illustrated in Figure 3.

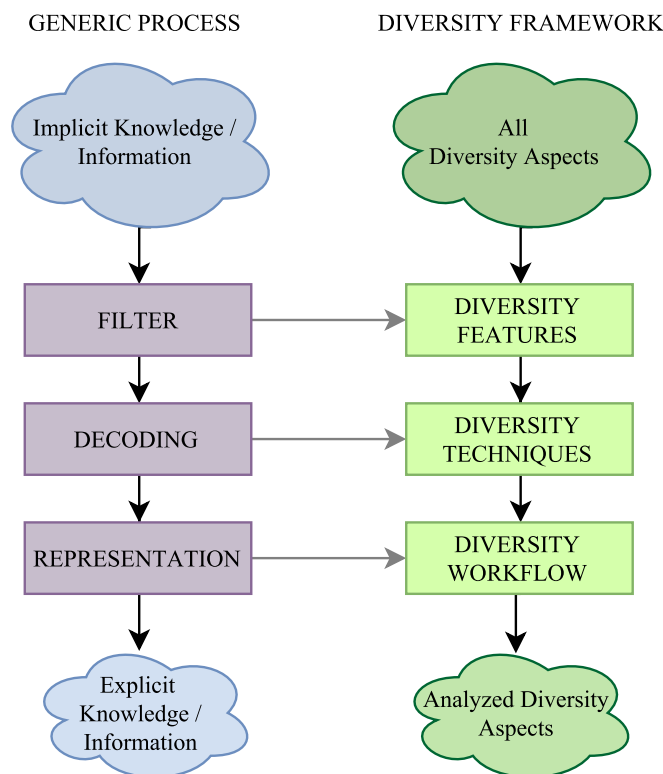


Figure 3: Conceptual model of the diversity framework

- Diversity Features. From numerous features those being most relevant for ICT projects were selected to apply a “filter” function.
- Diversity Techniques: A collection of diversity support techniques to explicate the relevant diversity features in each specific project team (“decoding” function).

- **Diversity Workflow:** A comprehensive diversity workflow that is integrated into the Rational Unified Process (RUP) and represented in a web-based tool.

Overall, this work aimed to generate an adaptation of the Rational Unified Process for international projects by systematically including relevant diversity knowledge (via a diversity workflow) in the sense of a knowledge-based project management process. Diversity knowledge, which so far had been implicit, becomes explicit and thus is available to the project team. This novel case of applying explanation techniques to visualize implicit knowledge within ICT project teams contributes to the field of representing other aspects of implicit knowledge. The created generic diversity framework serves as the basis for active, knowledge-based process management.

The diversity framework aims at supporting ICT development by following human-centered principles; in other words, by taking into account diverse behavioral patterns, attitudes, or work styles of people participating in ICT projects. Such work patterns could, for instance, describe how individuals in ICT teams deal with pre-defined structures and processes differently. Some would value rigidly predefined processes, while others feel constrained by rigid procedures and would prefer more flexibility in their working environments. Although there is no ‘right’ way to handle this issue, it is highly vital to know about this difference and create awareness for these specific situations. This awareness is created through the elaborated diversity workflow.

The results of this research primarily contribute to the field of software and knowledge engineering and in particular to knowledge-based project and process management. In addition, this case of externalizing implicit aspects and standardizing soft factors illustrates how information management can support other managerial processes. From a historical perspective, ICT supported explicating and formalizing several aspects in business – from formalizing structures to modeling workflows in process management – and thereby supported optimization and innovation in various areas. Now, explicating and formalizing implicit data could be a next step. Therefore, the ways in which explicating implicit aspects of diversity can be accomplished, represented and fed into ICT project management are examined.

1.3.3 LIMITATIONS OF THIS RESEARCH

In this subchapter the most important constraints of this dissertation are discussed. Moreover, a further elaboration of the constraints follows in the description of the research studies.

Interdisciplinary work, however with a clear focus on computer science. Various research fields and disciplines were considered for the purposes of this dissertation due to the interdisciplinary nature of this work. However, the main focus lies on the field of ICT project management with special attention to knowledge management, risk management, and a generic software development process like the RUP (Rational Unified Process). The RUP was chosen as reference process due to its adaptability, manifold application opportunities, and widespread use. Further inputs were generated from the current agile software and project management approaches.

Studies on culture and communication – in particular on intercultural communication and theories on human-centered approaches – certainly play a role in this work. Still, in order to narrow the scope of this dissertation, purely cultural studies that did not concern project management were excluded. Furthermore, from the adjacent fields of software development, process and workflow management, as well as system theory, only aspects that concern managing ICT projects were included in the thesis.

Focus in on teams rather than on organizations. This research focuses primarily on international ICT teams as social systems (International Project Management Association, 2015, p. 4; Patzak & Rattay, 2011) and their relevant behavior in ICT projects. Nevertheless, projects are affected by the organization they are embedded in. Teams usually are part of organizations and influenced by organizational aspects. However for reasons of focus, a differentiated treatment of organizational theories is outside the scope of this thesis. Hence, the emphasis of this thesis lies on the entity ‘project team’.

Limited scope of diversity features and techniques that are included in the first version of the diversity framework. The developed framework is a first version is designed to be calibrated, adapted, and extended in further research and application. Particularly, the diversity features and diversity techniques should be adapted to different cultural backgrounds. Due to workload constraints, it was not possible to research all nationalities and search all research databases. These constraints are discussed in Chapters 4.1.1.2 and 3.3.2.4.

1.3.4 OVERVIEW OF RESEARCH DESIGN

A design-based research methodology (The Design-Based Research Collective, 2003) was chosen for elaborating the leading research question in an iterative manner. Throughout the dissertation writing process, these intermediate results were published for several reasons. Firstly, presenting ideas, concepts, and results to a scientific community provided the opportunity to get feedback from experts. This is in accord with the basic ideas of design-based research used for this thesis. Secondly, the author was encouraged to publish the research throughout the dissertation process to ensure the quality of the research direction through an external, objective, peer-reviewing process. For examining the topic and building up the diversity framework, the following studies were conducted (see Figure 4).

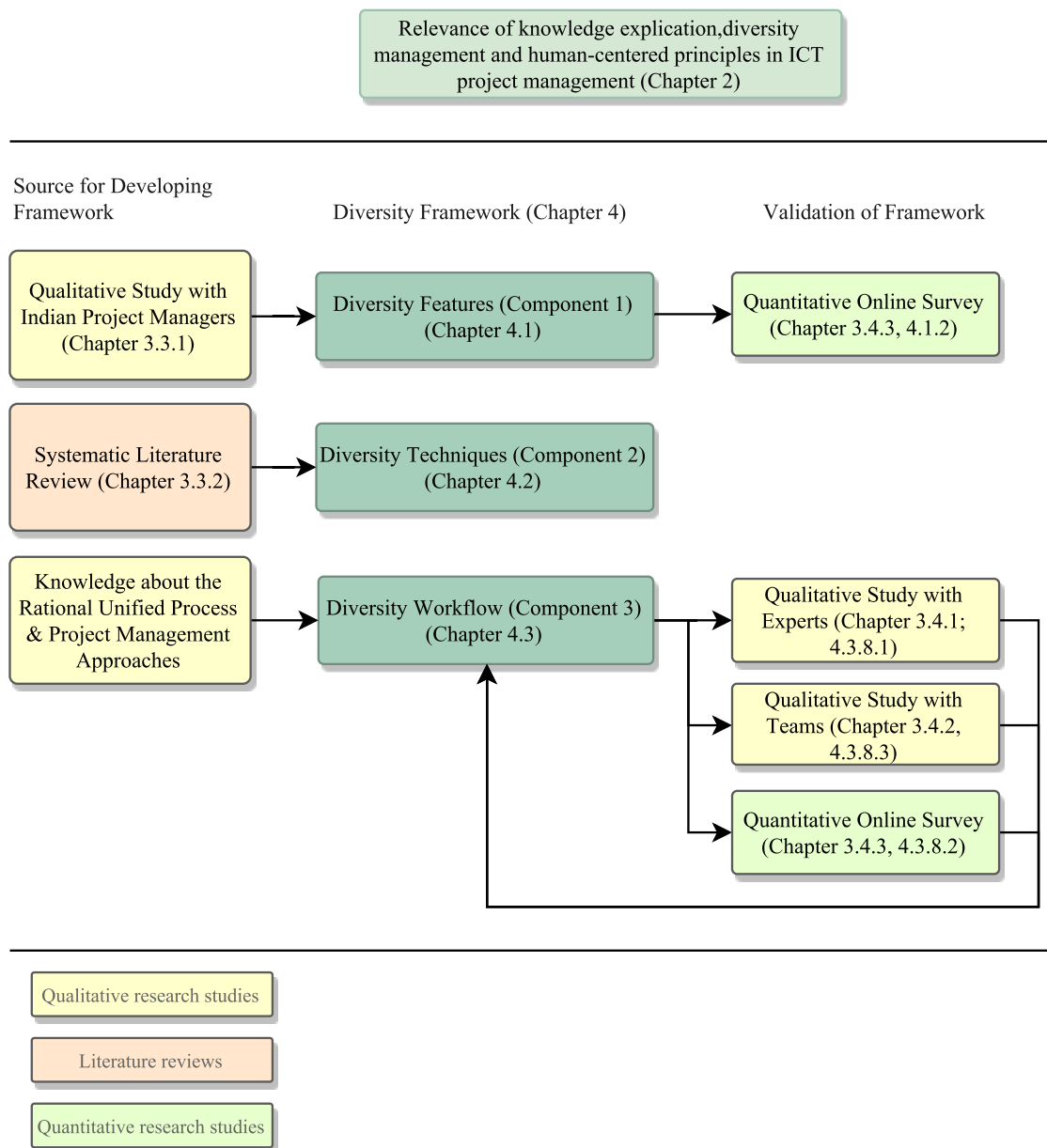


Figure 4: Overview of research performed for this dissertation

- Firstly, a literature review (Böhm, 2013a; Böhm & Motschnig-Pitrik, 2015) and a qualitative, empirical pre-study (Böhm, 2015) were conducted. Their results helped to understand the specific context and limit the field for this research. Furthermore, these confirm the relevance of the topic within an ICT context. In addition, another literature review illustrated the relevance of human-centered principles in current trends in the management of information technology or software development projects (Böhm, 2014). These trends underline the importance for creating a framework that builds upon these human-centered principles.
- Secondly, the diversity features were composed from the data of a qualitative study (Flick, 2002) with 40 Indian managers of outsourcing projects (Amster & Böhm, 2015). The managers were asked how they perceived behavioral differences in their international IT projects. The results of this study were used as basis for the first component of the developed diversity framework, the diversity features.
- Thirdly, a systematic literature review (Fink, 2014) was used to collect existing techniques to manage and explicate diversity aspects in the ICT field. The evaluation of existing techniques generated the second component of the diversity framework: the diversity techniques.
- Fourthly, based on knowledge of project management and the Rational Unified Process (RUP), and on the three preceding studies and diversity framework components, the diversity workflow was designed as third component, integrated into the RUP, and represented in a web platform. By performing three validation studies – qualitative expert interviews (Flick, 2002), a focus group study (Flick, 2002) with teams, and an online survey – the workflow and the entire framework were examined and optimized.

The diversity framework was designed flexibly and is open for adaption and extension. Further studies, application in real projects, and other experiences can help to calibrate and further develop the framework and all of its three components in a continued design-based research process.

1.4 STRUCTURE

This dissertation consists of four major parts as visualized in Figure 5.

- Chapter 2 describes theories of knowledge explication and diversity management in the ICT field. Furthermore, the factors of diversity and culture and their importance in project management are examined in Chapter 2.2. Moreover, the relevance of human-centered design and its principles in designing a diversity framework are presented in Chapter 2.3.
- Chapter 3 portrays the research approach and the research procedure of the various studies performed for the development of the diversity framework. The research process is an essential part of this thesis, as following another approach would have led to very different results. Hence, Chapter 3 presents this in detail and describes the major decisions that were taken during the research process.
- Chapter 4 presents the generated diversity framework by describing its three components: diversity features, diversity techniques, and the diversity workflow. Here, the results of the three validation studies are also incorporated.
- Chapter 5 includes the discussion of the dissertation's results and draws conclusions and implications for research as well as for practice.

In addition, the appendices provide all detailed results and information on the studies that were performed for this dissertation.

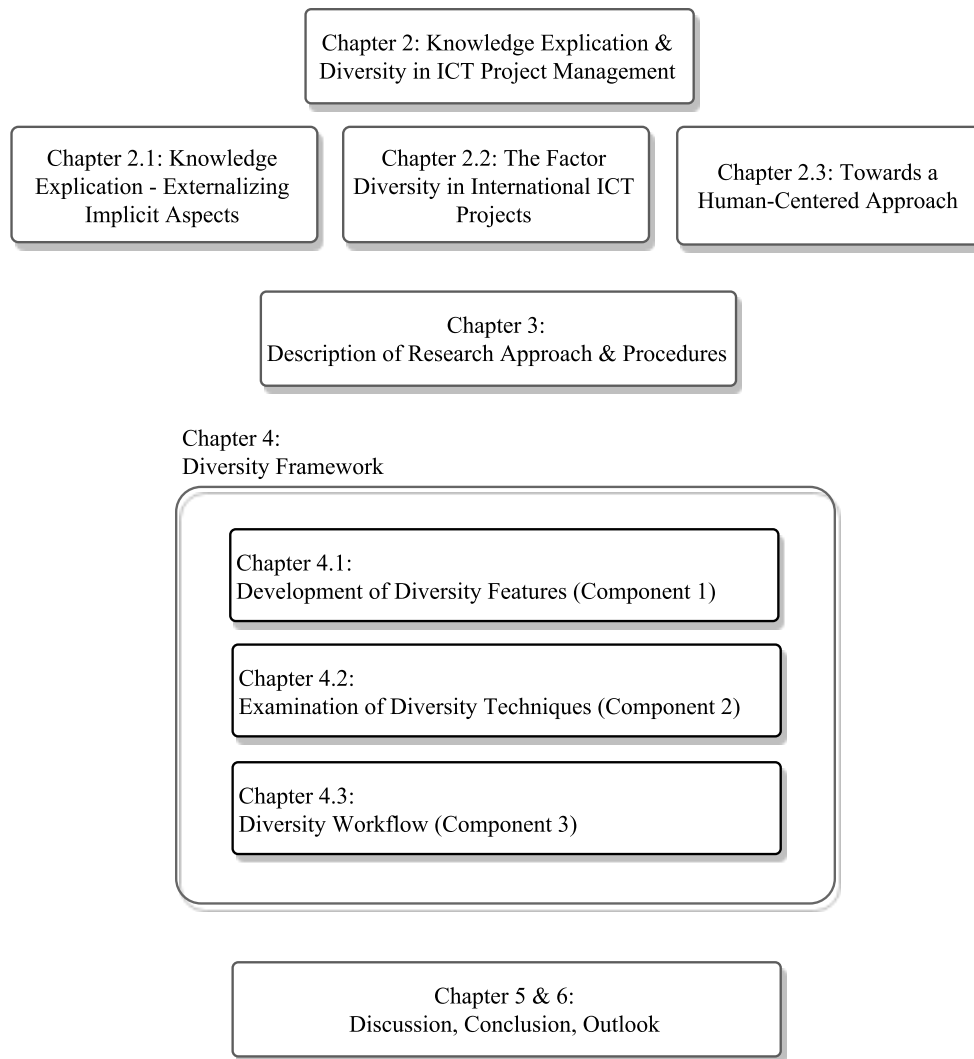


Figure 5: Overview of dissertation's structure

Different target groups may have different interests in reading the thesis. Below certain parts are suggested based on the target groups:

- *Readers with a high interest in the theoretical background* of the topic covered in this dissertation might be interested in reading about diversity management in the ICT field and how diversity is handled in international projects and intercultural fields (Chapter 2.2.2 or the corresponding articles (Böhm, 2013a, 2015; Böhm & Motschnig-Pitrik, 2015)), or on trends in project management in the ICT field and on why human-centered design and principles were chosen as basis for designing the diversity framework (Chapter 2.3 or the corresponding article (Böhm, 2014)).
- *Readers who have a particular interest in the research design* and the detailed research procedures of the studies performed for this dissertation will find all information in Chapter 3.
- *Readers who are interested in the detailed development of the framework* and its components might want to investigate Chapters 4.1 and 4.2 in more detail.
- *Finally, readers who are particularly interested in the final diversity workflow and its practical application* might want to proceed directly to Chapter 4.3.

1.5 OVERVIEW OF MAJOR RESULTS – THE DIVERSITY FRAMEWORK

The developed diversity framework should support project managers in managing diversity – following Thomas' (1990) idea of enabling potential of people at work – in their [international] projects more effectively. The framework primarily deals with diversity aspects such as different work styles that are not explicit and easily manageable.

An essential innovation of the developed diversity framework is the *focus on the individuals within a project team* and on identifying *differences and commonalities between their behaviors* in a human-centered manner. This differentiates the framework from existing models that use certain factors, for instance nationality, to derive anticipated values and behaviors.

Applying the framework of course requires effort – namely time and money. This effort is worth investing at the beginning and throughout the project, as this investment will save time and money later in the project. These savings could avoid, for instance, what would be the additional costs of dealing with conflicts that arise from diverse work behaviors. In the worst case, such conflicts could even lead to project failure (see Chapter 4.3.8). Another example would be that constructively managed diversity can not only help to avoid conflict, but can also generate innovative, sustainable, and creative solutions. As projects are unique in their definition, making it impossible to compare two projects, it is hard to provide scientific evidence for the prior statement. Still, many practitioners will confirm this tendency (see results of quantitative survey in Chapter 4.3.8.2).

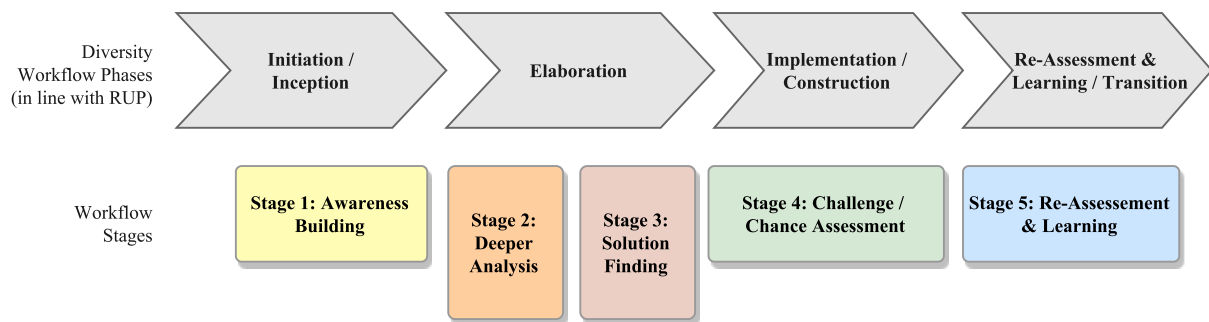


Figure 6: Overview of the diversity workflow and its phases and stages

The framework consists of four phases that represent the traditional process phases in any project (initiation / planning / implementation / closure) or the software development approach Rational Unified Process (inception / elaboration / construction / transition) (see Figure 6). The phases of the diversity workflow use a mixed notation. This was necessary as the workflow had to be validated by practitioners from different fields and should also address project managers with different backgrounds. Therefore, a rather practice-oriented notation was chosen for the phases.

- **Initiation:** An initial phase for choosing the further procedure for explicating diversity features for the particular project.
- **Elaboration:** A planning phase in which the diversity strategy for the particular project is developed.
- **Implementation:** A phase that deals with diversity challenges (conflicts or opportunities) arising during the implementation phase.
- **Re-Assessment & Learning:** A phase that ensures the deployment, exploitation, dissemination of the results of the preceding diversity workflows.

Each phase consists of several workflow steps. These steps are described in detail and specified by responsibilities and roles, comprehensive activity diagrams and, examples or templates in Chapter 4.3.2.

Moreover, the workflow is applied in five stages that partly build upon each other. The first stage aims at increasing awareness for the topic diversity and for differences and commonalities within the project team. In a following, second stage, a deeper diversity analysis can be performed that allows more insights into the team's expectations, behavioral preferences, and potential gaps between those preferences. In the third stage, solutions for the investigated diversity gaps can be elaborated and integrated into the project organization. Furthermore, a fourth stage that deals with assessing arising challenges or chances is suggested. Finally, the stage model is complemented by a continuous re-assessment and learning stage.

Additional information on how the diversity framework is linked to existing project management approaches, on the role description, and on required preconditions for applying the workflow can also be found in in Chapter 4.3.2.

2 KNOWLEDGE EXPLICATION AND DIVERSITY IN ICT PROJECT MANAGEMENT

In this chapter the current research status on knowledge explication and managing diversity in ICT projects is sketched. The factors diversity and culture and their role in ICT project management are described, as this factor will be the focus for the knowledge explication in this dissertation. Furthermore, the importance of implicit knowledge in ICT projects and the examined research gap are elaborated.

2.1 KNOWLEDGE EXPLICATION – EXTERNALIZING IMPLICIT ASPECTS

Knowledge is categorized in two major types: explicit and implicit knowledge. In literature various synonyms are used that describe this implicit knowledge, for instance tacit or personal knowledge.

Very simply stated, tacit knowledge is the contrary term for codified, explicit information or knowledge. It describes knowledge that is gained by observing or by learning from experiences without openly expressing this information (Busch, 2008). In general, tacit knowledge is “highly personal and hard to formalize” (Nonaka, Toyama, & Konno, 2000, p. 7) due to its unconscious nature. Explicit knowledge on the other hand can be processed and shared, for instance in data, documents, or similar artifacts. For this dissertation, the term “implicit” is defined as knowledge or information that is not explicitly represented and/or unconscious.

“Knowledge is dynamic, since it is created in social interactions amongst individuals and organizations” (Nonaka et al., 2000, p. 7). In order to transform information into knowledge, individuals need to combine the new information with their personal context. Therefore knowledge creation requires interaction with individuals or their environment, and should be perceived as continuous process. Nonaka, Toyama and Konno (2000) visualized this process in the SECI process that consists of the four components socialization, externalization, combination and internalization (see Figure 7).

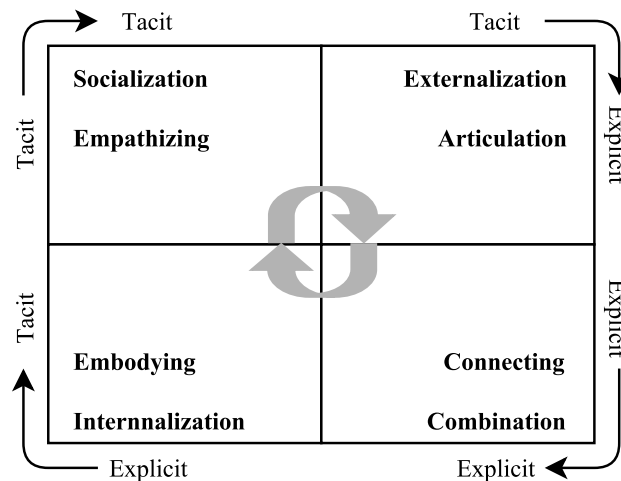


Figure 7: The SECI Process (Socialization, Externalization, Combination, Internalization) (from Nonaka et al., 2000, p. 12)

- Socialization: creating tacit knowledge through direct sharing, interactions, and experiences.
- Externalization: articulating tacit knowledge and making it visible or audible by reflection and dialoguing.
- Combination: systematizing and applying explicit knowledge and information in a personal context.

- Internalization: learning new tacit knowledge and practice.

This process is not restricted to organization-internal knowledge management, but can also be performed in an external context, for instance with customers or suppliers. Figure 8 illustrates how the SECI process can be applied in inter-organizational settings.

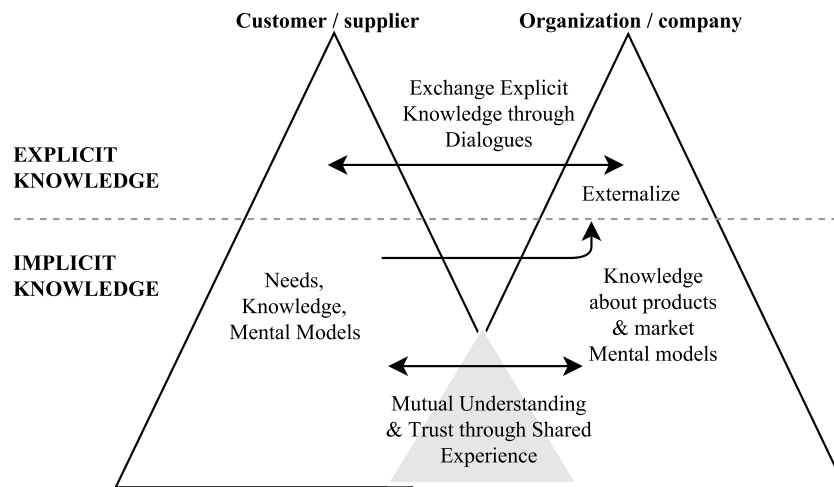


Figure 8: Creating knowledge with outside constituents (from Nonaka et al., 2000, p. 13)

This dissertation primarily focuses on the externalization process of the SECI (see Figure 7), in which tacit knowledge becomes explicit. This work will investigate how diversity aspects can be externalized through facilitating creative discussions, by using metaphors for elaborating different concepts, and by involving the entire project team (Nonaka, Toyama, & Byosi re, 2001) .

In addition, when externalizing tacit aspects, new knowledge in all four fields of the SECI process is also created in context. Tacit knowledge can be built up through sharing common experiences and by embedding knowledge into routines. Explicit knowledge is generated by fully understanding the issue, articulating concepts, and connecting them with language or images, as well as by creating documents (Nonaka et al., 2000).

Various authors examined the fact that implicit knowledge is an important source for gaining a competitive and sustainable advantage (i.a. Drucker, 1994; Leonard-Barton, 1995; Motschnig-Pitrik, Kabicher, Figl, & Santos, 2007; Nonaka & Takeuchi, 1995; Peschl, 2010). In order to be able to understand human interactions in business, one must understand how people use tacit knowledge in their practice (Collins, 2012).

Although implicit aspects can be a drive for innovation and change, research in Computer Science and ICT process / project management focuses primarily on tangible, explicit knowledge. Still, requirements in software development are highly influenced by diversification, global distribution (Chroust, 2008) and a high demand for flexibility (Ceschi, Sillitti, Succi, & De Panfilis, 2005; Highsmith, 2004; Motschnig, 2012). Addressing this need requires a comprehensive understanding of the complex situations and relationships in these environments (Nonaka et al., 2001; Peschl, 2010). This entails not only understanding explicit factors, but also implicit aspects (e.g. Motschnig-Pitrik, Lux, & Cornelius-White, 2013; Peschl, 2010).

In an ICT project team, each member holds implicit knowledge about his/her own behavioral patterns, attitudes, and values, as well as work styles or development preferences. When individuals with various backgrounds and experiences collaborate, differences in their behaviors may lead to conflicts that reveal these different expectations and thinking patterns. An early exposition of these deviations of implicit aspects might positively influence the effectiveness and efficiency of the project by reducing the sources and domains of conflicts (Avery, 2011).

2.2 THE FACTOR DIVERSITY IN INTERNATIONAL ICT PROJECTS

2.2.1 INTERNATIONAL PROJECT MANAGEMENT

Project management, in general, can be defined as “the application of knowledge, skills, tools and techniques to project activities to meet project requirements” (Project Management Institute, 2013, p. 5). This is usually performed in certain sub-processes that support the content of the project. For this dissertation the project management process suggested by the Project Management Institute (PMI) will serve as the main reference process model (see Figure 9). This process was chosen because it is highly generic and allows adaptations and combinations with development models (for instance iterative, agile methodologies).

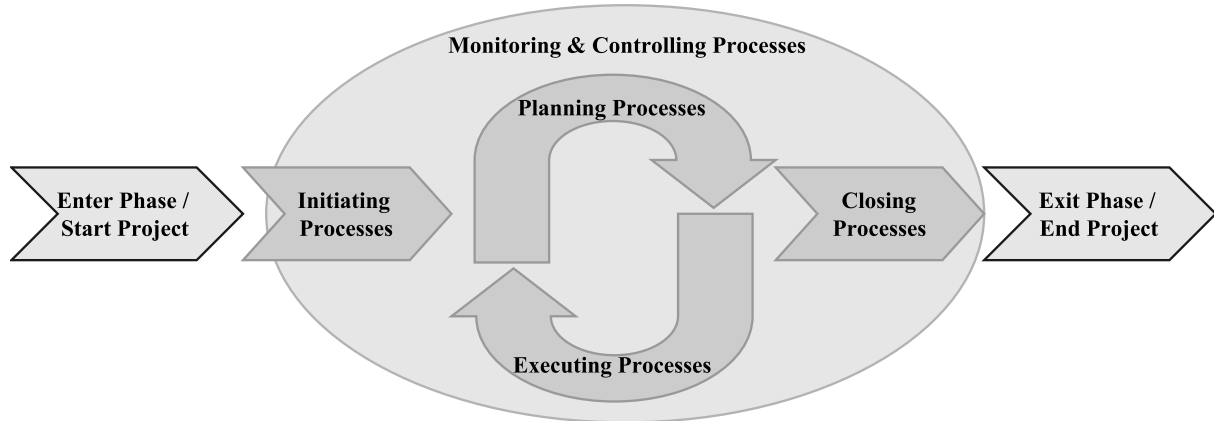


Figure 9: Project management process (from Project Management Institute, 2013, p. 49)

In addition to national projects, international projects are further characterized by a higher level of complexity regarding stakeholders, interdependencies or time zones, high risks and dynamics, the involvement of diverse cultures, educational and professional backgrounds, and a unique project setting (Köster, 2010). In particular, considering the context of international projects is extremely important. Various aspects influence international projects: from national and technical factors (e.g. times zones, topography, climate, nature, resources, technical equipment or infrastructure) to economic factors (e.g. financing, economic systems, and markets) to legal and political factors (e.g. legal systems, agreements, legal and political predictability) towards cultural factors (e.g. communication, understanding of project management as discipline, attitudes towards authority, risk, responsibility, or time) (Gessler, 2011, p. 1983).

2.2.2 RELEVANCE OF DIVERSITY IN INTERNATIONAL ICT PROJECT MANAGEMENT

In the globalized ICT world, different cultures have to work together in international projects. Consequently, project managers face multiple challenges: not only geographic or time differences, different law systems, currencies, or other environmental factors, but also managing and leading an intercultural, diverse team. Diverse behaviors can be a source for culture-based misunderstandings that affect the project's success (Amster & Böhm, 2015). Project management literature (i.a. Köster, 2010) and international project management standards (i.a. International Project Management Association, 2006, 2015; Project Management Institute, 2013) provide guidelines on how to manage many of the – mainly hard – factors influencing international projects. Nevertheless, a systematic, structured approach for managing soft factors in cross-cultural projects does not exist (Böhm, 2012).

Several studies indicate the importance of managing diversity on the effectiveness of ICT projects and link the risk of project failure to ineffective approaches towards diversity management (Harris & Davison, 2002). Lack of awareness of differences on all levels – on an interpersonal, methodical, and technical level – can increase misunderstandings that negatively affect business relationships, but also economic opportunities (Chroust, 2008) and successful project implementation. “One of the reasons

why so many solutions do not work or cannot be implemented is that differences in thinking among the partners have been ignored” (Hofstede et al., 2010, p. 4). Creating awareness and understanding for different behavioral manners can help to avoid or reduce conflicts in project situations. Related research on exploring and depicting the social architecture of groups and teams (Redlich, 2013) served as an inspiration for this work.

The topic of diversity is often associated with intercultural cooperation and culture-based team diversity. Hence, the following chapter provides a brief overview of the most important concepts and the current research status. Chapter 2.2.2.2 then elaborates other types of diversity in a management context and lays out the concept that is the primary reference for this work.

2.2.2.1 CULTURAL DIVERSITY IN ICT PROJECT WORK

‘Culture’ in a business and management context has a wide range of definitions; from an individual’s ‘ideas and their attached values’ (Kroeber & Kluckhohn, 1952), ‘explicit and implicit patterns’ (Kroeber & Kluckhohn, 1952), a ‘mental, collective program’ (Hofstede, 2001) to the commonly accepted concept of values and beliefs that are represented in a person’s behavior (Amster & Böhm, 2016; Hofstede et al., 2010; Trompenaars & Hampden-Turner, 2012).

“Culture’s influence may be indirect, difficult to isolate, and difficult to measure” (Shore & Venkatachalam, 1995, p. 5). Nevertheless, research clearly indicates that an individual’s cultural background has an impact on cross-cultural interaction (Harrison & Huntington, 2000; Kirkman, Lowe, & Gibson, 2006; Kluckhohn & Strodtbeck, 1961) and, in particular, on cross-cultural management (Hofstede et al., 2010; House, Hanges, Dorfman, & Gupta, 2004; Trompenaars & Hampden-Turner, 2012). Studies have furthermore shown that culture affects the effectiveness and efficiency of projects in an ICT-related environment (Amster & Böhm, 2015; Böhm, 2013a, 2013b, 2015; Böhm & Motschnig-Pitrik, 2015; Dunavant & Heiss, 2005; Harris & Davison, 2002; Ives & Jarvenpaa, 1991; Myers & Tan, 2003; Narayanaswamy & Henry, 2005; Shore & Venkatachalam, 1995).

Many researchers (Hall, 1977; Hofstede et al., 2010; House et al., 2004; Laurent, 1983; Schwartz, 1992; Trompenaars & Hampden-Turner, 2012) examined cultural diversity in business situations and provide measurements. For instance, two Dutch researchers (Hofstede et al., 2010; Trompenaars & Hampden-Turner, 2012) investigated particular values of national culture by creating dimensional systems. Hofstede, together with Minkov, defined six major dimensions for examining national culture and differences between nations: power distance (PDI), individualism versus collectivism (IDV), masculinity versus femininity (MAS), uncertainty avoidance (UAI), long term versus short term orientation (LTO) (Hofstede et al., 2010), and indulgence versus restraint (IND) (Hofstede, 2011; Minkov, 2007). These dimensions measure the acceptance of inequality, the degree of individualism, the distinction of gender roles, the extent of threat by an unknown situation, the approaches towards present challenges, and the handling of gratification and needs within a society (Böhm & Motschnig-Pitrik, 2015; Hofstede, 2011; Hofstede et al., 2010).

In addition, the research by Trompenaars and Hampden-Turner (2012) evolved dimensions that emphasizes how people find adequate solutions in particular business situations (Böhm & Motschnig-Pitrik, 2015). For this, they used three major categories: relationships with people, attitude towards time, and attitude towards environment. For the first category – relationships – the following sub-dimensions are used to specify the category: universalism versus particularism, individualism versus communitarianism, neutral versus emotional, specific versus diffuse, achievement versus ascription. In summary, these dimensions describe, for instance, how business is influenced by societal codes, by the focus on individual achievements, by emotions that are expressed or suppressed, by personal and informal relationships, and by status criteria within a society, as well as by the focus on past or future, and the relationship with the environment (Böhm & Motschnig-Pitrik, 2015; Trompenaars & Hampden-Turner, 2012).

Although their approaches are popular, both concepts are questioned for several reasons. Various researchers revealed bias in Hofstede's studies (Huo & Randall, 1991; Myers & Tan, 2003), such as that the survey's focus lies solely on IBM-related institutions. Furthermore, both concepts build upon national culture, which has been criticized for being inappropriate in a globalized world: a person's origin or nationality might not match the actual cultural values they hold when growing up in more than one country (Böhm, 2013a). Furthermore, the tendency to generalize and cluster people according to their nationality (Böhm & Motschnig-Pitrik, 2015) contradicts the human-centered principles.

Research has primarily focused on these value and beliefs systems, although "in practice people react to behaviors – not to the very abstract underlying beliefs" (Amster & Böhm, 2015, p. 233). Humans can analyze, reflect upon, and apply specific behavioral patterns more easily than complex and abstract value-dimensions. "Identifying differences, for example [...] behavioral norms, can enhance acceptance and respect towards other cultures in international business practices" (Böhm & Motschnig-Pitrik, 2015, p. 24). Hence, investigating behavioral differences can help to reduce misunderstandings and the potential for conflicts (Böhm, 2015), as those arise when the counterpart's behavior is misinterpreted (Amster & Böhm, 2015). Therefore, culture-based behaviors are investigated in-depth in this dissertation.

2.2.2.2 DIVERSITY IN A MANAGEMENT CONTEXT

In general, diversity within a project team can be defined as the individual's different characteristics, identities, and consequential behavior that create a variety of perspectives on and for the project (Böhm & Motschnig-Pitrik, 2015).

Multiple characterizations of diversity exist. For instance, diversity can be differentiated in a primary dimension (age, gender, race, ethnicity, physical abilities) and a secondary dimension (educational background, work experience, religion, income) (Aretz & Hansen, 2003; Loden & Rosener, 1991). Others cluster diversity into an individual (e.g. personality), a group-oriented (e.g. cultural diversity), and an organizational (structural and informal integration) level (Cox, 1993). Another differentiation defines demographic (gender, ethnicity, age), psychological (value, beliefs, knowledge) and organizational (status, occupation, hierarchy) perspectives (Jackson & Ruderman, 1996). Finally, diversity can also be characterized as visible or observable and non-visible (age, gender, race, ethnicity) and not directly observable (attitudes, values, skills, knowledge, educational, and functional background) (Beise, 2004; Lambert & Bell, 2013; Milliken & Martins, 1996; Triandis, 1972).

The latter typology is used for this work, whereas the focus of this dissertation lies on the non-visible aspects that are harder to observe. This has focus has two reasons. Firstly, a qualitative study consisting of semi-structured interviews (Flick, 2002) with ten experts from seven different countries (Austria, Croatia, Ecuador, Germany, Iran, United Kingdom, United States of America) revealed the significant influence of soft, social aspects, such as communication, trust, diversity, or involvement on the project's success in real-world settings (Böhm, 2015). At the same time, the study showed that there are no adequate, standardized, and structured approaches that help practitioners dealing with these soft aspects (Böhm, 2013b, 2015). The results of this study had a large cultural reach, as the participants' general experience spanned all five continents, and their work experience covered five countries on two different continents (Böhm, 2015).

In literature, diversity is highly associated either with culture or with gender aspects, age, profession, special needs, or religion although diversity concerns all explicit and implicit differences between individuals. Nevertheless, the research on diversity focuses primarily on explicit demographic factors (O'Reilly, Williams, & Barsade, 1998; Pelled, Eisenhardt, & Xin, 1999; Williams & O'Reilly, 1998), but pays less attention to softer diversity aspects such as personality or expertise (Avery, 2011). Still, these softer aspects can have high relevance as individuals can also differ due to their professional background or department affiliation (Cummings, 2004).

Especially in an ICT context, different software development practices and engineering models add up to the factor diversity; therefore it is also important to focus on diverse work experiences, work manners (Tractinsky & Jarvenpaa, 1995), and approaches. “A practical example demonstrates the relevance of including person-based experience: Person A works in a traditionally organized, hierarchical organization, and is used to approach projects with waterfall-based methodologies. In contrast, Person B is a developer in a small enterprise, which primarily uses agile methodologies in software development. If Person A and B are cooperating in a project, their different approaches towards software development and their understanding of standard procedures and processes need to be considered as relevant diversity aspect” (Böhm, 2013a, p. 120).

Actively managing diversity in an organizational context and specifically in a team context requires understanding differences within these systems, and minimizing disadvantages, and concurrently maximizing advantages (Cox, 1993). In practice, this is often difficult due to the complexity of the topic: “There is no general recipe for a country or a cultural region” (Böhm, 2015, p. 82). Several perspectives and objectives need to be considered for a comprehensive, strategic approach: building trust within the social system; providing particular measures; reflecting the cultural values within the organization; and managing work styles and mindsets (Aretz & Hansen, 2003; Böhm & Motschnig-Pitrik, 2015).

2.3 TOWARDS A HUMAN-CENTERED APPROACH

Human-centered design (HCD) evolved in the past two decades through the urge to involve users in software development (ISO, 2010; Kriglstein, 2011; Norman & Draper, 1986) as “those who are enchanted with technology can and do overlook what is needed to relate it to human behavior and psychology” (Nemeth, 2004, xiii).

There is a high need for empathic, human-centered designs, which are based on a comprehensive understanding of the users’ expectations, experiences, needs, and their environment. Classic requirement analysis is extended by a detailed user analysis that reveals the users’ diverse expertise, skills, and knowledge base in HCD (Rinkus et al., 2005). Integrating users’ experience, expectations, and needs rather than focusing primarily on the system and its functions can improve productivity by increasing user acceptance and satisfaction. HCD builds upon several principles: organizing technology according to users’ needs as well as their way of processing information and decision-making, and creating awareness of the situation. The latter principle – understanding the relevant surrounding information and its implication for a particular task or goal – is also the key for effective performance in complex, dynamic systems (Endsley & Jones, 2004).

Also in project management literature and practice, the human factor and customer/user orientation gained more importance (Böhm, 2014; Cleland, 1995; Cooke-Davies, 2002; Druskat & Druskat, 2006; El-Sabaa, 2001; Morris, 2004; Müller & Turner, 2010; White & Fortune, 2002). Especially in very complex and dynamic project environments, not only methodical skills are important; understanding soft aspects within the team as well as patterns of communication and conflicts is also vital for success (Böhm, 2014; Cicmil, Williams, Thomas, & Hodgson, 2006). One approach that responds to the need to focus on social aspects, human interactions, and collaboration (Augustine, Payne, Sencindiver, & Woodcook, 2005; Ceschi et al., 2005; Cockburn & Highsmith, 2001) is the agile movement with its Agile Manifest (Beck et al., 2001). Besides aiming at increasing adaptability and flexibility in volatile project environments, the concept of agile project management emphasizes the people factor in projects (Cockburn & Highsmith, 2001).

In a successful agile environment every individual in the team is valued because they have the power to shape the product developed for the customer (Boehm & Turner, 2005). This appreciation and valuing is achieved through an open and transparent information policy, frequent and respectful feedback and face-to-face interaction, and a certain degree of self-organization (Highsmith, 2004; Sheffield &

Lemétayer, 2013). Moreover, open communication and tight collaboration are the basis for a trustful environment (Moe, Dingsoyr, & Dyba, 2008; Motschnig, 2012; Nerur, Mahapatra, & Mangalaraj, 2005; Rogers, 1978; Santos, 2013) which again is the precondition for effective teamwork, (Druskat & Wolff, 2004), cooperation (Nerur et al., 2005) and project success (iCom Team, 2014; Verburg, Bosch-Sijtsema, & Vartiainen, 2013). In short, human-centered principles and attitudes (Motschnig, 2012; Rogers, 1978; Santos, 2013) are highly connected with agile (project) management principles, and help to build sustainable and long-term customer relationships and effective teams (Böhm, 2014).

Moreover, a focus group investigation (Flick, 2002) with project managers (see Appendix 8.3) supported that tendency towards human-oriented approaches in international practice. Based on these trends from research and practice, a human-centered approach is expedient for the research presented in this dissertation. Understanding and being aware of the individual's behavior within a highly diverse team is a central issue in international ICT projects that should – according to human-centered theories – help to increase effectiveness and efficiency of the teamwork. Hence, a human-centered design approach was chosen as the basis for creating an innovative, generic diversity framework (see Chapter 4). This approach is also highly reflected in the research procedure described in Chapter 3.2.

3 DESCRIPTION OF RESEARCH PROCEDURE

3.1 RESEARCH APPROACH

The leading question for this research, “How can relevant diversity aspects be explicated, represented and proactively supported in international ICT projects?” was researched by a design-based research methodology (The Design-Based Research Collective, 2003). This research design approach was chosen as it builds upon iterative refinement of the analysis, design, and research studies and thus matches the iterative nature of a human-centered process.

Furthermore, the methodology supports multiple research designs and methods that were needed when entering a complex field with a huge number of parameters that are highly intertwined. The methods that have been chosen in the overall design-based methodology are primarily qualitative research methods (e.g. semi-structured interviews, qualitative systematic literature review, group discussions and online surveys) that appear most suitable for building a new framework.

The open methodological approach also invites a triangulation of methods, such as comparing results from (partly quantitative) online surveys with interviews or detailed explorations done in focus groups settings. Finally, the design-based research methodology allows deriving the research question from practical problems, enhancing close collaboration and interaction with practice, and hence interlinking research and practice by focusing on results that are applicable in real-world settings (Brown & Campione, 1996; F. Wang & Hannafin, 2005).

3.2 RESEARCH PROCESS

As the research follows an iterative, design-based and human-centered process, the procedure was designed as follows.

Firstly, the results of a literature review and a qualitative pre-study (see Chapter 2.2.2) were analyzed in order to understand and specify the context of the research.

Secondly, the requirements of the component 1 (diversity features) and component 2 (diversity techniques) of the diversity framework were specified.

- Component 1: A qualitative study with 40 Indian managers with experiences in managing international outsourced projects was analyzed to collect relevant behavior-based diversity features for international ICT project management (component 1 of the diversity framework). The conducted qualitative, semi-structured interviews revealed insights into cross-cultural challenges and shed light on the complex ways that culture-based behaviors impact IT projects. The study identified 127 behaviors that significantly affected project success and cross-cultural cooperation between Indian managers and managers from all over the world. These behaviors were grouped into 19 behavior clusters.
- Component 2: In addition, a systematic literature review compiled relevant explication techniques for diversity aspects in ICT projects. These techniques were further analyzed, mapped with the requirements and the context, selected, and adapted to the user’s needs and technological possibilities.

The results from this research process step generated two components of the diversity framework: a clustered summary of cross-cultural behaviors that affect ICT project management, and a collection of techniques for explicating diversity features.

Thirdly, a comprehensive diversity workflow (component 3) was designed based on the components 1 and 2. This diversity workflow was presented in a web-based tool. This platform allowed an in-depth validation of the workflow and the entire framework. Furthermore, the third component of the diversity framework not only includes the workflow, a first version of a tool, but also an integration of the workflow into the Rational Unified Process.

Finally, the three components of the diversity framework were evaluated in three different validation studies. This validation also serves as proof of concept and allows drawing conclusions on the framework's feasibility. Based on the results of the previous steps, the framework was optimized in iterative cycles. Figure 10 illustrates the entire research phases conducted for this research.

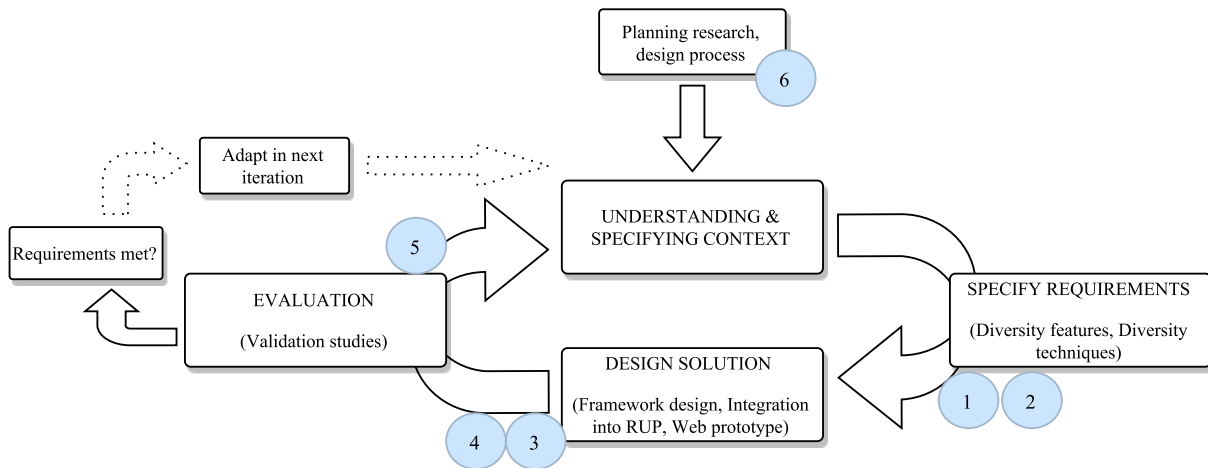


Figure 10: Human-centered, design-based research process (adapted from ISO, 2010)

The numbers in the process in Figure 10 indicate the created outcomes, which are presented in Figure 11.

In general, the first step of the research process was needed to understand the context and narrow the field of research for this work. Furthermore, the second step produced inputs for component 1 (diversity features) as well as for component 2 (diversity techniques). The third step delivered the content-related and technical design of the diversity framework and its integration into the RUP. Finally, the validation studies added up to all components of the framework and the quality of the entire framework.

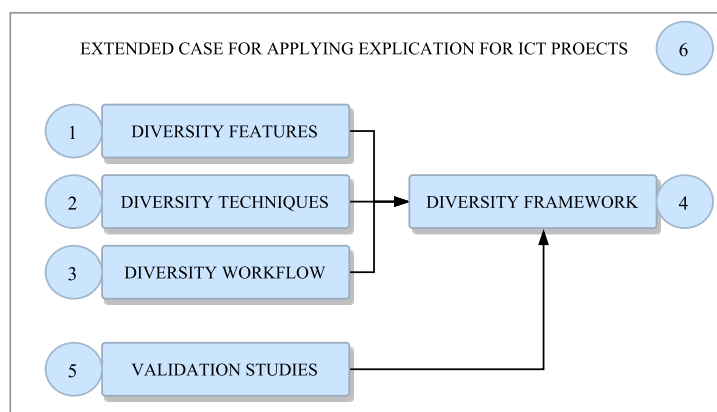


Figure 11: Research outcomes according to the human-centered design process (adapted from Hix & Hartson, 1993)

Moreover, the entire research can be perceived as a case for applying explication techniques in ICT projects – not only for the topic diversity, but also in other fields where implicit knowledge needs to be externalized.

3.3 RESEARCH METHODS

In this chapter, the research methods that have been used for building as well as evaluating the diversity framework are described in detail.

3.3.1 QUALITATIVE STUDY FOR ELABORATING RELEVANT CROSS-CULTURAL BEHAVIORS IN ICT PROJECTS WITH INDIAN PROJECT MANAGERS

Between December 2011 and January 2012, a qualitative study (Flick, 2002) with Indian managers of outsourcing companies was conducted that aimed at examining how cultural-based behaviors can impact IT outsourcing projects (Amster & Böhm, 2015). This was achieved through investigating and describing the sources for challenging situations in international IT projects that cause inefficiency, and by identifying the particular behaviors that lead to the challenging situation in the cross-cultural interaction. Hence, the study revealed how people act differently in cross-cultural project situations (behavioral perspective) and is extending the existing research that focuses on why people act differently (value / belief perspective) (Amster & Böhm, 2015).

In total, 40 Indian managers of outsourcing projects participated in the study. The participants were managing international projects with counterparts from all over the world. In particular, the counterparts were from 17 different countries on four continents: Australia and New Zealand, North America (Canada and USA), Europe (Belgium, France, Germany, Poland, Sweden, Switzerland, United Kingdom), Africa (South Africa), and Asia (China, Japan, Philippines, Singapore, Turkey). The participants were contacted through their companies. Two of the seven addressed companies agreed to let their senior employees be part of the study (Amster & Böhm, 2015).

The study was designed in semi-structured interviews (Flick, 2002). In the interviews, the participants were asked to describe behaviors of their counterpart “which made them feel uncomfortable, which made it difficult to meet their responsibilities or achieve their goals, which negatively affected their work morale, which seemed odd, irrational, or offensive, or which were confusing, surprised them [...]” (Amster & Böhm, 2015, p. 235). The data was analyzed with a content analysis method (Mayring, 2010) and triangulated (qualitative results were quantified) for representational purposes.

Finally, the study conveyed primary features of diversity; for example how team members prefer to communicate in their daily project routine, how relationships are formed in projects, how decisions are made and who makes them, how projects are planned, scheduled, and executed, and many more. The development of these diversity features as a first component of the diversity framework is described in Chapter 4.1, and a full list of the behavior-based diversity features is presented in Chapter 4.3.5.3.1.

3.3.2 SYSTEMATIC LITERATURE REVIEW ON EXPLICATION TECHNIQUES FOR MANAGING DIVERSITY IN INTERNATIONAL ICT PROJECTS

For the collection of scientific, existing techniques for managing diversity in international projects, a systemic literature review (SLR) process (Fink, 2014) (see Figure 12) was chosen for several reasons:

- Firstly, the systematic research method supports locating, selecting, synthesizing, and evaluating existing diversity techniques in a structured, transparent, and therefore replicable procedure (Denyer & Tranfield, 2009; Littell, Corcoran, & Pillai, 2008; Petticrew & Roberts, 2006).
- Secondly, the quality criteria for the studies taking into account in the practical and methodological screen support the validity of the research.
- Thirdly, the research method provides clear principles and processes, and requires the researcher to define the process details in advance, which further increases the replication of the study (Petticrew & Roberts, 2006).

Figure 12 illustrates the used research process for this systematic literature review.

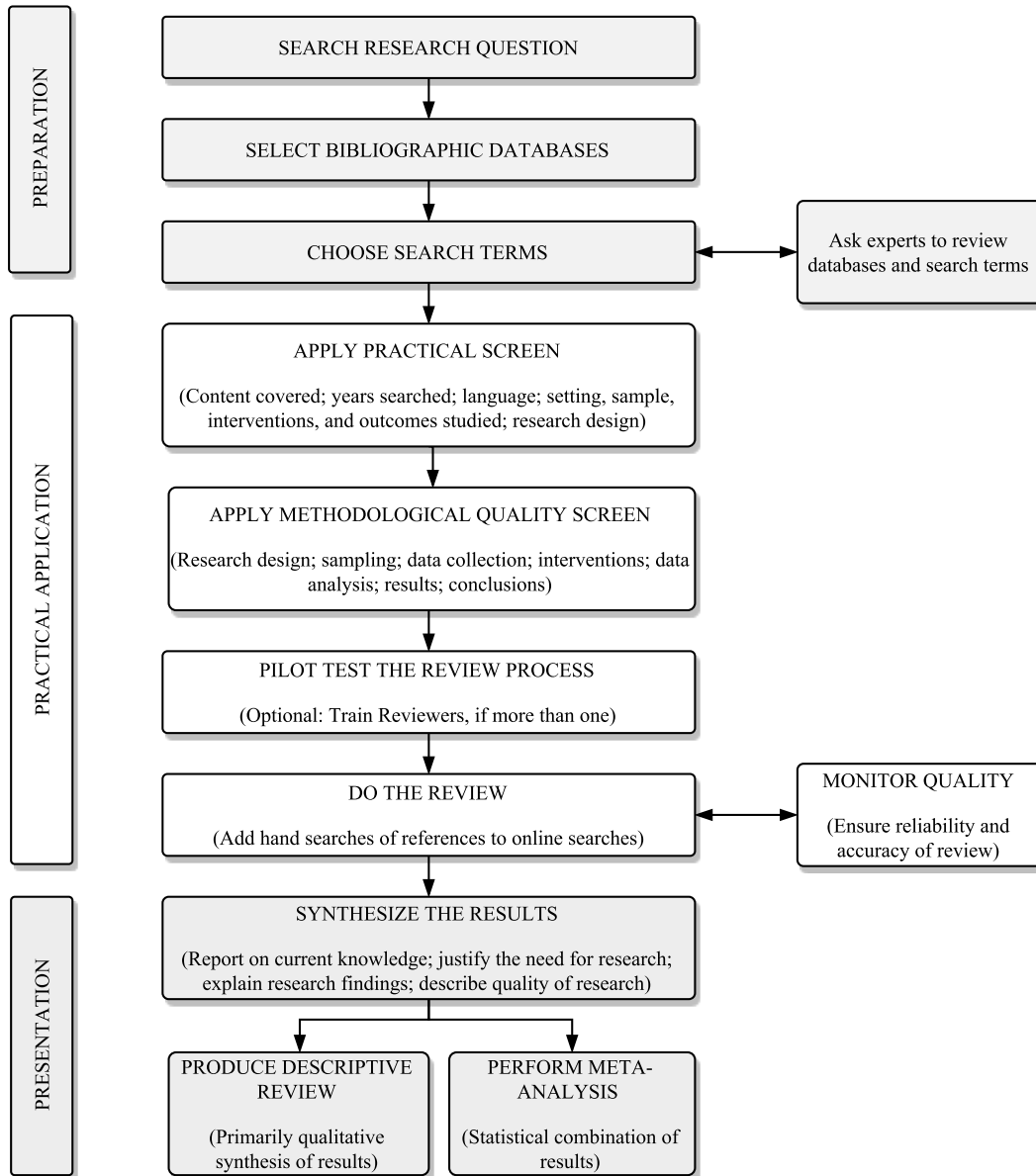


Figure 12: Generic systematic literature review (SLR) process (from Fink, 2014, p. 4)

3.3.2.1 PREPARATION

3.3.2.1.1 Search research question

‘Which techniques exist to support managing diversity in international projects?’ was chosen to be the leading research question for this systematic literature review. When finding existing techniques, it was particularly interesting to review which techniques also include the components of ICT, behavioral patterns, or focus on explicating implicit knowledge regarding the topic. In order to include these aspects, but also to narrow down this general question, the further sub-questions were defined:

1. Which techniques are relevant to ICT?
2. Which techniques focus on behavior (rather than on cultural value dimensions)?
3. Which techniques include an ‘explication component’?

3.3.2.1.2 Select bibliographic databases and web sites

In a next step the following databases were chosen for this systematic literature review as illustrated in Table 1.

	Database	Published / owned by	Chosen as database due to...
1	IEEE Xplore	IEEE	... its focus on computer science.
2	JSTOR	ITHAKA	... its multidisciplinary character.
3	ScienceDirect	Elsevier	... its multidisciplinary character.
4	SpringerLink	Springer	... its multidisciplinary character.

Table 1: Overview of bibliographic databases for the systematic literature review (SLR)

All databases were chosen for the literature review due to either their multidisciplinary character or their specific focus on computer science, but also due to their high reputation and scientific recognition, their large coverage, and their accessibility. Further, the databases represent the variety of existing and current research, as it was of high interest to demonstrate the variety of existing techniques.

3.3.2.1.3 Choose search terms

In brainstorming sessions and several iterative test runs in the databases, the search terms were generated. Due to the large range and variety of the search terms, four searches were generated in total to generate specific outcomes without excluding certain topics or areas. This process of finding appropriate search terms and search strings was extensive:

- 1) First, the initial search terms (“Diversity”, “Culture”, “Implicit”, “Project”, “Method”, “Technique”) did not deliver results of high quality and had too many hits in other research fields than IT and management. Therefore, the search terms were extended through searching for good, fitting papers and analyzing the keywords. This led to an extension of the initial keywords with: “Team”, “Project Management”, “Project Team”, “Management”, “Diversity Training”, “Collaboration”, “Cross-cultural”, “behavior”.
- 2) Second, to reduce the number of results, several search terms were excluded or connected. This combination or exclusion often resulted in an extremely low number of hits (below 15 per search). Finding the right balance between the connection and dependencies of the search terms and a certain degree of flexibility for the results took several test runs in all four databases.
- 3) Third, the manifold possibilities of combining the chosen search terms needed as well careful testing and investigation of the results.
- 4) In addition, not all databases offered the same search options and functions. SpringerLink does not provide a specific search in articles’ abstracts as opposed to the platforms IEEE Xplore, JSTOR and ScienceDirect. Therefore, a customized search algorithm that combined the four searches had to be used for the platform SpringerLink.

In summary, Table 2 shows which search terms and search combinations were rejected in the three databases IEEE Xplore, JSTOR, ScienceDirect.

Search combination	Reason for rejecting the search
<ul style="list-style-type: none"> • “Culture” in Abstract • AND “Project Management” in Full Text • AND “Team” in Full Text • AND “Method” in Full Text Results in JSTOR: 1,010 results	The search delivered too many hits. For the final used search, the term “Method” was changed from Full Text search to Abstract search.
<ul style="list-style-type: none"> • “Diversity” in Abstract • AND “Culture” in Full Text & Metadata • AND “Method” in Abstract NOT “genetic” Results in IEEE: 153 results Results in JSTOR: 279 results	The quality of results was low, as the articles were mainly from other research fields such as medicine or biology.
<ul style="list-style-type: none"> • “Culture” in Abstract 	The quality of results was low, as the articles were

<ul style="list-style-type: none"> • AND “implicit” in Full Text & Metadata • AND “technique” in Full Text & Metadata <p>Results in IEEE: 200 results</p> <p>Results in JSTOR: 43 results</p>	mainly from other research fields such as medicine or biology.
<ul style="list-style-type: none"> • “Diversity” in Abstract • AND “Training” in Full Text • AND “cross-cultural” in Full Text • AND “Technique” in Abstract <p>Results in IEEE: 2 results</p> <p>Results in JSTOR: 13 results</p>	The quality of results was low, as the articles were mainly from other research fields such as medicine or biology. Moreover, the number of results was low.
<ul style="list-style-type: none"> • “Culture” in Abstract • AND “Project Management” in Full Text • AND “Team” in Full Text • AND “Framework” in Abstract • Language: EN <p>Results in IEEE: 116 results</p> <p>Results in JSTOR: 118 results</p> <p>Results in ScienceDirect: 398 results</p>	<p>This search was rejected, as it did not reveal relevant findings for techniques to managing diversity in projects.</p> <p>Including the term “Framework” produced approximately 700 additional hits without any high relevance for contributing to the leading research question for this systematic literature review.</p>
<p>Combination of search 1a and search 1b:</p> <ul style="list-style-type: none"> • “Culture” in Abstract • AND “Project” in Full Text • AND “Management” in Full Text • AND “Team” in Full Text • AND “Technique” in Abstract • AND “Method” in Abstract • NOT “Hospital” in Full Text 	The combination of the search 1a and 1b lead to a low quality of the results and was therefore rejected.

Table 2: SLR – Rejected search combinations

All details of the final searches as well as the specific search terms and search strings are illustrated in Table 3.

Search 1a and 1b	Objective:
	Finding techniques/methods for managing culture/diversity in a project management context.
	<p>Search terms 1a:</p> <ul style="list-style-type: none"> • “Culture” in Abstract • AND “Project” in Abstract • AND “Management” in Full Text • AND “Team” in Full Text • AND “Technique” in Abstract <p>Search terms 1b:</p> <ul style="list-style-type: none"> • “Culture” in Abstract • AND “Project Management” in Full Text • AND “Team” in Full Text • AND “Method” in Abstract • NOT “Hospital” in Full-Text <p>Search strings 1a:</p> <ul style="list-style-type: none"> ○ IEEE: (((("Abstract":culture) AND "Abstract":project) AND management) AND team) AND "Abstract":technique) ○ JSTOR: (((((ab:(culture)) AND ab:(project)) AND (management)) AND (team)) AND ab:(technique)) ○ ScienceDirect: TITLE-ABSTR-KEY(culture, technique, project) and FULL-TEXT(management, team)

	<p>Search strings 1b:</p> <ul style="list-style-type: none"> IEEE: (((("Abstract":culture) AND project management) AND team) AND "Abstract":method) NOT hospital) JSTOR: (((ab:(culture)) AND (project management)) AND (team)) AND ab:(method)) NOT (hospital)) AND la:(eng OR en) ScienceDirect: TITLE-ABSTR-KEY(culture, technique) AND FULL-TEXT(project management, team) AND NOT FULL-TEXT(hospital)
Search 2	<p>Objective: Finding techniques/methods for managing culture/diversity in a diversity management context.</p> <p>Search terms:</p> <ul style="list-style-type: none"> • “Diversity Management” in Abstract • AND “Cultural” in Full Text • AND “Team” in Full Text • AND “Technique” in Abstract <p>Search strings:</p> <ul style="list-style-type: none"> IEEE: (((("Abstract":diversity management) AND cultural) AND team) AND "Abstract":technique) JSTOR: (((ab:(diversity management)) AND (cultural)) AND (team)) AND ab:(technique)) AND la:(eng OR en) ScienceDirect: TITLE-ABSTR-KEY(diversity management, technique) AND FULL-TEXT(cultural, team)
Search 3	<p>Objective: Finding techniques/methods for managing culture/diversity in a cultural collaboration context.</p> <p>Search terms:</p> <ul style="list-style-type: none"> • “Collaboration” in Abstract • AND “cultural” in Abstract • AND “behavior” in Full Text • AND “technique” in Full Text <p>Search strings:</p> <ul style="list-style-type: none"> IEEE: (((("Abstract":collaboration) AND "Abstract":cultural) AND behavior) AND technique) JSTOR: (((ab:(Collaboration)) AND ab:(cultural)) AND (behavior)) AND (technique)) AND la:(eng OR en) ScienceDirect: TITLE-ABSTR-KEY(collaboration, cultural) and FULL-TEXT(behavior, technique)
Combined searches	<p>Objective: Finding techniques/methods for managing culture/diversity in a cross-cultural project context.</p> <p>Search terms:</p> <ul style="list-style-type: none"> • “Culture” OR “Cultural” • AND “team” • AND “diversity” • AND “behavior” • AND “project management” • AND “technique” OR “method” • AND NOT “hospital” <p>Search strings:</p> <ul style="list-style-type: none"> SpringerLink: culture OR cultural, AND team, AND diversity, AND behavior AND "project management" AND (technique, OR method) AND NOT (hospital)'

Table 3: SLR – Searches, Search Terms and Search Strings

3.3.2.1.4 Asking experts to review databases and search terms

For getting feedback about the chosen search terms, a professor and two doctoral students were approached. After explaining how the search terms were generated and what they are aimed at, they provided the following feedback.

Firstly, they argued about whether “method” should be included in the search terms at all, as they were not sure if this would deliver real hands-on techniques. They also suggested using “approach” instead of “method”. As “approach” is even more high-level than “method”, this idea was rejected. Still, as using “method” in the search terms was controversial, the discussant and the researcher came up with an iterative procedure for the search itself. This means that at first, a search in all five databases was conducted with the search string 1a. In a next step, learning from this research (e.g. further restricting the search terms) could be used to adopt the other search strings before performing the searches for 1b, 2 and 3. This procedure was possible after each search string.

Secondly, they also questioned whether “culture” would also deliver results for “cultural”. Therefore, a second initial pilot search with the variation of culture was conducted and delivered the following results illustrated in Table 4. To create a good mixture between the search terms, two search strings were chosen with “culture”, while two were conducted with the search term “cultural”. The search term that delivered more results in total within a search were chosen (white sections), while the alternatives with lower quantity were not used (grey sections).

	culture	cultural	culture	cultural	culture	cultural	culture	cultural
	1a	1a	1b	1b	2	2	3	2
IEEE	42	28	145	112	3	7	59	44
JSTOR	12	9	131	136	116	124	9	22
ScienceDirect	41	45	149	157	32	24	107	152
	95	82	425	405	151	155	175	218

Table 4: SLR – Distribution of papers including the search terms “culture” and “cultural”

Thirdly, it was discussed whether “value” (in the context of cultural dimensions) should be included in the search terms. But as the diversity framework builds upon behavioral diversity features, this input was discarded.

3.3.2.2 PRACTICAL APPLICATION

For selecting relevant content in the four searches and structure and limit the results in a logic procedure, the following criteria were used for the practical and methodological quality screen.

3.3.2.2.1 Apply practical screen

Primary sources for the practical screenings for the criteria defined in Table 5 were the abstract (for scientific articles and conference proceedings) or the short description or blurb (for books or book chapters).

	Acceptance Criteria	Exclusion Criteria
Language:	English accepted	Other languages not considered.
Years searched:	No restrictions	No restrictions.
Content covered:	Empirical studies, conceptual and theoretical publications were accepted.	Papers dealing with quality management, safety culture, biology, architecture, or school education were not considered.
Quality of source:	Articles in scientific journals Books or book chapters Conference proceedings with a peer-reviewed selection procedure	Blogs. Websites. Abstracts without access to the full article outside the library network of the University of Vienna. This criterion only excluded few articles, but was necessary due to economic constraints for the research.

Access to source:	Publication had to be available via the library network of the University of Vienna.	Publications that were not accessibly publicly through the access of the University of Vienna were not considered.
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Table 5: SLR – Criteria for practical screen

3.3.2.2.2 Apply methodological quality screen

After the practical screen, the methodological quality screen was performed. Therefore, several criteria were defined ahead for the screening of the discussion or conclusion section (for scientific articles and conference proceedings) or particular chapters in the publication (for all publications). These criteria are described in Table 6.

	Acceptance Criteria	Exclusion Criteria
Investigated Sector:	Accepted sectors/areas were: Information and Communication Technologies Project Management Business Administration and General Management	Other research areas were not included.
Results:	Publications presenting a particular technique or method for managing culture or diversity in a business context (preferably ICT) were accepted.	Publications presenting high-level essays without a particular technique or method were not considered.

Table 6: SLR – Criteria for methodological quality screen

3.3.2.2.3 Pilot test the review process

The pilot tests were iteratively conducted throughout the preparation phase and in the phase of defining the practical and methodological quality screening criteria.

3.3.2.2.4 Do the review

During the data collection, all relevant publications were listed with all relevant bibliographic information and complemented with information regarding:

- the general focus of the publication.
- a description of the investigated technique or method.
- general recommendations.
- further information or cross-references to other techniques or methods.

3.3.2.2.5 Monitor quality

To ensure the reliability of the literature review, an inter-rater reliability (Gwet, 2014) test was conducted with an unbiased person. The person reviewed 3 different search strings in 3 different databases. In total, 86 search results were tested by the inter-rater person. The filtered results for each search resulted in a 100 percent compliance with the original research results. The full description of this inter-rater test can be found in Appendix 8.2.2.

3.3.2.2.6 Synthesize the results

During the analysis phase each accepted publication was analyzed in detail. Therefore, the categories used during the data collection were further specified as illustrated in Table 7.

Category in data collection	Category in data analysis
„General focus of the publication“	<ul style="list-style-type: none"> • „Subject of publication“
„Description of the investigated technique or method“	<ul style="list-style-type: none"> • „Short description of the investigated technique“ • “Prerequisites for using the technique” <p>Categorization of investigated technique:</p> <ul style="list-style-type: none"> • “Technique related to ICT (projects)” • “Technique focuses on behavioral aspects” • “Technique explicates implicit knowledge”
„Further information or cross-references to other techniques or methods“	<ul style="list-style-type: none"> • „Further information or cross-references to other techniques or methods“

Table 7: SLR – Categories for data collection synthesized with categories for data analysis

3.3.2.3 PRESENTATION OF THE RESULTS OF THE SYSTEMATIC LITERATURE REVIEW

In general, a qualitative approach was used to analyze the data. Still, the systematic literature review also reviews some interesting quantitative counts, which aid to a meta-analysis of the searches.

3.3.2.3.1 Perform meta-analysis

The following Table 8, Table 9, Table 10 and Table 11 illustrate the results in the different databases whereas Table 12 provides a full overview of all results.

Search 1a	All search results	Filtered results after abstract screen	Not considered in full screen	Filtered results after full screen
Search Science Direct	41	6	4	2
Search JSTOR	12	0	0	0
Search IEEE Xplore	42	5	4	1
Total	95	11	8	3

Table 8: SLR – Results of search 1a

Search 1b	All search results	Filtered results after abstract screen	Not considered in full screen	Filtered results after full screen
Search Science Direct	149	2	1	1
Search JSTOR	131	6	3	3
Search IEEE Xplore	145	9	7	2
Total	425	17	11	6

Table 9: SLR – Results of Search 1b

Search 2	All search results	Filtered results after abstract screen	Not considered in full screen	Filtered results after full screen
Search Science Direct	24	1	0	1
Search JSTOR	124	1	1	0
Search IEEE Xplore	7	2	1	1
Total	155	4	2	2

Table 10: SLR – Results of search 2

Search 3	All search results	Filtered results after abstract screen	Not considered in full screen	Filtered results after full screen
Search Science Direct	152	2	2	0
Search JSTOR	22	0	0	0
Search IEEE Xplore	44	1	1	0
Total	218	3	3	0

Table 11: SLR – Results of search 3

All Searches	All search results	Filtered results after abstract screen	Not considered in full screen	Filtered results after full screen
Search Science Direct	366	11	7	4
Search JSTOR	289	7	4	3
Search IEEE Xplore	238	17	13	4
Combined Search SpringerLink	189	2	1	1
Total	1082	37	25	12

Table 12: SLR – Overview of all search results

Comment: as the results from search 1a in the database Science Direct were identical with parts of the results from 1b in Science Direct (1a was a subset of 1b), the results were only assigned to search 1a. Also, one result in search 3 in the database IEEE Xplore was redundant with IEEE Xplore search of 1b and was assigned only to search 1b.

In total, the searches generated 1082 results in four different databases of which only 38 results were filtered after the first practical screen of the title and abstract of the publication. 25 results were not considered in the full screening of the entire paper, which consequently resulted in 12 filtered publications that actually presented a technique or method for managing diversity. Appendix 8.2.1 shows the methodological screening of the 38 results that passed the practical screen.

3.3.2.3.2 Produce descriptive review

The qualitative review can be found in Chapter 4.2.1.

3.3.2.4 LIMITATIONS OF THE SYSTEMATIC LITERATURE REVIEW

This systematic literature review followed the process of Adele Fink (2014) that does not intend to perform a detailed analysis of the references within the accepted sources. Hence, the procedure does not go into depth, but does provide an adequate overview of the field. Furthermore, the number of sources and databases used was limited due to restricted resources for this dissertation. Nevertheless, the quality of the review was proven with inter-rater reliability tests (see Chapter 3.3.2.2.5 and Appendix 8.2.2).

3.4 VALIDATION METHODS

For validating the diversity framework, a mixture of quantitative and qualitative methods was used.

- Firstly, a semi-structured expert interview study was performed including 10 experts from different fields related to project management and cross-cultural research. This study provided in-depth information about the framework and its components, and thus was a major drive for the optimization of the entire framework.
- Secondly, two focus group workshops were performed with two student groups at the University of Vienna. This study delivered further information on particular parts of the diversity workflow and the perception of users affected by the workflow.
- Thirdly, a qualitative online survey was performed within the professional project management community. Although the survey did not reach a representative count with 101 responses, the results indicate clear trends.

Overall, the validation studies served to evaluate whether the generic diversity framework (including diversity features, diversity techniques and diversity workflow) can enable ICT projects to be more effective and productive.

3.4.1 QUALITATIVE STUDY WITH EXPERTS

This qualitative study was designed for getting insights on the usability and applicability of the diversity workflow and its techniques and features. Furthermore, the study was used as major source for improving the content of the diversity workflow. The survey used expert interviews as main source of information.

3.4.1.1 SAMPLING

For the study ten experts that represent different fields of practice and research were interviewed. The following expert fields were covered with the interviews:

Field	Number of interviewees	Function
International project management organizations	1 interviewee	<ul style="list-style-type: none">• Vice president of an international project management organization
Project management consulting and coaching	3 interviewees	<ul style="list-style-type: none">• Managing director and adjunct lecturer• Senior consultant• Managing director, trainer, and intercultural expert
ICT project management practice	2 interviewees	<ul style="list-style-type: none">• Project manager• Assistant professor with responsibility for R&D projects
Project management research	1 interviewee	<ul style="list-style-type: none">• Research and reaching assistant
Cross-cultural research in management	2 interviewees	<ul style="list-style-type: none">• Coordinator and lecturer at an university of applied sciences (field: human resource management)• Adjunct faculty at a private university (field: business and management)
ICT project management education	1 interviewee	<ul style="list-style-type: none">• Director of a university study on project management and information technology

Table 13: Overview of interviewees' qualification as experts in their field

The participants can all be considered to have an expert status in their fields – either due to their research achievements or due to their large, practical experience. This expert status was one of the primary selection criteria for those ten participants. Further primary criteria were their gender as well as their accessibility to the researcher. Moreover, it was of essential importance that the persons were available to meet in Vienna or close to Vienna, as the interviews were designed to be performed in

direct, face-to-face settings. Potential experts within the researcher's professional network, which was fairly extensive throughout the prior research and networking activities, were asked to participate, and ten of the requested experts agreed to be interviewed (Lamnek & Krell, 2010). Also, there were no conflicting interests or relationships between the interviewees and the researcher that could have impacted the quality of results.

The gender composition of the participants was equal – five participants were female, the other five participants were male. All participants live or have lived in Austria. Still, their nationalities vary from Austria (5), Bosnia (1), Czech Republic (1), Germany (1), Turkey (1), United States (1).

3.4.1.2 RESEARCH SETTING

Prior to the interviews, the participants received information about the purpose of the study and the link to the web platform (see Appendix 0) via email. They were asked to browse through the platform for about 1 hour before the interview. They were asked to take at least a look at each phase of the diversity workflow and at their main workflow steps. In addition, they should examine randomly some workflow steps in detail and taking a look at the diagrams and templates. They also were asked to consider the following leading questions when browsing through the platform:

- Is the workflow applicable and practical? Could you use the workflow in your projects?
- Is the structure clear? Is the framework complete?
- Is the framework flexible enough to use it in different situations, teams, or project sizes?

The interviews were conducted between September and November 2015. All participants were interviewed in direct, face-to-face meetings. Eight interviews were conducted in German, as this was the participants' native language; two interviews were conducted in English. Each interview took approximately one to two hours. A full questionnaire and its categories are presented in Appendix 8.4.1.

3.4.1.3 DATA ANALYSIS

The interviews were recorded and later transcribed and paraphrased in one step. As the interpretation of the expert interviews primarily aimed at comparing the content of the interviews (Flick, 2002), a content analysis by Mayring (2010) was the most effective method to proceed with for the data analysis. For the categories of the analysis, the questionnaire's clusters were directly used: content, structure, feasibility and applicability, completeness, flexibility / adaptability, innovation, ease of use / learnability, skills, overall impression. A full set of the paraphrased, structured and evaluated data can be found in Appendix 8.4.3

The results of this study helped to improve the diversity workflow that is presented in Chapter 4.3.

3.4.1.4 LIMITATION OF STUDY

The sample of study participants is equally distributed regarding gender. Still, in regard to nationality there is an imbalance. Half of the participants have an Austrian nationality while the others are from Eastern European countries, Germany, Turkey, and the United States. Therefore, the study is not representative for all cultural regions and is limited by the number of experts. Still, the study provided valuable insights and information that could not have been gained with another research method, for instance an experiment or quantitative data surveys.

3.4.2 QUALITATIVE STUDY WITH TEAMS

The aim of this study was to learn more about the user perspective and user perception of the diversity elaboration phase. For this purpose a focus group discussion / workshop setting was applied (Flick, 2002).

3.4.2.1 RESEARCH SETTING

Participation in the study was proposed to student team at the Faculty of Computer Science at the University of Vienna. The students were approached in the compulsory bachelor course “project management”, in which they had already worked together as a team on the course exercises. In the course, they had to fulfill several tasks (e.g. project work, reflection sheets, presentations). Instead of writing a small seminar work, which was rewarded with 15 percent of the total course points, student teams could participate in the focus group study. The only restriction was that their entire team had to participate in the study and that they should have either some practical experience or that they were in the third semester of their bachelor study or higher. The students’ tasks were to participate actively during the workshop and to write in-depth reflections afterwards.

Two teams with four team members each volunteered for the study. Team 1 was composed of four male participants, while Team 2 was a mixed team with two female and two male participants.

Prior to the workshop, the teams were asked to read through a short explanation of the workshop and reflection on the following questions:

- How would you explain the term diversity in your understanding? Which association do you have with the topic?
- How would you find out as project manager if your team members have different work styles?
- Would you expect from a project manager that she/he deals with the topic diversity actively?

These questions should encourage the students to think about the topic before the workshop. Furthermore, the following preconditions for participating in the workshop were communicated to the participants:

- Open attitude towards the topic.
- Active participation during the workshop.
- Respectful interaction with the other participants.
- Confidentiality: what is elaborated during the workshop is only used for the study.

The author herself moderated the workshops. Although she also evaluated the participant and the accreditation for the course, it did not seem that the students were confined by these facts. Both during the workshop as well as the reflection, the participants seemed very honest, open, and critical.

3.4.2.2 RESEARCH PROCEDURE

The workshops were both held on the 16th of November, 2015 at the Faculty of Computer Science, and lasted three hours each.

Before starting with the workshop tasks, the participants introduced themselves and shared their personal background (for instance education, work experience, or hobbies) as a warm-up. Then the moderator defined the ground rules for the workshop (e.g. constructive feedback; open conflicts are not taken out of the room; nobody is forced to participate). Following, the participants were asked their opinion on the preparatory questions about diversity. In addition, the participants were asked to draw a picture in which they illustrate what diversity means to them. These two steps were used to open up the topic and get first insight into their perception. Furthermore, it was interesting to see whether they had negative or positive associations with the topics.

After this introduction the main part of the workshop started, which lasted for about 2 ½ hours. In the first phase, four different explication procedures (each lasted about 20-30 minutes) were tested in the following order:

1. Open discussion

In the open discussion the moderator asked five selected questions from the diversity feature list (see Chapter 4.3.5.3.1). The participants should discuss each question, identify if there is a gap between their preferred work styles, and note on the whiteboard if they identify a gap.

2. Positioning with figures

Again, another four questions from the diversity feature list (see Table 46 in Chapter 4.3.5.3.1) were stated and the participants were asked to pick an avatar and position themselves with the figure on a line on the table that represented the two extreme values of the question (e.g. for instance if they prefer to separate professional time at university or at work and their private time, or if there should be a strong connection). For the positioning “funny” figures (e.g. rubber ducks) were used to lighten the mood.



Figure 13: Example for positioning with figures on a table

After they positioned their figures, they should again discuss what they saw on the table and not on the whiteboard when they identified any gaps.

3. Positioning in the room

The positioning in the room followed the same procedure as the positioning with figures. The only difference was that the participants should position themselves alone a line in the room to visualize which work style they prefer. Again, other diversity features were used for this test. After they positioned themselves the moderator offered them to either sit down at the table again and discuss, or discuss while they keep their positions. Both teams did not leave their positions, which created some tension when only one team member took a contrary position to the other three team members.

4. Questionnaire

An excerpt of the full questionnaire with just 5 pair items from the diversity questionnaire (see Chapter 4.3.5.3.9) was handed to the participant for them to fill out. For team 1, the moderator evaluated the questionnaire on the whiteboard to find out if there were any gaps regarding these diversity features. Team 2 did not feel comfortable with the general questions on the questionnaire and did not want to fill them in, as they could not see much meaning in that. Therefore, this team did not identify any gaps in this procedure.

After each procedure was finished, the team was asked to reflect whether they liked the procedure or not.

In the next phase, the team was asked to review all collected gaps on the whiteboard, prioritize the gaps together, and then find situations from their project for the five highest ranked gaps. Afterwards,

the teams were asked to try to elaborate solution strategies for each diversity gap and the associated solution and note them on paper. In particular they should consider:

- rules and procedures for the project,
- risks and chances for the project,
- and a person that is responsible to keep an eye on the gap.

Finally, the workshop was completed with an extensive discussion about the entire workshop process.

One day after the workshop the following questions were send to the participants by email. They should answer the following questions within the next four days:

- Please reflect about the 4 different procedures (open discussion, positioning with figures, positioning in the room, traditional questionnaire) that were used to reveal different work styles and behaviors (diversity gaps). What did you perceive as good/bad, helpful/hindering, easy/hard etc.?
- Did you learn something new about your team? Did you learn something new about yourself?
- How did I experience the process of making implicit work styles and personal behavior explicit during the discussion?
- What did you like / dislike most? What would you change?
- Was the guided procedure helpful? Or could you have done the workshop with your team just with written instructions?
- How did you experience the process of searching for situations in which the diversity gaps could lead to conflict in the project?
- How do you perceived the exercise at the beginning (visualizing your associations with the topic diversity in a drawing)?
- How would you evaluate the solution process (creating rules and procedures, identifying risks/chances for the project, naming a responsible person)? Were the elaborated solutions really good and appropriate for the team?
- How would you proceed if observe that the agreed upon solutions are not kept during the project?
- What would you use in your practice / job or respectively what should a project manager apply? Would you approach the topic diversity actively in real-world project teams?

3.4.2.3 DATA ANALYSIS

The written reflections were the main source of information for the data analysis. Although the workshops were fully recorded on audio, the content from the workshop and the written reflections were congruent. Therefore, the written reflections were chosen as the primary source because they were already structured, and probably include more thought-through information than the recordings. For the analysis, a structured content analysis (Mayring, 2010) was performed, which used the same categories as the questionnaire.

The full results are described in Appendix 8.5. Selected results of this analysis are presented in Chapter 4.3.8.3.

3.4.2.4 LIMITATION OF THE FOCUS GROUP STUDY

The study is limited by the number of investigated teams and the background of the participants. The two teams that participated consisted of students. Further studies should be performed with project management practitioners to proof the validity of the study in real-world project settings. Nevertheless, the study provides first results on the applicability of the explication process of the diversity framework and the variety of preferences regarding a particular explication procedure.

3.4.3 QUANTITATIVE ONLINE SURVEY

In addition to the two qualitative studies, a quantitative online survey was completed. The survey aimed at investigating the relevance and economic efficiency of the diversity framework, and the quality of the component 1 (diversity features) of the framework.

Before the actual survey was put online, a small pre-study was done with four test persons. These people provided input and feedback on the structure, the scope, and the focal points of the survey. The results of these pre-tests are prepared in Appendix 0. The full questionnaire is also shown in Appendix 8.6.1.

3.4.3.1 DATA COLLECTION PROCEDURE

Finally, the survey was sent to two big international project management organizations in Austria and one project management organization chapter in Munich:

- Project Management Institute (PMI) – Chapter Austria
- Project Management Institute (PMI) – Chapter Munich
- International Project Management Association (IPMA) – Project Management Austria (pma)

The PMI Chapter Austria sent an announcement for the survey out in their regular newsletter (September, 9th 2015) that reaches approximately 355 project management professionals in Austria. Although such a large population was reached, there were only four responses directly connected to this promotion activity. Beforehand, it was estimated that there should be around 107 respondents in order to reach approximately 30 percent of the population and be able to draw conclusions to the entire population of 355 professionals.

Furthermore, the PMI Chapter Munich also included an announcement in their monthly magazine in September 2015. This announcement again reached around 1200 project management professionals in Southern Germany. Unfortunately, the Chapter did not include the survey link in the announcement, but the email address of the survey leader. Eventually, there was no single request from Chapter Munich. Therefore, the entire chapter can be excluded from the population of the survey.

Finally, the survey was sent out by the Project Management Austria (pma), a national institution of the International Project Management Association (IPMA) in their newsletter (November, 12th 2015) with a reach of approximately 1150 persons from practice, public institutions, and universities in Austria. Here, there was a higher resonance with 17 responses. Still, these also were too few responses to allow conclusions on this population.

Although apparently the target group - project managers of international projects that had a connection to Austria – could not be reached, there was still a need to gain more data even though it was clear that the study would not get a representative status. Hence, the survey was sent directly to a network of project management professionals from the preceding research project “iCom” via email. The partners from this project had agreed previously to participate in further research on topics and doctoral thesis related to the research project. The participants had also the opportunity to share the survey with other persons that fit the profile (experience project managers with international experience). Apparently, this direct mailing had the highest reach with 80 respondents (over about six weeks autumn 2015). Still, this survey procedure made it impossible to clearly define the population reached, as the original listed participants could hand the survey to other people. This resulted in some unexpected developments. For instance, due to the option for forwarding, the survey was distributed at the Italian Institute of Project Management (ISIPM) in Rome although there was no prior connection to this institute. Hence, 15 responses can be directly connected to this announcement at the Italian Institute.

3.4.3.2 DATA ANALYSIS

To analyze the data, certain open variables (e.g. types of projects) had to be coded before analyzing. The coded data was then processed in analytical statistic software.

- Firstly, descriptive statistical analysis had been performed on the entire dataset. The full analysis is presented in Appendix 8.6.
- Secondly, as the factor nationality showed an disproportional distribution (59 persons from Austria, 15 persons from Italy, 27 persons from other countries around the world), the data set was split into these three groups (Austria, Italy, other countries) and analyzed for the separate groups to reveal if there were any major differences in the answers. In addition, correlation tests based on Pearson Chi-Square, Cramer's V and Kendall's Tau were performed for major variables (see Appendix 0).
- Thirdly, to ensure the internal reliability of the questions, Cronbach's Alpha reliability tests were performed for certain grouped questionnaire items (see Appendix 8.6.9). The tests showed a high reliability (0.86 and 0.76 Cronbach's Alpha) for the tested items.

The results are presented in Chapter 4.1.2 and they provided details for the diversity workflow (see Chapter 4.3.8.2).

3.4.3.3 DEMOGRAPHIC INFORMATION

As mentioned before, some nationalities were quite disproportionally represented in the survey. Persons with Austrian nationality made up 58.4 percent of the total participants. Another 14.9 percent were Italians, 9.9 percent Germans, and 3.0 percent Czech. The remaining 13.8 percent came from countries all over the globe: Slovakia, Spain, Ecuador, Columbia, Hungary, Ireland, Israel, Palau, Poland, Turkey, and the United States.

Besides the differences in nationality, there was other demographic data that was collected and analyzed. From a total of 101 participants, 78 persons were male (77.2 percent) while 23 persons were female respondents (22.8 percent).

In terms of age, the majority of participants was quite equally distributed between 26 and 55 years old (see Table 14). Only two respondents were younger than 25 years, and eight respondents were older than 56 years.

	Frequency	Percent
36 to 45	35	34.7
46 to 55	30	29.7
26 to 35	26	25.7
56 or older	8	7.9
25 or younger	2	2.0
Total	101	100.0

Table 14: Demographic information about survey respondents – Age

Furthermore, the participants had different experiences in national (see Table 15) and international projects (see Figure 14). All participants had experience with project management, the majority even over 10 years (54.5 percent). In contrast, 12 respondents (equals 11.9 percent) had no experience with international projects.

	Frequency	Percent
less than 2 years	5	5.0
2 to 5 years	14	13.9
5 to 10 years	27	26.7
over 10 years	55	54.5
Total	101	100.0

Table 15: Demographic information about survey respondents – Experience in project management

Still, the average participant had more than seven years experience in international projects (mean = 7.31 years). In summary, the demographic data shows that the majority of respondents were experienced or even highly experienced in managing national and international projects.

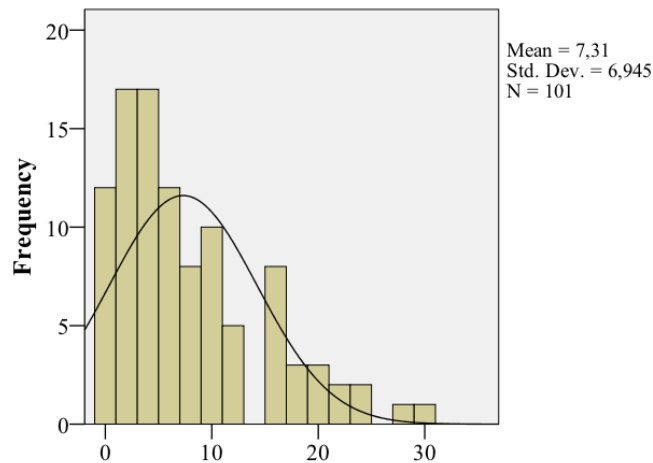


Figure 14: Demographic information about survey respondents – Experience in international projects

The participants were also asked which types of project they usually work with. This questioning allowed multiple answers. The responses show that 48 people had experience with software projects. Counted on the total number of 101 participants, these are 47.5 percent. Also, another 27.7 percent worked in IT projects. Other project types, such as change, organizational development, research & development, or construction projects added to this specialization on IT and software (see Table 16). Many respondents indicated several project types and combinations such as IT, change and organizational development, or software and process optimization and similar.

Type of projects	Count
Software Development and/or Implementation Projects	48
IT Projects	28
Change Projects	17
Organizational Development Projects	16
Research & Development Projects	9
Infrastructure / Construction Projects	7
Product Development	7
Telecommunication	4
Sales / Marketing	4
Process Optimization	4
Banking	4
Sustainability / Environment	3
Consultancy	3
Others: Non-Profit, HR, Logistics, Agriculture, Education	7

Table 16: Demographic information about survey respondents – Types of projects the respondents have worked with

In order to avoid repetition, the results that flow immediately into the framework development and its validation are presented directly in the Chapters 4.1.2 and 4.3.8.2.

3.4.3.4 CORRELATION

In order to examine the independence or dependence of one variable with others, several correlation tests were performed. Pearson Chi-Square tests with Cramer's V as a measure of correlation were performed for investigating the correlation between:

- the nationality of the participants and the evaluation of the diversity features.
- the nationality of the participants and the estimated time that should be invested when applying a diversity framework.

The results of the first correlation test (nationality and diversity features) are described in Chapter 4.1.2.1. For the variables of estimating the time needed for applying a framework (in the initiation and planning phase, in the implementation and closure phase of a project, and per team member in the

entire project), all nationalities were used as reference variable. Here, Cramer's V values showed a strong relationship at a significance level of 0.01 for the time needed in the implementation and closure phase of a project. The other variables did not show a significant relationship.

Moreover, correlation tests were performed with the Kendall's Tau correlation coefficient (see Appendix 8.6.8.6). Firstly, the correlation between the evaluation of each diversity feature was examined. The tests revealed significant correlations at the 0.01 level, but all of the correlations were quite low. The highest correlations (above 0.4) were identified between the following diversity features:

- Diversity Feature 4 (Following defined processes) and 5 (Recognizing and describing problems)
- Diversity Feature 3 (How decisions are made and who makes them) and 12 (Approaches to motivation)
- Diversity Feature 8 (Appreciation of work) and 12 (Approaches to motivation)
- Diversity Feature 10 (Problem escalation) and 18 (Information flow)

Secondly, Kendall's Tau b tests were also performed for revealing any correlation between the experience in project management and the estimation of needed time with a project. Here, no significant correlation was shown.

3.4.3.5 LIMITATION OF STUDY

Although the voluntary participation caused some serious issues for generating data, and although the population is not clear, as the research procedure had to be changed, the 101 responses still provide clear trends. It is obvious that the data composition does not allow any conclusions on the entire – yet uncertain – population. Nevertheless, the results can be used to create further hypotheses on the economic factors of the diversity workflow. To ensure that the results are valid, the survey should be repeated with a better defined population in future research.

4 KNOWLEDGE-BASED DIVERSITY FRAMEWORK

As illustrated in the previous chapter, the diversity framework consists of three major components: the diversity features that serve as filters for all existing diversity aspects; the diversity techniques that allow an externalization of the filtered diversity features; and the diversity workflow – a workflow that is integrated into the Rational Unified Process (RUP) and serves as a guideline for managing diversity in ICT projects. Here, these components and their development are described in detail.

4.1 DIVERSITY FEATURES

As shown in Chapter 2.2, the success or failure of ICT projects, especially in a global context, is highly influenced by how people behave based on their cultural background. Nevertheless, such culture-based behaviors have not been in the focus of research. Rather research emphasized value dimensions and belief systems that are on a more abstract level than behaviors (Amster & Böhm, 2015). Aiming at investigating more of the behavioral level, a qualitative interview study was conducted.

This study aimed at identifying cross-cultural challenges and analyzing culture-based differences in the behaviors of Indian project managers and their counterpart in countries all over the world (Amster & Böhm, 2015). The details of the research design and procedure of the study were already described in Chapter 3. In the semi-structured interviews, a total of 127 behaviors (see Appendix 8.1) were identified that had an effect on the project success. Moreover, according to the interviewees, the identified behaviors severely impacted the cooperation between the Indian managers and their global partners. For instance, the behaviors affected their long-term business and personal relationships and business communication (Amster & Böhm, 2015).

These 127 culture-based behaviors were clustered according to their logic affiliation to ICT project tasks or phases (for instance planning and scheduling, requirements engineering) that are also reflected in the three international project management standards PMI (Project Management Institute, 2013), IPMA (International Project Management Association, 2006, 2015), and PRINCE2 (Hinde, 2012). To ensure inter-rater reliability (Gwet, 2014), the clustering was performed by two researchers from Austria and the USA in several iterations to reach a final number of 19 clusters. These 19 clusters – further referred to as ‘diversity features’ – are presented and listed according to their frequency of mentioning in the interviews in Table 17.

No.	Diversity Feature	No. of behaviors from study	% of total behaviors
DF1	Communication	21	16.5%
DF2	How relationships are formed	20	15.7%
DF3	How decisions are made and who makes them	15	11.8%
DF4	How projects are planned, scheduled, and executed	13	10.2%
DF5	Following defined processes	10	7.9%
DF6	Recognizing and describing problems	7	5.5%
DF7	How requirements are handled	5	3.9%
DF8	Appreciation of work	4	3.1%
DF9	The importance of milestones	4	3.1%
DF10	Problem escalation	4	3.1%
DF11	Value of monitoring and business processes	4	3.1%
DF12	Approaches to motivation	4	3.1%
DF13	Types of information prospects are seeking	3	2.36%
DF14	Professional and personal time	3	2.36%
DF15	Handling of passwords and access	3	2.36%
DF16	Thinking and speaking patterns	2	1.57%
DF17	Working on tasks	2	1.57%

No.	Diversity Feature	No. of behaviors from study	% of total behaviors
DF18	Information flow	2	1.57%
DF19	Attention to detail	1	0.79%
	Total	127	100%

Table 17: Behavior-based diversity features relevant in ICT projects (slightly adapted from Amster & Böhm, 2015, p. 236)

4.1.1 DESCRIPTION OF THE DIVERSITY FEATURES

Although the qualitative data analysis focused on generating relevant diversity features by clustering the behaviors, the analysis process revealed that some behaviors that make up a diversity feature were mentioned more frequently than others. In particular, 62.1 percent of all 127 mentioned behaviors affected five diversity features: differences in communication (16.5 percent), building comfortable relationships with business partners (15.7 percent), who makes decisions and how those decisions are made (11.8 percent), different approaches to project planning and implementation (10.2 percent), and different expectations in regard to following pre-defined processes (7.9 percent) (Amster & Böhm, 2015, p. 236). As these five diversity features therefore seem to be particularly noteworthy, they are described in detail in Table 18.

Diversity Feature	Description
Diversity Feature 1: Communication	<p>Some business partners (e.g. from Canada, Germany, the Netherlands, and the USA) were described by the interviewees as being very direct when communicating (e.g. ‘very open, let you know exactly what they were thinking’), other business partners (e.g. from China, India, Japan, and the Philippines) were perceived as being indirect when communicating (e.g. ‘don’t like admitting mistakes in public’).</p> <p>The difference in communication behavior between Indian managers, who tend to be indirect, and managers who were direct led to project difficulties. For example, in many instances the Indian interviewees felt that the customer did not value their expertise because their customer used very blunt language (e.g. did not mask their displeasure when projects were late or problems arose). This blunt language was interpreted as ‘disrespect’, which hindered trust and created barriers for building comfortable relationships.</p>
Diversity Feature 2: How Relationships are Formed	<p>According to the interviewees, in some business cultures individuals tend to form relationships quickly. Interviewees described these business partners as being curious about their personal lives and being immediately hospitable (e.g. ‘asking where someone grew up’, and ‘inviting someone home for dinner’). These business partners were also willing and comfortable talking about themselves. In some cases, these business relationships were described as rather superficial (e.g. Canada, Sweden). In other cases, they were described as really delving deeply into a person’s life (e.g. Brazil, India). The Indian interviewees considered themselves to be both curious about others and comfortable talking about themselves: ‘Indians have a personal space that is non-existent. You talk to an Indian anywhere for about an hour ... you will know everything about him.’</p> <p>On the other hand, individuals from other backgrounds (e.g. Austria, China, France, Germany, Japan, Korea) tend not to discuss their private lives in business environments. Relationships are formed slowly over time. Attempting to talk about private things in first meetings may create silence or uninformative responses. The interviewees felt this “coldness” created tension in project situations with Indian managers: ‘The first meetings were very cold and only about business. No talking about family or personal life – but after a few weeks the partners started to open up and became friendlier.’</p>
Diversity Feature 3: How Decisions are Made and Who Makes Them	<p>The interviews revealed two different ways of dealing with decision-making. Interviewees stated that with some business partners (e.g. Canada, China, India, USA) the leader made most of the decisions. Sometimes the leader made decisions on their own. Often, especially for important decisions, the leader would consult with others and even go into open discussion with stakeholders or team members (e.g. ‘actively participate in brainstorming’). With these business partners, decision-making was perceived as a rather fast process.</p> <p>In contrast, other business partners (e.g. Japan) needed to have full agreement from all stakeholders for a decision. If one or more stakeholders did not agree with the proposed solution, the process was either delayed or might be annulled. In general, this decision-making approach was perceived as rather time-consuming. However, once all stakeholders agreed on a decision, the decision was implemented quickly and smoothly.</p>

Diversity Feature 4: How Projects are Planned, Scheduled, and Executed	<p>The process of planning and implementing projects differs from culture to culture. Some business partners (e.g. from India) tend to emphasize formal planning methodologies and project performance metrics when developing a project schedule. Other partners (e.g. Canada, USA) tend to focus on task descriptions and milestone dates when developing the project schedule. For these business partners, once a schedule is accepted, it is not considered to be changeable; therefore, changes require formal renegotiations.</p> <p>Contrarily, some project partners (e.g. China, Korea) do not assign much importance to detailed schedules, as they anticipate that ‘things never work out completely as planned’. Therefore, they consider schedules to change over time through informal renegotiations.</p>
Diversity Feature 5: Following Defined Processes	<p>As revealed by the interviewees, certain business partners (e.g. from Germany, Japan, and the Philippines) became extremely uncomfortable in unstructured environments. They avoid situations that were not structured with commonly known and accepted procedures. These business partners appeared most comfortable when they had precise rules or procedure to follow (e.g. ‘implementing changes only after investigation, agreement, and documentation’).</p> <p>On the contrary, the Indian interviewees felt constrained by rules and procedures. They were used to working in less structured environments where they had the ‘freedom of action’ – where they could choose how to work and figure out their own way to get to a solution (e.g. ‘I like to try to prototype new ways of doing things’).</p>

Table 18: Description of five behavior-based diversity features relevant in ICT projects (slightly adapted from Amster & Böhm, 2015, p. 237)

Although the frequency of the mentioned behaviors for those five diversity features was highest, this does not necessarily imply that they also have the greatest impact on the project. The other 14 diversity features might have an equal impact on ICT projects in global environments (Amster & Böhm, 2016). For instance, diversity feature 18 (information flow) could have a particular impact on the success of ICT projects. While some managers or team members would rather prevent a direct communication flow towards the customer or other external teams, others would prefer to foster an open and direct communication flow. Therefore, all 19 diversity features were extended with follow-on questions that could be asked to identify differences between each diversity behaviors. A full list of these questions can be found in Chapter 4.3.5.3.1 in Table 46.

The diversity features should help project managers – in combination with a structured diversity workflow – to identify and better understand behavioral differences that are based on culture and diversity aspects, and moreover be able to develop ways for more effective communication, more appropriate business relationships, and mutually accepted ways to show respect and appreciate good work (Amster & Böhm, 2015). In practice, people react to behavior – they interpret the counterpart’s behavior, and evaluate what they perceive by applying their own expectations, values, and patterns (Argyris, 1990; Senge, 2006). If there is a difference in the actual meaning of the behavior and the interpretation of the perceived behavior, misinterpretation can lead to cross-cultural conflicts (Amster & Böhm, 2016). Hence, focusing on behavior-based diversity differences rather than value and belief systems supports avoiding such conflicts in interdisciplinary and intercultural teams.

4.1.1.1 CONNECTION OF DIVERSITY FEATURES WITH EXISTING CULTURAL DIMENSIONS

Readers familiar with Hofstede’s (2001; 2010), Trompenaars’s and Hampden-Turner’s (2012), or other researcher’s work (i.a. Hall, 1977; House et al., 2004) will immediately recognize that the diversity features are an expression of those existing value dimensions.

Although this dissertation follows an empirical approach and focuses on concrete, project-relevant diversity features constituted by culture-based behaviors, a detail mapping with existing theoretic cultural dimensions (Hall, 1977; Hofstede et al., 2010; House et al., 2004; Köster, 2010; Laurent, 1983; Schwartz, 1992; Trompenaars & Hampden-Turner, 2012) is considered as interesting and hence exemplified in Figure 15. This figure shows the connection between acknowledged value dimensions and the five most frequently mentioned diversity features (see Table 18). However, a complete or more detailed mapping of all 19 diversity features with theoretic concepts is outside the scope of this work.

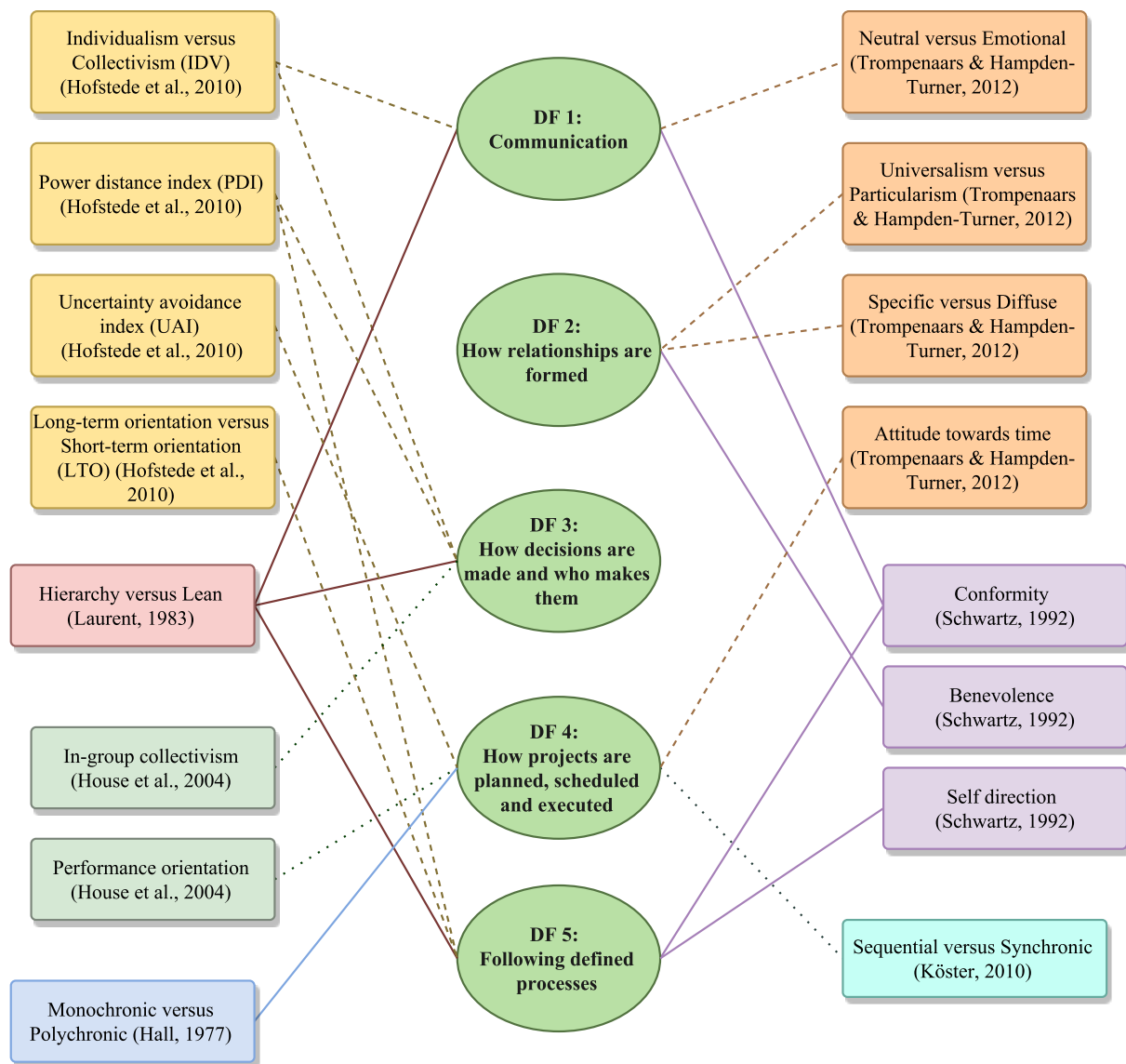


Figure 15: Exemplified linking of five diversity features with existing cultural value dimensions (adapted from a table in Amster & Böhm, 2016, p. 9)²

The connection between the behavior-based diversity features and the value dimensions, illustrated in Figure 15, is especially interesting in regard to Argyris' theory (Argyris, 1990; Senge, 2006). "Behaviors are what people perceive and react to, the reaction, however, will be shaped by interpretation and judgment, and interpretation and judgment result from the application of ones own values and beliefs. The follow-on behavior will be a perceivable action resulting from how the initial behavior is perceived, interpreted, and judged, and these three internal activities are strongly affected by the values, beliefs and expectations of the person reacting to the behavior. Enabling the global worker to understand both behaviors and values/beliefs and how they are related might be the key to effective training for cross-cultural projects" (Amster & Böhm, 2016).

4.1.1.2 LIMITATION OF THE DIVERSITY FEATURES

The diversity features are based on reactions of managers and their experiences of challenging situations in cross-cultural projects. Hence, the diversity features are not generalizable worldwide, as the study focused on Indian managers (Amster & Böhm, 2015). Also, the quantitative validation survey

² Comment: Figure 15 includes only existing value dimensions that are in connection with the five most frequently mentioned diversity features. Hence, other cultural value dimensions such as Masculinity versus Femininity (MAS) or Indulgence versus Restraint (IND) (Hofstede, 2011; Hofstede et al., 2010) or further dimensions by the other researchers are not included in this illustration.

(see Chapter 4.1.2) had an emphasis on European countries, in particular Austria. Furthermore, the data analysis was performed by two persons belonging to Western cultures (Austria and USA) which could also bias the clustering due to Western standards and values. Studies in other cultural contexts would be needed in order to elaborate on whether or not the diversity features are universally valid. Moreover, further research should generate diversity features for other cultural regions and/or adapt the ranking of the diversity features to the local circumstances.

Furthermore, the results presented in Table 17 show the frequency of mentioned diversity features by the interviewees, but do not provide any information about the impact of those diversity features or their associated behaviors. “This means, it might be possible that a small number of behaviors different from the five highest ranked behaviors described in this study may be more important for collaboration and business success than the higher ranked behaviors of this study” (Amster & Böhm, 2015).

4.1.2 INSIGHTS INTO THE DIVERSITY FEATURES FROM THE ONLINE VALIDATION SURVEY

4.1.2.1 RELEVANT DIVERSITY FEATURES WITHIN THE PROJECT TEAM

In the quantitative online survey described in Chapter 3.4.3, the participants were also asked to evaluate the importance of the diversity features of which each was described by an example (see Appendix 8.6.1.4). The importance of each of the 19 diversity features was rated by the respondents on an ordinal scale consisting of the following possible items: 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact. In the data analysis, the median, which was the appropriate value for the ordinal ranking, was calculated for each diversity feature (see Table 19).

		Median			
		Overall (n=101)	Austria (n=59)	Italy (n=15)	Other nationalities * (n=27)
1	Communication	3	2	3	3
2	How relationships are formed	2	2	2	2
3	How decisions are made and who makes them	2	2	3	2
4	How projects are planned, scheduled, and executed	3	3	2	3
5	Following defined processes	3	3	3	3
6	Recognizing and describing problems	3	3	3	4
7	How requirements are handled	3	3	3	3
8	Appreciation of work	2	2	3	2
9	The importance of milestones	2	2	3	2
10	Problem escalation	3	3	3	3
11	Value of monitoring and business processes	2	2	3	2
12	Approaches to motivation	1	1	2	2
13	Types of information prospects are seeking	2	2	2	2
14	Professional and personal time	2	2	2	1
15	Handling of passwords and access	1	1	2	1
16	Thinking and speaking patterns	2	2	2	2
17	Working on tasks	2	2	2	2
18	Information flow	3	2	3	3
19	Attention to detail	3	3	3	2
0 = no impacts 1 = low impact 2 = medium impact 3 = medium to high impact 4 = high impact * Other nationalities: Germany (n=10), Czech Republic (n=3), Ecuador (n=2), Slovakia (n=2), Spain (n=2), Columbia (n=1), Hungary (n=1), Ireland (n=1), Israel (n=1), Palau (n=1), Poland (n=1), Turkey (n=1), United States of America (n=1)					

Table 19: Evaluation the impact of the diversity features on the project success

As the nationality variable did not show an equal distribution, the medians of the diversity feature evaluation were evaluated separately for the major nationalities Austria and Italy. This helped to identify if there were connections between the evaluation and the nationality of the participant.

In addition, Pearson Chi-Square tests were performed with Cramer's V as a measure of correlation (see Appendix 8.6.8.6 and Chapter 3.4.3.4). These correlation tests should show if there is any significant connection between the nationality of the participants and the evaluation of the diversity features. For the evaluation of the diversity features, the tests were performed with all nationalities as well as with the clustered variable of the major nationalities (Austria, Italy, Others). The Cramer's V value showed that for most diversity features there was a non-significant correlation at a level higher than 0.05. Only one diversity feature 6 'recognizing and describing problems' showed a significant strong relationship at a 0.01 level in both tests. Hence, this diversity feature was evaluated significantly differently depending on the participant's nationality. Overall, the results of this correlation test reveal that the nationality of the participants did not have a high impact on the results of the survey. Hence, in the presentation of results in Chapter 4.3.8.2, no distinction between the nationalities has been made.

The majority of items (= diversity features) show a median of 2 (= medium impact) or 3 (= medium to high impact). Only two items – approaches to motivation, and handling of passwords and access – reach a median value of 1 (= low impact). When taking a closer look at the data, some participants did not perceive any importance (0 = no impact) for the handling of passwords and access, but other participants evaluated this diversity feature with a medium impact or higher. Overall, the respondents evaluated a low impact or higher for those two items. Therefore, no diversity features were rejected based on the survey analysis.

In addition to the evaluation of the diversity features (see Chapter 4.1.2) the participants were asked if they knew of any diversity aspects that also have a high impact on the project success – especially if there is a big range in expectation regarding this aspect within the team. The respondents noted some behaviors that were not included in the diversity feature list yet:

- conflict resolution
- understanding of quality
- proactive versus reactive mindset
- setting priorities (easy tasks first or hard tasks first)
- mind set (systemic versus chaotic)
- importance of hierarchy
- change requests
- application of past lessons learned
- respect to people
- usage of communication tools
- openness for receiving feedback
- timeliness

As each behavior was only mentioned once, none of these behaviors were included into the original diversity feature list. Still, this does not mean that they are not relevant. In future research, these behaviors could be tested for their relevance in projects in a quantitative study.

Moreover, participants mentioned other factors that were connected to the personal profile of a team member (e.g. culture, language, gender, full-time versus part-time employee, personal objectives) and managerial aspects (e.g. time zones, working hours, trust, contract management). As this work focuses primarily on behavioral aspects, those factors could add up to the framework, but should not be included into the diversity feature list.

4.1.2.2 RELEVANT DIVERSITY FEATURES WHEN INTERACTING WITH STAKEHOLDERS

The survey participants were moreover asked which of the 19 diversity features they also perceived with a medium or high impact if the differences were not within the team, but between the team and external stakeholders (e.g. customer). The most significant result was that communication was evaluated as important by nearly all participants (97 out of 101 total). Moreover, how relationships are formed, how decisions are made, and how projects are planned, scheduled, and executed were features that were rated as important by more than half of the participants. On the contrary, few respondents perceived attention to detail, information flow, working on tasks, and thinking and speaking patterns as important for stakeholder management (compare Table 20).

	Diversity Feature	Count*	Column N %
1	Communication	97	96.0%
2	How relationships are formed	59	58.4%
3	How decisions are made and who makes them	59	58.4%
4	How projects are planned, scheduled, and executed	58	57.4%
5	Following defined processes	47	46.5%
6	Recognizing and describing problems	47	46.5%
7	How requirements are handled	45	44.6%
8	Appreciation of work	43	42.6%
9	The importance of milestones	42	41.6%
10	Problem escalation	30	29.7%
11	Value of monitoring and business processes	28	27.7%
12	Approaches to motivation	27	26.7%
13	Types of information prospects are seeking	19	18.8%
14	Professional and personal time	18	17.8%
15	Handling of passwords and access	15	14.9%
16	Thinking and speaking patterns	13	12.9%
17	Working on tasks	13	12.9%
18	Information flow	12	11.9%
19	Attention to detail	11	10.9%
* Multiple response possible			

Table 20: Relevant diversity features for stakeholder management

4.2 DIVERSITY TECHNIQUES

This chapter presents the second component of the diversity framework that was generated in a systematic literature review. Whereas the first initial intention was to create a single and generic technique for diversity support, throughout the design-based research process, it became evident that there are various ways to explicate and externalize implicit diversity knowledge for ICT projects.

The idea of identifying diversity features and the concept of elaborating gaps within a diversity feature were inspired by Köster (2010), who recommends two techniques that support cross-cultural diversity management in projects.

In a diversity-complexity assessment, project managers should assess which aspect of each international project will be challenging. To generate a comprehensive overview of diversity aspects as well as of general complexity factors on the project, Köster (2010) suggests a diversity-complexity assessment template that serves as a checklist for international project managers (see Table 21).

	Criteria	Impact		
		Low	Medium	High
DIVERSITY	Number of national cultures (and sub-cultures)		4	
	Number of organizational cultures	1		
	Number of functional cultures		3	
	Number of ethnicities			6
	Number of languages		4	
	Competency level in one common language		x	
	Degree of heterogeneity of educational background	x		
	Heterogeneity of personalities of key stakeholders	x		
	Number of time zones	1		
	Number of currencies		3	
	Number of jurisdictions		3	
COMPLEXITY	Degree of physical distance / distribution		x	
	Degree of heterogeneity of stakeholder interests	x		
	Number of intra- and inter-organizational interfaces			x
	Amount of information to be processed		x	
	Degree of novelty (experience in organization existing?)		x	
Numbers of cultures/ethnicities/language.:		Numbers of time zones / currencies / jurisdictions:		
<ul style="list-style-type: none"> • 1-2 = low • 3-5 = medium • more than 5 = high 		<ul style="list-style-type: none"> • 1 = low • 2-4 = medium • more than 4 = high 		

Table 21: Diversity-complexity assessment example (adapted from Köster, 2010, p. 91)

Furthermore, Köster (2010) presents a cultural gap analysis that evaluates differences within the project team and towards stakeholders. In the analysis, it is examined how projects are usually planned, implemented and controlled, how risks are handled, which information is communicated to whom, and how teams are led. For example, the handling of risks within a certain project can be evaluated. The results of the cultural gap analysis help to sensitize the project team towards cultural differences and create an awareness of conflict potential. For this analysis, Köster (2010) proposes the following cultural categories / dimensions (partly derived from business practices) and aligned project management activities. Table 21 shows the dimensions and their opposed orientations (A and B) as well as the project management activities that are affected by the dimensions and its orientation.

Dimension	Orientation A	Project management activities	Orientation B
1	Equality	<ul style="list-style-type: none"> * Managing risk and uncertainty * Defining and planning the project * Organizing the project * Leading and managing the team * Communicating * Co-operating 	Hierarchy
2	Embracing Risk	<ul style="list-style-type: none"> * Defining the project * Managing risk and uncertainty * Planning the project * Organizing the project * Implementing and controlling the project 	Avoiding Risk
3	Individual	<ul style="list-style-type: none"> * Managing risk * Organizing the project * Implementing and controlling * Motivating and leading the team * Communicating * Co-operating * Learning 	Group
4	Universal	<ul style="list-style-type: none"> * Matching strategy with projects * Defining the project * Planning the project * Implementing and controlling the project * Learning 	Circumstantial
5	Conflict	<ul style="list-style-type: none"> * Defining the scope * Leading and managing the team * Communicating * Co-operating 	Consensus
6	Task	<ul style="list-style-type: none"> * Managing stakeholders * Planning the project * Implementing and controlling * Leading and managing the team * Learning 	Relationship
7	Achievement	<ul style="list-style-type: none"> * Planning the project * Organizing the project * Implementing and controlling * Motivating and leading the team 	Standing / Status
8	Sequential	<ul style="list-style-type: none"> * Defining the project * Planning the project * Implementing and controlling 	Synchronic
9	Theoretical	<ul style="list-style-type: none"> * Planning the project * Executing and controlling the project * Learning 	Pragmatic

Table 22: Cultural gap analysis tool (adapted from Köster, 2010, p. 90)

It is hypothesized that the elaborated diversity features in Chapter 4.1 could be used for conducting such a cultural gap analysis as well. Instead of the value dimensions, which are more abstract, the defined behaviors relevant to ICT project management could be used. Still, as the cultural gap analysis provides only a framework of what to analyze, but not how to analyze, a literature study was conducted in order to collect existing techniques for explicating implicit cross-cultural aspects.

4.2.1 EXPLICATION TECHNIQUES FROM THE SYSTEMATIC LITERATURE REVIEW

As described in Chapter 3.3.2, a systematic literature review in four different databases was conducted. Although the literature search process delivered more than 1,000 results (1082 in particular), only a fraction of papers (12 in total) actually presented a particular technique or method to explicate implicit aspects. Clearly there are many various explication techniques existing, but many of these are either quite vague and general, or are not suitable for explicating the behavior-based diversity features in an ICT project context. For instance, the soft systems methodology (Checkland, 1999; Vidgen, Avison, Wood, & Wood-Harper, 2002) is a appropriate method to express problem situations by creating rich pictures together with the actors. Still, this method focuses on (problem) situations and fits well as conflict management technique (see Chapter 4.2.1.11), but does not provides a procedure for explicating and dealing behavioral differences in a project context.

In the following chapter, all techniques are described and evaluated in detail.

Author(s)	Subject of publication	Short description of investigated technique
(Stern, 2013)	Analysis techniques for flexible and agile organizations	Interest based problem solving (IBPS) used to more deeply explore a problem scenario or unspoken interests or concerns
(Q. Wang & Hannes, 2014)	Photovoice project on socio-cultural adjustment among Asian and Belgium international students	Photovoice method combined with discussion rounds that enables participants to visually represent themselves or share lived experiences
(Fernández-Sanz & Sanjay, 2011)	Analyzing influences of culture and gender on software requirements in multinational team work	Team benefit awareness is a technique to explore behavior of small teams
(Commander, Zhao, Gallagher, & You, 2012)	Promoting cross-cultural understanding of education through online discussions	Using online discussions for enhancing cross-cultural understanding within a group
(Troman & Jeffrey, 2007)	Qualitative data analysis in cross-cultural projects	General research approach for qualitative data analysis in cross-cultural projects or environments that could be adapted for ICT projects
(Schall, 1983)	Investigating organizational culture by focusing on a communication-rule approach	Method that supports researching organizational culture by investigating formal rules (using e.g. orientation meetings, influences style questionnaires, ratings and rankings, interviews, card sorting, etc.)
(Piotrowski, 1982)	Using case methods in language training for non-native executives	Case method for learning that can be used as a guideline for group discussions
(Karttunen, Jaakkola, & Linna, 2011)	Cultural differences in intra-organizational education in software service field	Cultural differences evaluation tool (based on Walsham's structural analysis (Walsham, 2002) and Hofstede's dimensions (Hofstede et al., 2010))
(Hazzan & Dubinsky, 2005)	Relationship between software development methods and culture exemplified by the case of Israeli hi-tech industry and Extreme Programming (XP)	Technique is a five-dimensional model setting culture and the acceptance (measured by the 'tightness') of a software development method in relation
(Wilson, 2013)	Using encounters for diversity training as a different learning approach	Encounter group techniques including two particular exercises with the goal to overcome stereotypes
(Li, Gao, & Kameoka, 2004)	Enhancing process management by using knowledge management	Various techniques presented underlying the basic principles of process roadmapping, clustered in soft and hard system methodologies, and connected to the SECI model (Nonaka & Takeuchi, 1995)
(Horii, Jin, & Levitt, 2005)	Modeling and analyzing cultural influences through a computational simulation model	Computational simulation model to visualize the effects between two or more cultural groups

Table 23: Overview of the explored techniques from the systematic literature review

4.2.1.1 INTEREST BASED PROBLEM SOLVING

Short description of investigated technique:	
Interest based problem solving (IBPS) used to deeper explore a problem scenario or unspoken interests or concerns. “This interest evaluation results in precise and meaningful action on essential concerns, rather than continuing to spend time working on unsuccessful deliberations that focus on concerns that are merely superficial symptoms of a much deeper issue“ (Stern, 2013, p. 49).	
Prerequisites for using the technique:	
I) Trust: processes must ensure that open and honest communication is possible; can be enhanced by involving an external facilitator that develops a transparent environment. II) Agenda: providing a clear agenda and information prior to the meeting in order to make it effective. III) Documentation: making sure that there is a clear set of priorities that is understood by the staff; calm re-views of documentations and revealing reasons behind certain conditions helps to avoid misunderstandings.	
Categorization of investigated technique:	Technique explicates implicit knowledge
Further information or cross-references to other techniques:	
Ways to uncover underlying interest are: Tree structures and Charts of interests Tree structure: <ul style="list-style-type: none"> • Technique helps visualizing interests within a problem scenario and revealing underlying interests. • Starts with obvious problem and then delves deeper into more significant aspects of the conflict. Throughout the (time-consuming) process, the participants should aim at describing the situation and underlying conditions rather than trying to solve the problem. Charts of interests: <ul style="list-style-type: none"> • Mapping the staff’s interests with the goals of the organization (or project). • The chart (or a process flowchart) visualizes conditions, results, questions, processes, feedback, and related interests (see Figure 16). 	
<pre> graph TD IC[Initial conditions] --> D1{ } D1 -- Y --> P1[Process 1 Ensure accuracy - specialist skills pay] D1 -- N --> P2[Process 2 Remain union work, not student work] P1 --> D2{ } D2 -- Y --> SX[Send to Unit X] D2 -- N --> P3[Process 3 Outsourced work - lost jobs] SX --> D3{ } D3 -- Y --> SZ[Send to Unit Z Extra pay task] D3 -- N --> D2 P3 --> D4{ } D4 -- Y --> SX D4 -- N --> P3 P3 -.-> Notify unit Y SX </pre>	
Figure 16: Process flowchart with interests overlayed (from Stern, 2013, p. 58)	
Based on these charts the parties have to search for a solution that includes a user-oriented perspective that ensures that the compromise solution supports the entire company.	

Table 24: Interest based problem solving (summarized from Stern, 2013)

4.2.1.2 PHOTOVOICE METHOD

Short description of investigated technique:	
The photovoice method (originally developed by (C. Wang & Burris, 1997)) combined with discussion rounds that enables participants to visually represent themselves and how they perceive the world or share lived experiences. The method encourages first participants to portray their experiences with photos and create a lived story, followed by a focus group discussion to give meaning to the photos. The method consists of: <ul style="list-style-type: none"> • 2 rounds of photo taking • 2 focus group discussions The method enhances empowerment, involvement, and trust among participants and creates transparency. Compared	

to other techniques, this method may reveal deeper insights into other persons' environments and circumstances. On the downside, the method is time-consuming.	
Prerequisites for using the technique:	Not defined.
Categorization of investigated technique:	Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 25: Photovoice method (summarized from Q. Wang & Hannes, 2014)

4.2.1.3 TEAM BENEFIT AWARENESS

Short description of investigated technique:	
<p>Team benefit awareness (originally developed by (Fernández-Sanz, Lacuesta, Palacios, Cuadrado-Gallego, & Villalba, 2009)) is a technique to explore behavior of small teams (of 3 to 5 diverse persons) or individuals within teams in real situations of software requirements analysis in order to create deeper awareness and understanding of customer expectations. "The technique allows the collection of precise indicators of team dynamics during the sessions. When applied to multinational environments where members of different countries and genders should interact to reach the best results for their project, TBA offers valuable information on the influence of these factors in objective results" (Fernández-Sanz & Sanjay, 2011, p. 174).</p> <p>Team benefit awareness (TBA) consists of 3 fixed phases (Fernández-Sanz & Sanjay, 2011):</p> <ol style="list-style-type: none"> I. individual teamwork (including recorded answers) II. team discussions (including recorded agreed answers) III. calculation of indicators and final discussion <p>In the first phase participants get a short description of what the customer needs and individually answers a set of multiple-choice questions or opinion.</p> <p>In the second phase the participants get together with their individually recorded answers and consent on a list of answers. Once all answers are agreed upon, a coordinator reveals the correct answers and the number of correct answers are calculated. Based on these calculations, the individual and group answers can be compared. This phase is followed by a feedback questionnaire asking if the teamwork was more valuable for better understanding the software analysts and the customer orientation.</p> <p>The final phase concerns the computer-supported / web-based analysis for collecting data for research purposes.</p>	
Prerequisites for using the technique:	
<p>This technique has certain pre-conditions:</p> <ul style="list-style-type: none"> • there is a set of questions and correct answers • an coordinator is available • the analysis is technology-supported (for the recorded answers, results, and statistics) 	
Categorization of investigated technique:	<ul style="list-style-type: none"> • Technique related to ICT (projects) • Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 26: Team benefit awareness (summarized from Fernández-Sanz & Sanjay, 2011)

4.2.1.4 ONLINE DISCUSSIONS BASED ON THE INTERACTION ANALYSIS MODEL

Short description of investigated technique:

Using online discussions on particular cases for enhancing cross-cultural understanding within a cross-cultural group. For the online discussions, the teams (6 to 7 persons) are mixed according to obvious diversity. Then, people are asked to discuss a certain given case, also including their personal experiences.

This form of online discussion is based on an Interaction Analysis Model (IAM) (Gunawardena, Lowe, & Anderson, 1997), which consists of the following phases and attributes illustrated in Table 27.

Phase	Operations
Phase I: Sharing/Comparing of information	<ul style="list-style-type: none"> • statement of observation or opinion • statement of agreement from one or more participants • corroborating examples provided by one or more participants • asking and answering questions to clarify details of statements • definition, description, or identification of a problem
Phase II: Discovery and exploration	<ul style="list-style-type: none"> • through identifying and stating areas of disagreement • asking and answering questions to clarify the source and extent of disagreement

of dissonance or inconsistency among ideas, concepts or statements	<ul style="list-style-type: none"> restating the participant's position, and possibly advancing arguments or considerations in its support by reference to the participant's experience, formal data collected
Phase III: Negotiation of meaning/co-construction of knowledge	<ul style="list-style-type: none"> negotiation or clarification of the meaning of terms negotiation of the relative weight to be assigned to types of argument identification of areas of agreement or overlap among conflicting concepts proposal and negotiation of new statements embodying compromise, co-construction proposal of integrating or accommodating metaphors or analogies
Phase IV: Testing and modification of proposed synthesis or co-construction	<ul style="list-style-type: none"> testing the proposed synthesis against 'received fact' as shared by the participants and/or their culture testing against existing cognitive schema testing against personal experience testing against formal data collected
Phase V: Agreement statement(s) / Applications of newly-constructed meaning	<ul style="list-style-type: none"> summarization of agreement(s) application of new knowledge metacognitive statements by the participants illustrating their understanding that their knowledge or ways of thinking (cognitive schema) has changed as a result of the interaction

Table 27: Interaction analysis model for examining social construction of knowledge (extracted and adapted from Gunawardena et al., 1997, p. 414)

Prerequisites for using the technique:	
For effective application, the following aspects are important: <ul style="list-style-type: none"> It needs to be clarified that there is no 'right' answer or opinion. The constructivist approach bringing in the participants' knowledge needs to be accepted. Structured, focused discussion style by providing certain protocols for the participants. 	
Categorization of investigated technique:	Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 28: Online discussions based on the interaction analysis model (summarized from Commander et al., 2012)

4.2.1.5 QUALITATIVE DATA ANALYSIS IN CROSS-CULTURAL PROJECTS

Short description of investigated technique:	
General research approach for qualitative data analysis in cross-cultural projects or environments that might be adaptable for ICT projects. Developing a common analytic framework within cross-cultural teams based on the qualitative research approach of Miles and Huberman (1994): <ol style="list-style-type: none"> Data reduction (keeping the analysis manageable by reducing the amount of data) Data display (using charts, graphs, matrices, networks, etc. to display information, not only after, but also during the data collection phase) Conclusion drawing and verification (noting patterns, positing possible structure or measures) 	
Prerequisites for using the technique:	
Make sure that partners retain: <ul style="list-style-type: none"> "A vision of their own aims related to their situations and circumstances. An approach to fieldwork that was relevant and appropriate to their circumstances. A form of data collection that suited their staffing levels and situations. Contextualized approaches to research and respondent relations. Relevant levels of data analysis and reproduction. Different constituents to whom their research was targeted." (Troman & Jeffrey, 2007, p. 518) 	
Categorization of investigated technique:	Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 29: Qualitative data analysis in cross-cultural projects (summarized from Troman & Jeffrey, 2007)

4.2.1.6 METHOD INVESTIGATING FORMAL COMMUNICATION RULES

Short description of investigated technique:	
<p>Method that supports researching organizational culture by investigating formal rules (using e.g. orientation meetings, influences style questionnaires, ratings and rankings, interviews, card sorting, etc.).</p> <p>“Communication rules have been variously defined but, in general, they are considered to be tacit understandings (generally un- written and unspoken) about appropriate ways to interact (communicate) with others in given roles and situations; they are choices, not laws (though they constrain choice through normative, practical, or logical force), and they allow interactors to interpret behavior in similar ways (to share meanings)” (Schall, 1983, p. 560).</p> <p>These communication rules can be categorized on two levels: tactical meaning specific behavioral rules or thematic meaning more general rules.</p> <p>Phases:</p> <ol style="list-style-type: none"> I) Phase I – Preliminaries: Includes orientation meetings (with all participants, where the key concepts are explained) and an influence style questionnaire (where all participants are asked to describe characteristic styles of their group). II) Phase II – Formal Rule Discovery and Articulation: including document search for formal rule data (official document or reports about formal rules), the interpretation of the collected data, and the confirmation of the formal rule statement by a representative of the organization / group, etc. III) Phase III – Informal rule Discovery and Articulation: including an immersion period (sensing into the group’s informal interaction by participating in meals, coffee breaks, activities) of in-depth, open-ended interviews with each group member (interviewing about their work style, expectations regarding work, circumstances for performing well), two card sort exercises (sorting prepared strategies (e.g. threat, incentives, sharing information, diplomacy, blaming others, humor, persistence, etc.) into 3 piles (likely to influence others, likely to work against influencing others, do not know) and another index cards (e.g. large budget, resource allocation authority, visibility, information control, expertise, technical skills, fairness, numerous alliances, verbal skills, external alliances, high social status, etc.) into high or little importance), and an interpretation of the investigated data and rules (e.g. noting patterns). IV) Phase IV and V: research-relevant steps such as development, administration, and analysis of the workplace rule questionnaire, and of the group-culture description, and V) Phase VI – Termination: development of comprehensive reports for the groups and conducting feedback meetings (informal, interactive) with all participants. 	
Prerequisites for using the technique:	Not defined.
Categorization of investigated technique:	<ul style="list-style-type: none"> • Technique explicates implicit knowledge • Technique focuses on behavioral aspects
Further information or cross-references to other techniques:	Not defined.

Table 30: Method investigating formal communication rules (summarized from Schall, 1983)

4.2.1.7 CASE METHOD

Short description of investigated technique:	
<p>Case method for learning that can be used as a guideline for group discussions.</p> <p>The case method is based on discussion and decision-making processes.</p> <p>“A case is simply a record of a business issue which has been faced by business executives, together with the facts, opinions, and prejudices upon which the executive decisions had to depend” (Piotrowski, 1982, p. 230)</p> <p>The participants should identify the problem, analyze the facts and generate alternative solutions and actions.</p> <p>The process:</p> <ul style="list-style-type: none"> • Each person studies the case alone first. • Then small groups of three to four people discuss the case and develop solutions and recommendations. • Finally, the results are presented in a larger group with a follow-up discussion (reasoning the solution, evaluating, debating). 	
Prerequisites for using the technique:	Not defined.
Categorization of investigated technique:	Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 31: Case method (summarized from Piotrowski, 1982)

4.2.1.8 CULTURAL DIFFERENCES EVALUATION TOOL

Short description of investigated technique:

Cultural differences evaluation tool (based on Walsham's structural analysis (Walsham, 2002) and Hofstede's dimensions (Hofstede et al., 2010)):

<i>Structure</i>	<i>Culture</i>	<i>Cultural differences and conflicts</i>	<i>Reactivity and change</i>
Power distance	How much the society tolerates uneven division of power? What defines who can gain power?	Accepting the person and authority of a leader. Need for guidance and leading. Leader's choice vs. shared choice. Valuation of age. Ways of giving feedback. Meaning of status differences.	Change of the leader. Leadership education. Education on cultural differences in leadership. Adjustment of the methods of leading according to the subordinates.
Uncertainty avoidance	How do the members of the society react to uncertainty? How great is the need to create rules to balance uncertainty? How much does the society try to control the future?	Accepting different opinions and people. The need for rules and the attitude towards them. Reaction to breaking the rules. Planning beforehand and the reaction to change of plans. Need for models, standards and rituals in the work-environment. The meaning of time, timing and punctuality. Showing emotions in public.	Cultural education. Sharing information about the company future. Creation of company's own behavioral norms. Familiarization or frustration of employees.
Masculinity	What roles does the society place on each sex? What characteristics are valued in the society? (for example achievement, wealth, self confidence and strength vs. personal relations, modesty, quality of life, the weak)	Roles of the sexes in the working environment. Attitude towards macho- or female leadership. The meaning of work for an individual and the definition of quality of working life. Value and division of work time and free time. Expectations and ways of promotion. Value of achievements and personal relations.	Gradual familiarization of the staff, possibly through conflicts. Common rules and reward systems. Recreational activities. Models of promotion.
Individuality	Interdependency between the members of the society. "Me vs. we".	Own success in comparison with the success of close people. Loyalty towards work community, superior and subordinates. Team working skills and individual achievements. Prioritization of business vs. personal relationships. Importance of sustaining harmony and one's face.	Team education. Proper ways of giving feedback to sustain the subject's face. Placing the employees to tasks fitting to their ways of working. Creating and sustaining the "spirit" of the working environment.
Long term orientation	The "here and now"-thinking of the western world. Value of traditions, keeping one's face, fulfilling social demands. Asian ways of taking into account the past, the present and the future. Saving and sustaining.	Timing of tasks and goals. Setting objectives.	Internal ways and habits of the work place are dependent of the business environment. Education and agreements of time management according to the business environment demands.

Table 32: Cultural difference evaluation tool (from Karttunen et al., 2011, p. 1148)

Prerequisites for using the technique:	Not defined.
Categorization of investigated technique:	<ul style="list-style-type: none"> Technique focuses on behavioral aspects Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 33: Cultural differences evaluation tool (summarized from Karttunen et al., 2011)

4.2.1.9 FIVE-DIMENSIONAL MODEL

Short description of investigated technique:

Technique is a five-dimensional model setting culture and the acceptance (measured by the 'tightness') of a software development method in relation. This model helps to predict whether a certain software development method is compatible with a certain national culture.

"(...) with respect to a national culture, the term 'tightness' reflects the degree to which a culture accepts and adopts ordered, planned and procedural work habits" (Hazzan & Dubinsky, 2005, p. 1).

The mapping of software development methods (SDM) and national cultures are examined by five dimensions (Hazzan & Dubinsky, 2003):

- 1) Project plan
- 2) Procedures and Standards

- 3) Responsibility
- 4) Time Estimation
- 5) Individual Need Satisfaction

When a gap between the SDM and the national culture is examined, it is likely that implementing this certain method will be harder in the particular culture.

The level of tightness (of a software development method or of a culture) can be measured with the following dimensions and criteria (see Table 34).

Dimension	Tightness level of a SDM	Tightness level of a culture
Project plan dimensions	Number of releases; number of feedback milestones; importance of planning; number of pre-planned days	Cultural tendency to plan ahead
Procedure and standards dimension	Level of detailed description of the SDM	Cultural tendency to follow a plan
Responsibility and accountability dimension	Frequency in which team members report on progress	Cultural tendency to avoid taking (unnecessary) risks
Time estimation dimension	Unit and level of estimations (months, days, hours)	Cultural tendency to commit to time estimation and evaluation the estimations
Individual need satisfaction dimension	Mutual dependency of team members;	Degree of investing time in the present for long-term benefits; degree of maintaining mutual dependency

Table 34: Five-dimensional model illustrating the relationship between a culture and the acceptance of a software development method (summarized from Hazzan & Dubinsky, 2005, p. 4)

This model can be applied by using a questionnaire for analyzing the tightness level of a culture for a certain SDM. After completing the questionnaire, the levels of tightness of each category – culture or SDM – are set into relation. If both levels are low or high, an implementation is possible. If the cultural tightness is high, but the SDM tightness is low, an application is also possible. In the fourth case that the cultural tightness is low, but the SDM tightness is high, it will be hard to perform an implementation.	
Prerequisites for using the technique:	Not defined.
Categorization of investigated technique:	<ul style="list-style-type: none"> • Technique related to ICT (projects) • Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 35: Five-dimensional model (summarized from Hazzan & Dubinsky, 2005)

4.2.1.10 ENCOUNTER GROUP TECHNIQUE

Short description of investigated technique:	
Encounter group techniques including two particular exercises with the goal to overcome stereotypes in a workshop style.	
<ol style="list-style-type: none"> I. First Exercise: Participants are asked in the entire group to call out what they identify with (e.g. age, gender, nationality, education, religion, family history). During that process, participants are asked to listen to the others in the group and note similarities. II. Second Exercise: working in pairs; each participant chooses an ‘identity’ and the partner repeats the identity while the other partner responds intuitively and instantaneously. This will be done alternately. III. An open group discussion aiming to reflect upon the origin of stereotypes and their effects. <p>“Through attention to the organisation of perception and the taking-place of prejudice, the exercises aim to open up the ways in which prejudice and its effects are understood, (...) and forcing individuals to rethink how they are variously implicated in prejudice” (Wilson, 2013, p. 80).</p>	
Prerequisites for using the technique:	
Preconditions are: <ul style="list-style-type: none"> • honesty of participants • facilitator 	
Categorization of investigated technique:	Technique explicates implicit knowledge
Further information or cross-references to other techniques:	Not defined.

Table 36: Encounter group technique (summarized from Wilson, 2013)

4.2.1.11 ROADMAPPING

Short description of investigated technique:

Various techniques (see Table 37) presented underlying the basic principles of process roadmapping, clustered in soft and hard system methodologies, and connected to the SECI model (Nonaka & Takeuchi, 1995).

Roadmapping is a process in which different people (e.g. from different professions, departments, etc.) collectively discuss, chart, and revise a certain objective and how to reach this goal. The final result of the process is an agreement and commitment through common anticipation upon shared views and information for the future prospects and opportunities of an organization (unit) (Li & Kameoka, 2003). "Hence, a dynamic process can embrace multiple values and beliefs, perspectives and interests are the kind of pragmatic solution for such complex and diverse contexts" (Li et al., 2004, p. 506).

Prerequisites for using the technique:	Not defined.
Categorization of investigated technique:	Technique explicates implicit knowledge
Further information or cross-references to other techniques:	

Li, Gao and Kameoka (2004) suggest a combining various (existing) methodologies from different disciplines.

Hard techniques	Soft techniques
<ul style="list-style-type: none"> • Econometrics • S-Curves • Path and tree • Simulations • Time series estimation • Regression analysis • Literature analysis • Scenario • Delphi • In-out matrices • Trend extrapolation • Patent trend analysis • Etc. 	<ul style="list-style-type: none"> • Soft systems methodology (SSM) • Interactive planning (IP) • Critical systems thinking (CST) • Critical systems heuristics (CSH) • Team synte-grity (TS) • Total systems interventions (TSI) • TOP (technical, organizational, personal perspectives) • Systems dynamics (SD) • Viable system model (VSM) • Modified Delphi, modified scenarios • Cognitive mapping • Domain mapping • Mind mapping

Table 37: System methods (summarized from Li et al., 2004)

The combination of these methods depends on circumstances, preferences and constraints. The authors (Li et al., 2004) combined different methods and associated them with different methodologies in each step of the SECI knowledge creation process (Nonaka & Takeuchi, 1995).

Category	Socialization Process	Externalization Process	Combination Process	Internalization Process
Dominant Methodology	Self-reflection; brainstorming	SSM (Soft systems methodology) (Checkland, 1999)	IP (Interactive planning)	CSP
Principles	Meditation Critical; heuristic; synthetic	Human activity systems; systemic learning process	Participative; continuity	Critical awareness; improvement; pluralism
Main Methods	Mapping; rich pictures; visual applause; idea writing	Rich pictures; root definitions; conceptional models; scenarios writing	Issue formulation; idealized design; double-loop learning	Polemic employment of Boundary judgment; dialectics

Table 38: Combination of methodologies and processes (adapted from Li et al., 2004, p. 508)

4.2.1.12 COMPUTATIONAL SIMULATION MODEL

Short description of investigated technique:

Computational simulation model visualize the effects between two or more cultural groups using two dimensions: practices (level of centralization of authority, of formalization of communication, and of organizational hierarchy) and values (decision making and communication).

- I) Characterize typical mechanisms of the cultures that should be compared (in terms of practice and value differences). This can be based on literature or observations.
- II) Encode selected cultural factors into the micro-level behavior parameters of the Virtual Design Team (VDT) model (Jin & Levitt, 1996; Levitt et al., 1994), a validated model that can be used for predicting aspects of an organization like duration, costs, or process quality.
- III) Then analyze the effects on the team performance with 'Intellective Simulation' (Burton & Obel, 1995): simulation of 48 scenarios to reveal effects of changes in the micro-level behavior patterns.

Prerequisites for using the technique:	
<ul style="list-style-type: none"> • For each single project team, there must be the same micro-behaviors. • Additional exceptions cannot be parameterized with the VDT model. 	
Categorization of investigated technique:	Technique explicates implicit knowledge.
Further information or cross-references to other techniques:	Not defined.

Table 39: Computational simulation model (summarized from Horii et al., 2005)

4.2.2 EVALUATING THE DIVERSITY TECHNIQUES & THEIR DEVELOPMENT

For the evaluation of the twelve identified techniques, the author asked herself the following questions:

- Are the techniques adequate for explicating the implicit diversity features (behaviors) in ICT project management context?
- Are there any preconditions that hinder a practical application?
- Which pro or contra can be defined for each technique?

Table 40 summarizes the assessment of the techniques based on these questions.

	Technique	Description for international projects	Comments / Evaluation
1	Interest-based problem solving	Two particular techniques: tree structure (1a) and chart of interest (1b)	Precondition: both variants need open and honest communication, a trustful environment, and a clear agenda and documentation
1a	Tree structure	<ol style="list-style-type: none"> 1. Visualize problem 2. Reveal underlying reasons in group discussions 	Con: time consuming Comment: appropriate method when problems / conflicts arise
1b	Chart of interest	<ol style="list-style-type: none"> 1. Map individuals' interests with project interest 2. Visualize conditions, results, questions, processes and interest in chart 3. Search for solution (based on visualized chart) 	Con: time consuming Pro: might be good for visual persons (maybe visualization solution) Process: better when problems arise as conflict management technique
2	Photovoice method	<ol style="list-style-type: none"> 1. Visually present the daily 'work story' 2. Discuss in several rounds with team members 	Con: time-/effort-consuming; very subjective Pro: can generate deep understanding
3	Team benefit awareness	<ol style="list-style-type: none"> 1. Individually answer multiple-choice questions on customer needs 2. Discuss answers in small groups and consent on a answer 3. Reflect upon the decision making process and the quality of the results (compare number of correct individual and group answers) 4. Conduct web-based analysis to collect data 	Con: set of 'right' answers needed Pro: create deeper awareness and understanding of expectations Process: better for specific team building sessions rather than for diversity explication
4	Online discussions based on the interaction analysis model	<ol style="list-style-type: none"> 1. Choose / Provide a case for the participants 2. Share and compare information on the case 3. Address dissonance / inconsistency / disagreements among the participants 4. Identify areas of agreement & negotiate different opinions and generate synthesis 5. Test the synthesis against personal experience or existing data 6. Summarize agreement and apply new knowledge 	Pro: enhance cross-cultural understanding Precondition: good, structured conversation culture necessary
5	Qualitative analysis in cross-cultural projects	<ol style="list-style-type: none"> 1. Reducing data by using manageable data units 2. Data display through graphs, charts, matrices, networks, etc. 3. Noting patterns and positing possible structure or measure 	Con: very general, not specific guidelines
6	Investigating formal communication rules	<ol style="list-style-type: none"> 1. Conduct orientation meeting with all participants to explain key concepts 2. Participants fill out first questionnaire 3. Combine questionnaire answers with formal written 	Con: time-consuming Pro: combination of explicit and implicit aspects of a culture

		<p>rules of an organization/country/group</p> <ol style="list-style-type: none"> Discover informal rules through various actions (informal interaction with participants, in-depth interviews, card sorting, etc. Interpret data and develop description Develop comprehensive report for the group and conduct feedback meetings (informal, interactive) with all participants 	
7	Case method	<ol style="list-style-type: none"> Each participant studies a case alone first Then small groups (3-4 people) discuss the case and develop solutions / recommendations The results are presented in a larger discussion round 	<p>Con: prepared case necessary</p> <p>Pro: not time-intensive, easy application</p>
8	Cultural differences evaluation tool	<ol style="list-style-type: none"> Evaluate cultural characteristics (based on Hofstede) Assess cultural characteristics and their impact on conflicts Choose reactive actions or changes with the team work 	<p>Con: too general</p> <p>Comment: cultural characteristics and conflicts could be mapped with the elaborated diversity features</p>
9	Five-dimensional model	<ol style="list-style-type: none"> Examine the ‘tightness’ of the planned software development method (SDM) Examine the tightness of the culture involved (e.g. with questionnaire) Identify gaps between SDM and culture by using 5 dimensions: project plan, procedures and standards, responsibility and accountability, time estimation, individual need satisfaction 	<p>Pro: mapping if culture fits with software development approach</p> <p>Con: does not help with different cultures in a team</p>
10	Encounter group technique	<ol style="list-style-type: none"> Participants name their ‘identity’ (age, gender, nationality, etc.) Working in pairs and intuitively respond to identity’s characteristics Open group reflection of origin of stereotypes and their effects 	<p>Pro: enhances overcoming stereotypes</p> <p>Con: time-consuming; people actively need to speak up to participate</p>
11	Roadmapping	<p>Using various techniques (see Table 37) to collectively discuss, chart and revise expectations and goals. For the externalization part this would be the soft systems methodology (SSM) (Checkland, 1999):</p> <ol style="list-style-type: none"> Define and express the problem situation Analyze and create root definition including various perspectives (customer, actors, environment, etc.) Develop conceptual model by structuring the activities (in e.g. a bubble diagram) Compare model with real world problem Define feasible and desirable changes Define actions to improve the problem situation 	<p>Pro: mix of existing methods (e.g. soft system methodology, brainstorming, rich pictures)</p> <p>Con: no procedure for dealing with behavioral differences in projects</p> <p>Process: focus on problem situation</p>
12	Computational simulation model	<p>Visualize the effects between two or more cultural groups through:</p> <ol style="list-style-type: none"> Characterize typical mechanisms for comparison Encode selected factors into the micro-level behavior parameters (VDT-model) Analyze effects on the team performance by simulating scenarios 	<p>Con: very general and theoretic; not very practical</p>

Table 40: Evaluation of appropriate diversity techniques

Based on this evaluation, the techniques 3, 5, 8, 9, 11 and 12 were rejected as they were either too general or theoretic or were not feasible to explicate diversity in ICT projects. Furthermore, the accepted techniques were assigned to certain phases in the project management process. Five techniques could be assigned to the planning phase:

- Photovoice method (2)
- Online discussion based on the interaction analysis model (4)

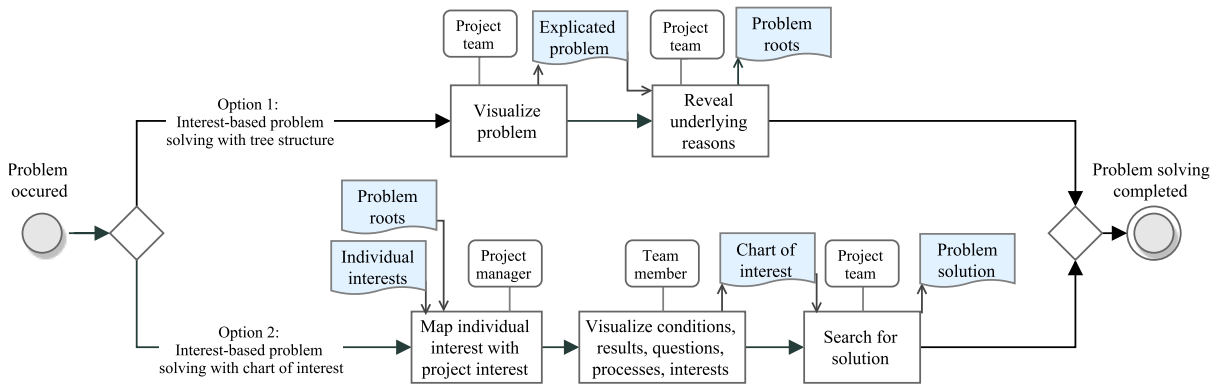


Figure 18: First draft of construction phase

4.2.2.2 FURTHER DEVELOPMENT OF THE WORKFLOW

Obviously, these first drafts indeed were not sophisticated. For instance, the initiation and closure phase were missing, which hindered the integration into the Rational Unified Process, and some techniques had redundant contents. Therefore, the drafts were further improved with the following major changes and adaptations:

- 1) Developing an inception (initiation) phase.
- 2) Combining techniques of the elaboration (planning) phase:
 - a. The techniques ‘online discussion (interaction analysis model)’, ‘case method’, ‘photovoice method’ and ‘encounter group technique’ were merged to one single technique that supports open and group-based discussions. Furthermore, the single activities were extended and more data assigned to the process steps.
 - b. The technique ‘investigating formal / informal rules’ was adapted and extended for a technique that supports an individual-based procedure.
 - c. This differentiation in having two options to proceed – an individual-based procedure where the project manager has the main lead, and a collaborative technique in which the team decides major aspects – makes the techniques applicable in various international settings and allow adaptation to certain situations.
- 3) Combining the techniques of the construction (implementation) phase and extending the artifacts.
- 4) Developing a transition (closure) phase.

In the next chapter, the final diversity workflow and its integration into the Rational Unified Process is presented.

4.3 THE DIVERSITY WORKFLOW

In this chapter the diversity workflow and its integration into the Rational Unified Process (RUP) is described. Furthermore, the Chapters 4.3.4, 4.3.5, 4.3.6, and 4.3.7 provide detailed workflow step descriptions and templates for the four major phases (initiation, elaboration, implementation, reassessment and learning) of the diversity workflow.

4.3.1 INTEGRATING THE DIVERSITY WORKFLOW INTO THE RATIONAL UNIFIED PROCESS

When first starting with describing diversity procedures for ICT projects, it became evident that it was needed to ensure a systematic support by integrating all actions, measures, and techniques in a standardized framework. As this work's focus lies on ICT-related projects and developments, choosing a framework that support IT development was natural. It was further intended to make it easier for practitioners, who are familiar with the RUP, to apply the generic diversity framework's workflow, techniques, and features.

The Rational Unified Process (RUP) (Kruchten, 2004) was selected as basic framework for being a software development process framework that is specific enough to apply to IT projects, but still generic enough to allow an upscaling of the entire procedure for other projects. Therefore, it was decided to design a new workflow into the RUP adding up to the existing support workflows within this framework (see Figure 19).

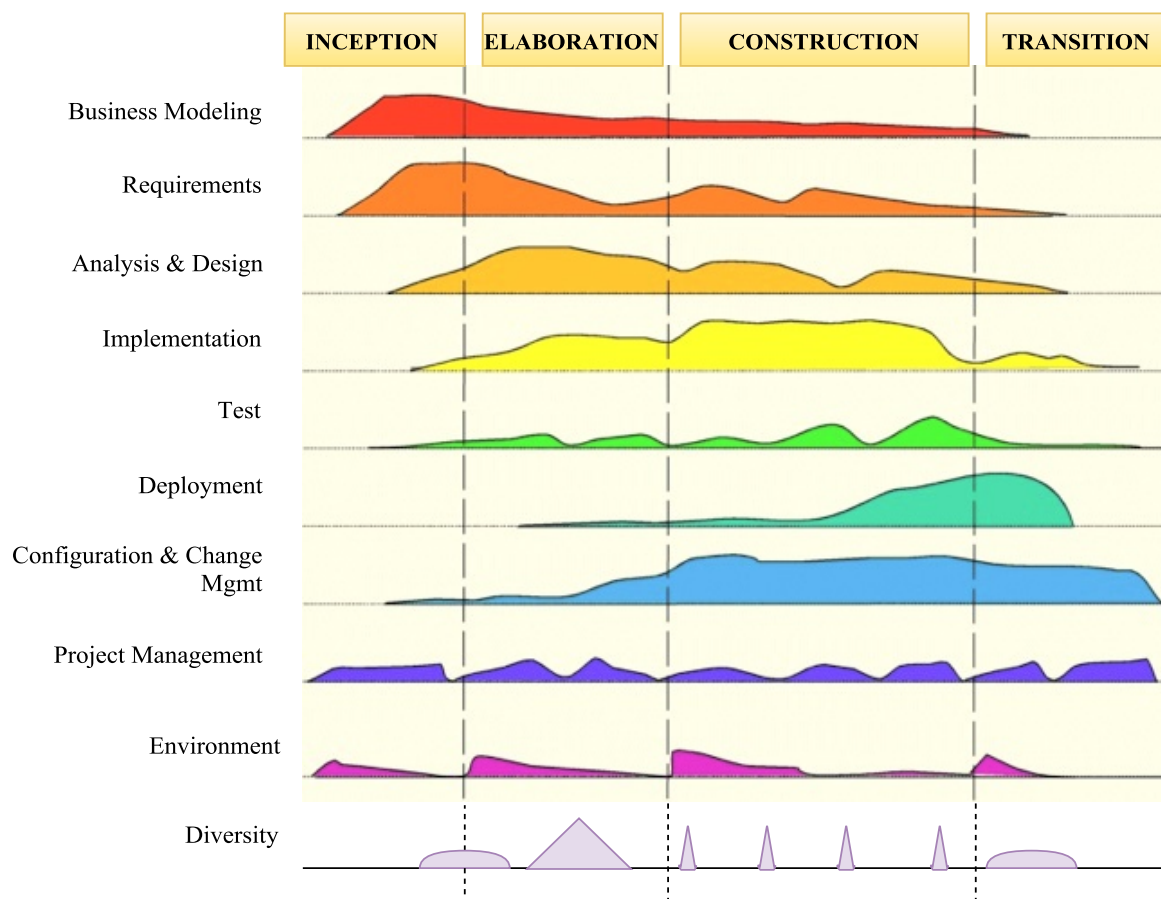


Figure 19: Integration of the diversity workflow into the RUP (Rational Unified Process) (adapted from Kruchten, 2004, p. 22)

The RUP was preferred compared to the Unified Process (UP) (Jacobson, Booch, & Rumbaugh, 1999) as it represents a refinement of the UP and extends the framework by the support workflows (Change & Configuration Management; Project Management; Environment).

Furthermore, the Rational Unified Process (RUP) is based on six best practice principles (Kruchten, 2004, p. 6), of which two are of high significance for choosing the process as a reference process framework for integrating diversity management in software development projects:

1. Iterative software development: Due to the iterative nature of the RUP, its workflows support agile approaches for ICT projects. Still, the generic process also allows a traditional procedure. Therefore, the process suits well as it supports the current trend in software development and project management without limitations for traditional approaches.
2. Manage requirements: Understanding the requirements is a major precondition to start any development. The supporting processes integrated in the RUP – and extended by the newly integrated diversity workflow – enhance this understanding and thereby support this main principle.

In addition, the RUP allows tailoring or extending the framework for the adopting organization (Kruchten, 2004). Therefore, also the diversity workflow is designed for organization-specific adoption (see Diversity Workflow – Re-Assessment and Learning Phase in Chapter 4.3.7).

4.3.2 DESCRIPTION OF THE DIVERSITY WORKFLOW

This chapter presents the comprehensive and full presentation of component 3 that incorporates the components 1 and 2 of the diversity framework. The aim of the diversity framework is to support project managers in managing diversity in their international projects more effectively. In addition to the information in this chapter, the participants of the qualitative validation study received further information that was already presented in the Introduction section of this work (see Chapters 1.3):

- basic information about the framework and a definition of the term ‘diversity’,
- background and benefits of the framework,
- the structure of the framework,
- and a visual overview of the framework.

4.3.2.1 BASIC INFORMATION AND CORNERSTONES

Diversity Analysis	<p>= the process of</p> <ul style="list-style-type: none"> • explicating diversity aspects, which have been implicit so far, • identifying gaps between the individuals within a team, • elaborate and evaluate the identified gaps, • and searching for solution strategies for these particular gaps.
Diversity Features	<p>= a list of culture-based diversity features (see Table 46 in Chapter 4.3.5.3.1) affecting project management process. In total, 19 diversity features have been defined in empirical studies so far (Amster & Böhm, 2015). Still, the researcher reckons that this list can be extended or adapted to the organization’s specific characteristics and needs. The diversity features can be either used for identifying gaps in an open discussion with the project team or they can serve as basis for the survey questionnaire in an individual-based procedure (see Elaboration phase of the diversity workflow).</p>

This framework primarily deals with diversity aspects such as different work styles that are not explicit and hence not able to be managed. Of course, other diversity factors that are already explicit (e.g. language, religion, race, age) should be considered in the project management process. Some examples:

- For instance, creating a glossary with major terms used in the project in the persons’ native language would be beneficial for creating a common understanding.

- Establishing common communication rules for distributed teams for particular situations.
- Including persons with different religions into social activities without discriminating or excluding anybody.

Such explicit aspects and examples are already well integrated in the literature on international project management (compare Chapter 2.2.2.2) and therefore would not add innovative value to the framework.

Moreover, the following aspects are important cornerstones of the framework:

- **Generic:** The framework is designed in a generic manner to enable its integration in various existing approaches (e.g. as add-on to software development models like the Rational Unified Process or to any international project management standards). This characteristic also allows an agile as well as a traditional application. Still, it is recommended to use the framework as a supporting development process rather than fully integrating the framework into an iterative, agile approach. For practice it is suggested to have the phases Initiation and Elaboration as part of a supporting management cycle, whereas the Implementation and especially the Re-Assessment and Learning phases could be included in the agile procedure and its feedback loops (e.g. in Scrum this part could be integrated into the retrospective meeting).
- **Tailoring:** The framework can be tailored and applied flexibly. This means that not all workflow steps are necessarily essential for all projects, but project managers can use those activities that fit the project situation. Furthermore, the framework is open to be extended or adapted for organization-specific purposes.
- **Open:** The framework is open to any culture. Due to a variety of procedure options it is ensured that the workflows suit any culture.

Although the framework can be applied to any project type, size, or team compositions, it is advised to use procedures with workshop or open discussion elements for teams with a maximum of eight to ten team members. For larger teams, another procedure might be more appropriate. Alternatively, big project teams can be split into sub teams with the preferred size, and then a workshop approach could also be performed. The Elaboration phase (see Chapter 4.3.5.2) furthermore defines a separate procedure for distributed or virtual teams.

In general, it might be easier to apply the framework in teams that already worked together before as opposed to teams that are collaborating for the first time and/or whose team members are skeptical.

4.3.2.2 LINK TO PROJECT MANAGEMENT

The framework is designed based on the procedure model Rational Unified Process (Kruchten, 2004) (RUP) and can be easily linked to any standardized project management approach and process. Therefore, this list provides references to connected fields from the project management.

Standard	Adjacent subjects
PMBOK® (Project Management Institute, 2013)	<p>The diversity framework touches the following knowledge areas defined in “A Guide to the Project Management Body of Knowledge (PMBOK® Guide)”:</p> <ul style="list-style-type: none"> • Communication management • Risk management • Stakeholder management • HR management <p>Furthermore, the framework adds up to the social skills defined in the PMBOK® as well to the Project Manager Competency Development Framework (CDF).</p>
ICB 3.0 (International Project Management Association, 2006)	<p>The IPMA Competence Baseline Version 3.0 defines certain competence elements in three groups: technical, behavioral, and contextual competences. The following are directly impacted by the diversity framework:</p> <ul style="list-style-type: none"> • Risk and opportunity (technical) • Project organization (technical)

	<ul style="list-style-type: none"> • Teamwork (technical) • Problem resolution (technical) • Communication (technical) • Leadership (behavioral) • Openness (behavioral) • Conflict and crisis (behavioral) • Ethics (behavioral) • Personnel management (contextual)
ICB 4.0 (International Project Management Association, 2015)	<p>In the newer version of IPMA's baseline, the following competence elements are affected:</p> <ul style="list-style-type: none"> • Power and interest (perspective no. 4) • Culture and values (perspective no. 5) • Personal communication (people no. 3) • Relationships and engagement (people no. 4) • Leadership (people no. 5) • Teamwork (people no. 6) • Conflict and crisis (people no. 7) • Organization and information (practice no. 5) • Stakeholder (practice no. 12)
PRINCE2 (Projects in Controlled Environments) (Hinde, 2012)	<p>The diversity framework is also reflected in the standard PRINCE2 project management approach and its framework consisting of processes, themes and underlying principles; in particular in:</p> <ul style="list-style-type: none"> • Learn from experience (principles) • Project organization (themes) • Project risk (themes) and risks (processes)

Table 41: Linkage between the diversity workflow and international project management standards

Although the framework touches various areas, competencies or processes, the topics are not comprehensively explained within the framework, as the standards already provide solutions for these fields. For instance, human resource management / personnel management is obviously important when finding the right project manager. Still, it would be out of scope of this framework to comprehensively elaborate the field and, for instance, deal with recruiting processes or other HR topics.

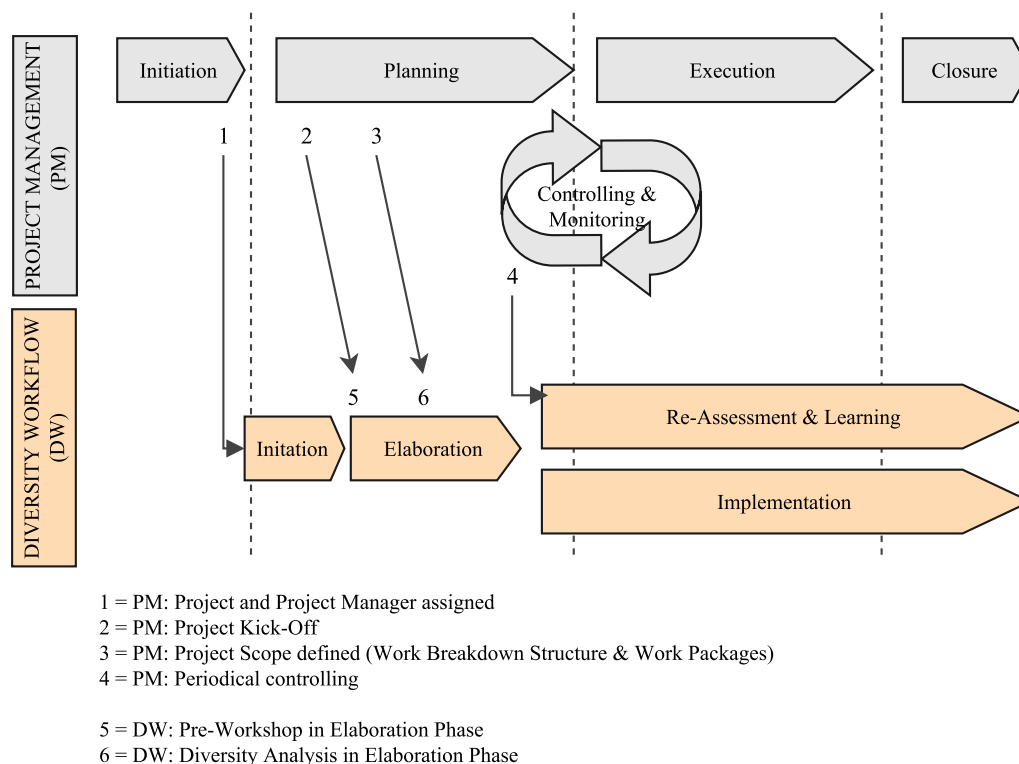


Figure 20: Timeline of diversity workflow in a project

Prior to the actual diversity initiation workflow, the topic should be already considered in project management activities. For instance, a few sentences on the topic should be integrated into the project charter.

Depending on the project, the diversity workflow will start after or during the project initiation phase (as soon as the team composition is fixed and a project manager is assigned).

In the elaboration phase, a pre-workshop that aims at raising awareness and a diversity analysis that elaborates diversity gaps and solution strategies are performed.

Performing the elaboration phase before or during the kick-off would be too early, as the team needs to work together before doing the diversity analysis. Also, including the diversity analysis in the kick-off would overburden the team members, as the scope of the project is not even clear yet. Also if the team has never worked together before, there needs to be a certain level of trust built before the analysis. Therefore, the topic should first be conceptually introduced with the pre-workshop that opens up the topic for the project and additionally can serve as team building activity. The diversity analysis itself (independent of which procedure is chosen) can start as soon as the major cornerstones of the project are clarified (e.g. work breakdown structure is created, work packages are described, high-level schedule is available).

After the elaboration phase is completed, the workflow phases of implementation as well as re-assessment and learning will support the planning, execution, and closure phase of the project. The implementation phase only comes to effect if challenges or chances that are linked to diversity appear during the project.

The re-assessment and learning phase should be performed regularly (e.g. in three to six weeks-cycles). This phase can also be integrated into the social project controlling phase of the project management process.

4.3.2.3 ROLES

In the workflow description the following three roles are used:

Project Manager	<p>The project manager is “the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives” (Project Management Institute, 2013, p. 16). Her/his responsibilities are for instance:</p> <ul style="list-style-type: none"> • focusing on specific project objectives • managing the constraints (cost, time, scope, quality) of the project • understanding different organizational styles and cultures that may affect a project • ensuring effective communication with all relevant stakeholders and managing their influences on the project • leading the project team
Project Team / Project Team Member	<p>The project team includes all persons of the core team such as:</p> <ul style="list-style-type: none"> • core team members such as developers, system architects, business analysts, quality managers, testing managers, etc., • project manager, • and the project owner. <p>These persons should be included in any case into the diversity workflow.</p>
Stakeholders	<p>All persons working on the project or who are involved in a project (in addition to the project team as defined above), such as:</p> <ul style="list-style-type: none"> • supporting experts from various departments (such as legal, financial, safety, testing, quality control), • customer and users, • project sponsor (if not project owner), • or suppliers. <p>Depending on the complexity of the project and the particular situation the project manager should decide who needs to be involved in the diversity workflow. In some situations it might not be reasonable to involve all stakeholders (e.g. if the stakeholders are not highly involved in the project or have little impact and power on the project). In other</p>

	<p>cases, it might be reasonable to include selected powerful stakeholders in the diversity workflow. The degree of involvement will also depend on the culture of the company or on the country that the project is associated with.</p> <p>Still, it is recommended when dealing with stakeholders to involve at least the core team members, the project owner and/or project sponsor, as well as a representative from the customer side.</p>
Project Management Office (PMO)	<p>According to the PMBOK® a “project management office (PMO) is a management structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques” (Project Management Institute, 2013, p. 10).</p> <p>In this workflow, the PMO can mainly take on tasks from the project managers that concern company-internal diversity management regulations and standards (in the Initiation workflow), as well as the improvement of the diversity workflow and its diversity features through the lessons learned from projects (in the Re-Assessment and Learning phase).</p>
Trainer	<p>The role of a trainer is primarily used for the pre-workshop in the elaboration phase. This pre-workshop aims at sensing into the topic diversity, and could be combined with integrative team building elements. As this requires high trainer competences, an experienced trainer or coach should moderate this step.</p>
Supporter	<p>In many cases, the project manager might not have sufficient skills and/or experiences for applying the diversity workflow alone.</p> <p>Especially for the group-based discussion procedure in the elaboration phase, an additional supporter is required to take the role of a (co)-moderator during the workshop. For the mixed procedure part of the workshop, a supporter is also highly recommended. For inexperienced project managers the supporter can also be of great value during the individual-based procedure or throughout all four phases.</p> <p>Including a supporter into the diversity workflow is especially important when applying the workflow for the first or second time. The supporter will accompany the process and help the project manager to learn from the application. In the best case, the supported project manager can support other project managers after a few applications as a supporter and therefore acts as a multiplier in the organization.</p> <p>Therefore, a supporter can either be an external coach (e.g. a change coach) or (cultural) trainer, but also a person within the organization. This person can be a project-external person, but can also be involved in the particular project. Various practical insights have shown that both options have their certain benefits. If the supporter is not involved in the project, she or he can take a different role in the coaching / training / facilitation of the team. On the other hand, if the supporter is part of the project team, it makes some steps easier as the framework is already known by this team member.</p>

Table 42: Role descriptions

4.3.2.4 STAGE INTEGRATION

In theory, it would be possible to perform the elaboration phase and the consecutive phases within the project team, but also with external stakeholders. Still, in empirical studies it became evident that there should be a clear differentiation between performing the workflow within a project team or with stakeholders.

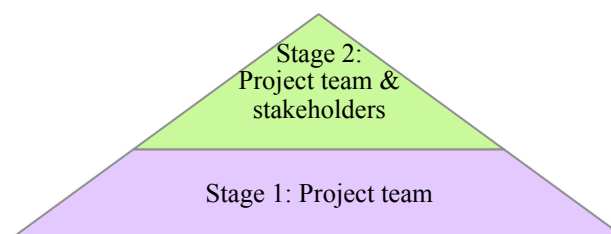


Figure 21: Stage model of the diversity workflow

A stage model helps to clarify who should be included in the process. In the first iteration, the elaboration phase is performed only with the project team members. In the second iteration, powerful stakeholders – for instance the customer – can be included in the workflow.

Depending on the project and the aim of applying the diversity workflow, the entire diversity workflow can

- only be conducted on the first stage (only with the project team),
- or brought partly to the second stage (e.g. only performing awareness building with major stakeholders),
- or be fully conducted on the second stage with relevant stakeholders.

In general, the customer should not be included into this first stage if it is performed in a group-based discussion procedure. The presence of the customer in this stage could hinder the openness that is needed and might make it harder to integrate introverted persons during the workshop.

4.3.2.5 PRECONDITIONS FOR APPLYING THE DIVERSITY WORKFLOW

When applying the framework, certain preconditions need to be in place in order to ensure a successful performance. In any case, there need to be sufficient support by colleagues and/or team members. On a managerial level, the application needs to be supported by the management / project owner.

Also, selecting project manager with appropriate skills, experience, and knowledge is a vital success criterion. The project manager needs to bring the following skills and experience in this priority:

- 1) International experience / Intercultural competences
 - At least she or he should have several experiences with challenging teams or projects (e.g. in intercultural, global, or very heterogeneous teams).
 - Having formal intercultural training (and theoretical knowledge) is a plus but not required.
- 2) Leadership skills
 - Experience in leading project teams
- 3) Interpersonal skills, such as:
 - Be culturally sensitive and be aware of the high impact of culture.
 - Be open-minded and show respect for other ideas or ways of doing things.
 - Be able to create a trustful, safe environment within the team and towards external stakeholders.
 - Be motivated and interested on the topic.
- 4) Methodical project management skills

If the project manager or project owner uses the framework to manipulate people or use the information from the process for any misleading purpose, applying the framework might show some effects, but these may not be the positive effects.

Also, although this framework seems simple, people that apply it need to be aware that processing checklists will not be enough. Diversity is and will not be a simple or easy topic. This framework gives an orientation, but it also requires a deeper appraisal with the topic.

4.3.3 OVERVIEW OF THE DIVERSITY WORKFLOW

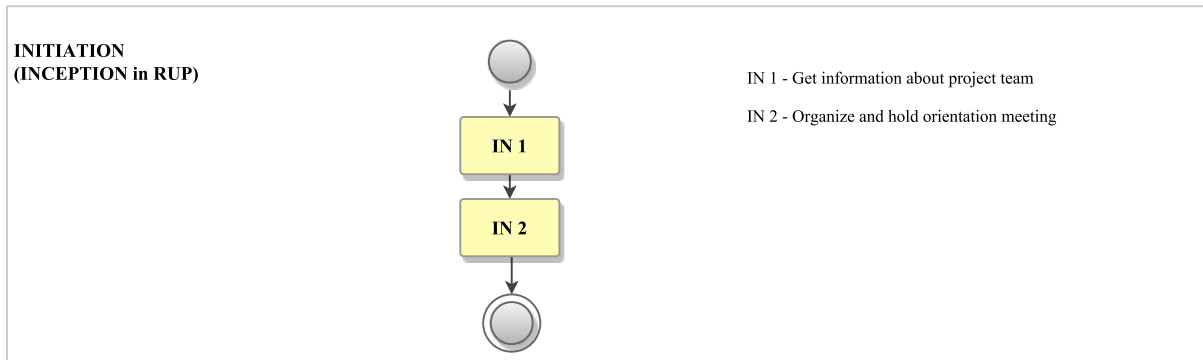


Figure 22: Overview of the initiation phase

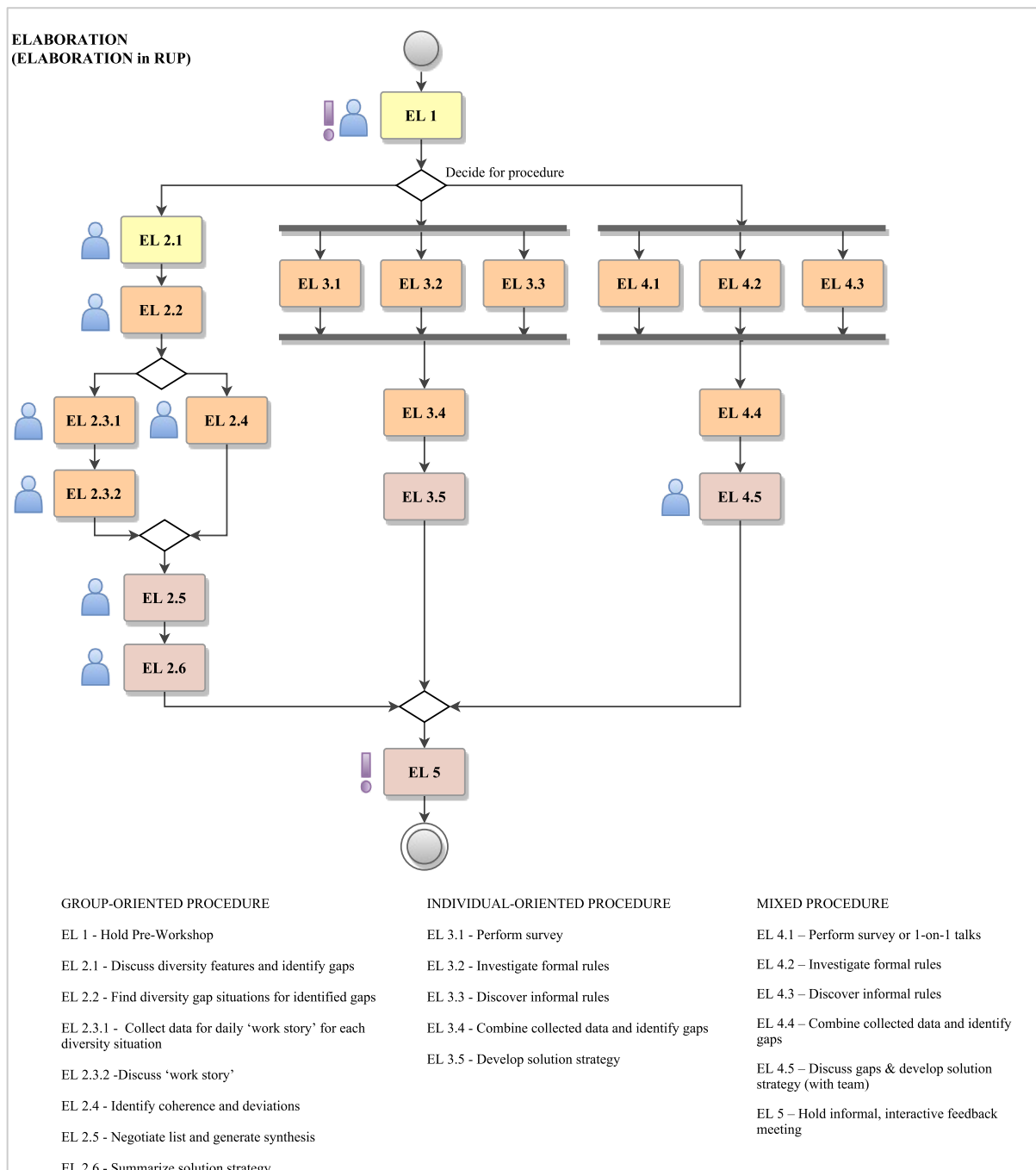


Figure 23: Overview of the elaboration phase

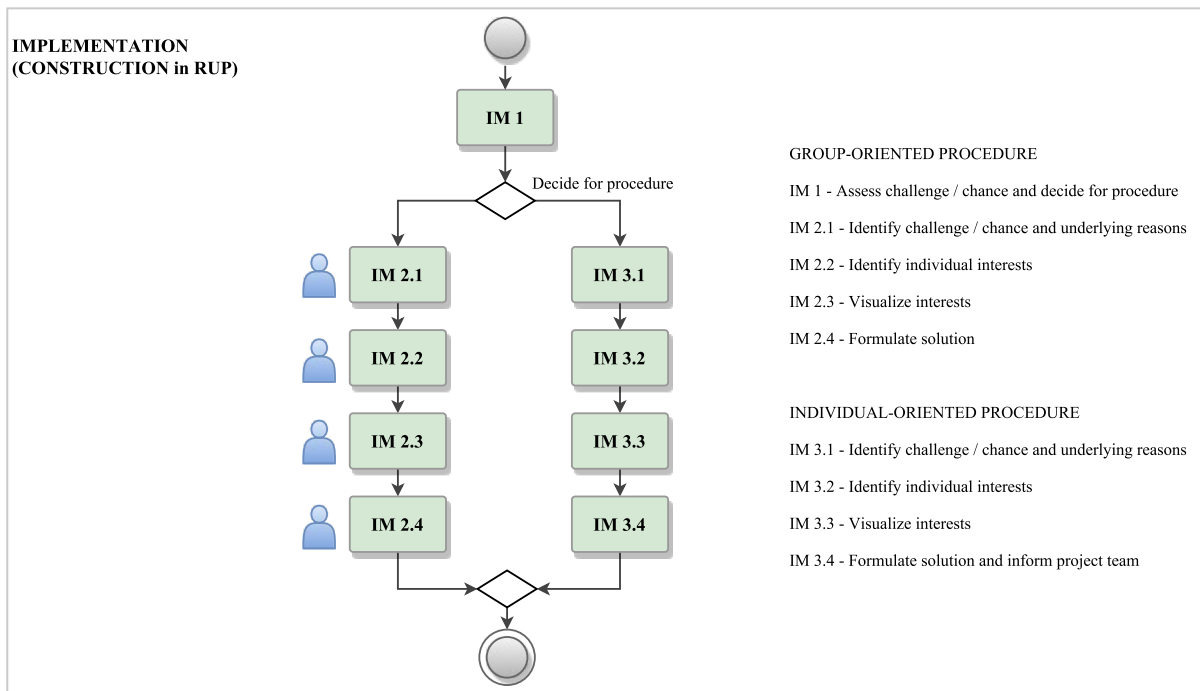


Figure 24: Overview of the implementation phase

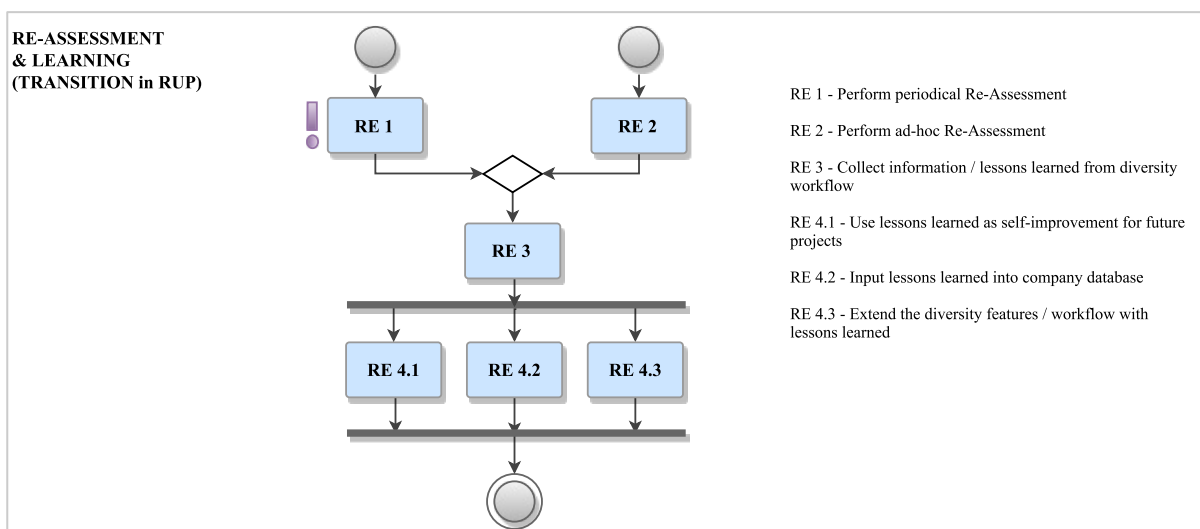


Figure 25: Overview of the re-assessment & learning phase

Certain workflow steps in the visualizations are characterized with small icons and a color code.

1. The icons indicate steps that are either compulsory or that require high moderation and/or trainer competencies.

High moderation / trainer competence needed



Steps marked with this icon require the person responsible to have a high level of moderation and/or trainer competencies. This icon is mainly found for the workshop steps in the workflow.



Compulsory workflow step

Steps marked with this icon need to be conducted in any case. Steps in between could be skipped if this seems reasonable in the project situation.

2. The colors indicate a stage model that allows tailoring the entire diversity workflow into smaller entities.
 - The first three stages – awareness building, deeper analysis, solution finding – build upon each other. Without performing awareness workshops or analysis, a deeper understanding cannot be achieved and information for solutions would be lacking.

- The fourth and fifth stages – challenge / chance assessment, re-assessment, and learning – can be done in parallel to any of the other activities.

Awareness Building	<p>This stage is the first stage to start with and aims at increasing awareness for the topic diversity within the project team.</p> <p>The following steps are associated with this stage:</p> <p>EL 1 – Hold Pre-Workshop</p> <p>EL 2.1 – Discuss diversity features and identify gaps</p>
Deeper Analysis	<p>This stage builds upon the first stage – awareness building and aims at not only raising awareness for the topic diversity, but also performing a deeper diversity analysis. This can be done in three different procedure styles: group-based discussion, individual-based, or mixed procedure.</p> <p>The following steps are associated with this stage:</p> <p>EL 2.2 – Find diversity gap situation for identified gaps</p> <p>EL 2.3.1 – Collect data for daily work story for each diversity situation</p> <p>EL 2.3.2 – Discuss work story</p> <p>EL 2.4 – Identify coherence and deviation</p> <p>EL 3.1 – Perform survey</p> <p>EL 3.2 – Investigate formal rules</p> <p>EL 3.3 – Discover informal rules</p> <p>EL 3.4 – Combine collected data and identify gaps</p> <p>EL 4.1 – Perform survey or 1-on-1 talks</p> <p>EL 4.2 – Investigate formal rules</p> <p>EL 4.3 – Discover informal rules</p> <p>EL 4.4 – Combine collected data and identify gaps</p>
Solution Finding	<p>This stage builds upon the first and second stage. Upon awareness and analysis this stage focuses on finding solutions for the elaborated diversity gaps.</p> <p>The following steps are associated with this stage:</p> <p>EL 2.5 – Negotiate list and generate synthesis</p> <p>EL 2.6 – Summarize solution strategy</p> <p>EL 3.5 – Develop solution strategy</p> <p>EL 4.5 – Discuss gaps & develop solution strategy (with team)</p> <p>EL 5 – Hold informal, interactive feedback meeting</p>
Challenge / Chance Assessment	<p>The stage challenge / chance assessment can be performed in parallel to stage one, two or three. This stage mainly aims at solving arising challenges or chances within the project.</p> <p>The following steps are associated with this stage:</p> <p>IM 1 – Assess challenge / chance and decide for procedure</p> <p>IM 2.1 – Identify challenge / chance and underlying reasons</p> <p>IM 2.2 – Identify individual interests</p> <p>IM 2.3 – Visualize interests</p> <p>IM 2.4 – Formulate solution</p> <p>IM 3.1 – Identify challenge / chance and underlying reasons</p> <p>IM 3.2 – Identify individual interests</p> <p>IM 3.3 – Visualize interests</p> <p>IM 3.4 – Formulate solution and inform project team</p>
Re-Assessment & Learning	<p>The stage re-assessment and learning can be performed in parallel to stage one, two or three. This stage aims at periodically (or ad-hoc) reviewing the activities in the workflow, monitoring gaps and solution strategies, and learning from the process for the project.</p> <p>The following steps are associated with this stage:</p> <p>RE 1 – Perform periodical re-assessment</p> <p>RE 2 – Perform ad-hoc re-assessment</p> <p>RE 3 – Collect information / lessons learned from diversity workflow</p> <p>RE 4.1 – Use lessons learned as self-improvement for future projects</p> <p>RE 4.2 – Input lessons learned into company database</p> <p>RE 4.3 – Extend the diversity features / workflow with lessons learned</p>

4.3.4 INITIATION PHASE – WORKFLOW STEPS AND TEMPLATES

This initial phase can be applied in the first phase of a project. Here, the project manager evaluates whether a diversity analysis is actually feasible and applicable (based on the team member's background and/or company-internal guidelines on diversity management). If it is decided to conduct a diversity analysis, the project manager will initiate and hold an orientation meeting with the entire project team.

Comment: In theory this phase can be skipped if the team is known and has collaborated and used the diversity workflow before.

4.3.4.1 WORKFLOW STEPS IN THE INITIATION PHASE

4.3.4.1.1 IN 1 – Get information about project team

Description:	The project manager should gather information about the project team and decide whether a diversity analysis is beneficial and meaningful for the particular project. This assessment and its outcomes can vary from project to project and therefore has to be conducted for each project separately. On a decision basis, the project manager (or PMO) can use CVs of the team members (see diversity checklist) and check company-internal guidelines on how to proceed with diversity management in the particular company.
Roles involved:	Lead: Project Manager
Templates:	<ul style="list-style-type: none"> Diversity Checklist (see Table 43)

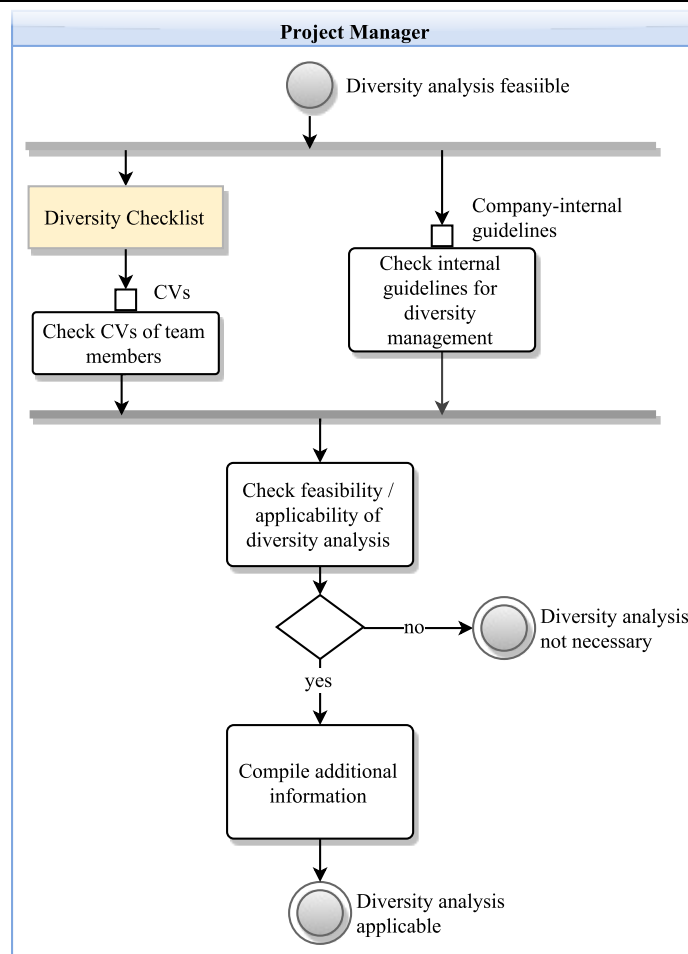


Figure 26: Activity Diagram: IN 1 – Get information about project team

4.3.4.1.2 IN 2 – Organize and hold orientation meeting

Description:	<p>After deciding for performing a diversity analysis, the project manager will arrange an orientation meeting for his project team. In this meeting, she/he needs to check the team members' availability, define a place, a setting (e.g. online or face-to-face workshop) and who will participate. Although the project situation largely determines who will attend this orientation meeting, it is recommended to involve all core team members and/or the project owner.</p> <p>Furthermore, in this process step the project manager will also define agenda points for the meeting and produce an orientation meeting guideline.</p> <p>In the orientation meeting, the project manager presents the purpose, objectives and expected outcomes of the meeting, and defines the schedule and ground rules for the meetings.</p> <p>Then, the team together with the project manager discusses which procedure they will use for this project. Either the team chooses a group-based discussion procedure or an individual-based procedure. In both cases, the project manager will collect action items, outcomes of the meeting, and defined follow-up activities. At the end, the team can give feedback on the orientation meeting.</p> <p>In any case the team will perform a pre-workshop that increases the awareness for the topic before performing the chosen procedure.</p>
Roles involved:	<p>Lead: Project Manager</p> <p>Attending: Project Team</p>
Templates:	<ul style="list-style-type: none"> Orientation Meeting Guideline (see Table 44)

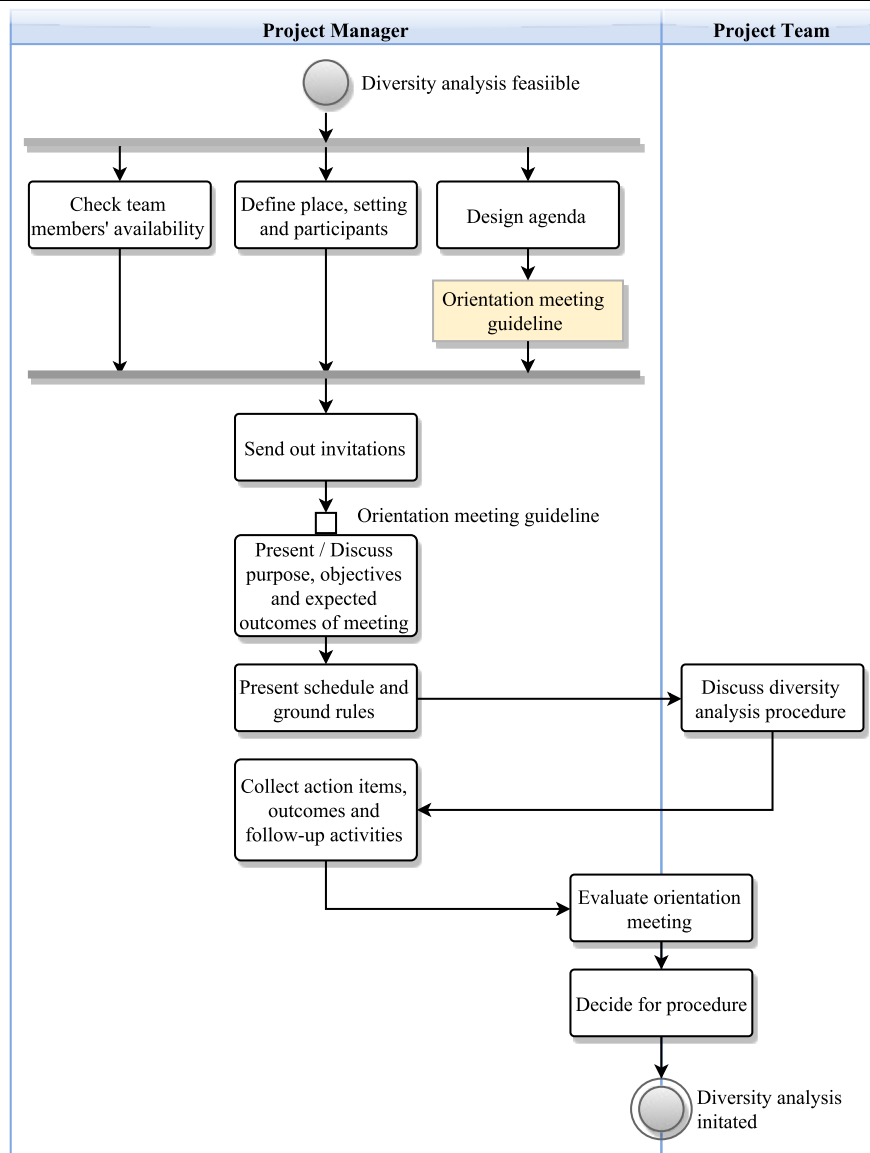


Figure 27: Activity Diagram: IN 2 – Organize and hold orientation meeting

4.3.4.2 TEMPLATES

4.3.4.2.1 Template I – Diversity checklist

The diversity checklist serves as orientation for the project manager (or PMO) and helps to determine whether the team composition suggests the necessity of applying the diversity workflow. The list is not a full compendium of aspects, and therefore can be extended or adapted. The needed data can be collected from the team members' CVs or directly with the team members.

This checklist serves as a first orientation to determine in which team compositions the framework should be applied. Of course further aspects can be added to this list.

Aspect	Questions	Answer	
Nationalities	<ul style="list-style-type: none"> Do the team members have different national backgrounds? Did the team members grow up / work in different countries? 	Yes	Apply diversity workflow independent of other aspects.
Departments	<ul style="list-style-type: none"> Do the team members currently work in very different fields or departments (e.g. marketing and IT)? 	Yes	Apply diversity workflow if 1 other aspect is also answered with "yes".
Age	<ul style="list-style-type: none"> Does the team differ in age (e.g. more than 20 years difference)? 	Yes	Apply diversity workflow if 2 other aspects are also answered with "yes".
Educational background	<ul style="list-style-type: none"> Is the educational level very diverse (e.g. persons with university degrees are working together with apprentices)? 	Yes	Apply diversity workflow if 2 other aspects are also answered with "yes".
Work experience	<ul style="list-style-type: none"> Does the amount of work experience differ highly (e.g. some persons are young professionals, others have large professional experience)? 	Yes	Apply diversity workflow if 2 other aspects are also answered with "yes".
International experiences	<ul style="list-style-type: none"> Do the team members have experiences with international projects? 	Yes	Apply diversity workflow if 2 other aspects are also answered with "yes".

Table 43: Template I – Diversity checklist

4.3.4.2.2 Template II – Orientation meeting guideline

The orientation meeting guideline can be used for the first initial meeting. It defines the participants, the setting of the meeting and provides a rough agenda. It is essential to clearly introduce the purpose, objectives, and expected outcome of the meeting and to ensure a safe, confidential environment for the participants.

Participants:	Recommended: all core project team members (project manager, project owner, project team members)
Setting:	Date, time, meeting room (channel/medium for online meetings)
Agenda:	<p>Introduction:</p> <ul style="list-style-type: none"> Present purpose of meeting / Objectives / Expected outcomes Present schedule for meeting / Ground rules (set rules such as confidentiality, active participation, etc.) <p>Main section:</p> <ul style="list-style-type: none"> Discussion Prepare pre-workshop Clarify action items / outcomes <p>Evaluation:</p> <ul style="list-style-type: none"> Feedback: evaluate satisfaction regarding the meeting Optional: fix date for follow-up meetings / activities <p>Comment: Keep the agenda flexible enough to allow ad hoc changes and include uprising needs of participants during the meeting.</p>
Success factors for the meeting:	For instance, a success factor could be that there will be a decision made about how to deal with the diversity workflow in this particular project (choosing the individual- or group-based procedure).

Table 44: Template II – Orientation meeting guideline

4.3.5 ELABORATION PHASE – WORKFLOW STEPS AND TEMPLATES

This phase sets the strategy for dealing with diversity aspects in a particular project. After informing the project team about the purpose and benefits of conducting a diversity analysis, the project manager can choose (together with the team) between two basic options. Either the team performs the diversity analysis and develops solution strategies together in an **open, group-based discussion setting**; or the project manager uses a **individual-based procedure** and is primarily responsible for identifying diversity gaps within the team and developing a solution strategy.

Both procedures are equally eligible. Which procedure is chosen depends on the project context and the preferences of the project manager and the project team. For instance, in cultures where face-saving (Hall, 1977) is important and team members avoid the open, group-based discussion of conflicts so that no individual is publicly embarrassed (e.g. persons whose behavior is highly impacted by their cultural background such as Japan, Southern Europe, Balkan regions etc.), an open, group-based discussion might not be the preferred procedure. In that case, an individual-based procedure is more applicable and will develop more valuable results.

In addition, a **mixed procedure** combines both procedures and serves as solution option for applying the framework, for instance, in virtual teams.

4.3.5.1 COMPARISON OF PROCEDURES

This table provides an overview and serves as decision basis for one of the three procedures:

Criteria	Group-based Procedure	Individual-based Procedure	Mixed Procedure
Time effort for team	High	Low	Medium
Approximate duration for medium-size project (team)	3 days (or more)	½ to 1 day	1 to 2 days
Time effort for project manager	Medium	High	High
Acceptance of solutions	High	Low	High
Quality of solutions	High	Low – High (depending on the project manager)	High
Supports team building	Yes	No	Yes
Suitable for virtual teams	No	Yes	Yes
Trainer /Supporter needed	Yes	Optional	Optional
Can be delegated?	No	Could be supported by a project assistant	No
Stakeholder	Can be included in a second iteration	Hard to include into the procedure	Can be included in a second iteration
Data collection	Delivers valuable insights of the team, but also time-consuming	Data collection apparently easier, but the solutions have to be carried by the team	Data collection apparently easier, but delivers fewer insights of the team
Possible challenges in data collection	Workshop can be very difficult on an emotional and social level	The questionnaire might be hard to fill out for some persons that need a lot of context	The questionnaire might be hard to fill out for some persons that need a lot of context
Possible risks	Team can get lost in the discussion	Proposed solution is not accepted	Team does not accept identified gaps

Table 45: Decision criteria for procedure in elaboration phase

4.3.5.1.1 Group-based procedure

The project team can decide for an open, group-based discussion approach. In that case, the project manager still plays a key role in the process, but instead of collecting, analyzing, and compiling data, the project manager acts as a moderator and facilitator throughout the process. The group-based procedure could be either conducted in one meeting (e.g. extending a kick-off meet-

ing for a day) or in several smaller meetings. Anyhow, the meeting will start with discussing diversity features and identifying gaps within the team. For this discussion, a pre-defined set of questions describing the diversity features can be used. After the gaps have been identified, the team ought to find realistic diversity gap situation for the project. Subsequently, collecting diversity gap situation(s) for each diversity gap that will be dealt with is important as it reduces the level of abstractness, which makes it easier to find solutions.

Next, these situations will be discussed in the group and a list of agreements and disagreements will be generated. This list will further be used to negotiate the deviations and generate a synthesis for the project. In particular, the team will define procedures and rules for dealing with a certain diversity topic.

As an alternative to a classic group discussion, the team could also use a visualization technique before discussing the diversity gap. For this visualization technique, the project team members document visually (pictures, screenshots, videos, etc.) how they usually behave in particular situations. Then these visual daily 'work stories' are collected, compared, and discussed. This can be done in one big meeting or in several smaller iterations throughout the planning phase of the project. Finally, the project team together with the project manager collects all identified gaps and the agreed solutions and identifies risks and chances associated with the gap.

4.3.5.1.2 Individual-based procedure

In the individual-based procedure the project manager has the tasks to initiate, investigate, and analyze several diversity aspects for the project, combine the collected data, and generate a practical solution strategy for the project. The data, which the project manager will accumulate, are derived from three sources:

1. The project manager will initiate a survey based on certain diversity features that have an impact on project management. For this survey, a pre-defined diversity questionnaire can be used. The questionnaire answers need to be analyzed and gaps need to be identified.
2. Furthermore, the project manager will search for formal rules that already exist for the involved organizations (e.g. from the project management office (PMO)).
3. The third set of data is generated through direct, participatory observation of the team working together. Here, the project manager should discover and collect informal rules that were not identified in the formal rule collection.

By combining all three sets of data, the project manager creates a comprehensive picture of possible diversity factors impacting the particular project in the particular organization. Based on this information – the diversity gap analysis – the project manager develops a solution strategy (consisting of procedures and rules to deal with the particular diversity aspect).

4.3.5.1.3 Mixed Procedure

In the mixed procedure the project manager first has the tasks to initiate, investigate, and analyze several diversity aspects for the project and combine the collected data. The data, which the project manager will accumulate, are derived from three sources:

1. Diversity preferences:
 - a) The project manager could initiate a survey based on certain diversity features that have an impact on project management. For this survey, a pre-defined diversity questionnaire can be used. The questionnaire answers need to be analyzed and gaps need to be identified.
 - b) Alternatively, the project manager could use the diversity features as basis for 1-on-1 talks with all team members. Based on all talks the project manager can then identify gaps between the team members' behavioral preferences.

2. Furthermore, the project manager will search for formal rules that already exist for the involved organizations (e.g. from the project management office (PMO)).
3. The third set of data is generated through direct, participatory observation of the team working together. Here, the project manager should discover and collect informal rules that were not identified in the formal rule collection.

If any circumstances or factors (e.g. time effort) hinder a full application of the framework, only the diversity preferences can be elaborated and optionally be combined with formal or informal rules.

After the gaps have been identified, the project manager will organize a team meeting (for virtual teams this could be also a conference call), present the identified differences and commonalities, and discuss each diversity gap in depth. Consequently, the team will negotiate and generate a synthesis for the project. In particular, the team will define procedures and rules for dealing with a certain diversity gap. Finally, the project team together with the project manager collects all identified gaps and the agreed solutions and identifies risks and chances associated with the gap.

After all three procedures, the results of the diversity analysis – the solution strategy – will be presented and discussed with the team in an interactive follow-up meeting.

The results of this phase need to be integrated into project management plans (e.g. work breakdown structure, schedule, and cost plans) and add to the social project controlling. All elaborated solution strategies need to be re-assessed in periodical cycles (see workflow phase “Re-Assessment and Learning”) in order to keep the diversity gaps tracked throughout the project duration. If there is a budget needed for certain activities or solution measures, they can be included in risk management (e.g. risk list). This also applies to diversity gaps that do not have a solution defined.

Comment: This phase primarily describes how to identify and manage diversity gaps. Depending on the situation and purpose of the diversity analysis, this can also be used to identify very homogenous areas of a team. It is a commonly accepted fact and proven in studies (Basadur & Head, 3002; O’Reilly et al., 1998) that heterogeneous teams produce more creative results and could be more beneficial for the project outcomes.

4.3.5.2 *WORKFLOW STEPS IN THE ELABORATION PHASE*

4.3.5.2.1 *EL 1 – Hold pre-workshop*

Description:	<p>Before starting the diversity analysis, a pre-workshop should be hold that aims at increasing the awareness for the topic diversity within the team. This workshop should be done independent procedure chosen for the diversity analysis (group-based discussion, individual-based procedure, mixed procedure).</p> <p>This pre-workshop can be also used to find out how the team perceives diversity – as a resource or as a problem. This could prevent that people with negative associations sabotage the diversity analysis process later on.</p> <p>An option for could be to work with metaphors, e.g. team members should independently draw what they associate with the topic diversity. These associations are important for further argumentation of the importance of performing a diversity analysis.</p> <ul style="list-style-type: none"> • If there are rather positive associations, it can be argued that performing a diversity analysis could help to recognize strengths and use them for the project. • If the people’s attitude is rather negative, it can be argued that by applying the diversity workflow the team can learn more about differences and define common ways for the project. These common solutions can reduce negativity, stress, and effort during the project. <p>Of course other diversity training methods can be used in this pre-workshop.</p> <p>The pre-workshop can serve as team building element for the project or can be combined with other integrative team building activities.</p> <p>It is advised to work with an experienced diversity trainer in this step. The project manager her-</p>
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	self / himself should not lead this workshop.
Roles involved:	Lead: Trainer Attending: Project Team, Project Manager

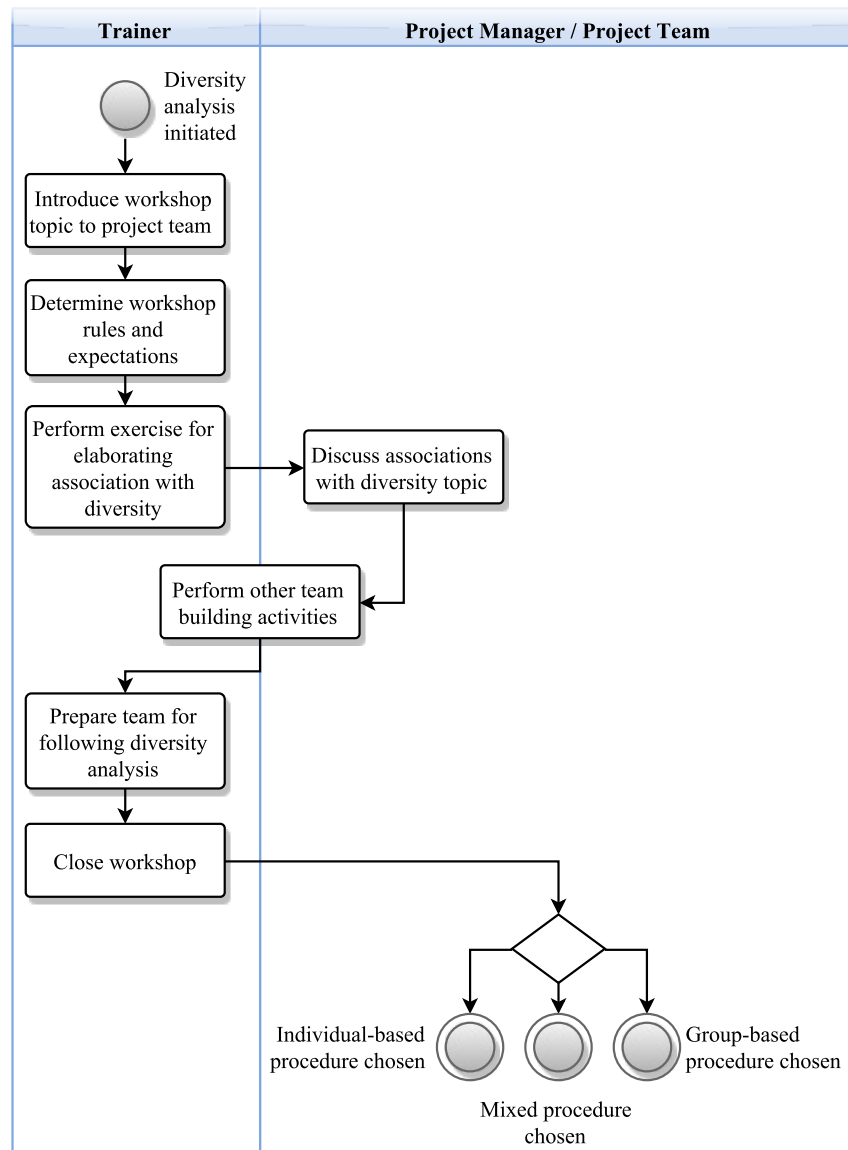


Figure 28: Activity Diagram: EL 1 – Hold pre-workshop

4.3.5.2.2 EL 2.1 – Discuss diversity features and identify gaps

Description:	<p>If the team decides for a group-based procedure, a workshop will be organized. In this workshop, the project manager will introduce the analysis process to the team. Also, the project manager will present the diversity features, which will be in the focus of this workflow step.</p> <p>The team discusses each diversity feature and – facilitated by the project manager and/or supporter – the questions that are associated with the diversity features, and tries to identify gaps and/or commonalities.</p> <p>For this activity several techniques could be used:</p> <ul style="list-style-type: none"> • Open discussion: The team discusses relevant diversity features and tries to identify gaps and commonalities in the discussion. • Positioning with figures: Every participant first chooses a small figure or avatar. Then the workshop moderator explains one particular diversity feature and asks the participants to position their figures on a line with extreme values (e.g. serial task preference versus parallel task preference). Then team discusses this positioning and clarifies if there is a gap or not. • Positioning in a room: Comparably to the positioning with figures, the workshop moderator explains one particular diversity feature, but now asks the participants to position themselves in the room on a notional line (e.g. preference for agile or traditional development approach). Then team discusses this positioning and clarifies whether there is a gap or not. <p>Independent of the technique, all identified gaps are finally collected.</p>
Roles involved:	<p>Lead: Project Team</p> <p>Facilitating: Supporter / Project Manager</p>
Templates:	<ul style="list-style-type: none"> • Diversity Features (see Table 46 and Table 47) • Diversity Gaps (see Table 48 and Table 49)

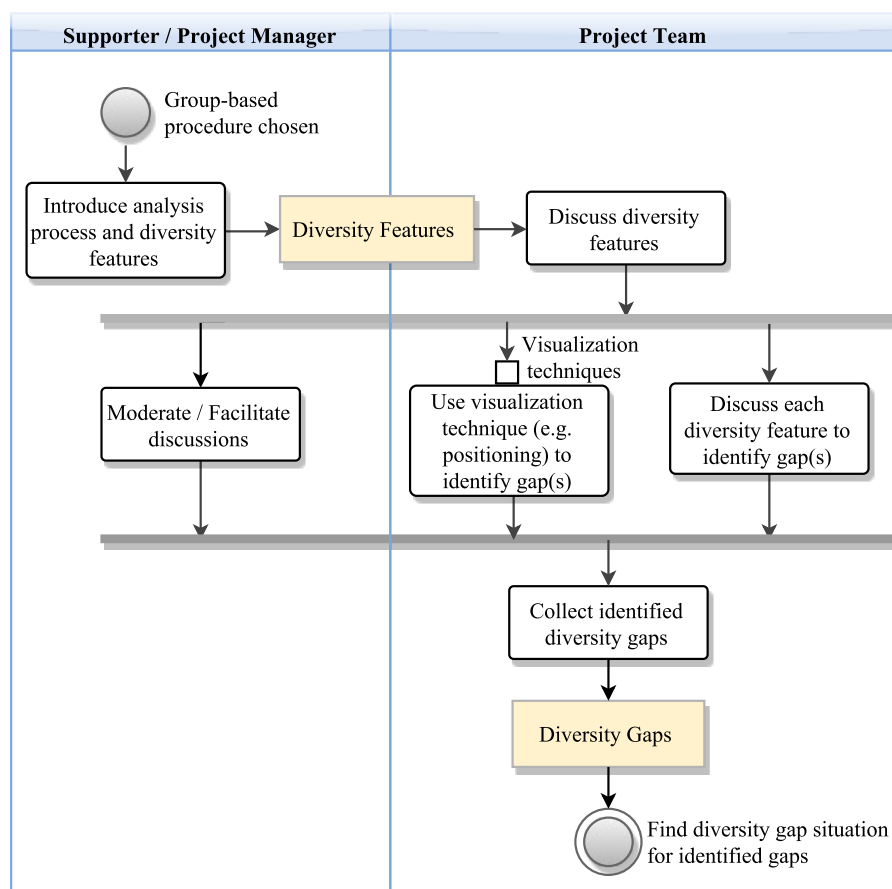


Figure 29: Activity Diagram: EL 2.1 – Discuss diversity features and identify gaps

4.3.5.2.3 EL 2.2 – Find diversity gap situations for identified gaps

Description:	After collecting all diversity gaps, the team – facilitated by the project manager – describes each diversity gap through particular, real-world situations. This will make the diversity gap less abstract and allows better solution finding. Here, the team has two options. They can either use a visualization method (which demands more time, but allows a deeper understanding) or a classic group discussion.
Roles involved:	Lead: Project Team Facilitating: Supporter / Project Manager
Templates:	<ul style="list-style-type: none"> Diversity Gaps (see Table 48 and Table 49) Diversity Gap Situation (see Table 51)

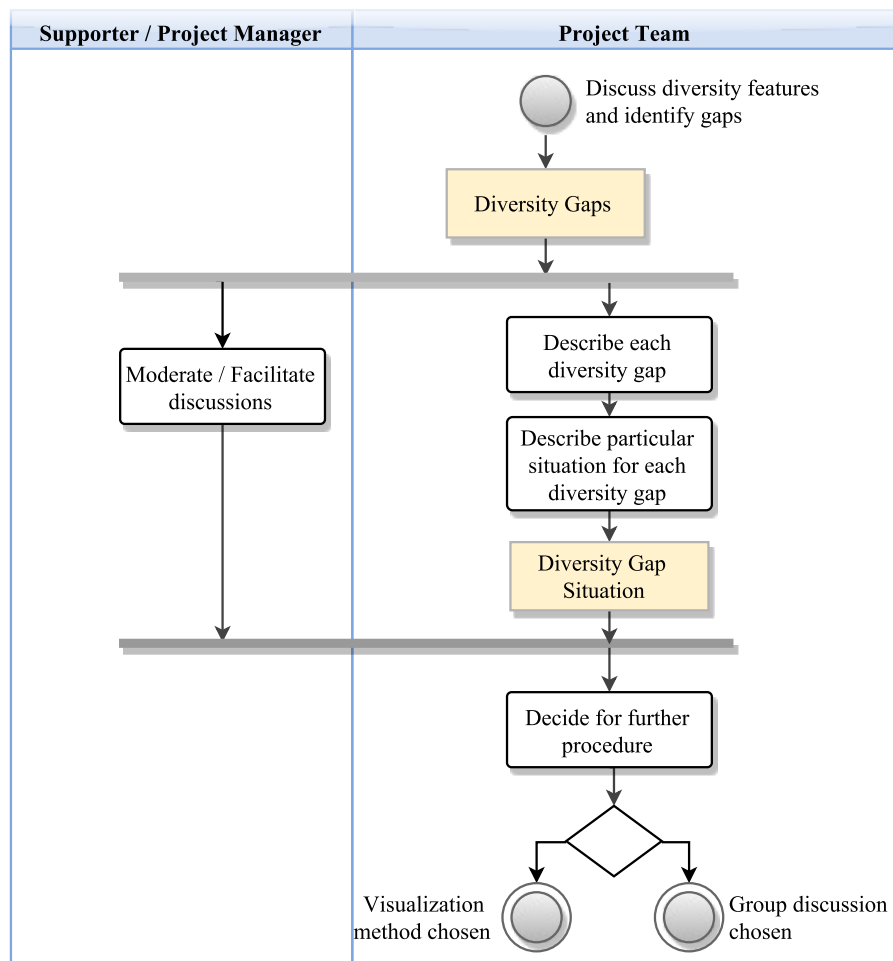


Figure 30: Activity Diagram: EL 2.2 – Find diversity gap situation for identified gap

4.3.5.2.4 EL 2.3.1 Collect data for daily work story for each diversity situation

Description:	If the team decides for a visualization method, each team member will collect examples for each diversity gap situation (or alternatively selected situations) from his own work. This can be done through pictures, screenshots, videos, or similar techniques/methods. From this visualization each team member creates a short visual ‘work story’.
Roles involved:	Lead: Project Team
Templates:	<ul style="list-style-type: none"> Diversity Gap Situation (see Table 51) Visual Work Story (see Chapter 4.3.5.3.4)

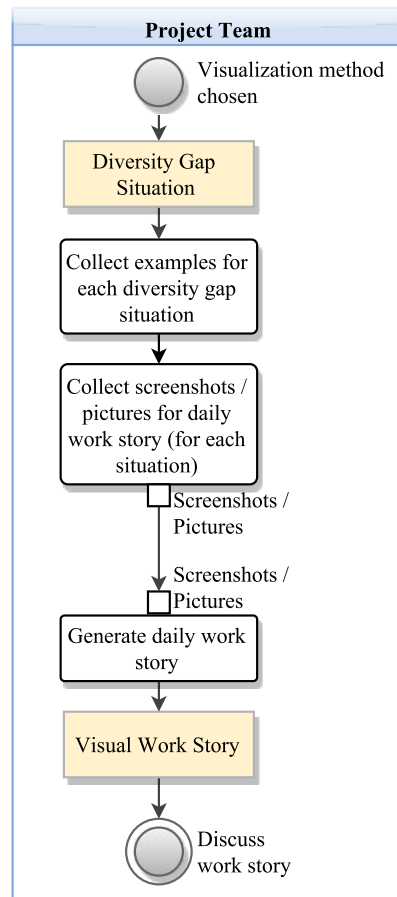


Figure 31: Activity Diagram: EL 2.3.1 – Collect data for daily work story for each diversity situation

4.3.5.2.5 EL - 2.3.2 Discuss work story

Description:	The visual ‘work stories’ generated in the previous step should be discussed in a team meeting, which will be facilitated by the project manager. The project manager therefore sets up one or several meeting (both online and face-to-face are possible). In these meetings, the project team works on identifying coherences and deviations in the different perspectives and opinions.
Roles involved:	Lead: Project Team Facilitating: Supporter / Project Manager
Templates:	<ul style="list-style-type: none"> Visual Work Story (see Chapter 4.3.5.3.4) List of Coherence / Deviation (see Table 52)

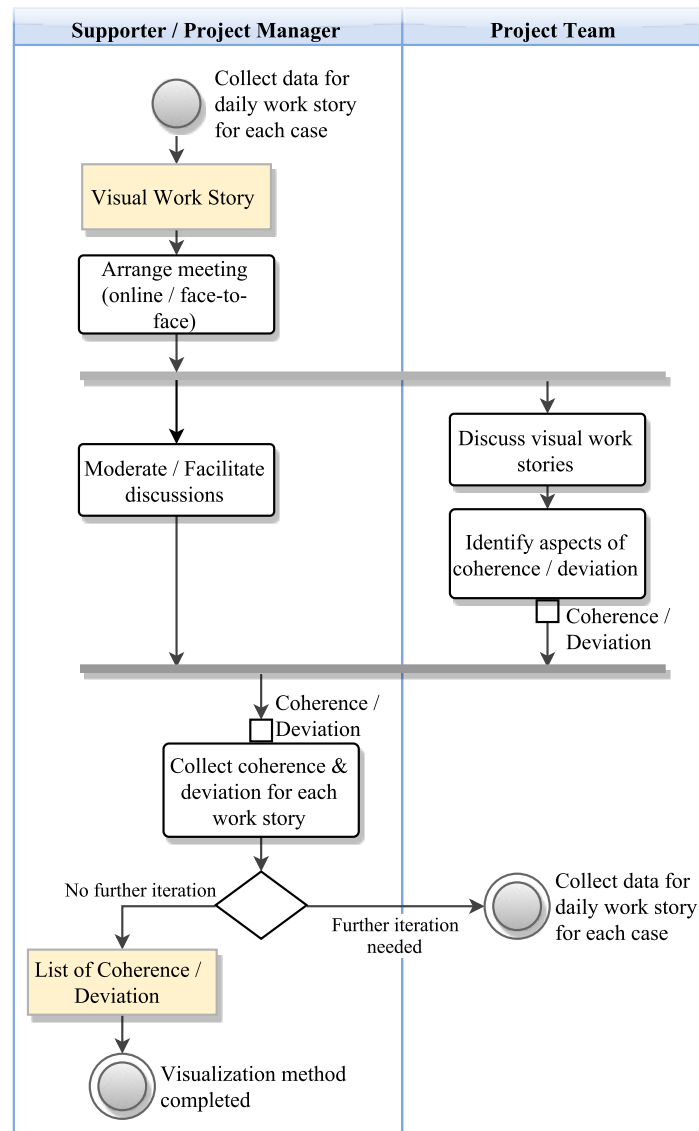


Figure 32: Activity Diagram: EL 2.3.2 – Discuss work story

4.3.5.2.6 EL 2.4 – Identify coherence and deviations

Description:	If the team decides for a classic group discussion, the project team will directly discuss the diversity situations in a meeting. In this meeting, the project team works on identifying coherences and deviations in the different perspectives and opinions. The project manager acts as facilitator and moderator.
Roles involved:	Lead: Project Team Facilitating: Supporter / Project Manager
Templates:	<ul style="list-style-type: none"> Diversity Gap Situation (see Table 51) List of Coherence / Deviation (see Table 52)

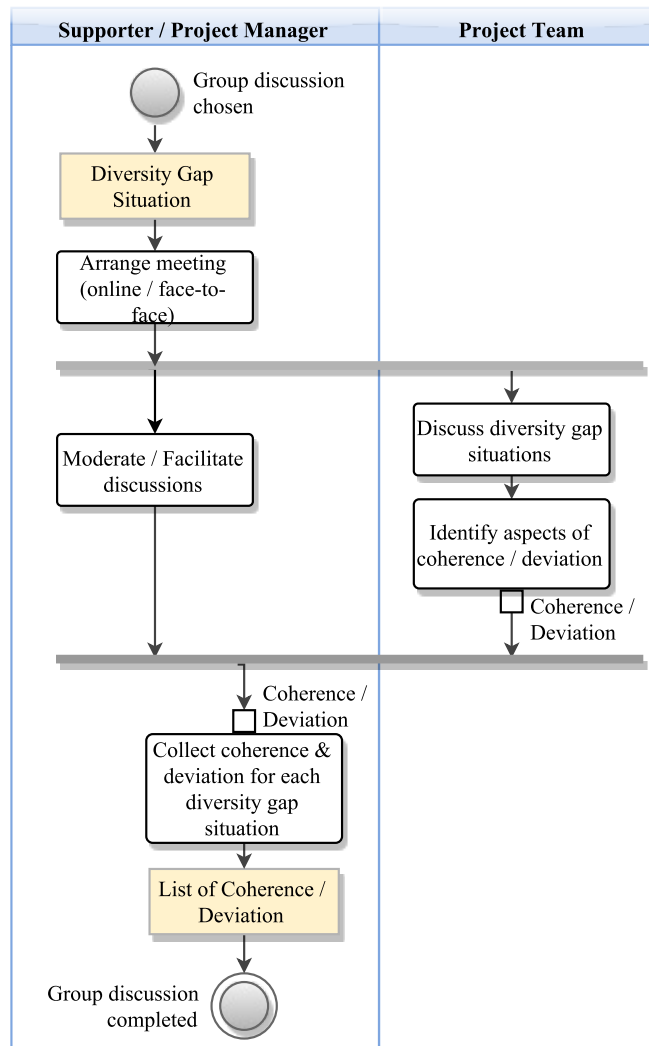


Figure 33: Activity Diagram: EL 2.4 – Identify coherence and deviations

4.3.5.2.7 EL 2.5 – Negotiate list and generate synthesis

Description:	<p>Prior to the meeting (or alternatively as part of the workshop), the project manager should investigate formal rules existing within the organization. Therefore, she or he could interview experts or screen the company-internal database (if existing) and/or internal guidelines. Alternatively, a project management office can support or take over this task.</p> <p>All identified rules from the 1-on-1 interviews and the database/guideline search will be collected and mapped with the pre-defined diversity features.</p> <p>During the meeting/workshop, the list of coherence and deviation (from either the visualization method or the classic group discussion) will be used to negotiate all deviations within the team and find a synthesis for this particular project, taking the organization's formal rules into account.</p>
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	Therefore the team will identify rules and procedures for each diversity gap. The project manager acts as facilitator and moderator.
Roles involved:	Lead: Project Team Facilitating: Supporter / Project Manager
Templates:	<ul style="list-style-type: none"> Formal Rule Collection (see Table 53) List of Coherence / Deviations (see Table 52) Agreed Rules / Procedures (see Table 54)

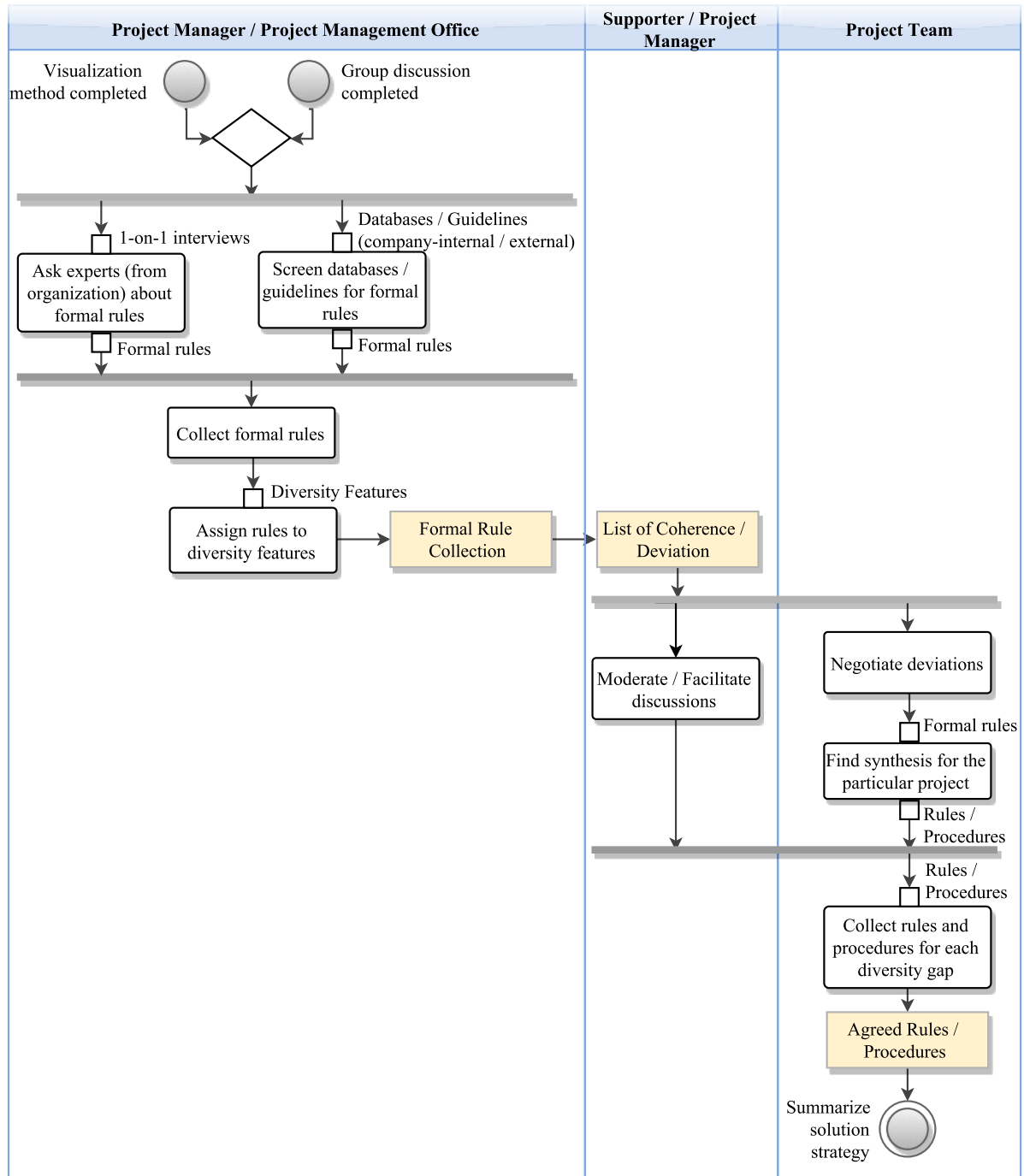


Figure 34: Activity Diagram: EL 2.5 – Negotiate list and generate synthesis

4.3.5.2.8 EL 2.6 – Summarize solution strategy

Description:	Now, the project team summarizes all identified diversity gaps as well as associated procedures and rules that have been agreed upon. Furthermore, they should identify chances and risks for each gap and analyze if there are any connections to other identified gaps. Also, the team should
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	<p>name a person responsible for tracking the diversity gap and its solution implementation. The project manager, who facilitates the discussion, summarizes all aspects (diversity gaps, rules, procedures, risks, chances, connection to other gaps, person responsible) in a solution strategy paper.</p> <p>The solution strategies should be integrated into other project management activities (e.g. project management plans, social project controlling and/or risk management) in order to keep the diversity gaps tracked throughout the project duration.</p> <p>If there is budget needed for certain activities or solution measures, they can be included in risk management (e.g. risk list). This also applies to diversity gaps that do not have a solution defined.</p>
Roles involved:	<p>Lead: Project Team</p> <p>Facilitating: Supporter / Project Manager</p>
Templates:	<ul style="list-style-type: none"> Agreed Rules / Procedures (see Table 54) Solution Strategy (see Table 59)

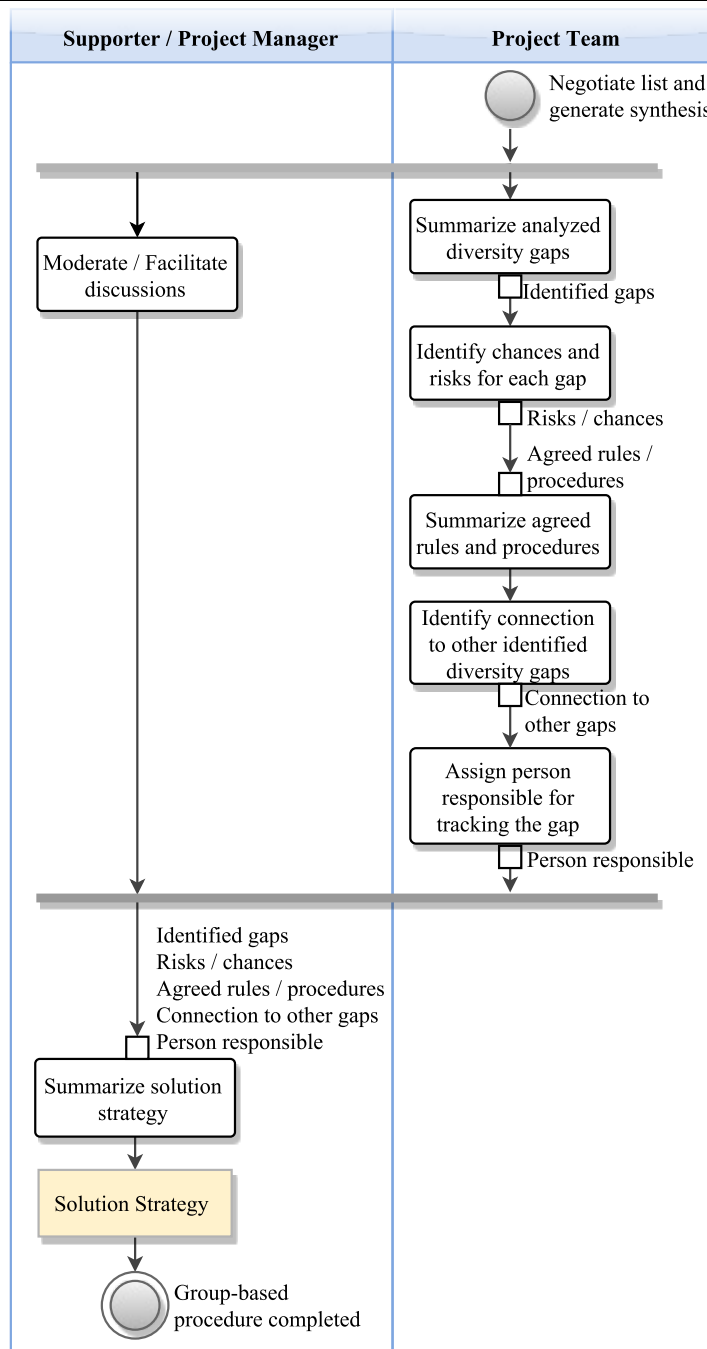


Figure 35: Activity Diagram: EL 2.6 – Summarize solution strategy

4.3.5.2.9 EL 3.1 – Perform survey

Description:	<p>If the team decided for an individual-based procedure, the project manager will collect data from various sources (e.g. through questionnaire survey, investigating formal rules, observing informal rules).</p> <p>One set of data is generated through a survey in this step. Therefore, the project manager introduces the diversity analysis process to the team and prepares the diversity questionnaire (see template) which is based on the diversity features. The team members should fill out the questionnaire. It is essential that all selected team members participate to achieve a comprehensive diversity analysis.</p> <p>The survey can be conducted either anonymously or specific (e.g. persons or functions (e.g. developer)) – this has to be agreed upon in advance.</p>
Roles involved:	<p>Lead: Project Manager</p> <p>Attending: Project Team</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> • Diversity Features (see Table 46 and Table 47) • Diversity Questionnaire (see Table 56) • Questionnaire Evaluation (see Table 57)

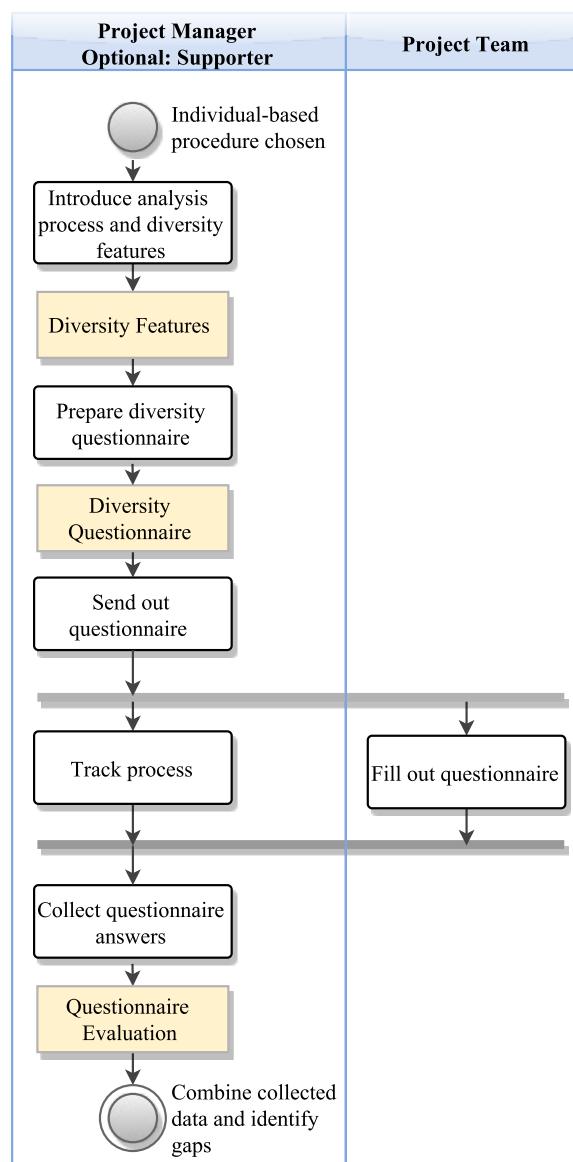


Figure 36: Activity Diagram: EL 3.1 – Perform survey

4.3.5.2.10 EL 3.2 – Investigate formal rules

Description:	<p>In parallel to the questionnaire survey, the project manager will interview experts from the organization about existing formal rules and work styles.</p> <p>Also, the project manager can screen company-internal databases and/or internal and external guidelines to identify formal rules. Alternatively, a project management office can support or take over this task.</p> <p>All identified rules from the 1-on-1 interviews and the database/guideline search will be collected and mapped with the pre-defined diversity features.</p>
Roles involved:	<p>Lead: Project Manager / Project Management Office</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> Formal Rule Collection (see Table 53)

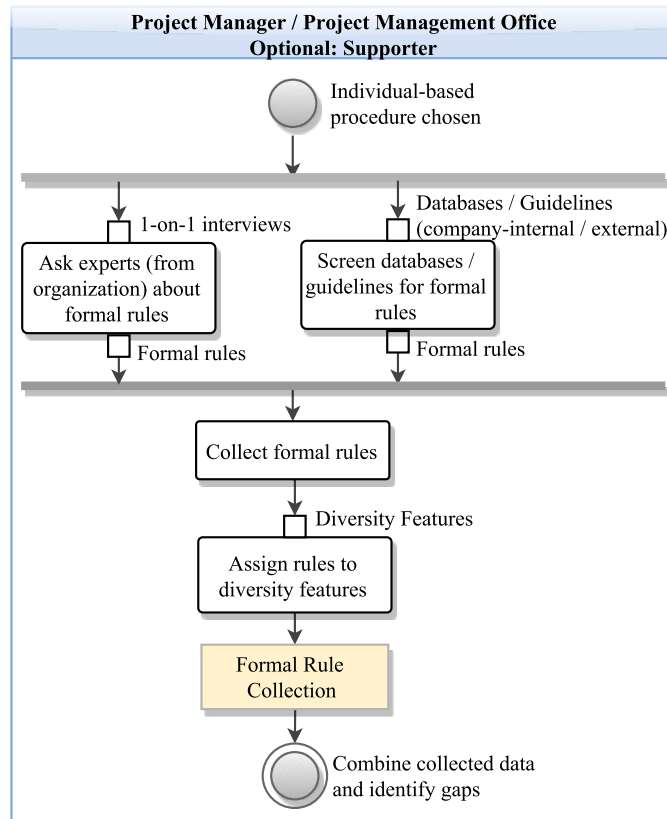


Figure 37: Activity Diagram: EL 3.2 – Investigate formal rules

4.3.5.2.11 EL 3.3 – Discover informal rules

Description:	In parallel to the questionnaire survey and the formal rule collection, the project manager will also investigate the team and observe how the team works in daily project situations. From these observations, the project manager can collect additional information about informal procedures. These informal procedures need to be assigned to one of the pre-defined diversity features.
Roles involved:	Lead: Project Manager Optional: Supporter
Templates:	<ul style="list-style-type: none"> Informal Rule Collection (see Table 58)

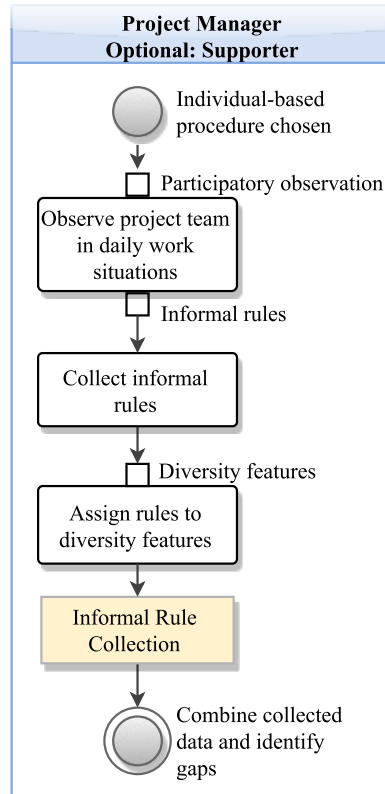


Figure 38: Activity Diagram: EL 3.3 – Discover informal rules

4.3.5.2.12 EL 3.4 Combine collected data and identify gaps

Description:	After collecting data from various sources (diversity questionnaire, formal rules, and informal rules), the project manager needs to first interpret the data from the diversity questionnaires before combining it with the formal and informal rules. This combination provides the basis for identifying diversity gaps. Each diversity gap needs to be described and connected to one of the pre-defined diversity features. All data and its interpreted gaps should be collected in a diversity gap analysis document.
Roles involved:	Lead: Project Manager Optional: Supporter
Templates:	<ul style="list-style-type: none"> Questionnaire Evaluation (see Table 57) Formal Rule Collection (see Table 53) Informal Rule Collection (see Table 58) Diversity Gap Analysis (see Chapter 4.3.5.3.12)

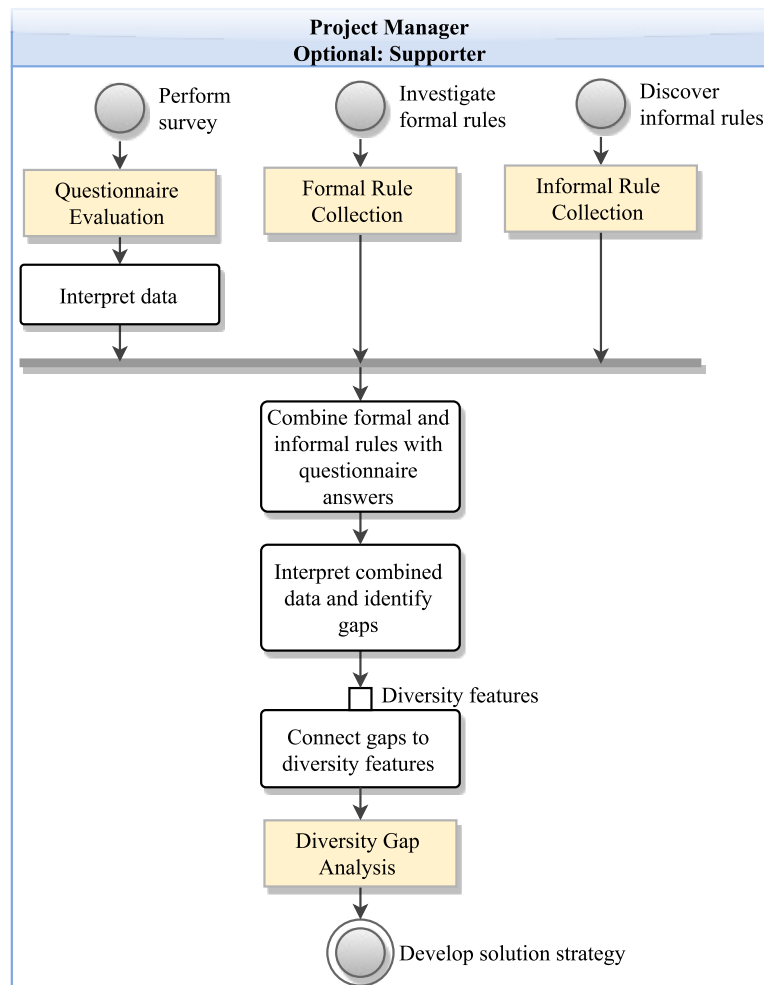


Figure 39: Activity Diagram: EL 3.4 – Combine collected data and identify gaps

4.3.5.2.13 EL 3.5 Develop solution strategy

Description:	<p>In addition to the diversity gap analysis, the project manager next identifies chances and risks for each gap. Then, she or he determines procedures and rules that describe how the team will deal with any deviations in this particular project.</p> <p>Furthermore, she or he should analyze if there are any connections to other identified gaps. In addition, a person responsible for tracking the diversity gap and its solution implementation needs to be named.</p> <p>This information is summarized in a solution strategy paper.</p> <p>The solution strategies should be integrated into other project management activities (e.g. project management plans, social project controlling and/or risk management) in order to keep the diver-</p>
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	sity gaps tracked throughout the project duration. If there is budget needed for certain activities or solution measures, they can be included into risk management (e.g. risk list). This also applies to diversity gaps that do not have a solution defined.
Roles involved:	Lead: Project Manager Optional: Supporter
Templates:	<ul style="list-style-type: none"> Diversity Gap Analysis (see Chapter 4.3.5.3.12) Solution Strategy (see Table 59)

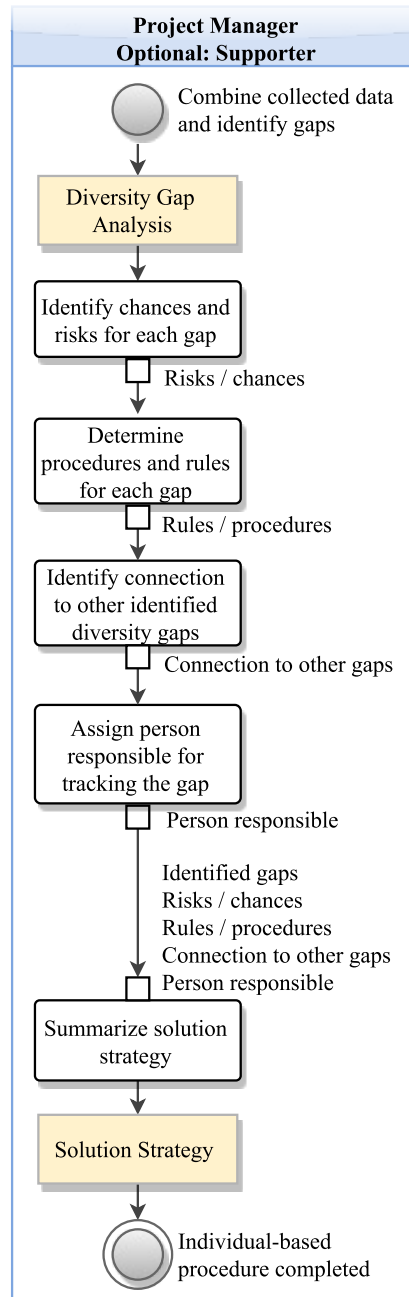


Figure 40: Activity Diagram: EL 3.5 – Develop solution strategy

4.3.5.2.14 EL 4.1 – Perform survey or 1-on-1 talks

Description:	<p>If the team has decided for an individual-based procedure, the project manager will collect data from various sources (e.g. through questionnaire survey, investigating formal rules, observing informal rules).</p> <p>One set of data is generated through a survey in this step. Therefore, the project manager introduces the diversity analysis process to the team and prepares the diversity questionnaire (see template) which is based on the diversity features. The team members should fill out the ques-</p>
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	<p>tionnaire. It is essential that all selected team members participate to achieve a comprehensive diversity analysis. The survey can be conducted either anonymously or specifically (e.g. persons or functions (e.g. developer)) – this has to be agreed upon in advance.</p> <p>Alternatively, the project manager could also perform the survey in 1-on-1 meetings with each team member individually.</p>
Roles involved:	<p>Lead: Project Manager</p> <p>Attending: Project Team</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> • Diversity Features (see Table 46 and Table 47) • Diversity Questionnaire (see Table 56) • Questionnaire Evaluation (see Table 57)

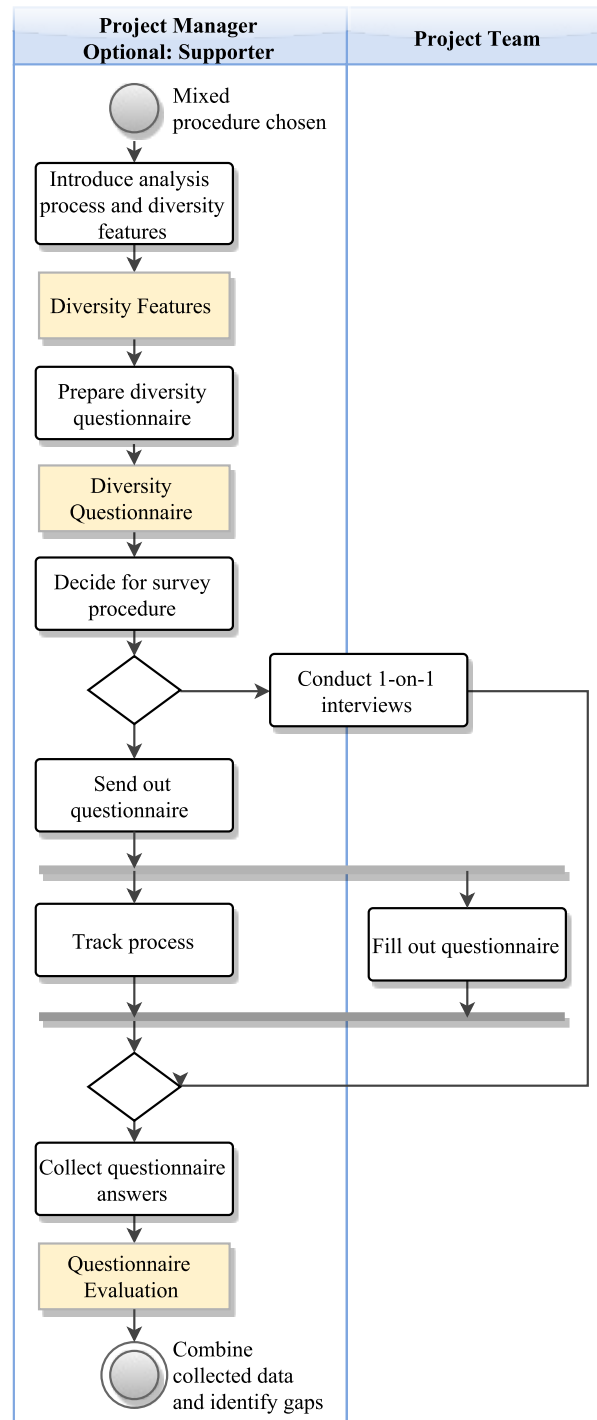


Figure 41: Activity Diagram: EL 4.1 – Perform survey or 1-on-1 talks

4.3.5.2.15 EL 4.2 – Investigate formal rules

Description:	<p>In parallel to the questionnaire survey, the project manager will interview experts from the organization about existing formal rules and work styles.</p> <p>Also, the project manager can screen company-internal databases and/or internal and external guidelines to identify formal rules. Alternatively, a project management office can support or take over this task.</p> <p>All identified rules from the 1-on-1 interviews and the database/guideline search will be collected and mapped with the pre-defined diversity features.</p>
Roles involved:	<p>Lead: Project Manager / Project Management Office</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> Formal Rule Collection (see Table 53)

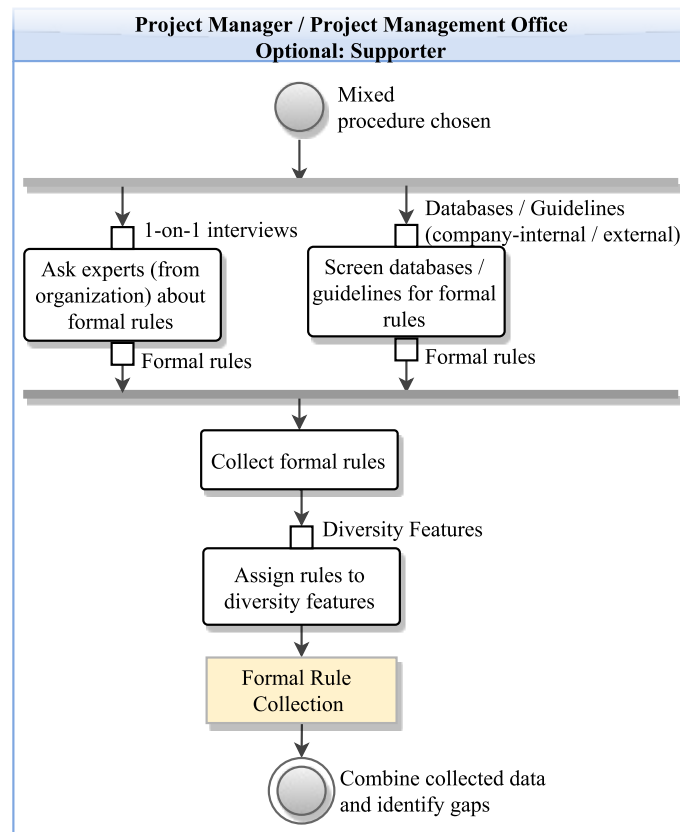


Figure 42: Activity Diagram: EL 4.2 – Investigate formal rules

4.3.5.2.16 EL 4.3 – Discover informal rules

Description:	In parallel to the questionnaire survey and the formal rule collection, the project manager will also investigate the team and observe how the team works in daily project situations. From these observations the project manager can collect additional information about informal procedures. These informal procedures need to be assigned to one of the pre-defined diversity features.
Roles involved:	Lead: Project Manager Optional: Supporter
Templates:	<ul style="list-style-type: none"> Informal Rule Collection (see Table 58)

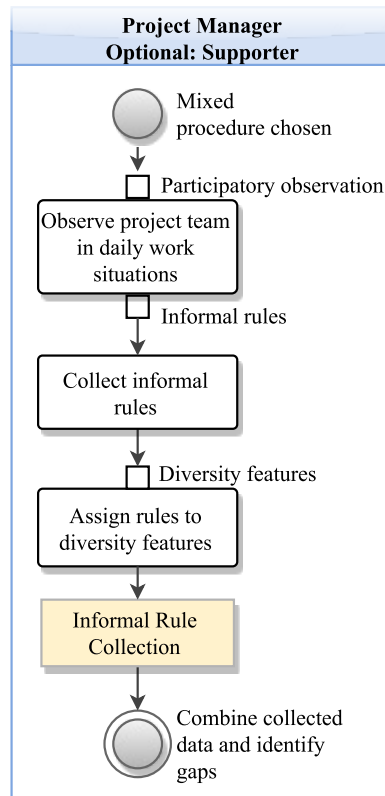


Figure 43: Activity Diagram: EL 4.3 – Discover informal rules

4.3.5.2.17 EL 4.4 – Combine collected data and identify gaps

Description:	After collecting data from various sources (diversity questionnaire, formal rules and informal rules), the project manager needs to first interpret the data from the diversity questionnaires before combining it with the formal and informal rules. This combination provides the basis for identifying diversity gaps. Each diversity gap needs to be described and connected to one of the pre-defined diversity features. All data and its interpreted gaps should be collected in a diversity gap analysis document.
Roles involved:	Lead: Project Manager Optional: Supporter
Templates:	<ul style="list-style-type: none"> Questionnaire Evaluation (see Table 57) Formal Rule Collection (see Table 53) Informal Rule Collection (see Table 58) Diversity Gap Analysis (see Chapter 4.3.5.3.12)

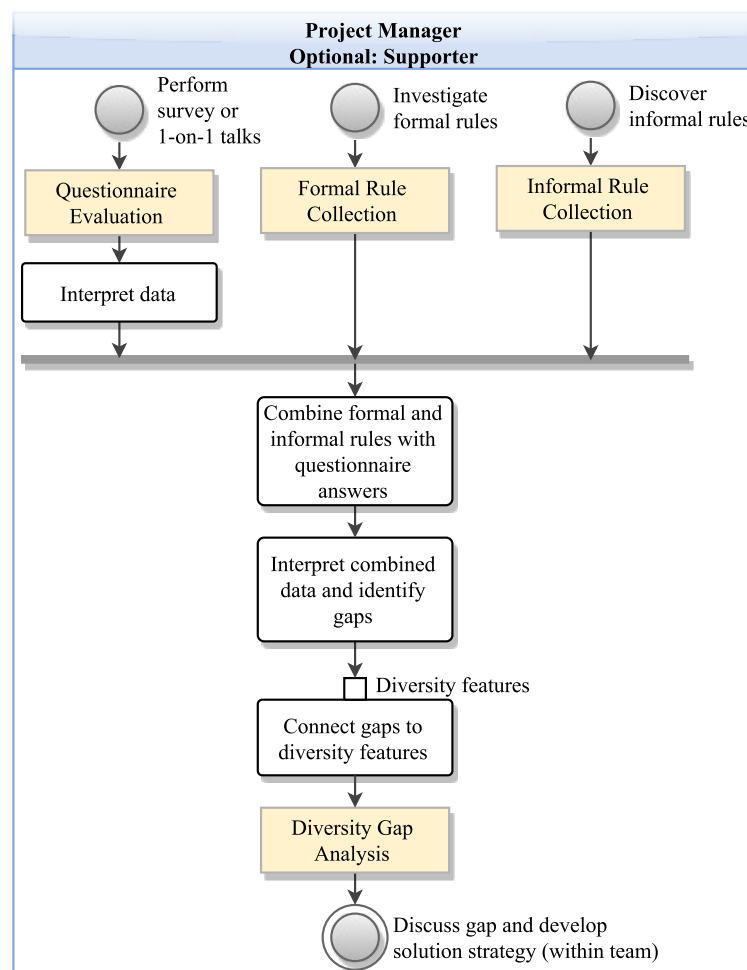


Figure 44: Activity Diagram: EL 4.4 – Combine collected data and identify gaps

4.3.5.2.18 EL 4.5 – Discuss gaps and develop solution strategy (with team)

Description:	In a next step, the project manager will gather the team and present the results of the diversity gap analysis. Based on these results, the team will now determine procedures and rules for this particular project for each identified gap. Furthermore, they should identify chances and risks for each gap and analyze if there are any connections to other identified gaps. Also, the team should name a person responsible for tracking the diversity gap and its solution implementation. The project manager, who facilitates the discussion, summarizes all aspects (diversity gaps, rules, procedures, risks, chances, connection to other gaps, person responsible) in a solution strategy
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	<p>paper.</p> <p>The solution strategies should be integrated into other project management activities (e.g. project management plans, social project controlling and/or risk management) in order to keep the diversity gaps tracked throughout the project duration.</p> <p>If there is budget needed for certain activities or solution measures, they can be included into risk management (e.g. risk list). This also applies to diversity gaps that do not have a solution defined.</p>
Roles involved:	<p>Lead: Project Manager</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> • Diversity Gap Analysis (see Chapter 4.3.5.3.12) • Solution Strategy (see Table 59)

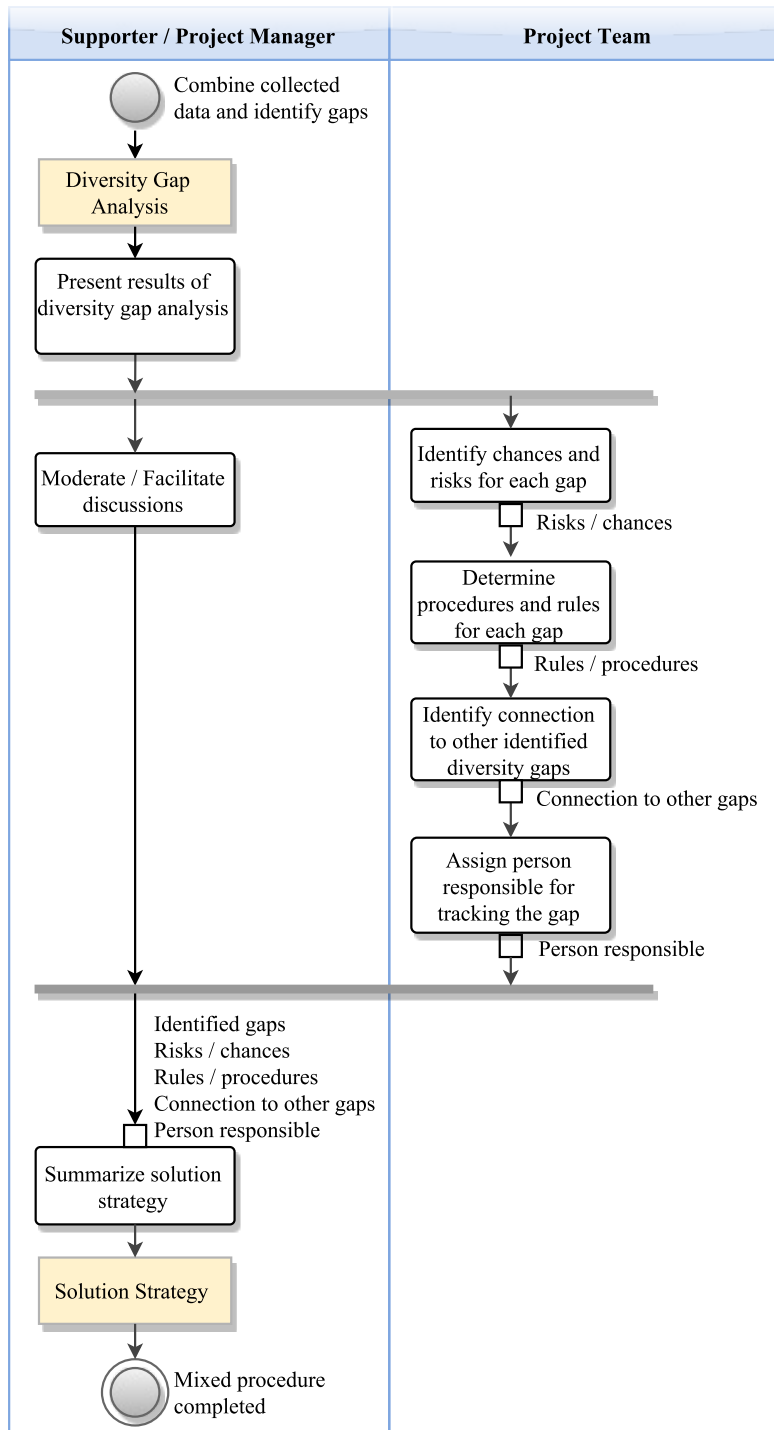


Figure 45: Activity Diagram: EL 4.5 – Discuss gaps and develop solution strategy (with team)

4.3.5.2.19 EL 5 – Hold informal, interactive feedback meeting

Description:	Conducting an interactive and informal project meeting completes this workflow phase. The project manager will arrange the meeting and send the solution strategy document to her or his project team for review. In the meeting, the team discusses the solution strategy. The project manager collects feedback and refines the solution strategy.
Roles involved:	Lead: Project Manager Attending: Project Team Optional: Supporter
Templates:	<ul style="list-style-type: none"> Solution Strategy (see Table 59)

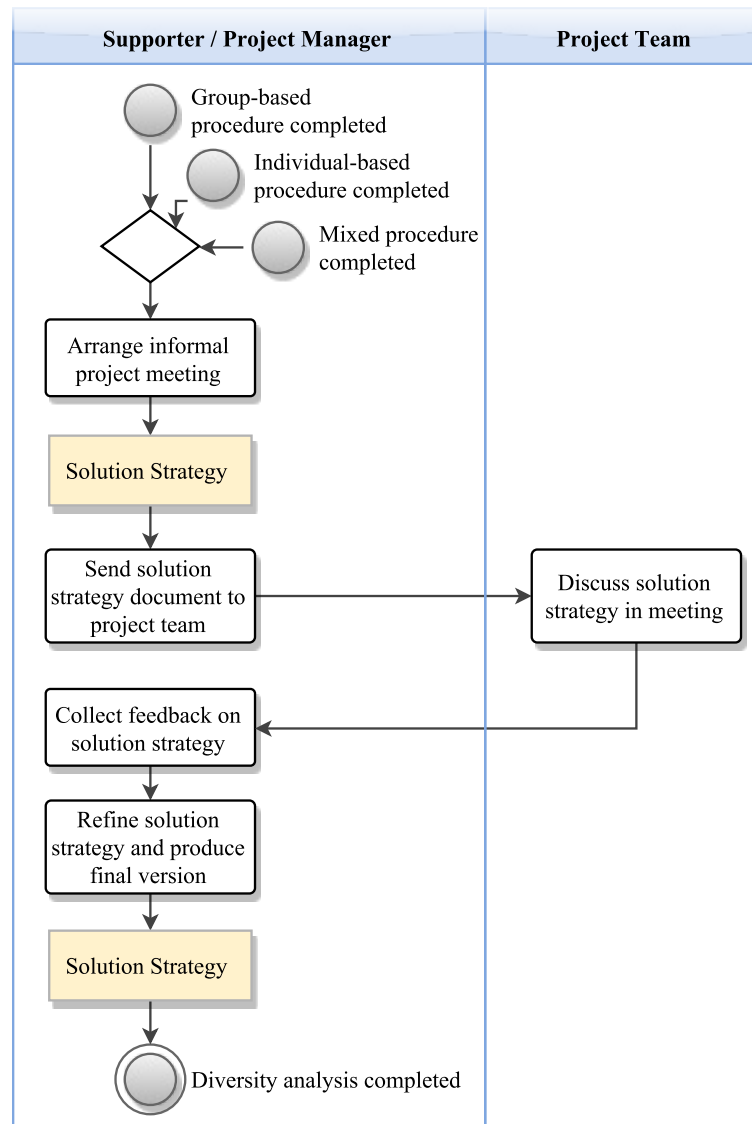


Figure 46: Activity Diagram: EL 5 – Hold informal, interactive feedback meeting

4.3.5.3 TEMPLATES

4.3.5.3.1 Template III – Diversity features

This is a collection of behavior-based diversity features that affect project management success. For each diversity feature, questions are associated that help to identify gaps in behavior regarding a particular diversity feature.

In total, 19 behavioral clusters have been defined in empirical studies so far (Amster & Böhm, 2015). Still, the researcher reckons that this list can be extended or adapted to the organization's specific characteristics and needs. Therefore, this list of diversity features is not a complete list of all relevant features, but can be calibrated through further research. Still, these diversity features provide a starting point for real world projects.

The diversity features can be either used for identifying gaps in an open discussion with the project team or they can serve as basis for the survey questionnaire in an individual-based procedure. The questions associated with each diversity features should give a better understanding what is described in the cluster.

No.	Diversity Feature (=Behavioral cluster)	Questions for finding extreme values / gaps
DF1	Communication	<ul style="list-style-type: none"> • Is it ok to disagree with the manager / superior and can you openly and proactively articulate own ideas? • Are you rather persistent or not when discussing / arguing with your team members? • Do you prefer community, brainstorming sessions to deal with issues or do you prefer 1-on-1 discussions? • Is F2F communication very important to you or not?
DF2	How relationships are formed	<ul style="list-style-type: none"> • What is more important: talking about business professionally or getting to know each other on a personal level (e.g. family, personal background, work experience, etc.) first? • How important are social events and personal contact outside the work context for you? • Do you prefer to have a lot of F2F contact with colleagues / business partners?
DF3	How decisions are made and who makes them	<ul style="list-style-type: none"> • Should the team be involved in decision-making or is the team's vote not so important (top-down versus bottom-up)? • Do all stakeholders have to agree or is one person (e.g. senior manager) taking the decision autonomously? • Do you prefer to make decisions in formal, official meetings or rather in personal, informal meetings?
DF4	How projects are planned, scheduled, and executed	<ul style="list-style-type: none"> • Do you follow a traditional or agile project management / software development approach? • Are you planning very detailed before implementing or do you prefer to iteratively implement parts (e.g. building systems with serial prototypes)? • Do you prefer specified, well-defined roles and responsibilities that do not change during the project or do you prefer to have adaptable roles and flexibly switch responsibilities throughout the project? • How important is prioritization to you? Does everything need to be prioritized or do you prefer to have few priorities?
DF5	Following defined processes	<ul style="list-style-type: none"> • Do you need an appointment to see your manager individually or not? • Do you emphasize methodology or the actual work approach? • Do you prefer a trial-and-error approach or do you prefer following defined processes and instructions? • Can changes only be implemented after careful investigation, agreement, and documentation or is it possible to bypass the change management process in emergency cases?
DF6	Recognizing and describing prob-	<ul style="list-style-type: none"> • Do you feel more comfortable immediately acknowledging problems and reporting them, or do you rather prefer to wait before reporting problems?

	lems	<ul style="list-style-type: none"> How accurately should problems be described? Do you prefer very detailed or rather vague descriptions?
DF7	How requirements are handled	<ul style="list-style-type: none"> How strict or flexible should the generally agreed upon contracts be for your projects? Do you prefer an incremental software development approach (including making unsolicited or un-requested improvements) or should exactly be developed what was requested according to the requirements specification?
DF8	Appreciation of work	<ul style="list-style-type: none"> Do superiors and colleagues rather appreciate that you get work done or that you can show that you work hard and put lots of effort into it?
DF9	The importance of milestones	<ul style="list-style-type: none"> In your opinion, are small changes in the schedule tolerated or not?
DF10	Problem escalation	<ul style="list-style-type: none"> Would you clearly articulate that something cannot be done or that you do not know how to implement a task immediately, or would you not say anything (and e.g. try first)? Do you openly ask for help if you face a problem during implementation?
DF11	Value of monitoring and business processes	<ul style="list-style-type: none"> Should the effectiveness or work effort be monitored in detail? Are standardized service contracts (such as Service Level Agreements (SLAs)) very important to you or do you prefer a rather anecdotal and non-binding management approach?
DF12	Approaches to motivation	<ul style="list-style-type: none"> Do you prefer to give / to receive rewards in public or private?
DF13	Types of information prospects are seeking	<ul style="list-style-type: none"> What information do you include in a sales pitch for potential buyers? Would you suggest new ideas to prospects from your company, or do they want to know best practices and what the competition is doing?
DF14	Professional and personal time	<ul style="list-style-type: none"> Do you prefer separating professional and personal time, or do you like to connect professional and personal time?
DF15	Handling of passwords and access	<ul style="list-style-type: none"> Are you rigorous with passwords and your ID or do you have a rather loose approach (and would, for example, share you ID and passwords with colleagues or write your password down)?
DF16	Thinking and speaking patterns	<ul style="list-style-type: none"> Do you talk straight and to the point or rather provide lots of information and context first?
DF17	Working on tasks	<ul style="list-style-type: none"> Do you work better doing several tasks simultaneously or do you prefer single-threaded tasks?
DF18	Information flow	<ul style="list-style-type: none"> How do you deal with information towards customers and external teams? Are you rather preventing direct communication and flows of information from the team or do you foster an open and direct communication and information flow from to team towards external stakeholders?
DF19	Attention to detail	<ul style="list-style-type: none"> How much attention do you pay to detail? How important is it for you to have perfect outcomes?
DF = Diversity Feature		

Table 46: Template III – Diversity features (DF)

In addition to the questions that should help to identify gaps, examples for each diversity features are also defined in Table 47.

No.	Diversity Feature	Example for potential diversity gap
DF1	Communication	Example: Some team members openly disagree with a superior; other team members would never question a superior. Also, some team members like brainstorming sessions while others prefer 1-on-1 meetings to discuss issues.
DF2	How relationships are formed	Example: Some team members need to have personal relationship before doing business; other team members would start directly with business in the first meeting.
DF3	How decisions are made and who makes them	Example: Some team members want to be included in the decision making process; other team members want the project manager to decide. Also, some want decisions to be made in formal and official meetings, while others prefer personal, informal meetings.
DF4	How projects are planned, scheduled, and executed	Example: Some team members tend to follow a traditional project management approach (planning before implementation; fixed roles and responsibilities), while other team members prefer an agile approach (iterative procedures and higher flexibility).
DF5	Following defined processes	Example: Some team members prefer a trial-and error approach; other team members prefer following pre-defined processes and instructions.

DF6	Recognizing and describing problems	Example: Some team members immediately report problems and provide detailed problem descriptions; other team members defer problems and provide rather vague problem descriptions.
DF7	How requirements are handled	Example: Some team members stick to specific requirement and interpret a contract strictly, while other team members would also make un-requested improvements and perceive the contract to be rather flexible.
DF8	Appreciation of work	Example: Some team members rather appreciate that one gets the work done; others feel that showing hard work and lots of effort is more important.
DF9	The importance of milestones	Example: Some team members would tolerate small changes in the schedule; other team members would not tolerate small changes in the schedule.
DF10	Problem escalation	Example: Some team members would openly ask for help if they face a problem during implementation; other team members would not ask for help and try to solve the problem by themselves.
DF11	Value of monitoring and business processes	Example: Some team members think that monitoring should be very detailed and effectiveness and work effort should be tracked; other team members think that this is not so important.
DF12	Approaches to motivation	Example: Some team members prefer to be rewarded in public; other team members prefer to be rewarded privately.
DF13	Types of information prospects are seeking	Example: Some team members would suggest new ideas to potential buyers in a sales pitch, while other team members would present best practices and competition research results to the prospects.
DF14	Professional and personal time	Example: Some team members like to separate professional and personal time; others like to have a connection between work and private life.
DF15	Handling of passwords and access	Example: Some team members are very rigorous with their passwords, while other team members have a rather loose approach (and would, for example, share ID and passwords with colleagues).
DF16	Thinking and speaking patterns	Example: Some team members talk straight to the point, while other team members provide a lots of information and context first.
DF17	Working on tasks	Example: Some team members work better when doing several tasks parallel (multi-tasking), but other team members prefer single-threaded tasks.
DF18	Information flow	Example: Some team members would rather prevent direct communication and information flow towards customers/external teams; other team members would rather foster open and direct communication and information flow towards external stakeholders and customers.
DF19	Attention to detail	Example: Some team members pay a lot of attention to detail and perfect outcomes are very important to them; other team members do not pay so much attention and are rather pragmatic when it comes to outcomes.

Table 47: Template III - Diversity features: Examples

4.3.5.3.2 Template IV – Diversity gaps

Based on the diversity features, the project manager or project team can identify gaps. Here, various techniques can be used: creating lists with gaps for each diversity feature or visualizing potential gaps (e.g. by positioning persons in a room or characters on a space). However, it is important to have a collection and description of all identified diversity gaps and underlying diversity features in the end. This overview can be done in a tabular overview or in a visual overview.

The following templates are examples for a practical application in a real-world project and show how the identified diversity gaps could be structured and described based on the diversity features.

No.	Diversity Feature	Gap identified? No / Yes	Description of Identified Diversity Gap
	DF1 (Communication)	No	
DG1	DF2 (How relationships are formed)	Yes	Different opinions whether Face-to-Face contact with the colleagues is necessary (and to which extend).
DG2	DF2 (How relationships are formed)	Yes	Different opinions how much personal (family, background) is really necessary for working togeth-

			er in a team. Some team members need to have personal relationship before doing business; other team members would start directly with business in the first meeting.
DG3	DF3 (How decisions are made and who makes them)	Yes	The majority of team members prefer a democratic decision procedure, while a few would like the project manager to take any important decision without much discussion.
	DF4 (How projects are planned, scheduled, and executed)	No	
	DF5 (Following defined processes)	No	
	DF6 (Recognizing and describing problems)	No	
	DF7 (How requirements are handled)	No	
DG4	DF8 (Appreciation of work)	Yes	Different opinions on whether the time invested in the result or the actual result should be evaluated and appreciated. Some team members rather appreciate that one gets the work done; others feel that showing hard work and lots of effort is more important.
	DF9 (The importance of milestones)	No	
	DF10 (Problem escalation)	No	
	DF11 (Value of monitoring and business processes)	No	
DG5	DF 12 (Approaches to motivation)	Yes	Different opinions on whether rewards (non-monetary) should be given in public or private.
DG6	DF 12 (Approaches to Motivation)	Yes	Different opinions on whether monetary rewards should be given in public or private.
DG7	DF13 (Types of information prospects are seeking)	Yes	Different opinions on how to sell projects. Some team members would suggest new ideas to potential buyers in a sales pitch, while other team members would present best practices and competition research results to the prospects.
DG8	DF14 (Professional and personal time)	Yes	Different opinions on how much professional and personal life should be connected.
	DF15 (Handling of passwords and access)	No	
	DF16 (Thinking and speaking patterns)	No	
DG9	DF17 (Working on tasks)	Yes	Different opinions on whether tasks are processed in parallel or sequentially in different work situations. Example: Some team members work better when doing several tasks in parallel (multi-tasking), but other team members prefer single-threaded tasks.
	DF18 (Information flow)	No	
	DF19 (Attention to detail)	No	
DG = Diversity Gap DF = Diversity Feature			

Table 48: Template IV: Diversity gaps - Tabular overview

For visual illustration, two major options are possible. Of course, these two options can be adapted to the particular situation.






Illustrating commonalities / differences between two team members		
Example 1: Diversity Feature 1 (Communication)		
Person A 		Person B 
<i>Indirect Communicator</i>		<i>Direct Communicator</i>
Result: Gap identified!		
Example 2: Diversity Feature 4 (How projects are planned, scheduled and executed)		
Person A 		Person B 
<i>Agile Planning Preferences</i>		<i>Traditional Planning Preferences</i>
Result: Gap identified!		
Example 3: Diversity Feature 19 (Attention to detail)		
		Person A & Person B 
<i>Attention to Big Picture</i>		<i>Attention to Details & Visualizations</i>
Result: No gap identified!		

Table 49: Template IV: Diversity Gaps - Visual Overview with two team members








Illustrating commonalities / differences between several members		
Example 1: Diversity Feature 1 (Communication)		
Person A & D 	Person B & E 	Person C 
<i>Indirect Communicator</i>		<i>Direct Communicator</i>
Result: Gap identified!		
Example 2: Diversity Feature 4 (How projects are planned, scheduled and executed)		
Entire team 		
<i>Agile Planning Preferences</i>		<i>Traditional Planning Preferences</i>
Result: No gap identified!		
Example 3: Diversity Feature 19 (Attention to detail)		
Person D 	Person C 	Persons A, B & E 
<i>Attention to Big Picture</i>		<i>Attention to Details & Visualizations</i>
Result: Gap identified!		
Example: <ul style="list-style-type: none"> • Person A, B are developers • Person C is project manager • Person D is customer • Person E is system architect 		

Table 50: Template IV: Diversity gaps - Visual overview with multiple team members

For the diversity gaps, a large variety of solutions might be applicable. As the solutions are highly influenced by the project setting, the team composition, the particular project situation, as well as by the leadership preferences, there are no definite suggestions for solutions. Different managers have different approaches to how to lead their team. For instance, in example 3 the project manager could decide to persuade person D to adapt the majority's work style. Another manager, on the other hand, would not try to align behaviors but would use the diverse preferences as an asset for the project. A third project manager might try to generate a consensus that all project team members accept as solution.

The outcome is quite dependent on which theory is applied. For instance, following Belbin's (2010) theory, a team should cover nine different team types and hence needs to be heterogeneous in some aspects. Furthermore, a study showed that some aspects, such as gender and minority help to increase a team's effectiveness on a certain diversity level (Knouse & Dansby, 1999). In addition, the effectiveness of any diversity approach is highly impacted by the underlying paradigm and how differences are understood: as risks or as assets (D. A. Thomas & Ely, 1996). Moreover, whether diversity is beneficial or hindering is also dependent on the type of project. Whereas in routine projects diversity can be disruptive due to unnecessary debates that arise from the different approaches, complex tasks can benefit or even require a longer discussion, and hence can benefit from higher diversity (Jehn, Northcraft, & Neale, 1999).

4.3.5.3.3 Template V – Diversity gap situation

The project team will define a particular diversity situation for each diversity gap. This diversity situation should be an example from daily work, allow a deeper understanding, and help to have a more concrete discussion. Each situation needs to consist of a description of the gaps and the associated situations(s), different points of views on the situation from the project team members and any aspects and factors that influence the situation. These diversity situation(s) can be further either used for a structured collection of visual work stories or for classic open group discussions.

No.	Diversity Feature	Description of Identified Diversity Gap	Description of Diversity Gap Situation
DG3	DF3 (How decisions are made and who makes them)	The majority of team members prefer a democratic decision procedure, while a few would like the project manager to take any important decision without much discussion.	Situations (s): <ul style="list-style-type: none"> accepting or not accepting new requirements from project owner meeting frequency and content of meetings
DG4	DF8 (Appreciation of work)	Different opinions whether the time invested in the result or the actual result should be evaluated and appreciated. Some team members rather appreciate that one gets the work done; others feel that showing hard work and lots of effort is more important.	Situations (s): <ul style="list-style-type: none"> evaluation of work rewarding
...
...
...
DG8	DF14 (Professional and personal time)	Different opinions on how much professional and personal life should be connected.	Situations (s): <ul style="list-style-type: none"> going for dinner after work social team events
...
DG = Diversity Gap DF = Diversity Feature			

Table 51: Template V: Diversity gap situation

4.3.5.3.4 Template VI – Visual work story

A visual work story aims at illustrating a particular diversity gap situation from various team members' perspectives. The team members collect examples in an agreed format – such as pictures, screen shots, or videos – for a particular situation to illustrate how work is carried out in their work culture. These visual work stories then provide a visual basis for the later discussion in finding a mutual procedure for the project on how to deal with a diversity gap and the associated diversity gap situation.

4.3.5.3.5 Template VII – List of coherence / deviation

The project team examines each diversity gap situation (or the compiled visual work story) and tries to identify perspectives in which they either agree or have different opinions. These aspects are summarized in a list of coherence or deviation. Each coherence / deviation needs to be linked to a particular diversity gap or visual work story and its underlying diversity feature.

No.	Identified Gaps	Description of Identified Gap	Linked Diversity Feature	Coherence	Deviations
C/D1	DG3	The majority of team members prefer a democratic decision procedure, while a few would like the project manager to take any important decision without much discussion.	DF3 (How decisions are made and who makes them)	big decisions should be discussed within the team meetings should be useful / meaningful	not clear, if small requirements from customer should be checked by the relevant team member (e.g. developer), frequency of meetings, content of meeting (should everybody be informed about everything?)
C/D2	DG4	Different opinions on whether the time invested in the result or the actual result should be evaluated and appreciated. Some team members rather appreciate that one gets the work done; others feel that showing hard work and lots of effort is more important.	DF8 (Appreciation of work)	time needed for tasks should be considered in revised planning	is it ok to spend a lot of time on a task when there is no result?
C/D3	DG8	Different opinions on how much professional and personal live should be connected.	DF14 (Professional and personal time)	social inclusion is important, but should be up to every individual person	how to avoid social exclusion if people do not include themselves socially?
...
C/D = Coherence/Deviation DG = Diversity Gap DF = Diversity Feature					

Table 52: Template VII: List of coherence / deviation

4.3.5.3.6 Template VIII – Formal rule collection

The formal rule collection comprises data about existing formal rules and work styles from three major potential sources: company-internal databases, internal and external guidelines, and from 1-on-1 interviews with experts within or outside the organization. The formal rule collection does not only describe these rules, but also provides information about the source (e.g. guidelines or 1-on-1 interview) and additionally links each formal rule to one of the diversity features.

No.	Formal rules / experiences	Source	Linked Diversity Feature
FR1	Usually the company proceeds in projects that include a distribution of the project team as follows: Synchronous communication channels (e.g. face-to-face,	Interview with head of department	DF1 (Communication)

	phone calls, voice-over-IP calls) for discussions & important decisions. Asynchronous communication channels (e.g. email, chats) for continuous information sharing within the team.		
FR2	The company's project management guidelines state: For approval, a comprehensive business case has to be presented. Responsibilities have to be fully clarified for the entire project duration. Planning needs to be fully done before starting the implementation.	Company's project management guideline	DF4 (How projects are planned, scheduled, and executed)
FR3	Passwords have to be held absolutely secure; IDs are personalized and cannot be used by colleagues.	Internal security guideline	DF15 (Handling of passwords and access)
FR = Formal Rule DF = Diversity Feature			

Table 53: Template VIII: Formal rule collection

4.3.5.3.7 Template IX – Agreed rules / procedures

This list includes all procedures and rules about how to deal with a certain diversity gap. All entries in this list should be linked to the regarding diversity gap and the underlying diversity feature.

No.	C/D	Identified Gaps	Description of Identified Gap	Linked Diversity Feature	Agreed Rules	Agreed Procedures
R/P 1	C/D 1	DG3	The majority of team members prefer a democratic decision procedure, while a few would like the project manager to take any important decision without much discussion.	DF3 (How decisions are made and who makes them)	1) Big decisions will be always discussed with the team 2) It is everybody's personal responsibility to be informed about changes and news regarding the project	1) Small decisions will be discussed with the relevant team member, but not with the entire team 2) Meetings will be held weekly, but with different focal points. For each focal point, the required team members will be announced.
R/P 2	C/D 2	DG4	Different opinions on whether the time invested in the result or the actual result should be evaluated and appreciated. Some team members rather appreciate that one gets the work done; others feel that showing hard work and lots of effort is more important.	DF8 (Appreciation of work)	1) Results are more important than time effort	1) If some tasks cannot be completed within an adequate time frame, the schedule and resource plan has to be adapted according to the team members' abilities.
R/P 3	C/D 3	DG8	Different opinions on how much professional and personal lives should be connected.	DF14 (Professional and personal time)	1) Nobody is forced to spend private time with the team.	1) There will be opportunities within professional (paid) time to socially interact with other team members.
...		
R/P = Rules/Procedures C/D = Coherence/Deviation DG = Diversity Gap DF = Diversity Feature						

Table 54: Template IX: Agreed rules / procedures

4.3.5.3.8 Template X – Solution strategy

The solution strategy document is the final outcome of this entire workflow phase (in all streams; the group and individual as well as the mixed procedure). The solution strategy provides a comprehensive overview of identified gaps and linked diversity features, risks, chances, agreed rules and procedures, and/or connection to other gaps, as well as a person responsible for reporting changes. The content of this document can be used for adapting project management plans, performing social project controlling, or adding critical items to risk management.

For each behavioral gap identified, the project manager (together with the team) should define the following aspects:

- Description of identified gap (including ID for the gap)
- Diversity feature linked to the gap (from the list of 19 pre-defined features)
- Risks and chances linked to the diversity gap
- Description of agreed rules
- Description of agreed procedure within this project
- Other connected diversity gaps (linked to this particular gap)
- Person responsible for tracking the gap and reporting on the implementations of the fixed rules or procedures to the project manager / team.

The content of this document can be used for adapting project management plans (e.g. work breakdown structure, schedule, cost plan), performing social project controlling (see workflow phase “Re-Assessment and Learning”), or adding critical items to risk management (e.g. risk list).

Aspects	IDs	Description
Description of Gap	DG3	Different opinions on whether the time invested in the result or the actual result should be evaluated and appreciated. Some team members rather appreciate that one gets the work done; others feel that showing hard work and lots of effort is more important.
Diversity Feature	DF8	Appreciation of work
Risks / Chances		Risk: different understanding of ‘good work’ could lead to problems within the teams (e.g. distribution of tasks) or lead to issues with the project schedule if results are not delivered. Chance: higher competitiveness within the team
Agreed rules	R/P2	Results are more important than time effort
Agreed procedures	R/P2	If some tasks cannot be completed within an adequate time frame, the schedule and resource plan has to be adapted according to the team members’ abilities.
Other connected diversity gaps	DG5	DF 12 (Approaches to motivation): Different opinions whether monetary rewards should be given in public or private.
Person responsible		Project team member D
R/P = Rules/Procedures DG = Diversity Gap DF = Diversity Feature		

Table 55: Template X: Solution strategy

4.3.5.3.9 Template XI – Diversity questionnaire

For the individual-based procedure, a pre-defined questionnaire based on the diversity features can be used. The questionnaire is based on a 6-point Likert scale. This diversity questionnaire builds upon the diversity features. Therefore, there are several items defined for each diversity feature.

The items are arranged in logic pairs whereas each pair consists of two items with contrary directions. This pairing is used in order to identify if there is any bias within the items or in the data collection process (e.g. if the participant follows a random structure when answering).

In general, the items in one pair should deliver similar values. For instance, if item a) delivers the value 2, item b) should at least have a value between 1 and 3. Having a negative value for the other item (-3 to -1) would mean that the participant is not consistent with her or his opinion or did not understand the question properly. In this case, there should be further investigations on the consistency of the questionnaire and maybe a deeper investigation of the participants' ideas by conducting a direct interview with the participants to solve the bias. Some aspects need to be considered when using this questionnaire:

- One should be aware that the quality of the results is dependent on motivation and willingness of the participants. Therefore, there needs to be sufficient briefing and awareness raising before sending out the questionnaires.
- For international projects, the project manager could consider translating the questionnaire into the local language of the team members to avoid misinterpretation.
- To allow the participant to provide more context (e.g. if she or he is not sure in which situation this applies), you could also provide a commentary field for each question.
- Comparably to the diversity features, this set of question is open to be adapted or tailored for specific purposes.

Possible Scale: (3) Strongly agree – (2) Agree – (1) Rather agree – (-1) Rather disagree – (-2) Disagree – (-3) Strongly disagree (-3) Strongly agree – (-2) Agree – (-1) Rather agree – (1) Rather disagree – (2) Disagree – (3) Strongly disagree	
Diversity Feature 1 - Communication	
Item 1a	I can openly disagree with a superior and proactively articulate own ideas.
Item 1b	I would never question decisions of my superior, especially not in public.
Item 1c	I am very persistent in discussions and try to convince other team members.
Item 1d	I rather avoid arguing with my team members.
Item 1e	I actively participate in brainstorming sessions.
Item 1f	I prefer formulating my ideas anonymously or in 1-on-1 conversations.
Item 1g	Communicating face to face with my team members is very important.
Item 1h	Communicating face to face with my team members is not very important.
Diversity Feature 2 – How relationships are formed	
Item 2a	I prefer talking straight about business in the first meeting.
Item 2b	I prefer getting to know my partner on a personal level (e.g. family, personal background, work experience) before getting into business talks.
Item 2c	Social events and personal contact with the team are very important to me.
Item 2d	I prefer not having personal contact with my team members outside a work context.
Item 2e	I prefer meeting my colleagues / team members face to face as often as possible.
Item 2f	Meeting my colleagues / team members in an online setting is sufficient.
Diversity Feature 3 – How decisions are made and who makes them	
Item 3a	Every team member should be involved in the decision-making process.
Item 3b	Ideas of the team members should not be included in decision-making.
Item 3c	All stakeholders need to agree to important decisions within the project.
Item 3d	In the decision making process not all stakeholders need to agree to important decisions.
Item 3e	Decisions should be made in a formal, official meeting.
Item 3f	Decisions should be found in personal, informal meetings.
Diversity Feature 4 – How projects are planned, scheduled, and executed	
Item 4a	Following a traditional project management and software development approach is most beneficial.
Item 4b	Following an agile project management and software development approach is most beneficial.
Item 4c	The planning should be done detailed and careful before implementation.
Item 4d	Implementing serial prototypes is more important to get to a solution than detailed planning.
Item 4e	Roles and responsibilities should be specified, fixed and well-defined.

<i>Item 4f</i>	<i>Roles and responsibilities can be flexible and can change throughout the project.</i>
Item 4g	Every task needs to be prioritized in order to stay focused.
<i>Item 4h</i>	<i>Only the main work packages should be prioritized.</i>
Diversity Feature 5 – Following defined processes	
Item 5a	I can talk to my manager without any appointment.
<i>Item 5b</i>	<i>I need to arrange an appointment to see my manager.</i>
Item 5c	A clearly defined methodology is very important.
<i>Item 5d</i>	<i>The actual work approach is more important than a defined methodology.</i>
Item 5e	I prefer a trial-and-error approach and creative prototyping.
<i>Item 5f</i>	<i>I prefer to follow defined processes and instructions.</i>
Item 5g	Changes can only be implemented after careful investigation, agreement, and documentation.
<i>Item 5h</i>	<i>It is possible to bypass the change management process in emergency cases.</i>
Diversity Feature 6 – Recognizing and describing problems	
Item 6a	I immediately report problems when they arise.
<i>Item 6b</i>	<i>It takes me some time to report a problem to a superior.</i>
Item 6c	I describe problems very accurately and detailed.
<i>Item 6d</i>	<i>I rather provide vague, but quick descriptions of a problem.</i>
Diversity Feature 7 – How requirements are handled	
Item 7a	I prefer strict contracts with the customer.
<i>Item 7b</i>	<i>I prefer flexible contracts with the customer.</i>
Item 7c	Software developers making incremental, unsolicited or un-requested improvements.
<i>Item 7d</i>	<i>Software developers should code exactly what was requested according to the requirements specification.</i>
Diversity Feature 8 – Appreciation of work	
Item 8a	It is more important to work hard even if the task cannot be completed.
<i>Item 8b</i>	<i>It is more important to complete the task regardless of the work effort.</i>
Diversity Feature 9 – The importance of milestones	
Item 9a	Small changes in the schedule are not critical and not important.
<i>Item 9b</i>	<i>Small changes in the schedule are critical and very important.</i>
Diversity Feature 10 – Problem escalation	
Item 10a	I clearly articulate that something cannot be implemented immediately.
<i>Item 10b</i>	<i>I first try to implement a task even if I am not sure if it can be done.</i>
Item 10c	I openly ask for help if I face a problem during the implementation.
<i>Item 10d</i>	<i>If I have problems during the implementation I try to solve them by myself before asking for help.</i>
Diversity Feature 11 – Value of monitoring and business processes	
Item 11a	I think work effort and effectiveness should be monitored in detail.
<i>Item 11b</i>	<i>Monitoring should not consume too much effort and attention.</i>
Item 11c	Standardized Service Contracts (e.g. Service Level Agreements (SLAs)) are the most important consideration.
<i>Item 11d</i>	<i>Non-binding agreements are better than strictly managed requirements.</i>
Diversity Feature 12 – Approaches to motivation	
Item 12a	A reward or bonus should be given / announced in public.
<i>Item 12b</i>	<i>A reward should only be given in private without public notice.</i>
Diversity Feature 13 – Types of information prospects are seeking	
Item 13a	In a meeting with potential partners or buyers I would focus on best practices from the competition on the market.
<i>Item 13b</i>	<i>In a meeting with potential partners I would rather suggest new ideas.</i>
Diversity Feature 14 – Professional and personal time	

Item 14a	I prefer to have professional and personal time separated.
Item 14b	<i>I prefer to have professional and personal time connected.</i>
Diversity Feature 15 – Handling of passwords and access	
Item 15a	I am very careful with my ID and password and would never share it.
Item 15b	<i>I would share my ID and password with a colleague if she / he needs it.</i>
Diversity Feature 16 – Thinking and speaking patterns	
Item 16a	I talk straight to the point.
Item 16b	<i>I talk rather circularly and provide a lot of context.</i>
Diversity Feature 17 – Working on tasks	
Item 17a	I work better when doing several tasks simultaneously.
Item 17a	<i>I work better when doing several tasks in sequence.</i>
Diversity Feature 18 – Information flow	
Item 18a	When working with external partners I prefer to have one point of contact that decides which information should be communicated to the partner.
Item 18b	<i>I foster an open and direct communication and information flow when working with external partners.</i>
Diversity Feature 19 – Attention to detail	
Item 19a	I pay a lot of attention to detail.
Item 19b	<i>I prefer to focus my attention on the big picture.</i>
Item 19c	I think having a perfect result is neither possible nor important.
Item 19d	<i>I think it is essential to deliver perfect outcomes.</i>

Table 56: Template XI: Diversity questionnaire

4.3.5.3.10 Template XII – Questionnaire evaluation

The answers from the questionnaires need to be analyzed in a certain manner. Although there are various mathematic procedures and statistic methods, we recommend a rather simple, yet structured procedure that visualizes potential gaps.

By producing bar charts for each item pair and identifying the modal value (= the value that appears most often in a set of data), gaps between one direction (values 3 to 1) and the contrary direction (values -1 to -3) can be visually presented. These bar charts can later be used for reports that demand a visual component. The interpretation of the bar charts is highly dependent on the project's cause, the project manager's leadership style, and other project objectives.

For analyzing the diversity gaps questionnaires, there are several options to interpret the data.

- a) **Calculating the modal value:** Evaluate the modal value for each item pair (e.g. 18a & 18b) = value x_{mod} is the characteristic that is the most common for the item pair. This value can be used to see what the majority of the team wants.
- b) **Calculate the range for each item pair.** If the range has a higher value than +/-3, there is definitely a big gap that needs to be considered.
- c) **Interpret data directly from the bar chart.** Produce bar charts for each item pair. The bar chart shows if the team is mainly in the “agree” or “disagree” section (which tells us that there is not a big gap), or if the team splits into sections and some are in the “agree” and others are in the “disagree” section (which tells us that there is a gap).

It is not important how many counts are shown for each category (so the size of the team is not relevant for the analysis), but the deviation of the distribution of the answers on different categories (or also the deviation from the modal value).

In comparison to calculating the range, here one can already see if there are small gaps. For example: if some are ‘rather disagreeing’ (-1) , some are ‘rather agreeing’ (1), there is a small gap which the range calculation would not reveal.

Below are two examples that explain how to interpret the data / bar charts in this manner.

Example for items 17a and 17b:						
Item 17a	I work better when doing several tasks simultaneously.	(3) Strongly agree – (2) Agree – (1) Rather agree – (-1) Rather disagree – (-2) Disagree – (-3) Strongly disagree				
Item 17b	I work better when doing several tasks in sequence.	(-3) Strongly agree – (-2) Agree – (-1) Rather agree – (1) Rather disagree – (2) Disagree – (3) Strongly disagree				
Example Answers:						
	3 (Strongly agree)	2 (Agree)	1 (Rather agree)	-1 (Rather disagree)	-2 (Disagree)	-3 (Strongly disagree)
Item 17a	1	0	0	2	7	0
Item 17b	1	0	0	3	6	0
Bar charts:						
<div><div><p>Item 17a</p><p>Frequency</p><p>-3 -2 -1 0 1 2 3</p></div><div><p>Item 17b</p><p>Frequency</p><p>-3 -2 -1 0 1 2 3</p></div><div><p>-3 = strongly disagree 1 = rather agree -2 = disagree 2 = agree -1 = rather disagree 3 = strongly agree</p></div></div>						
Interpretation:						
<p>This example illustrates that the majority of the team (total of 10 persons) rather prefer a multi-tasking work style in stressful situations. Still, 1 person highly prefers single-threaded tasks. This case shows that the majority of the team has the same expectations; still, the person with the contrary extreme values should be considered in stressful situations.</p> <p>Here we can also see that there is no bias in the items or the data collection, as the bar charts are exactly mirrored.</p>						
Example for items 14a and 14b:						
Item 14a	I prefer to have professional and personal time separated.	(3) Strongly agree – (2) Agree – (1) Rather agree – (-1) Rather disagree – (-2) Disagree – (-3) Strongly disagree				
Item 14b	I prefer to have professional and personal time connected.	(-3) Strongly agree – (-2) Agree – (-1) Rather agree – (1) Rather disagree – (2) Disagree – (3) Strongly disagree				
Example Answers:						
	3 (Strongly agree)	2 (Agree)	1 (Rather agree)	-1 (Rather disagree)	-2 (Disagree)	-3 (Strongly disagree)
Item 17a	1	4	0	0	5	0
Item 17b	2	3	0	1	4	0

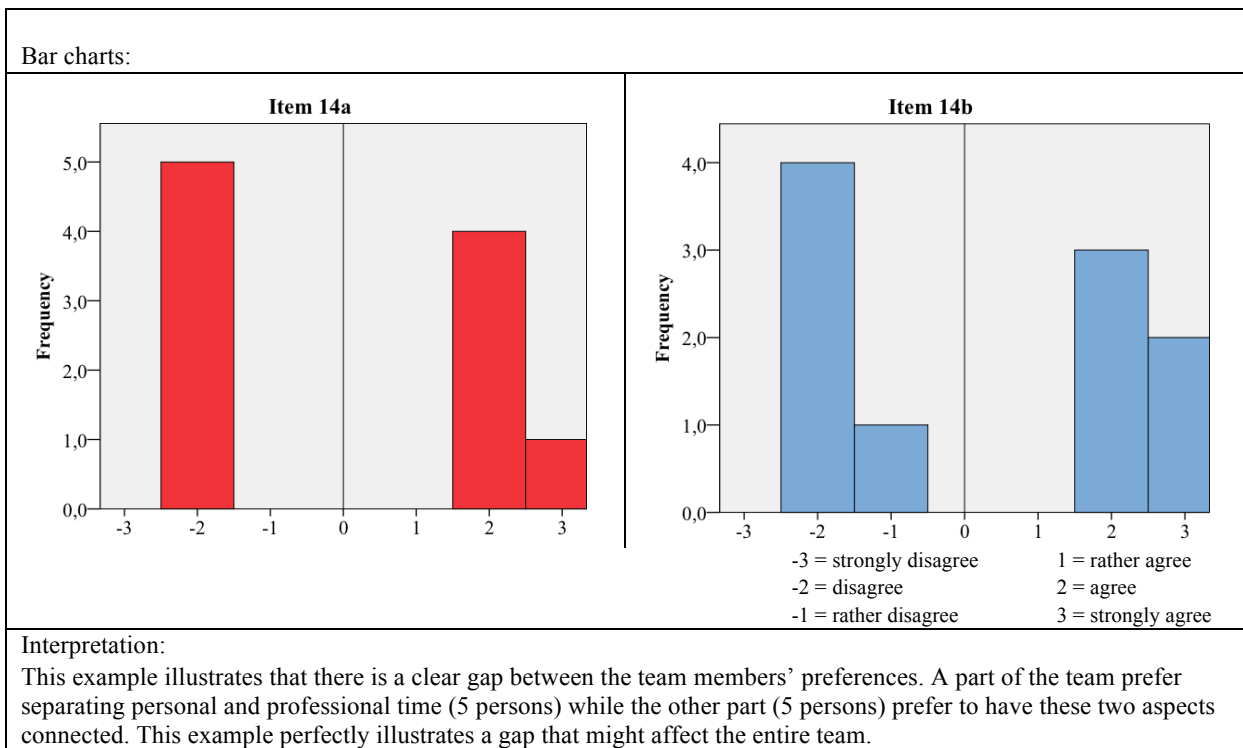


Table 57: Template XII: Questionnaire evaluation

Each identified diversity gap should be collected in a table. An example:

No.	Diversity Feature	Gap identified? No / Yes	Description of Identified Diversity Gap
	DF1 (Communication)	No	
...
DG1	DF14 (Professional and personal time)		A part of the team prefers separating personal and professional time (5 persons) while the other part (5 persons) prefers to have these two aspects connected. This example perfectly illustrates a gap that might affect the entire team.
...
DG4	DF17 (Working on tasks)		There is a discrepancy between the formal internal guideline on project management and the actual preferences of the team.
...

DG = Diversity Gap
 DF = Diversity Feature

4.3.5.3.11 Template XIII – Informal rule collection

This collection of informal rules results from real-world investigation of the project team's work habits. Similar to the formal rule collection, all investigated informal rules should be linked to one of the diversity features.

All investigated informal rules should be assigned to the pre-defined diversity features (see example).

No.	Investigated informal rules / Observations	Linked Diversity Feature
IR1	Decisions are mainly made in the team. Still, some team members articulated that they would like to have the project manager decide faster rather than being stuck in long discussions without any consensus.	DF3 (How decisions are made and who makes them)
IR2	Especially the development team is not very keen on exact planning and	DF4 (How projects are

	rather seems to prefer being asked for clear, precise estimations.	planned, scheduled, and executed)
IR3	The team openly shares all information with the customer / project owner even if it does not put the organization in the brightest light. Especially the business analysts seem to be highly transparent and honest towards external persons.	DF18 (Information flow)
IR4	Relationships seem to be very important to many members of the team. The project team spends a high effort on getting to know each other (including the project manager) and the team seems highly interested in meeting colleagues outside the work context. Project-related issues are mainly discussed in direct conversations.	DF2 (How relationships are formed) DF14 (Professional and personal time)
IR = Informal Rule DF = Diversity Feature		

Table 58: Template XIII: Informal rule collection

4.3.5.3.12 Template XIV – Diversity gap analysis

Based on the questionnaire answers and the formal and informal rule collection, the project manager produces a comprehensive diversity gap analysis that links all three data sources in one document. This diversity gap analysis is the major input from the individual-based procedure and the basis for the solution strategy (that additionally includes risks and chances, rules and procedures, connections to other gaps, and a person responsible for tracking the gap).

For each diversity feature or identified diversity gap there should be a combined analysis of the collected data

- from the questionnaire,
- from collecting formal rules,
- and from investigating informal rules.

No.	Gap Name	Gap identified in questionnaire evaluation	Formal Rules / Experiences	Investigated informal Rules	Linked Diversity Feature	Comment
DGA 1	Separating time	DG4 A part of the team prefers separating personal and professional time (5 persons) while the other part (5 persons) prefers to have these two aspects connected. This example perfectly illustrates a gap that might affect the entire team.	No information	IR4 Relationships seem to be very important to many members of the team. The project team spends a high effort on getting to know each other (including the project manager) and the team seems highly interested on meeting colleagues outside the work context. Project-related issues are mainly discussed in direct conversations.	DF14 (Professional and personal time) DF2 (How relationships are formed)	
DGA 2	Planning	No gap identified	FR 2 The company's project management guidelines states: For approval, a comprehensive business case has to be presented. Responsibilities	IR2 Especially the development team is not very keen on exact planning, and rather seems to prefer being asked for clear, precise estimations.	DF4 (How projects are planned, scheduled, and executed)	There is a discrepancy between the formal internal guidelines on project management and the actual preferences

			have to be fully clarified for the entire project duration. Planning needs to be fully done before starting the implementation.			of the team.
DGA 3
DGA = Diversity Analysis Gap Item DG = Diversity Gap FR = Formal Rule IF = Informal Rule DF = Diversity Feature						

Table 59: Template XIV: Solution strategy

The solution strategy should further include this diversity gap analysis and define the following aspects (compare solution strategy template):

- Risks and chances linked to the diversity gap
- Description of rules regarding this gap
- Description of procedure within this project
- Other connected diversity gaps (linked to this particular gap)
- Person responsible for tracking the gap and reporting on the implementations of the fixed rules or procedures to the project manager / team

4.3.6 IMPLEMENTATION PHASE – WORKFLOW STEPS AND TEMPLATES

This phase provides a guideline on how to tackle arising diversity challenges during the project implementation phase.

If a challenge or chance arises, the project manager will first assess whether the problem or chance is related to diversity. An example for a chance would be that there is a new, highly skilled team member joining the group, whereas a challenge could be an arising conflict within the team. Comment: If the chance or challenge was already dealt with in the elaboration phase (including a solution strategy for the gap), the implementation does not need to be performed, but the re-assessment phase would be more appropriate and efficient.

The project manager has two basic options on how to proceed in this phase. Either the team deals with the challenge in a group-based meeting or, alternatively, the project manager can elaborate the challenge in 1-on-1 sessions with the team members. The choice for a procedure is highly dependent on the project context, the project manager's preference or also to the chosen procedure in the preceding planning phase.

Both procedures are equally eligible. Which procedure is chosen depends on the project context and the preferences of the project manager and the project team. For instance, in cultures where face-saving is important and team members avoid the open discussion of conflicts so that no individual is publicly embarrassed (e.g. persons whose behavior is highly impacted by their cultural background such as Japan, Southern Europe, Balkan regions etc.), an open discussion might not be the preferred procedure. In that case, an individual-based procedure would be applicable and can also develop valuable results. This table provides an overview and serves as decision basis for one of the three procedures:

Criteria	Group-based procedure	Individual-based procedure
Time effort for team	High	Low
Approximate duration for medium-size project (team)	1 days (or more) per person	1-2 hours per person
Time effort for project manager	Medium	High
Acceptance of solutions	High	Low – High (depending on the project manager)
Quality of solutions	High	Low – High (depending on the project manager)
Supports team building	Yes	No
Suitable for virtual teams	No	Yes
Trainer /Supporter needed	Yes	Optional
Possible risks	Team can get lost in the discussion.	Proposed solution is not accepted.

Table 60: Decision criteria for procedure in implementation phase

In the group-based solving procedure, the team will conduct the following steps in one or more meetings:

1. Identifying the challenge/chance and identifying underlying reasons for it.
2. Identifying personal, individual interests linked to the challenge/chance.

3. Visualizing the interests, other conditions (e.g. questions and potential processes) in a chart of interest.
4. Formulating a challenge/chance solution strategy.

In an individual-based procedure, the project manager will conduct the same steps as mentioned above – not in a collaborative meeting, but in 1-on-1 sessions with the team members.

4.3.6.1 WORKFLOW STEPS IN THE IMPLEMENTATION PHASE

4.3.6.1.1 IM 1 – Assess challenge / chance and decide for procedure

Description:	Whenever a challenge or chance arises, the project manager will check if it is linked to the diversity topic. If it is not connected, the project manager can use standard conflict solution techniques (as part of the project management process) or try to use potentials that come up. If the challenge is linked to diversity, the project manager can choose between a group-oriented procedure or a procedure on an individual basis (with 1-on-1 meetings with single project team members).
Roles involved:	Lead: Project Manager Optional: Supporter

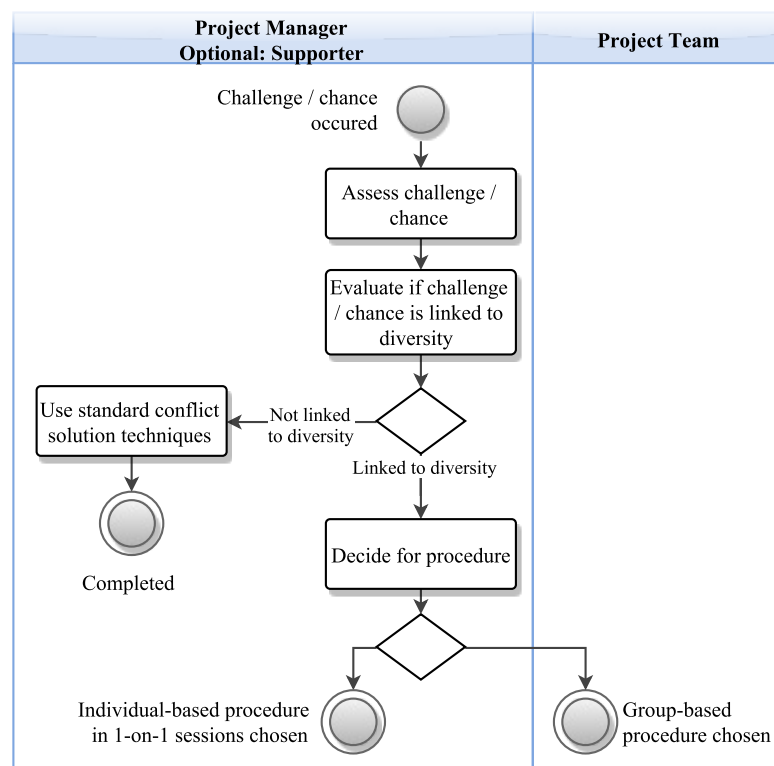


Figure 47: Activity Diagram: IM 1 – Assess challenge / chance and decide for procedure

4.3.6.1.2 IM 2.1 – Identify challenge / chance and underlying reasons

Description:	If a group-based procedure was chosen, the project manager will organize a meeting (checking team member's availability, defining place and setting (online or face-to-face), define mandatory participants, and design agenda). In the meeting, the project manager first sets and clarifies the purpose, objective, and rules for the meeting. Then the team should describe the challenge / chance. By using a preferred visualization technique (e.g. creating tree structures or mind maps, etc.) the project team structures the chal-
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	<p>lenge / chances and identifies associated challenges / chances. Furthermore, the team will analyze underlying reasons for the challenge / chance.</p> <p>The project manager acts as facilitator in the team discussions. Finally, she or he collects and structures all identified impact factors.</p> <p>In any case, all conflicts should be constructive to avoid any violation of interpersonal relationships.</p>
Roles involved:	<p>Lead: Project Team</p> <p>Facilitating: Supporter / Project Manager</p>
Templates:	<ul style="list-style-type: none"> Impact Factors (see Table 61)

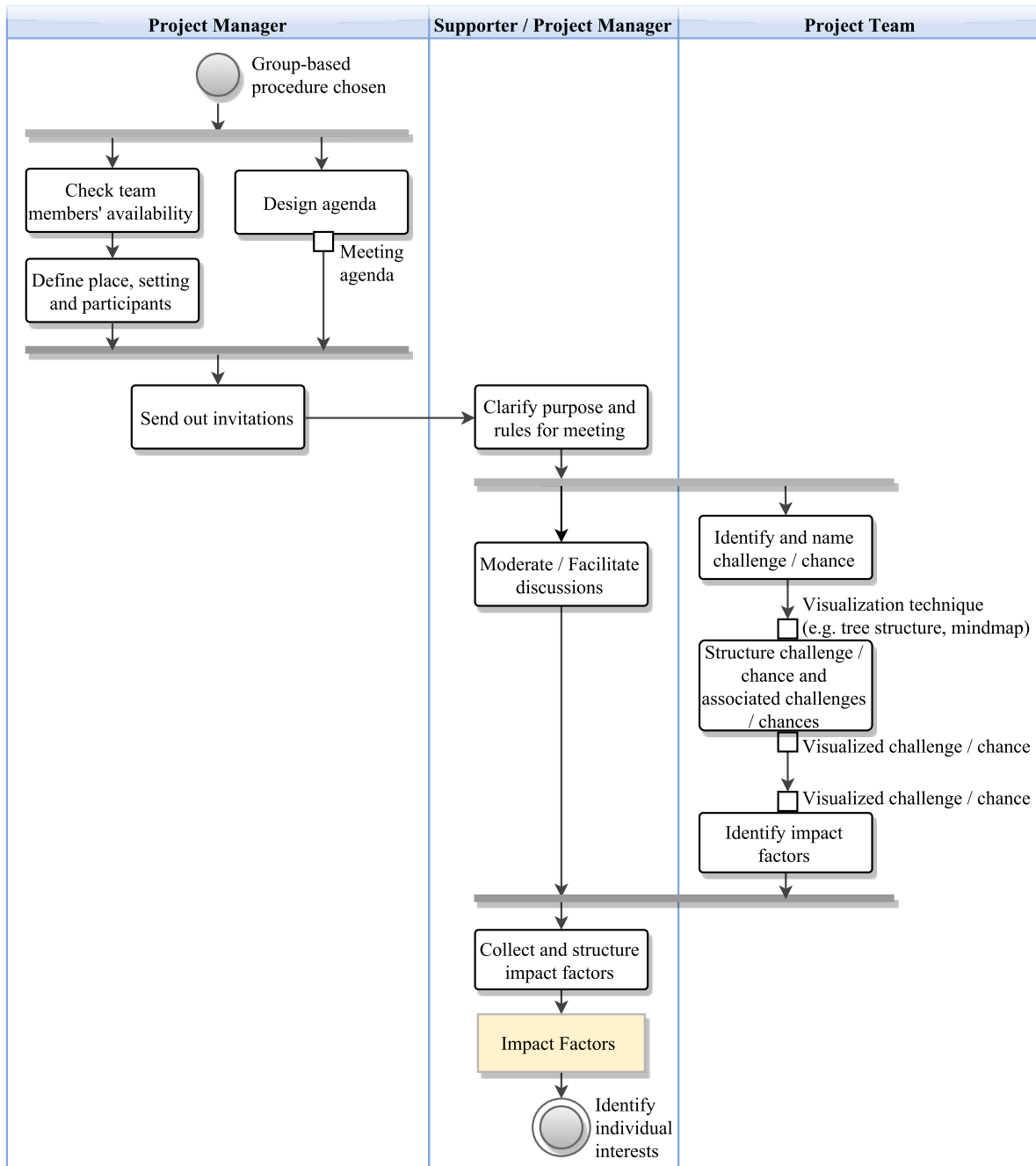


Figure 48: Activity Diagram: IM 2.1 – Identify challenge / chance and underlying reasons

4.3.6.1.3 IM 2.2 – Identify individual interests

Description:	Based on the impact factors of the challenge / chance, the project team will identify their personal and individual interests linked to these impact factor(s) and challenge or chance. The supporter or project manager is responsible for collecting all individual interests in this step. In addition, she or he will facilitate the team in mapping the individual interests with the pre-defined diversity features. Furthermore, the team will also identify project interests that are in connection with the individual interests.
Roles involved:	Lead: Project Team Facilitating: Supporter / Project Manager
Templates:	<ul style="list-style-type: none"> Individual Interests (see Table 62)

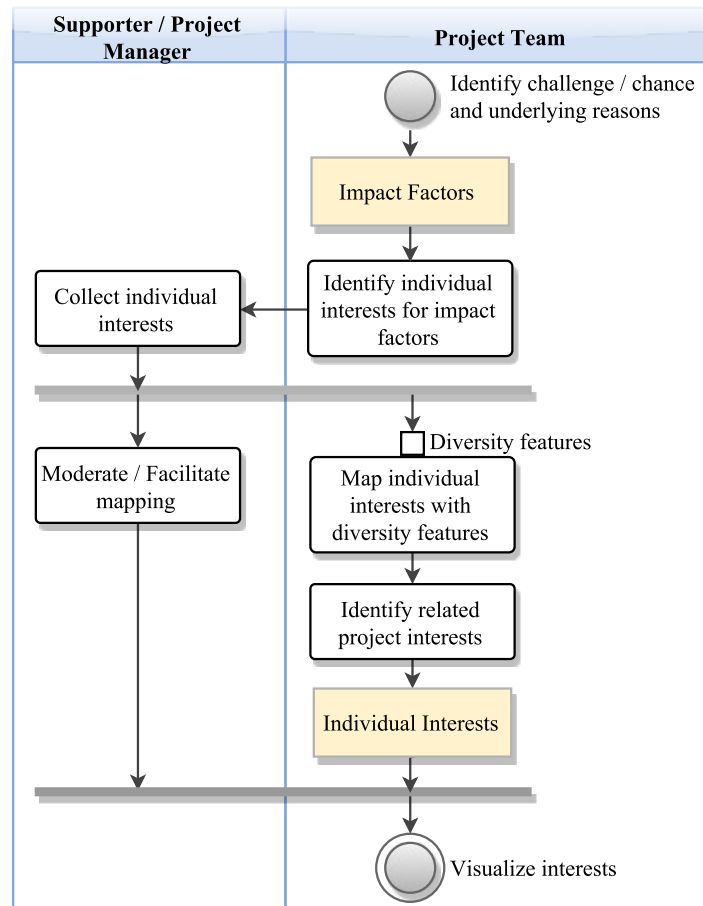


Figure 49: Activity Diagram: IM 2.2 – Identify individual interests

4.3.6.1.4 IM 2.3 – Visualize interests

Description:	<p>In this next step, the project team identifies gaps and contradictions between their individual interests. They also examine gaps between individual gaps and project interests.</p> <p>Furthermore, the team collects more factors connected to the gap (e.g. conditions that enhance the challenge / chance, questions regarding the gap, connected/linked processes). The project manager or supporter facilitates the entire process step.</p> <p>Finally, the project manager visualizes all conflicting interest(s) and the connected factors in a chart of interest.</p>
Roles involved:	<p>Lead: Project Team</p> <p>Facilitating: Supporter / Project Manager</p>
Templates:	<ul style="list-style-type: none"> • Impact Factors (see Table 61) • Individual Interests (see Table 62) • Chart of Interest (see Table 63)

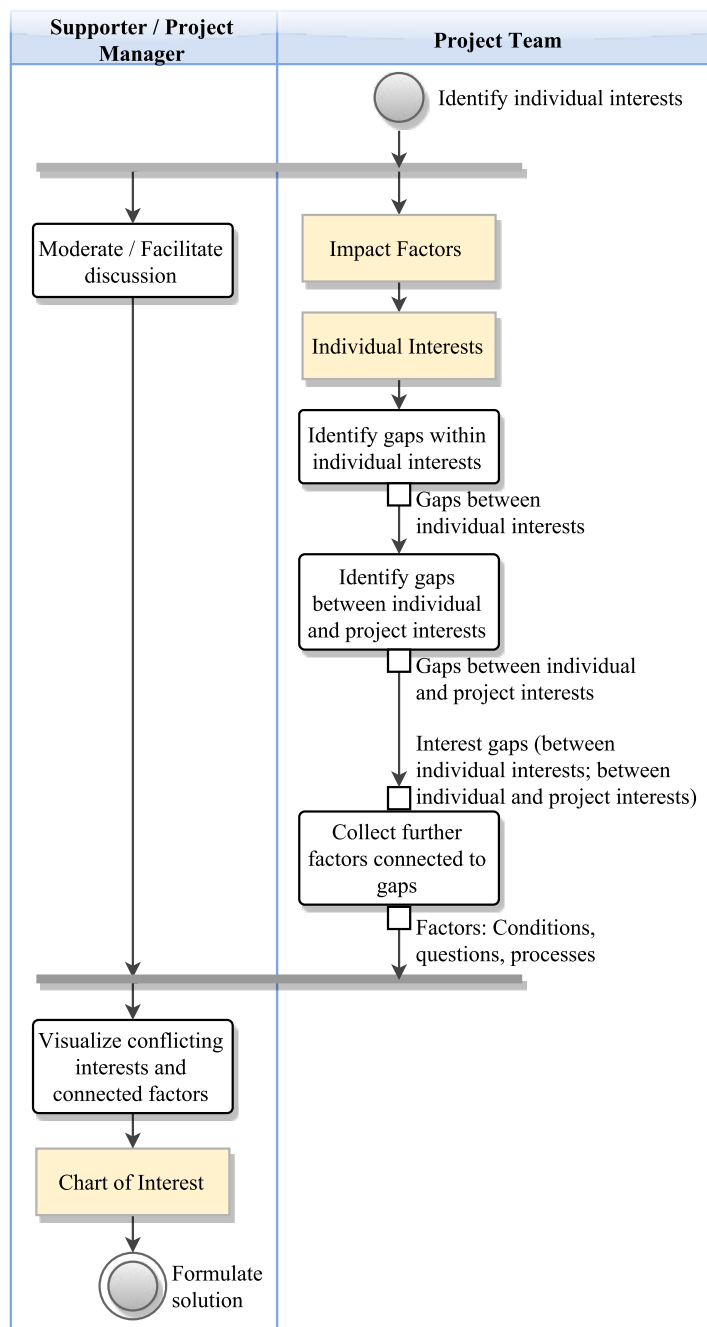


Figure 50: Activity Diagram: IM 2.3 – Visualize interests

4.3.6.1.5 IM 2.4 – Formulate solution

Description:	<p>To complete the meeting (or a series of meetings) the team discusses – facilitated by the project manager – all conflicting interests (based on the chart of interest). The team members need to search for procedures and rules that define how to deal with the challenge or chance. In addition, the project team identifies a person that is responsible for tracking the challenge or chance and the implementation of the agreed procedure and rules.</p> <p>The project manager summarizes all aspects (challenge / chance, impact factors, interests gaps, connected factors such as conditions, processes, agreed rules and procedures, and the person responsible) in a challenge/chance solution strategy document.</p>
Roles involved:	<p>Lead: Project Team</p> <p>Facilitating: Supporter / Project Manager</p>
Templates:	<ul style="list-style-type: none"> Chart of Interest (see Table 63) Challenge / Chance Solution Strategy (see Table 64)

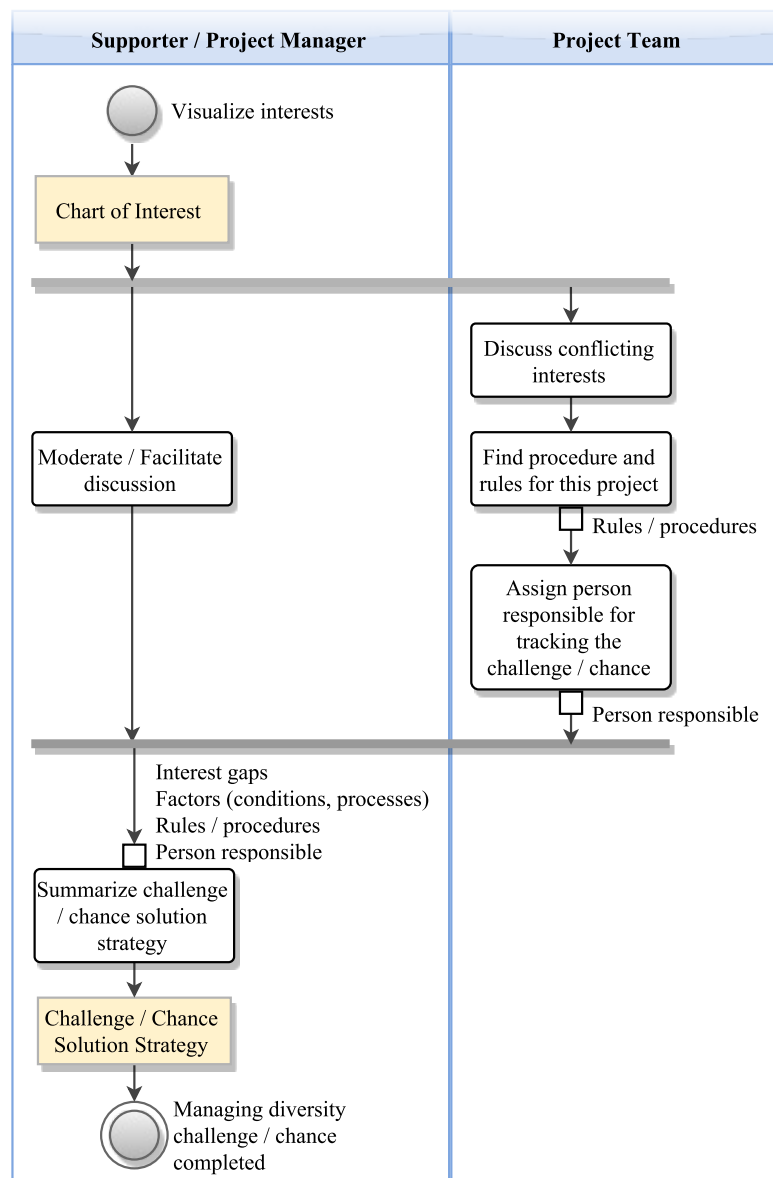


Figure 51: Activity Diagram: IM 2.4 – Formulate solution

4.3.6.1.6 IM 3.1 – Identify challenge / chance and underlying reasons

Description:	<p>If an individual-based procedure was chosen, the project manager arranges 1-on-1 meetings with all team members involved in or impacted by the challenge or chance.</p> <p>In the 1-on-1 meetings the project manager first clarifies purpose, objectives, and the further procedure.</p> <p>Then the team member provides information on the challenge / chance and answers questions, while the project manager structures the challenge / chance with a preferred visualization technique (e.g. creating tree structures or mind maps, etc.). Also, they both try together to identify associated challenges or chances and analyze underlying reasons for the challenge / chance.</p> <p>This procedure is performed for all 1-on-1 meetings. Finally, the project manager collects and structures all identified sub-challenges / sub-chances and their impact factors from all 1-on-1 meetings.</p>
Roles involved:	<p>Lead: Project Manager</p> <p>Attending: Project Team Member</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> Impact Factors (see Table 61)

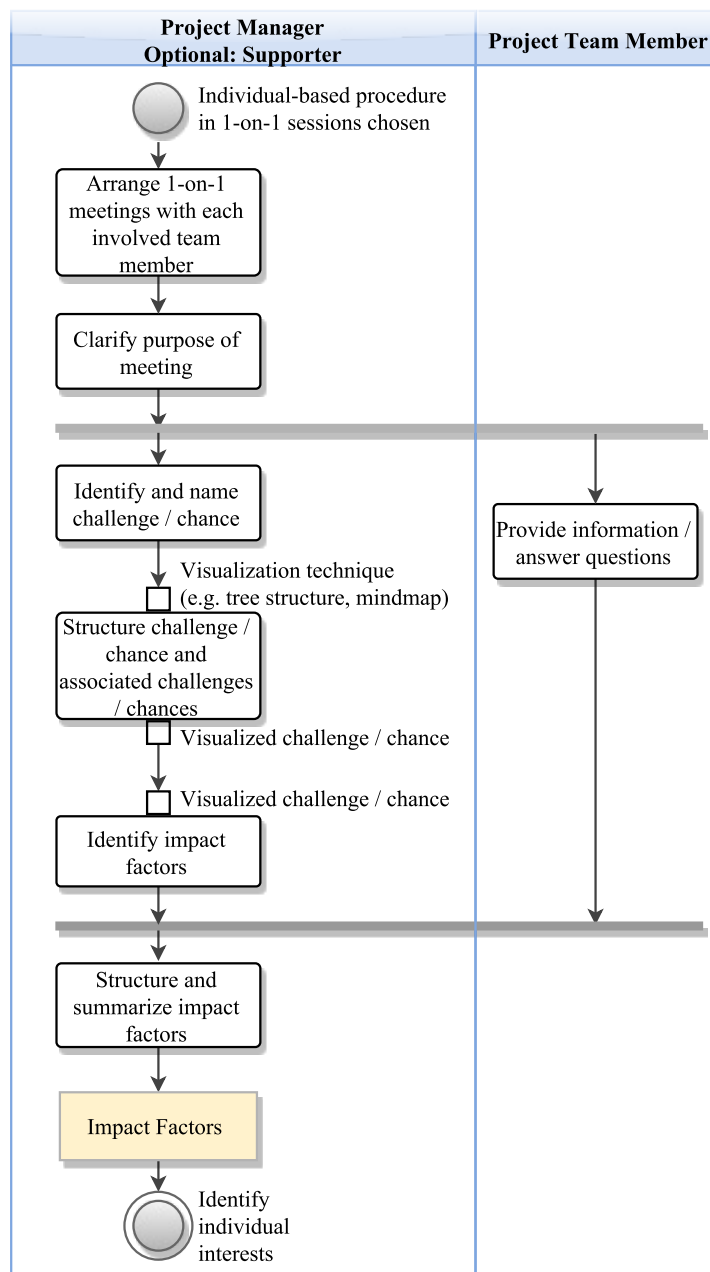


Figure 52: Activity Diagram: IM 3.1 – Identify challenge / chance and underlying reasons

4.3.6.1.7 IM 3.2 – Identify individual interests

Description:	Based on the impact factors of the challenge / chance, the project manager now needs to identify the team members' personal and individual interests linked to these impact factors(s) and challenge or chance. The team members provide information on their own interests while the project manager collects these interests and maps them with the pre-defined diversity features. This procedure is performed for all 1-on-1 meetings.
Roles involved:	Lead: Project Manager Attending: Project Team Member Optional: Supporter
Templates:	<ul style="list-style-type: none"> Impact Factors (see Table 61) Individual Interests (see Table 62)

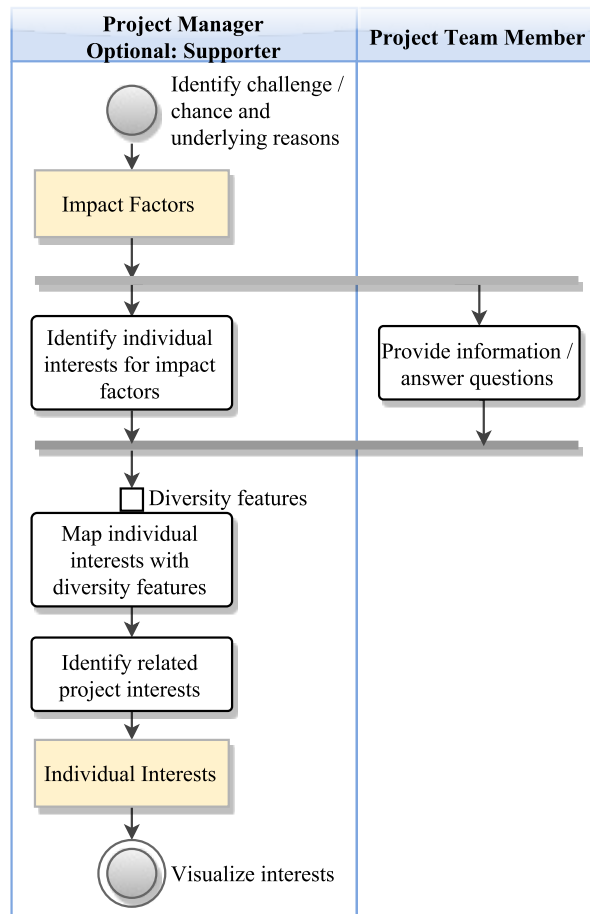


Figure 53: Activity Diagram: IM 3.2 – Identify individual interests

4.3.6.1.8 IM 3.3 – Visualize interests

Description:	When all 1-on-1 meetings are completed, the project manager uses the list of impact factors and associated challenges / chances and the list of individual interest to identify gaps. First, she or he will focus on gaps between the team members' individual interests. Then she or he further examines the project interests, associates them with existing diversity features (compare individual interests) and identifies gaps between the individual interests and project interests. Next, the project manager defines more factors connected to the gap (e.g. conditions that enhance the challenge / chance, questions regarding the gap, connected/linked processes). Finally, the project manager visualizes all conflicting interest(s) and the connected factors in a chart of interest.
Roles involved:	Lead: Project Manager Optional: Supporter
Templates:	<ul style="list-style-type: none"> Impact Factors (see Table 61) Individual Interests (see Table 62) Chart of Interest (see Table 63)

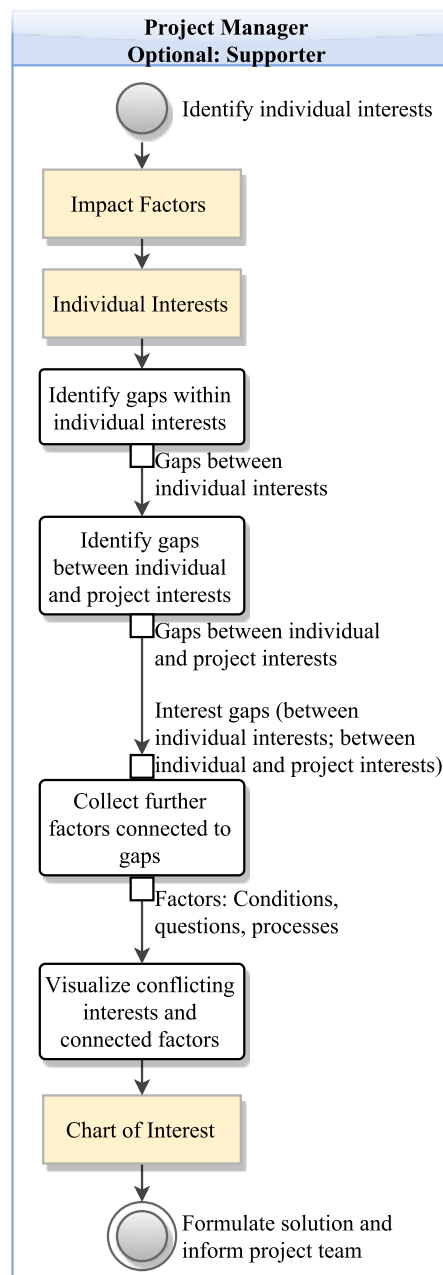


Figure 54: Activity Diagram: IM 3.3 – Visualize interests

4.3.6.1.9 IM 3.4 – Formulate solution and inform project team

Description:	<p>To complete the individual-based procedure, the project manager will determine procedures and rules that define how to deal with the challenge or chance. In addition, the project manager identifies a person that is responsible for tracking the challenge or chance and the implementation of the agreed procedure and rules.</p> <p>Alternatively, the project team could also perform this workflow step.</p> <p>The project manager summarizes all aspects of the challenge / chance, impact factors, interests gaps, connected factors (such as conditions, processes, agreed rules and procedure), and the person responsible in a challenge/chance solution strategy document.</p> <p>Finally, the project manager needs to inform the project team about the solution strategy and procedures (e.g. in a team meeting).</p>
Roles involved:	<p>Lead: Project Manager or Project Team</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> • Chart of Interest (see Table 63) • Challenge / Chance Solution (see Table 64)

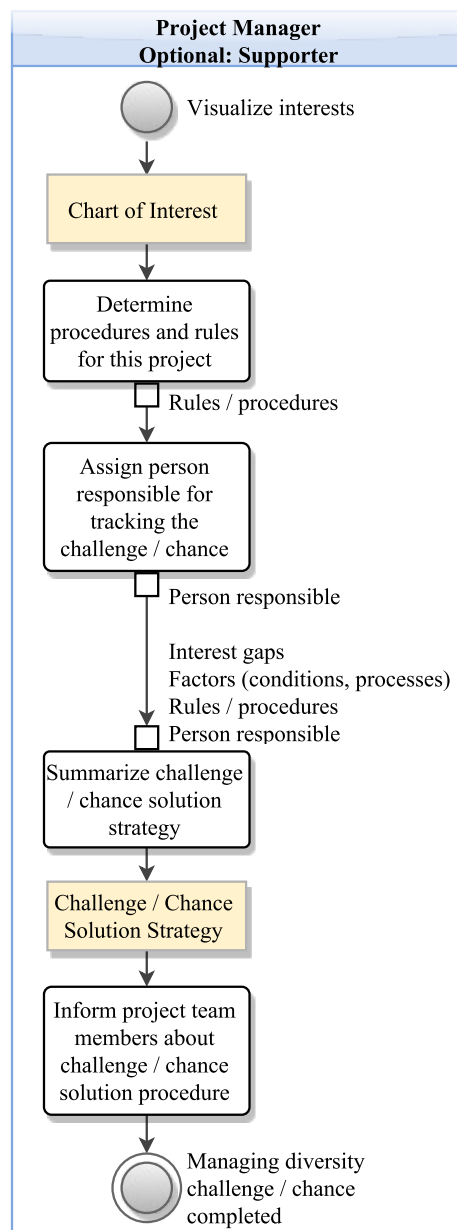


Figure 55: Activity Diagram: IM 3.4 – Formulate solution and inform team

4.3.6.2 TEMPLATES

4.3.6.2.1 Template XV – Impact factors

Impact Factor: This table or list is the output of visualizing a challenge or chance and its associated impact factors. This example suggests a tree structure to organize the challenge / chance and its impact factors. Certainly, other visualization methods (e.g. brainstorming, mind mapping, etc.) can be used to visualize the challenge / chance.

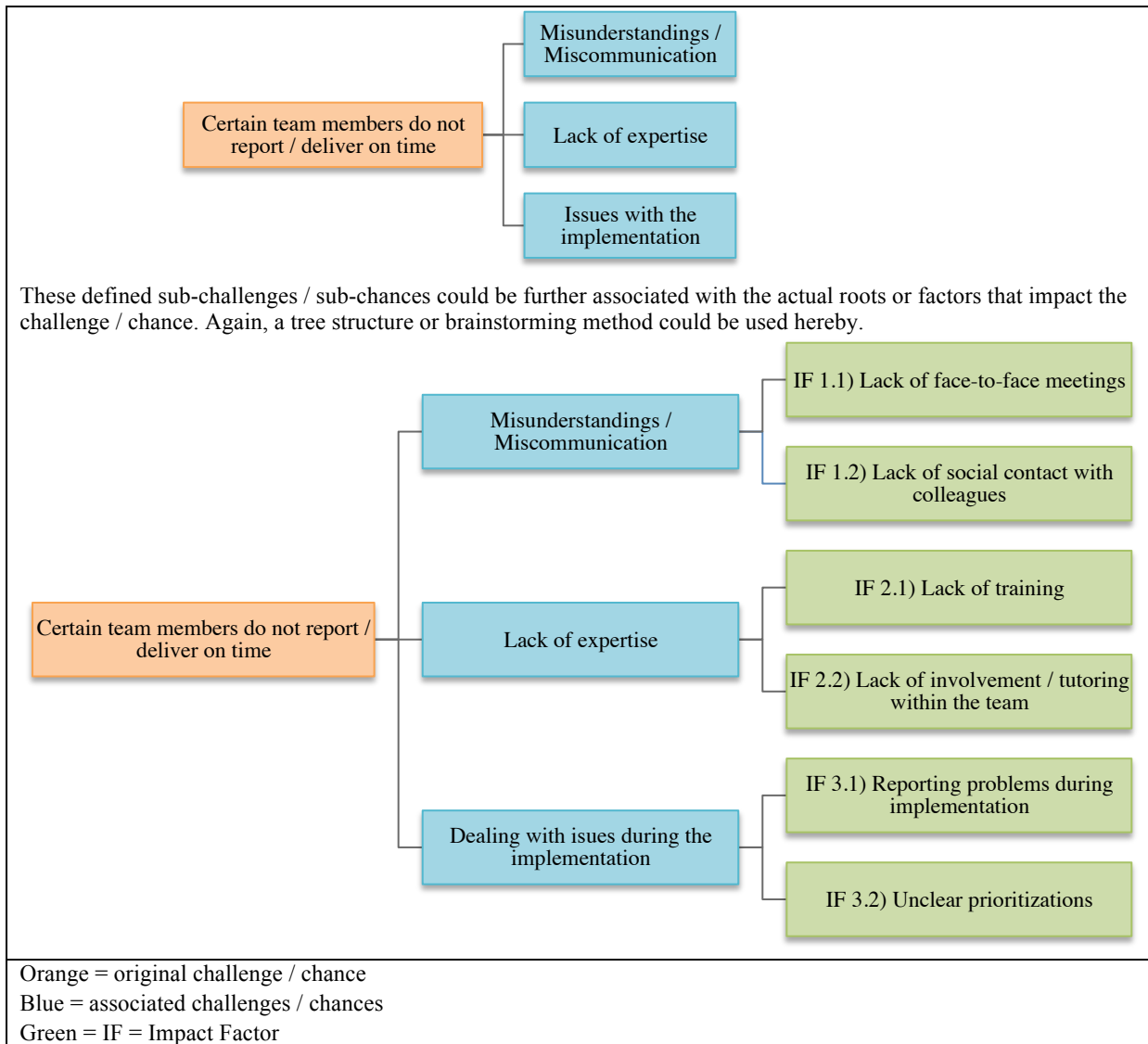


Table 61: Template XV: Impact factors

4.3.6.2.2 Template XVI – Individual interests

Individual Interests: This is a list of individual interests of the project team members that are connected to a certain challenge / chance and associated to a particular diversity feature (from the diversity feature list).

Challenge / Chance	Linked Diversity Feature	Team members' interests	Project interests
IF 1.1 Lack of face-to-face meetings	DF1 (Communication)	InI 1 Some team members prefer face-to-face meetings while others do not feel an urge for personal meetings	PI 1 Regular face-to-face contact for effective teamwork

IF 1.2 Lack of social contact with colleagues	DF2 (How relationships are formed)	InI 2 Some team member do not need much personal context before working together, others would like to know their team-mates also on a personal level.	
IF 2.1 Lack of training	No connection identified	InI 3 All team members prefer more training	
IF 2.2 Lack of involvement / tutoring within the team	No connection identified	InI 4 Some team members would like to be more involved by the project manager, but also by the team.	
IF 3.1 Reporting problems during implementation	DF6 (Recognizing and describing problems)	InI 5 All team members prefer trying to solve a problem before reporting.	PI 2 Immediate reporting of problems / deviations
IF 3.2 Unclear prioritizations	DF4 (How projects are planned, scheduled, and executed	InI 6 Prioritization is not an important topic for all team members.	
IF = Impact Factor DF = Diversity Feature InI = Individual Interest PI = Project Interest			

Table 62: Template XVI: Individual interests

4.3.6.2.3 Template XVII – Chart of interest

Chart of Interest: This chart of interest summarizes the identified gaps (either between individual interests or between individual and project interests) and those interests. In addition, certain conditions, processes and questions associated with this gap could be visualized. Of course, this chart of interest could be also done in a table and not a visual chart.

	Challenge / Chance	Linked Diversity Feature	Description of conflict gap	Team members' interests	Conditions / Environmental Factors	Questions	Related Processes
DG 1	IF 1.1 Lack of face-to-face meetings	DF1 (Communication)	Some team members prefer face-to-face meetings while others do not feel an urge for personal meetings	Gap between team members' individual interests (InI1)	Entire team is situated in the same city, travel time approx. 30 minutes.	Is it possible to differentiate between important and less important topics (prioritize information and adapt communication channel accordingly)?	---
...
DG 3	IF 3.1 Reporting problems during implementation	DF6 (Recognizing and describing problems)	Team prefers trying to solve a problem before reporting, while the project's interest require immediate reporting	Gap between individual and project interest (InI5 and P1)	Full reporting to project owner is carried out every 2 months.	Is an immediate reporting necessary for all cases?	A company-internal standard process exists that requires immediate reporting.
...
DG = Diversity Gap IF = Impact Factor DF = Diversity Feature InI = Individual Interest PI = Project Interest							

Table 63: Template XVII: Chart of interest

4.3.6.2.4 Template XVIII – Challenge / chance solution strategy

Challenge/Chance Solution Strategy: This document is the major output from the implementation phase of the diversity framework. It describes the initial challenge / chance and its impact factors, any identified interest gaps, and other connected factors (such as conditions, processes, rules and procedures, and a person responsible). The content of this document can be used for adapting project management plans (e.g. work breakdown structure, schedule, cost plan), performing social project controlling (see workflow phase “Re-Assessment and Learning”), or adding critical items to risk management (e.g. risk list).

For each conflicting interests identified the project manager (together with the team) should define the following aspects:

1. Description of identified gap (including ID for the gap)
2. Diversity feature linked to the gap (from the list of 19 pre-defined features)
3. Additional Factors such as conditions, related processes, etc.
4. Description of procedure and rules
5. Person responsible for tracking the gap and reporting on the implementations of the rules or procedures to the project manager / team.

Aspects	IDs	Description
Description of Gap	DG3	Team prefers trying to solve a problem before reporting, while the project’s interest require immediate reporting
Diversity Feature	DF6	Recognizing and describing problems
Additional factors		Conditions: Full reporting to project owner is carried out every 2 months. Related processes: A company-internal standard process exists that requires immediate reporting.
Rules	R1	All issues / problems need to be reported internally to the project manager.
Procedures	P1	Immediate reporting of any problems will be addressed to the project manager first; she or he decides if the company-internal process applies and if immediate reporting to the project owner is required.
Person responsible		Project team member D
DG = Diversity Gap DF = Diversity Feature R = Rules P = Procedure		

Table 64: Template XVIII: Challenge / chance solution strategy

4.3.7 RE-ASSESSMENT AND LEARNING PHASE – WORKFLOW STEPS AND TEMPLATES

This phase describes the main possibilities re-assessing the diversity solutions and options for learning from the entire workflow and integrating lessons learned sustainably.

The re-assessment should be done periodically (e.g. after a main project phase or in combination with social project controlling monthly or every 3 to 6 weeks). Also, the phase could be triggered by an uprising issue (e.g. the agreed upon diversity solution strategy does not work in practice) and would result in an ad-hoc procedure.

Based on the major outputs from the other phases, a collection of lessons learned can be generated and used in three spheres:

- a) by the project manager or project team members for their own improvement of diversity skills and application in future projects.
- b) within the organization to add up to a company-internal database;
- c) for tailoring the diversity workflow and/or the diversity features for organization-specific use;

Especially option b) and c) could be performed by a project management office (PMO). This unit can collect all lessons learned from the project in an organization's database and initiate and perform adaptations and optimizations on the diversity workflow and its diversity features.

As learning should not be only done at the end, lessons learned should be collected after each re-assessment cycle. This approach ensures that the team can already learn directly for the project, which might increase the motivation for this learning process. Consequently, the results for the organization will be better compared to a collection at the very end of the project (when the energy level is rather low and some team members already work on other projects).

4.3.7.1 WORKFLOW STEPS IN THE RE-ASSESSMENT AND LEARNING PHASE

4.3.7.1.1 RE 1 – Perform periodical re-assessment

Description:	<p>The factor elaborated in the previous phases need to be revised periodically. The periodic re-assessment can be included into social project controlling activities or performed separately in 3 to 6 week cycles. In agile procedures, this phase can be performed at the end of each iteration (e.g. for Scrum in the retrospective meeting).</p> <p>Basically the project manager or the entire team (e.g. in a project meeting) reviews if any aspect changed. They should elaborate: if any aspects changed (positively or negatively), and if new aspects occurred. If aspects did not change or if they changed positively, no major changes have to be made. If aspects changed negatively or if new aspects occur, reasons for this change need to be elaborated and alternative solutions will be generated.</p> <p>Depending on the stage (awareness building, deeper analysis, solution finding, trouble shooting) that was performed, different aspects and documents can be revised.</p> <p>Stage 1: Awareness building</p> <ul style="list-style-type: none">• Diversity features <p>Stage 2: Deeper analysis:</p> <ul style="list-style-type: none">• List of coherence and deviations• Diversity gap analysis <p>Stage 3: Solution finding</p> <ul style="list-style-type: none">• Solution strategy <p>Stage 4: Trouble shooting</p> <ul style="list-style-type: none">• Challenge / chance solution strategy
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Roles involved:	Lead: Project Manager / Project Team Optional: Supporter
Templates:	<ul style="list-style-type: none"> • Diversity Features (see Table 46 and Table 47) • List of Coherence / Deviation (see Table 52) • Diversity Gap Analysis (see Chapter 4.3.5.3.12) • Solution Strategy (see Table 55) • Challenge / Chance Solution Strategy (see Table 64)

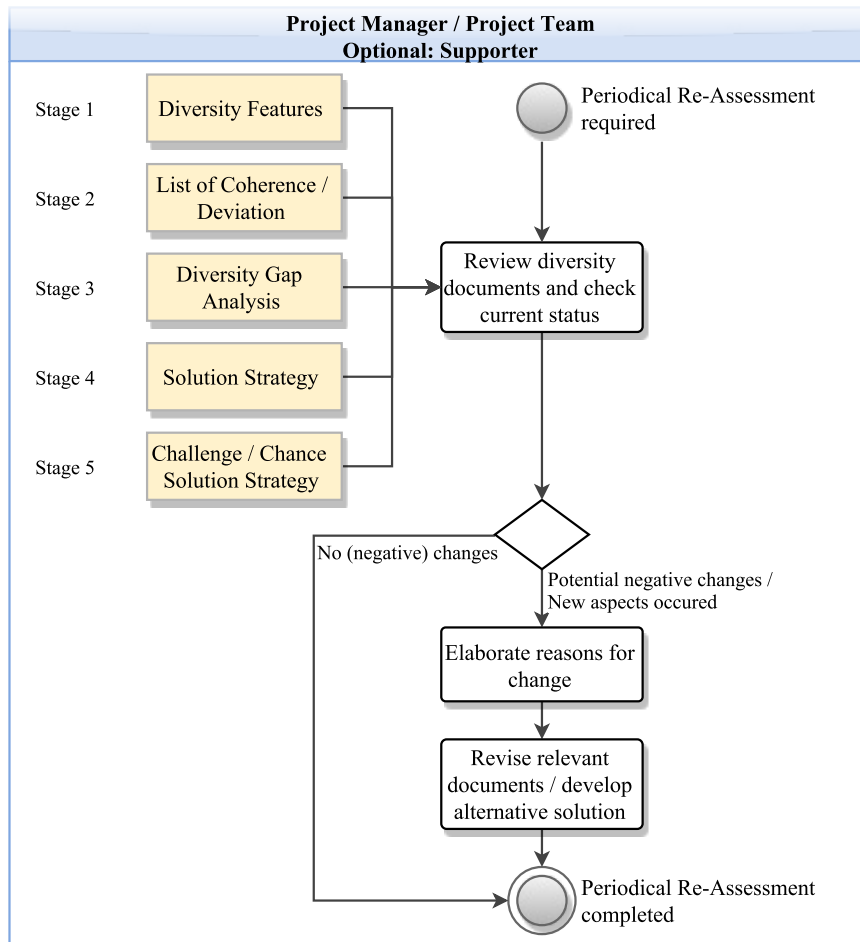


Figure 56: Activity Diagram: RE 1 – Perform periodical Re-Assessment

4.3.7.1.2 RE 2 – Perform ad-hoc re-assessment

Description:	<p>If issues occur that were already dealt with in the elaboration or implementation phase of the workflow, this issue should be discussed in an ad-hoc re-assessment.</p> <p>Basically the project manager or the entire team (e.g. in a project meeting) reviews the issue. The current issue should be described and reasons for the issue will be elaborated. If possible, an alternative solution will be generated.</p> <p>Depending on the stage (awareness building, deeper analysis, solution finding, trouble shooting) that was performed so far, different aspects and documents need to be reviewed.</p> <p>Stage 1: Awareness building</p> <ul style="list-style-type: none"> Diversity features <p>Stage 2: Deeper analysis:</p> <ul style="list-style-type: none"> List of coherence and deviations Diversity gap analysis <p>Stage 3: Solution finding</p> <ul style="list-style-type: none"> Solution strategy <p>Stage 4: Trouble shooting</p> <ul style="list-style-type: none"> Challenge / chance solution strategy
Roles involved:	<p>Lead: Project Manager / Project Team</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> Diversity Features (see Table 46 and Table 47) List of Coherence / Deviation (see Table 52) Diversity Gap Analysis (see Chapter 4.3.5.3.12) Solution Strategy (see Table 55) Challenge / Chance Solution Strategy (see Table 64)

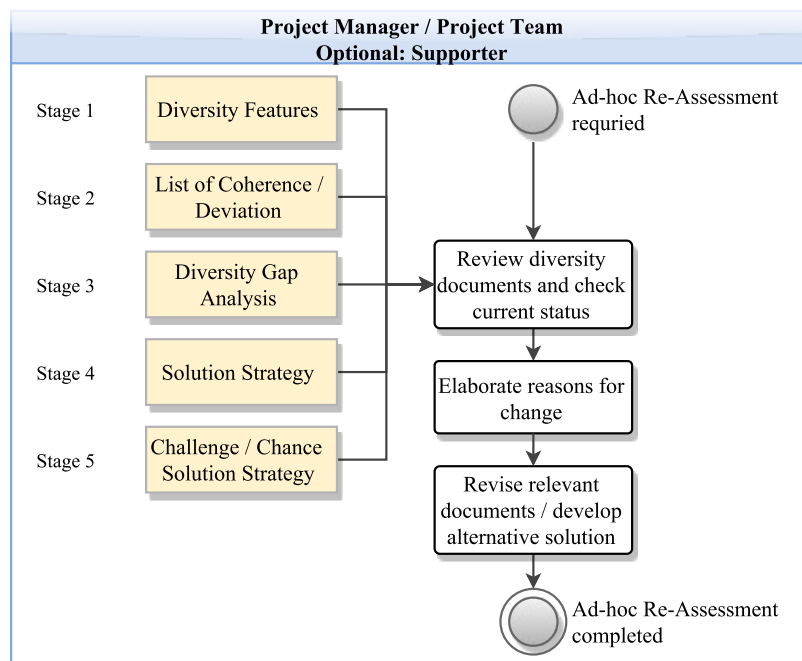


Figure 57: Activity Diagram: RE 2 – Perform ad-hoc Re-Assessment

4.3.7.1.3 RE 3 – Collect information / lessons learned from diversity workflow

Description:	<p>In order to be able to use the significant learnings from the particular project, the project manager will arrange a meeting to collect the lessons learned.</p> <p>Prior to the meeting the project manager needs to collect existing information from the diversity workflow – primarily from the documents ‘diversity gap analysis’, ‘solution strategy’ (elaboration phase) and from the ‘challenge/chance solution strategy’ (construction phase).</p> <p>These findings will be discussed in the team meeting and – if relevant – will be extended by further lessons learned. The project manager summarizes the feedback from the participants, creates the collection of lessons learned, and decides how these lessons learned can be used.</p> <p>In general, there are three major options for using the collection: by exploiting the learning within the organization, by advancing the diversity workflow within the organization, or by using the learning for the personal development of the people who were involved in the diversity workflow.</p>
Roles involved:	<p>Lead: Project Manager / Project Team</p> <p>Optional: Supporter</p>
Templates:	<ul style="list-style-type: none"> • Diversity Gap Analysis (see Chapter 4.3.5.3.12) • Solution Strategy (see Table 55) • Challenge / Chance Solution Strategy (see Table 64) • Collection of Lessons Learned (see Table 65)

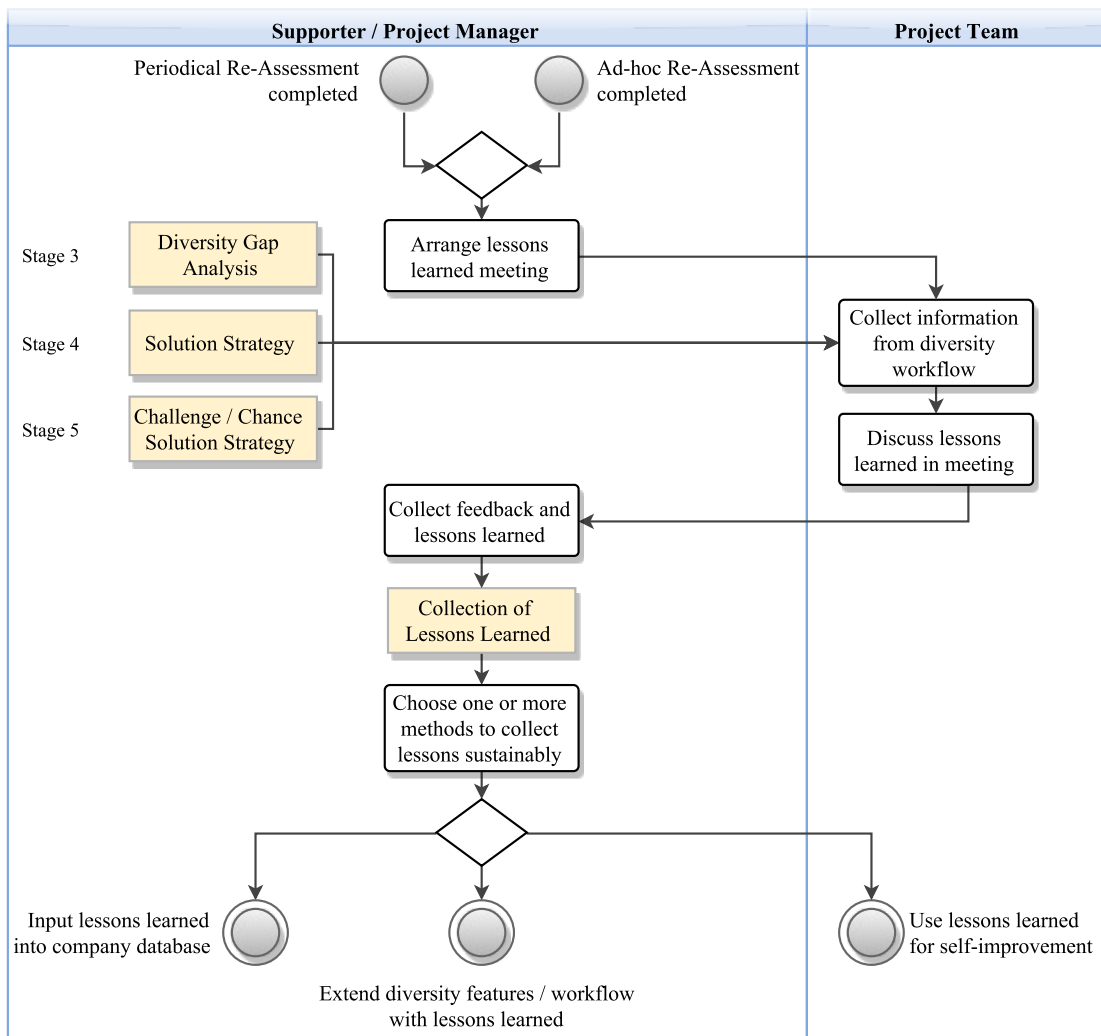


Figure 58: Activity Diagram: RE 3 – Collect information / lessons learned from diversity workflow

4.3.7.1.4 RE 4.1 – Use lessons learned for self-improvement for future projects

Description:	The project manager and/or each project team member can learn from the collection of lessons learned and improve their personal diversity skills. Also, the lessons learned can be analyzed by those persons and prepared for use them in future projects.
Roles involved:	Lead: Project Manager / Project Team Member
Templates:	<ul style="list-style-type: none"> Collection of Lessons Learned (see Table 65)

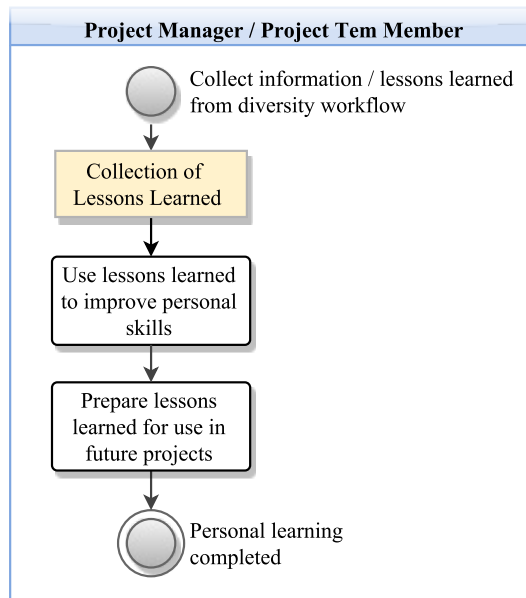


Figure 59: Activity Diagram: RE 4.1 – Use lessons learned for self-improvement for future projects

4.3.7.1.5 RE 4.2 – Input lessons learned into company database

Description:	In order to use the lessons learned for exploitation within the organization, the project manager needs to add these lessons from the project to the organization's knowledge database.
Roles involved:	Lead: Project Manager / Project Management Office
Templates:	<ul style="list-style-type: none"> Collection of Lessons Learned (see Table 65)

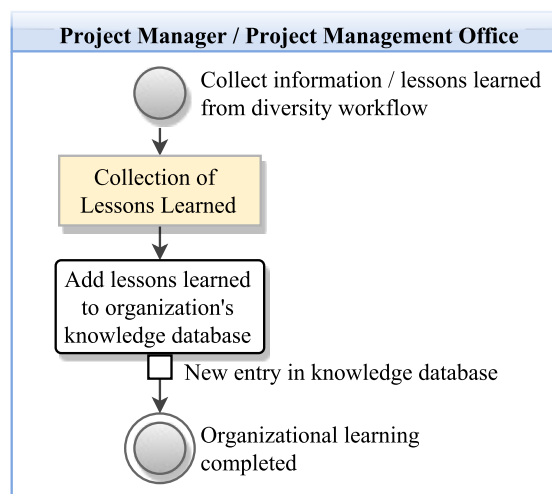


Figure 60: Activity Diagram: RE 4.2 – Input lessons learned into company database

4.3.7.1.6 RE 4.3 – Extend the diversity features / workflow with lessons learned

Description:	In order to use the lessons learned to tailor the diversity workflow or features, the project manager needs to analyze the lessons learned and identify improvements in the current diversity workflow and/or the diversity features. Based on this analysis the project manager can rework, calibrate and adapt the diversity workflow / features for the organizations and even create an organization-specific workflow and /or an adapted set of diversity features.
Roles involved:	Lead: Project Manager / Project Management Office Optional: Supporter
Templates:	<ul style="list-style-type: none"> Collection of Lessons Learned (see Table 65) Diversity Features (see Table 46 and Table 47) Organization-Specific Diversity Features / Workflow (see Table 66)

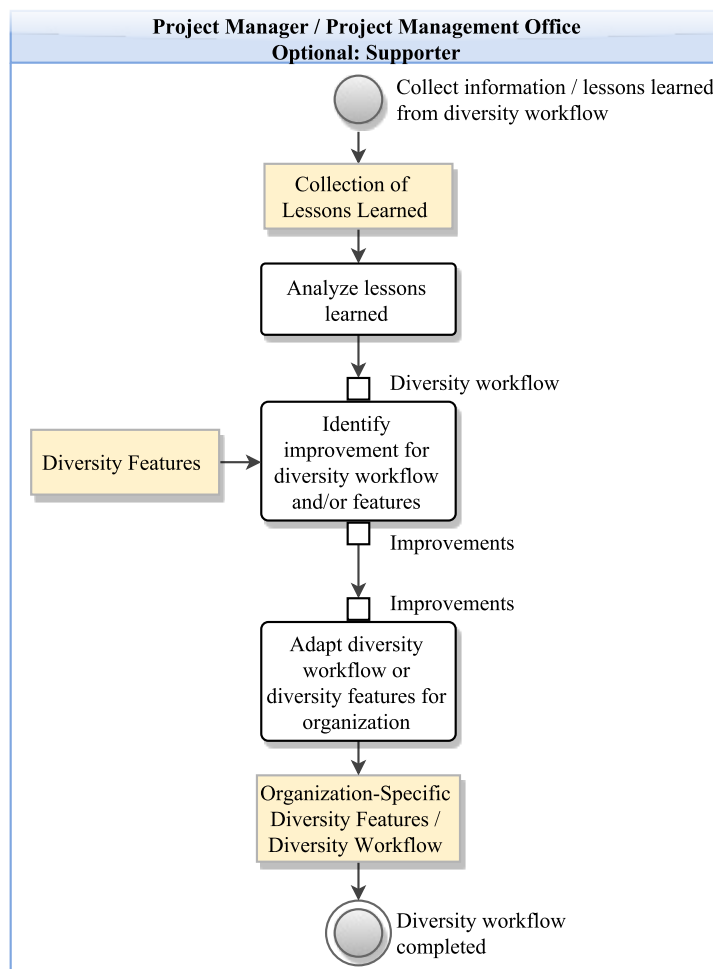


Figure 61: Activity Diagram: RE 4.3 – Extend the diversity features / workflow with lessons learned

4.3.7.2 TEMPLATES

4.3.7.2.1 Template XIX – Collection of lessons learned

Collection of Lessons Learned: The collection of lessons learned includes at least a description of the learnings and the association to the relevant diversity feature. Furthermore, the collection identifies relevant impact factors as well as rules and procedures that were (successfully) used.

ID	Description of Lesson Learned	Linked Diversity Feature	Circumstances	Rules & Procedures
LL1
LL2
LL = Lessons Learned				

Table 65: Template XIX: Collection of lessons learned

4.3.7.2.2 Template XX – Organization-specific diversity features / workflow

Organization-Specific Diversity Features / Workflow: This is a tailored workflow and/or an adapted list of diversity features for the organization's needs. It is recommended to use the diversity feature list (see planning phase of the diversity workflow) as a template to identify new behavioral clusters, describe the clusters/features, and provide questions for addressing the extreme values of a cluster. Furthermore, implications for the entire diversity workflow should be considered.

No.	Name of New Diversity Feature	Description of Diversity Feature	Questions for finding extreme values / gaps	Implications for diversity workflow
DF20
DF21
DF = Diversity Feature				

Table 66: Template XX: Organization-specific diversity features

4.3.8 INSIGHTS FROM THREE VALIDATION STUDIES

Three studies were performed to evaluate the quality, applicability, and user-friendliness of the diversity framework. In addition, data on the possible time effort for applying the framework was generated and analyzed. This chapter presents the major results of three validation studies: expert interviews, focus group workshops, and an online survey.

4.3.8.1 PERCEPTIONS AND POTENTIAL FOR OPTIMIZATION FROM THE EXPERT INTERVIEWS

The expert interviews (described in Chapter 3.4.1) aimed at gaining insights on the applicability of the diversity workflow and at improving the diversity workflow's content and representation. In general, the framework seemed to be a "very thought-out concept" and one expert "was impressed by the profound information". Still, the aim of the interviews was to collect as many improvements as possible. The full results are presented in Appendix 8.4.3 and 8.4.4.

4.3.8.1.1 Content and completeness

Most of the suggested changes regarding the content of the framework were included in the final version of the framework (presented in Chapter 4.3), as the interviewees provided very valuable and thoughtful inputs. The following modifications were done:

- The experts commented that additional examples and checklists (for instance, particular examples for formal rules, not only a template) would help. In the final framework, the first three phases (initiation, elaboration, and implementation) now provide not only templates but also a comprehensive, consistent example within the phases and its procedures.
- Furthermore, the experts had various ideas on improving the elaboration phase of the workflow. From having a decision support when to use which procedure, to suggesting a third procedure that combines the both proposed paths (group-based and the individual-based procedure). This third procedure was modeled as "mixed procedure" and is now a part of the elaboration phase. In addition, this procedure now is a solution option for applying the framework in virtual teams.
- Regarding the learning phase, the experts recommended to include the learning process continuously in the project instead of only learning at the end. Combining the learning with a regular re-assessment in the final version solved this request.
- Moreover, the connection between the diversity workflow and project management was examined. Also, the integration of the solution strategy into project risk management was discussed. To provide a comprehensive overview, the connection between the diversity workflow and project management was visualized in Figure 20 in Chapter 4.3.2.2. Furthermore, this visualization also illustrates when to start which phase in a standard project. In addition, the framework was connected to areas of the three major international project management standards (PMBOK, ICB, PRINCE2) (see in Chapter 4.3.2.2).
- Another major input from the experts was the need for a controlling phase. Seven out of ten experts suggested to add an additional phase in the workflow for this topic. Therefore, a re-assessment phase (periodical and ad-hoc) was introduced and combined with the existing learning phase. This re-assessment and learning phase can be easily integrated into social project controlling in the project management process. In agile project management this phase could be easily incorporated into the retrospective in each iteration.
- In addition, the experts proposed to introduce a stage model that allows tailoring the workflow to the specific need of a project. For instance, it might not be possible for every project to

conduct the entire workflow, but it would still be beneficial to raise awareness for the topic within the project team. Hence, a stage model was created that consists of three stages that build upon each other: raising awareness, creating a deeper understanding, and finding solutions. These stages are accompanied by the two support stages challenge / chance assessment (implementation phase) and re-assessment and learning.

- Another aspect for improvement was the role description in the home section of the platform. The experts mentioned that there should be a better differentiation between the role of the project manager and the supporter and that it should be clear who belongs to the project team. Accordingly, the roles were concretized and the additional role of a trainer was introduced.
- Finally, there were other minor adaptations such as modeling details or improvements in the text.

Some requests could not be included in the optimization. For instance, one expert remarked that examples from companies where the framework was applied would be very beneficial. As the final framework has not yet been applied in its entirety in real-world settings, this should be an aspect for future research.

Also, two experts suggested to include the DMIS (development model of intercultural sensitivity) scale by Bennett (Bennett, 1993, 2004) before starting the externalization procedures in the elaboration phase. This could help the project manager to know beforehand if she or he will face difficulties. If many team members are in the ethno-relative stages (adoption or realization) they will be aware of diversity and its importance, but if many team members are in an ethno-centric stage (defense or denial) the project manager could face strong resistance and need to adapt her or his approach. Although this request is very reasonable, including additional psychological aspects in the framework would open an entire new field, for example, personality trait theories and techniques as well as team building and dynamic techniques, which then would exceed the scope of this workflow. Nevertheless, this input is very valuable for future research that builds upon or intends to extend this diversity framework.

4.3.8.1.2 Structure

In general, the experts perceived the structure of the framework as understandable. The framework was seen as rational and logical. Especially, the diagrams were very clear and helped to understand the details. Furthermore, the examples were very beneficial. One expert stated: “Examples are very good and the process and templates are well described. The structure and process are logic and self-contained”. Also, the design of the website was positively mentioned.

Still, the experts had some essential points for possible improvements regarding the structure. The following suggestions were integrated into the final version of the diversity workflow presented in Chapter 4.3:

- An illustration that helps to understand the big picture. This visualization should not only contain the workflow steps, but also mark which steps could be skipped or when high trainer competencies are needed. Furthermore, using different colors for the stages should highlight the suggested stage model in a graphical overview.
- It was recommended to label the workflow steps not only with numbers, but to also provide a clear link to the phases the step is imbedded in. Therefore, the acronyms IN (initiation), EL (elaboration), IM (implementation) and RE (re-assessment and learning) were included in the workflow description.
- Furthermore, the descriptions did not offer a clear explanation of when to use which procedure in the elaboration and implementation phase. In the final versions, a decision support checklist was integrated in the description.

- The experts also noted that the home session of the platform, which was used to present the diversity workflow in the qualitative validation study (see Appendix 8.3), could be better structured and could provide more information (e.g. a clear definition what diversity means in this context). The home section was reworked and now includes more information, for instance, which basic skills the project manager needs to have when applying the framework.

Moreover, redundancies in the navigation of the platform and more interlinking of important terms on the platform were requested in order to increase the usability of the platform. This was not changed, as it was not an essential need for the platform at this point. Still, this request could be a task for future improvements of the web platform.

Furthermore, the wording of the workflow phases was a point of discussion. The experts had very different ideas on how to improve the names of the phases. As there was no clear tendency between the suggestions of the experts, and as the entire framework is closely linked to the Rational Unified Process, the names of the phases were not changed. Finally, one expert suggested to split the framework and provide one generic framework for project management and one framework that is specifically tailored for IT projects (e.g. adapting the diversity features). Although this seems logical, such an adaption is out of scope for now, but could be considered in future improvements of the framework.

4.3.8.1.3 Applicability and practicability

All ten experts thought that the framework is applicable, as it is “user-friendly and practice-oriented”. Therefore it should work well for real (IT) projects. One person stated positively that the framework focuses on behaviors and not on values. This reduces the risks for simplifications, discrimination, and stereotyping. Still, the framework demands sophisticated skills from the project manager and requires high time effort.

Nine of the ten experts thought that the diversity workflow is also practical and relevant for their work. Only one expert stated that it would not be easy to apply the framework in practice, as the project manager would need more examples and templates.

Basically, the framework can be used for any teams, any project sizes, and any project types. The experts mentioned that obviously the framework is most meaningful in an international context and in teams where diversity plays a bigger role, but can be also used for national and intra-organizational projects. Some procedures (e.g. the group-based procedure in the elaboration phase) might be hard to implement for groups that exceed a size of ten persons. Alternatively, bigger teams could be split into sub teams. This would allow for the application of a group-based procedure in big groups.

In any case, the workflow can be tailored to the size of the team or project. For instance, in a small team with three persons, it might be also relevant to approach the topic, but maybe only perform the awareness raising stage. This also applies to the duration of a project. For longer projects it is easier to argue why the time effort should be invested.

4.3.8.1.4 Required skills

The experts were also asked which skills are required for a project manager who applies the diversity framework.

All experts agreed that the framework might not be appropriate for junior project managers without any experience in projects. Still, the entrance level for applying the workflow is not too high. The project manager, in any case, would need to have intercultural competencies. Furthermore, another requirement would be a certain level of emotional intelligence and abilities in leading teams. If the group-based procedure is performed, the workshop skills of the project manager should be very high. Furthermore, the project manager should bring certain open-mindedness.

Moreover, the experts agreed that a supporter, mediator, or coach could help especially in the group-based procedures and workshops. This third person could reduce the resistance within the team and

allow the project manager to participate in the workshops as part of the team. The supporter needs to have high reflection skills, self-awareness, and experience. In larger organizations, the role of the supporter could be embedded into a project management office (PMO) as a service for all projects.

4.3.8.1.5 Degree of innovation and learnability

The ten experts all evaluated the framework as innovative. They highlighted the connecting aspects to project management and existing standards. Furthermore, one experts acknowledged that the design as an open framework that can be adapted for certain context. This allows for application in any cultural context.

Six experts would recommend the diversity framework to colleagues; one person would recommend it if a trainer or supporter accompanies the process. The other three experts did not explicitly respond to this question. Basically, the “framework seems trustworthy, reliable, and creditable. The combination of soft aspects with methodical project management seems quite useful”. Still, the project manager needs to be motivated to invest time effort for applying the framework.

Furthermore, an adequate training or coaching would be needed. Most experts agreed that it would be beneficial or even required to have a supervisor or supporter that facilitates the process when applying the framework in the first projects. Furthermore, a co-moderator or co-facilitator would be needed for all projects. The supporter, who accompanies the first application(s), could train these co-facilitators. Those facilitators could act as multiplier within the organization and take the role as co-moderator or even as supporter later on.

The experts had quite different opinions on how long it would take to learn the framework and apply it. Still, it seemed that most experts preferred an experiential approach. Hence, they would apply the framework (or part of the framework) and learn from this application for future projects. The project that is chosen for the first application should not be too complex. Also, it was suggested that it might be easier to try the process in a team that is known and had worked together before.

4.3.8.2 RELEVANCE AND ECONOMIC ASPECTS OF THE DIVERSITY FRAMEWORK FROM THE ONLINE SURVEY

The quantitative online survey (described in Chapter 3.4.3) did not only evaluate the diversity feature list (see Chapter 4.1.2), but also questioned the relevance and economic efficiency of the framework.

4.3.8.2.1 Current state and needs

The participants of the online survey were first asked if they managed diversity actively in their project. 59.4 percent of the respondents answered ‘yes’ while consequently the other 40.6 percent chose ‘no’. In a follow-up question they could either write which actions they take (if they responded ‘yes’) or why they do not deal with the topic in their projects (if they responded ‘no’). Table 67 provides an overview of actions performed by the project management professionals in practice. The main categories were actions that improve communication, deal with differences and/or create awareness, and related project management activities.

Action	Number of responses*
Communication (e.g. meetings, discussions, reflections)	17
Dealing with differences (e.g. awareness for differences, evaluating differences in project team, establishing baseline and rules, explaining cultural differences, overcoming gaps)	16
Project management activities (e.g. consider diversity in project plans, stakeholder management)	10
Listening and understanding	8
Team building activities	7
Adjusting tasks and communication	5
Managing and mediating conflicts	5
Respect (for behaviors, seniority, cultural differences)	5
Language (common language and terms, language courses)	5
Adjusting own behavior	4
Ethics	4
Selecting diverse team members	4
Others	7
* Multiple responses possible * n = 101 respondents	

Table 67: Actions for managing diversity actively in projects

Those people who do not manage diversity in their project actively responded that there is no need (11 responses) in their projects. On the other hand, 7 persons stated that diversity is so natural in their field that they do not need particular actions. Other reasons were time constraints (6) and little appreciation, importance, priority, or acceptance (5).

Moreover, participants were asked if they would like to have a comprehensive guideline on the topic that they can use for managing diversity their projects. 83.2 percent would like to have a guideline; the remaining 16.8 percent responded ‘no’. Following, the professionals were asked what such a guideline should offer in particular (see Table 68).

Elements of a diversity guideline	Number of responses*
Checklist and guide, e.g. <ul style="list-style-type: none"> the main culture or diversity aspects that need to be managed, practical hints or techniques, processes, measures, actions, how to integrate diversity into project management, an easy tool, a managerial method or an overview of all diversity aspects. 	37
Cultural aspects e.g. <ul style="list-style-type: none"> information on cultures, backgrounds and behaviors, do's and don'ts how to behave, or recommendations for particular nationalities. 	20
Best practices and examples	12
Behavioral aspects and social team dynamics	5
Information about personality types	4
Solution, patterns, or templates	4
Others aspects	17
* Multiple responses possible	

Table 68: Elements that should be included in a diversity guideline

4.3.8.2.2 Estimated time effort for applying a framework in a project team

The online survey examined how much time the project management professionals would invest in their own projects for dealing with diversity. Three different factors were asked to be evaluated: approximate time effort for the project manager during the initiation and planning phase, as well as during the implementation and closure phase, and the time effort per team member for the entire project (compare Table 69, Table 70 and Table 71).

	Frequency	Percent
0 = none	0	0.00
1 = less than 1 day	20	19.8
2 = 1 to 2 days	42	41.6
3 = 3 to 5 days	27	26.7
4 = 6 to 10 days	8	7.9
5 = more than 11 days	4	4.0
Total	101	100.0

Table 69: Time effort that should be invested in the initiation and planning phase of a project

	Frequency	Percent
0 = none	2	2.0
1 = less than 1 day	21	20.8
2 = 1 to 2 days	43	42.6
3 = 3 to 5 days	18	17.8
4 = 6 to 10 days	13	12.9
5 = more than 11 days	4	4.0
Total	101	100.0

Table 70: Time effort that should be invested in the implementation and closure phase of a project

	Frequency	Percent
0 = none	1	1.0
1 = less than 1 day	31	30.7
2 = 1 to 2 days	29	28.7
3 = 3 to 5 days	27	26.7
4 = 6 to 10 days	8	7.9
5 = more than 11 days	5	5.0
Total	101	100.0

Table 71: Time effort that should be invested per team member in the entire project

The average respondent would invest one to two days (median = 2.00) in each category. Although of course there were also persons who would spend less time, and persons who would spend way more time, the average project manager would spend two to four days her-/himself during the project and would schedule one to two days for each project team member.

4.3.8.2.3 *Return on investment for the project*

Finally, the professionals were asked how they would argue to a superior as to why they calculate a certain amount of time – and consequently money – for managing diversity in their project plan. 22 respondents would argue that this would improve the team collaboration (teamwork, motivation, team building). 15 persons would claim that this investment would create better results and quality. Others would suggest that this time effort ensures the project success (14), serves as conflict prevention (13), improves communication (10), reduces risks or is part of risk management (10), results in higher efficiency or effectiveness (10), or will reduce costs (7). Others would convince the superior that the effort saves time and is thus an investment that pays off during the project.

In order to be able to support these statements on the return on investment, the participants were also asked to estimate how much time it usually takes to resolve diversity issues in a) low diversity projects and b) high diversity projects with a duration of six to twelve months. For this context, low diversity projects are characterized by little variance in work styles and behaviors (e.g. with very homogeneous teams) while high diversity projects are characterized by high variance in work styles and behaviors (e.g. with very heterogeneous teams or in an international context).

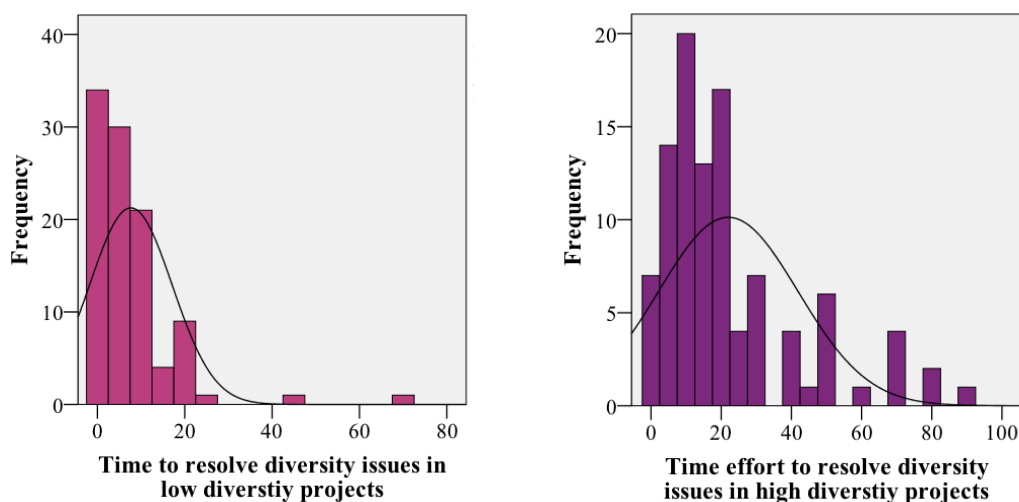


Figure 62: Comparing the time effort for resolving diversity issues in low (left) and high (right) diversity projects

The average duration for solving diversity issues was evaluated with 7.65 days (mean value) in low diversity projects and with 22.01 days (mean value) in high diversity projects. Some persons even estimated up to 60, 70, 80, or 90 days in high diversity projects, which explains the high value of the standard deviation (19.89).

4.3.8.3 *USER-PERSPECTIVE FROM FOCUS GROUP WORKSHOPS*

In focus group workshops with two students teams (see 0), the user-friendliness of the methods suggested in the elaboration phase of the workflow were tested. The major goal was to find out how project teams perceive the process of investigating diversity gaps and finding solutions for their particular projects. For the workshop procedure of the elaboration phase, three different methods were tested: an open discussion, a positioning with figures on a table, and positioning of the team members in the room. For the individual-based and mixed procedure, the shortened questionnaire was used for the study. After the workshop the participants were asked to reflect in written form.

4.3.8.3.1 *New insights into team*

All 4 members of team 1 perceived that they learned new things about the team. For instance, they described that they found out through the questions of the diversity features that some team members prefer a last-minute work approach while others start earlier with their tasks. Also, they heard about their different educational background, about the team members' opinions and attitudes on different topics, and about their team composition and dynamics within it. Furthermore, one person stated that he got "valuable information and knowhow" in the workshop (T1 – Member 4). All 4 members reflected that they did not learn much about themselves.

Comparably, all four members of team 2 reflected that they learned new things about the team, but also about themselves. For instance, one person realized that she/he got active if the topic was serious and when she/he felt disadvantaged. Although the team had very similar opinions, as some team members knew each other before, they were quite surprised that they revealed unknown differences and unexpected behaviors. One team member stated: "I got some new insights about my team colleagues. I might have seen them before, but they were not conscious to me" (T2 – Member 4). Another member perceived that "the workshop was an extraordinary experience that brought up new things" (T2 – Member 2).

4.3.8.3.2 *Perception of making implicit work styles and personal behaviors explicit*

Team 1 perceived the explication process as "interesting trying to transform implicit aspects into explicit" as "those implicit aspects are hard to grasp. But with the used techniques in the workshop it was surprisingly easy" (T1 – Member 1). Also, one team member wrote that "it is important to elaborate such work styles" and the procedure also helped him to improve his own work approaches (T1 – Member 4). 3 of the 4 members thought that the process was quite easy, while one person stated that "it was difficult in the beginning, but got better throughout the workshop" (T1 – Member 2).

In team 2, the procedure was perceived as unusual, but not "as hard" as they thought it would be (T2 – Member 1). The team members described the process as interesting. For instance, one participant wrote: "It was very interesting to make the own way of working explicit, as I have not dealt with it before. Only during the workshop I had to reflect why I do things the way I do" (T2 – Member 2). Another member stated: "I also reflected on my own work styles more critically" (T2 – Member 3).

In general, team 1 wrote positively about the workshop. For instance one team member wrote: "It was interesting to evaluate the different methods and to prioritize the most important diversities" (T1 Member 4). Another participant stated: "It was positively surprising, because I imaged the workshop to be more difficult" (T1 – Member 2). One participant also valued the playful elements that were used for the workshop: "The discussion was very entertaining, because the main points were elaborated playfully" (T1 – Member 3).

Two team members reflected on the different procedures for explicating the diversity gaps. One preferred the positioning with figures, because "the method delivered quick and clear results" and in

comparison with the positioning in the room not as tight and intimate (T1 – Member 1). Another member stated that he did not like the questionnaire so much (T1 – Member 3). One person also reflected that some of the used methods depended very much on the group size (T1 – Member 1). One participant suggested giving examples in which field diversity can appear in the preparation phase (T1 – Member 2).

Three team members mentioned the positive, open, comfortable atmosphere during the workshop. For instance, one participant wrote: “I liked very much the openness during the workshop. I felt very comfortable and could talk openly and freely” (T2 – Member 1). Also, the workshop was perceived as “very entertaining and informative. It was interesting trying out the four different procedures” (T2 – Member 3). One participant also mentioned that she/he liked the open discussion very much. One participant noted that the questions were too vague: “It was hard for me to take a concrete position as I could identify with almost every answer. Therefore I would use more specific situations for the questioning” (T2 – Member 3).

4.3.8.3.3 Relevance of the guided procedure

The entire team thought that the guided procedure was very helpful as “it is necessary to have always one person that is familiar with the procedure and can lead the workshop” (T1 – Member 1). “It is more comfortable to have a person in the group that leads the discussion and guides it in a particular direction” (T1 – Member 4) because then “unclear aspects could be solved quickly” (T1 – Member 2). The team noted that only without guidance the workshop would consume more time and the quality would suffer. Also, it would be more difficult to solve problems just with written instruction, and it could also negatively impact the workshop and its targets. One participant suggested to have written instructions in addition to the guidance, so the rules and tasks were visible during the workshop (T1 – Member 2).

All members of team 2 also agreed that personal guidance through the workshop was very important. One person even wrote: “I think the guided procedure is indispensable” (T2 – Member 2). Basically, the team agreed that written instructions are insufficient for conducting such a workshop because “paper does not respond if something is misunderstood or if the discussion wanders off the point” (T2 – Member 3). Then unclear instructions cannot be questions, which would create an additional barrier in the workshop. Also, “if conflicts emerge it is better to have somebody who can bring everything back to the topic and mediate so that conflicts do not escalate” (T2 – Member 3).

In the beginning of the workshop, all team members were asked to visualize what they associate with the topic of diversity in a drawing. All members of team 1 had positive associations with the visualizing exercise, for instance “funny”, “motivating”, “creative”, or “informative”. All of them liked that they could see how the others perceive the topic. In general, team 2 also liked the task, although some felt that it was “difficult to draw anything on the topic” which caused “common displeasure” (T2 – Member 2). Still, three members noted that the exercise loosened the mood and made the situation more relaxed. In line with team 1, three participants of team 2 also noted that it was interesting to see the others’ associations and to hear their explanations.

4.3.8.3.4 Perception of the four different explication procedures

The teams were also asked to reflect upon the four procedures (open discussion, positioning with figures, positioning in the room, traditional questionnaire) that were used to reveal different work styles and behaviors (diversity gaps). As the two teams had very different perceptions about these explication procedures, Table 72 compares the two teams’ opinions on each procedure.

Procedure	Team 1	Team 2
Open discussion	All team members in team 1 liked the open discussion procedure. They felt that they could talk freely and directly, and that they could express their opinion and ideas instantly. Still, the procedure might have the disadvantage that not all team members can participate equally in the discussion. Also, the procedure consumes much time, and there is a risk that the team wanders off the discussion.	In comparison to team 1, team 2 had a very different perception of the procedures of explicating diversity differences. Three participants preferred the open discussion because it was the best method to express their opinions, reveal misunderstandings, and discuss the questions directly. One participant disliked this procedure because it is not appropriate for people who are not fond of discussions and as “people might wander off the discussion” (T2 – Member 1).
Positioning with figures	Three team members stated that positioning themselves with figures on a line on the table was their favorite method and most appropriate. They liked that “it was easy to position myself, as the figures gave me anonymity” (T1 – Member 1). Also, two persons stated that they had a good overview of the different opinions and they could position themselves freely. In comparison to the open discussion, this procedure ensures that the team sticks with the particular question and does not get lost (T1 – Member 3). Furthermore, the small abstraction with funny figures loosened the situation (T1 – Member 4).	Whereas in team 1 the positioning with figures on the table was the preferred method, team 2 opinions were rather ambiguous here. Two team members liked the procedure, as they had more time to think first. Also, the procedure gave an overview and they could see how the positions changed during the discussion (T2 – Member 1). On the other hand, the other two team members disliked this procedure, because they had to position their opinion on a line on the table. One person stated: “This was a problem, as I cannot classify myself on scales easily” (T2 – Member 2). The other person even perceived that “with the positioning some misunderstandings were provoked” and finally they figured out “that there were actually no differences” (T2 – Member 3).
Positioning in a room	Team 1 did not like the positioning in the room. Three participants stated explicitly that they did not like this procedure, and one person had a neutral opinion. All four members thought that the physical distance or proximity could be an issue here. In particular, the members can be “too close to others and violate their comfort zone” (T1 – Member 3). Also the result of this procedure might be biased as persons try to keep a physical distance and therefore might not position them where they actually wanted (T1 – Member 2).	The positioning in the room was perceived negatively by three of the four participants in team 2. Again, one person did not like that she/he had to position him-/herself on a scale. Furthermore, there was a higher conflict potential when people “are positioned “against” each other” (T2 – Member 3). On the other side, one participant stated: “I liked the positioning in the room as you could move around and not only sit” (T2 – Member 1).
Traditional questionnaire	Regarding the questionnaire procedure, team 1 was quite neutral. They reflected positive as well as negative aspects. Among the positive aspects were, for instance, that their answers were not influenced by others, or that the procedure is quick and delivers quite good results. On the other hand, “different questions could be interpreted differently, which could decrease the value of the information” (T1 – Member 3). In comparison, the positioning with figures provided more insights. One person noted that he would use this method in very large teams.	The entire team 2 perceived the questionnaire procedure negatively. They did not like the scales and questioning, as those “did not consider particular situations or exceptions” (T2 – Member 2). Also, they felt that they could not express their own opinion on the topic in a questionnaire. In addition, the answers could be misunderstood when the data is interpreted. Still, one person thought that it might be an appropriate procedure for big groups.

Table 72: Comparison of user perception on explication procedures

4.3.8.3.5 Searching for diversity gap situations and finding solutions

First, the teams were instructed to find particular situations in their project in which the elaborated diversity gaps could lead to conflicts.

All members of team 1 stated that finding situations for the diversity gaps was quite easy. Also, “it was very good that we addressed these situations” (T1 – Member 2). In contrast, team 2 perceived the

process as “difficult” (T2 – Member 2), “complicated” (T2 – Member 1), “time-consuming” (T2 – Member 3), but also “interesting” (T2 – Member 4). Basically, there was little conflict potential within the group and they had very similar opinions. In particular, the questions were too unspecific and too open.

Furthermore, the teams should define solutions by creating rules and procedures, identifying risks and chances of the gap for the project, and naming a person responsible for tracking the gap.

In general the solution finding process was perceived as easy and useful by team 1. Defining rules and procedures “generated a common basis for the team how to react on particular situations” (T1 – Member 1) and this “was good and helpful for the project” (T1 – Member 2). Furthermore, analyzing risks and chances was not so easy, but “showed which effects different situations could have “ (T1 – Member 1) and “why it is important to stick to the rules” (T1 – Member 2). One participant stated: “I was surprised of the results of the workshop. The elaborated procedures will help for sure in the future to bring the team quicker and better on the same track and to improve communication” (T1 – Member 4).

Team 2 had to work with a fictive project situation. Two participants thought that this was quite difficult, because of this fictive example. One participant stated that they “had the same opinion about risks, but finding a common solution that satisfies everybody was difficult” (T2 – Member 3). Moreover, one participant stated: “In some situation it might be good to have rules and procedures worked out before a conflict arises” (T2 – Member 4).

In addition the teams were asked how they would react if the agreed upon solutions were not kept during the project. Team 1 thought that it was a good idea to address the issue – either the person concerned or the entire team – and find out why the solution does not work. Furthermore, two participants would rework the solution or create alternative solutions. One team member would also set rules in case that the agreed upon rules and procedures were broken. Team 2 would also discuss the topic either with the person concerned or among the entire team. One participant would make his reaction depending on whether “other team members feel offended or betrayed by this violation” (T2 – Member 2). Furthermore, three participants would go back into a discussion and rework the solutions or develop new solutions.

4.3.8.3.6 Application in practice

In team 1, three persons noted that using a diversity approach might be good for medium or big projects. Also, these three participants would expect that the project manager apply the method and that there is at least an open discussion of the topic as problems can be avoided if it is dealt with the topic in the beginning. On the other hand, one person stated that the project manager could add the diversity aspects, but organizations often “have pre-defined processes and procedures that regulate many aspects”.

Team 2 agreed that the topic was important and that, in any case, “the project manger should deal with the different work approaches within the team” (T2 – Member 1) and it should be “a topic to be discussed – at least briefly” (T2 – Member 4). Two participants also noted that knowing more about the team members was important for assigning and distributing tasks in a more effective manner. Furthermore, two participants stated that applying an approach depended very much on the project and team size and might be more suitable for bigger teams and bigger projects with longer durations.

4.3.8.3.7 Overview of focus group workshop results

Nr	Reflection Question	Team 1 (T1)	Team 2 (T2)
1	Did you learn something new about your team?	Yes (4/4)	Yes (4/4)
1	Did you learn something new about yourself?	No (4/4)	Yes (4/4)
2	How did I experience the process of making implicit work styles and personal behavior explicit during the discussion?	Easy (3/4) Difficult (1/4)	Interesting (3/4) Difficult (0/0)
3	What did you like most?	Evaluating different methods (1/4) Playful elements (1/4) Positioning with figures (1/4)	Workshop atmosphere (3/4) Open discussion (1/4)
3	What did you dislike most? What would you change?	Questionnaire (1/4)	Unspecific questions (1/4)
4	Was the guided procedure helpful? Or could you have done the workshop with your team just with written instructions?	Guided procedure was helpful (4/4)	Guided procedure was helpful (4/4)
5	Please reflect about the 4 different procedures that were used to reveal different work styles and behaviors (diversity gaps). What did you perceive as good/bad, helpful/hindering, easy/hard etc.?		
	Open discussion	Liked (4/4)	Disliked (1/4) Liked (3/4) Favorite procedure (1/4)
	Positioning with figures	Favorite procedure (3/4) Liked (4/4) Positive: overview (2/4)	Liked (2/4) Disliked (2/4) Positive: more time to think first (2/4)
	Positioning in the room	Disliked (3/4) Neutral (1/4) Negative: losing the overview (3/4) Physical close proximity can be uncomfortable (4/4)	Liked (1/4) Disliked (3/4) Movement was good (2/4)
	Traditional questionnaire	Neutral (4/4) No influences of others (2/4)	Dislike (4/4)
6	How did you experience the process of searching for situations in which the diversity gaps could lead to conflict in the project?	Easy (4/4)	Hard (3/4) Interesting (1/4)
7	How do you perceive the exercise at the beginning (visualizing your associations with the topic diversity in a drawing)?	Positive (4/4)	Positive (3/4) Neutral (1/4) Loosened the situation (3/4)
8	How would you evaluate the solution process (creating rules and procedures, identifying risks/chances for the project, naming a responsible person)? Were the elaborated solutions really good and appropriate for the team?	Easy and helpful (4/4)	Time-consuming (1/4) Difficult (2/4)
9	How would you proceed if you observe that the agreed upon solutions are not kept during the project?	Rework solutions (2/4) Set rules for this case (1/4) Address the issue (3/4)	Rework solutions (3/4) Address the issue (3/4)
10	What would you use in your practice / job or respectively what should a project manager apply? Would you approach the topic diversity actively in real-world project teams?	Appropriate for medium and big projects (3/4) Should be applied by the project manager (3/4)	Should be a topic in practice (4/4) Depending on project size (2/4) Important for task distribution (2/4)

Table 73: Overview of results from focus group study

5 DISCUSSING THE RESEARCH RESULTS

This chapter provides insights into how far the research goals have been reached and suggests future research opportunities as well as improvements in practice.

5.1 REVIEWING THE RESEARCH RESULTS

In the beginning, the leading question ‘How can relevant diversity aspects be explicated, represented and proactively supported in international ICT projects?’ was postulated and specified with five sub-questions. Table 74 illustrates in which chapters in this dissertation the sub research questions were examined and answered.

	Sub research question	Chapter reference
I	Which diversity features are relevant for the success of ICT projects?	4.1
II	What techniques are available and can be adapted to assess, explicate, and capture relevant diversity features and differences between them?	4.2
III	How can the diversity framework for ICT projects be modeled conceptually? How can a generic diversity framework be technically supported?	4.3
IV	How can a diversity framework for ICT projects be integrated into a workflow of the Rational Unified Process? How can diversity features and techniques be arranged to make up a usable, practice-oriented diversity workflow?	4.3
V	How can the generic diversity framework be validated?	3.4, 4.3.8

Table 74: Research question overview

This work illustrates that diversity aspects in ICT projects can be explicated by applying the created diversity workflow. This workflow includes empirically generated and validated diversity features which impact the success or failure of ICT projects (see Chapter 4.1) and provides the answer to sub-question I.

For examining relevant explication techniques (sub-question II), a systematic literature review was performed in Chapter 4.2. This review delivered twelve explication techniques of which seven techniques were combined and modeled in the first draft of a diversity workflow. Furthermore, Köster’s (2010) cultural gap analysis served as example of analyzing differences in international projects.

Based on these techniques and the first, rough diversity workflow draft, a comprehensive diversity workflow was modeled and presented on a web-based platform (sub-question III). The platform primarily served as representation option and was used for the qualitative validation study with experts. Furthermore, the workflow was designed to fit into the Rational Unified Process (RUP) (see Chapter 4.3). The integration into the RUP was ensured by defining clear roles for the workflows, visualizing phases and workflow steps within these phases, providing detailed descriptions of each activity in UML 2.0 activity diagrams, and a description of the needed artifacts in form of templates and examples (sub-question IV).

Finally, the three validation studies (see Chapter 3.4, and 4.3.8) demonstrate how to validate a generic framework by using a combination of different research methods for validating different aspects of the framework (sub-question V).

In summary, the research question was comprehensively examined throughout this work and resulted in the major outcome of the work: the diversity framework with its diversity features, diversity techniques, and the diversity workflow.

5.2 HUMAN-CENTERED EMPHASIS OF THE DIVERSITY FRAMEWORK

The generated diversity framework follows human-centered principles in several aspects. Firstly, the framework was designed to put people in the focus and strengthen their importance as success factors for projects. When applying the diversity workflow in project, a major social value is added to the management perspective of ICT projects that traditionally put more emphasize on explicit, hard facts.

Secondly, concentration on individuals within a project team instead of nationalities breaks the custom of using primarily Hofstede's work (2001; 2010) in research and practice. Although the author values his work for opening up an entire new research field, the approach of comparing persons only on the basis of their nationality seems too narrow and can prepare the ground for stereotyping and discrimination. Hence, the diversity framework focuses on individual team members, on their values reflected in their behaviors, regardless of their national or ethical background, as well as on dealing with differences or commonalities between the individuals' behavioral preferences.

Thirdly, the diversity workflow counts on human-centered core values (compare Chapter 2.3). Without an open-minded project manager, open participants, transparent and direct communication, constructive feedback, and consequential trust created within the team, the diversity workflow cannot be successful. Misusing the framework for personal reasons or power games would not work if there is lack of trust within the team. Such restrictions would, for instance, hinder the team discussions or generate only socially accepted answers. Hence, the benefits of the framework cannot be exploited.

Fourthly, the variety of procedures offered in the diversity workflow allows situative adaption and consideration of team members' needs and preferences. The project manager can always choose – between two or three different options – the one procedure that the team is most comfortable with. The focus group study revealed that the two teams had very different preferences although their age and educational background were very similar. While one team showed clear preferences for the positioning procedure with figures on a table, members of the other team did not like this procedure. This was also the case for the questionnaire (individual-based procedure) that was well accepted by one team, but created even resistance within the other tested team. This example illustrates that it is essential that either the team can decide for a procedure or that the project manager adapts the procedure to the team's personalities.

5.3 IMPLICATIONS FOR FUTURE RESEARCH

The content of this dissertation offers research potential in various areas. Major opportunities were identified in the field of project management of software and IT projects.

Future research should focus more strongly on the integration of the diversity framework into agile projects considering different agile methodologies (e.g. integration into Scrum, compatibility with extreme programming principles, and so forth).

Moreover, the diversity framework adjoins various other fields such as (intercultural) management psychology. Experts from the interview study suggested to include additional psychological aspects in the framework, for instance the development model of intercultural sensitivity by Bennett (1993, 2004) or team building techniques. Such personal traits would be very valuable as an extension of the framework and could therefore be a subject for further development and adaptation.

The expert interviews also revealed a need for application cases from practice. Therefore, case studies that examine the applicability in real-world projects should be considered as future research approach.

This work likewise contributes to the field of intercultural management. Although the diversity feature list, component 1 of the diversity framework (see Chapter 4.1), was generated from empirical data and validated in an online survey, there is still potential for improvement. On the one hand, the existing diversity feature list could provide more questions on each diversity feature category, but could also

be more deeply prioritized regarding the importance of each figure for ICT project management. On the other hand, the online survey delivered additional behaviors that could be tested on their relevance for ICT projects in future research (e.g. a larger quantitative study). Moreover, case studies could be performed in various cultural contexts to investigate if the diversity features are generically valid, or respectively generate appropriate diversity features and prioritization of the features for different cultural contexts.

It is furthermore hypothesized that the variety of different externalization procedures (in the elaboration and implementation phases of the workflow) ensures the applicability of the framework in different cultural contexts and for different personality types. Further research should prove the applicability and acceptance of the diversity framework in different cultural regions and in different organizations.

This work moreover offers research potential in the knowledge management field. As this work focuses primarily on the externalization process of the SECI model (Nonaka et al., 2000), further research can investigate how the topic can be managed in the other sections of this spiral model (combination, internalization, socialization).

Finally, the framework could be expanded for organizational units such as human resource management or the entire organization. So far, the workflow focuses on the entity 'project' as a social system, but the generic manner of the framework might allow scaling it up to larger context. Of course, this would require an extension of organizational aspects and impacts.

5.4 RECOMMENDATIONS FOR PRACTICE, IMPROVEMENT, AND EXTENSION

Besides the implication for further research, several improvements and extensions are possible and recommended for real-world settings.

For future application, the diversity framework should be fully integrated into an international project management standard to ensure the compatibility with standardized project management procedures. Such integration would increase the reach and efficacy of the framework in practice.

In all validation studies the factor time was of high importance for evaluating whether the diversity framework can be applied in reality. A major concern in the qualitative interviews was that people might not invest the needed time for applying the framework in projects. When taking a look at the online survey's results, the time effort that project management professionals would invest in their projects was two to four days for the project manager and one to two days for team members (median value). On the contrary, the estimated average time effort for solving diversity issues during the project in highly diverse environment was calculated with 22 days (mean value). Here, it becomes evident that applying a method that effectively deals with the issue could save time and money for projects. Considering that the extreme values for solving issues in medium-sized project with a high diversity level reached up to 90 days, it might be reasonable to invest even more than the suggested two to four days as project manager and two days for the team members.

Furthermore, there is potential for improvement regarding the diversity questionnaire used in the individual-based procedure of the diversity elaboration phase. In its current state, the questionnaire and the evaluation of the responses are quite time-consuming and require appropriate skills and/or software. Hence, a support tool that can be used for the survey, but also for its evaluation, would be helpful in practice.

Moreover, the results of the focus group study (4.3.8.3) revealed that there is no 'perfect' procedure to conduct the diversity analysis workshops in practice. The success of the explication of diversity aspects is highly dependent on the team members' preferences. These preferences therefore should be

always considered to ensure the effectiveness of the diversity workflow and enhance benefits created from the externalization procedure.

Finally, the studies performed in this dissertation are limited in cultural variety. Hence, adapting the framework to the particular cultural context is recommended for practical application in international projects.

6 CONCLUSION

The aim of this dissertation was to demonstrate how relevant diversity aspects could be explicated, represented, and proactively supported in international ICT project management. As examined and revealed in Chapter 2, diversity aspects have a major impact on the success or failure of projects. Irritatingly, no meaningful, comprehensive, and standardized method or technique to managing diversity in ICT project management existed so far, although the need for such is conspicuous in research as well as in practice. A qualitative pre-study and a literature review underpin this statement.

Thus, in this work this research gap was closed. The dissertation presents a comprehensive, scientific, yet practical framework that supports ICT project management professionals to manage diversity aspects in their projects effectively. This diversity framework was developed by performing the following steps.

Firstly, a qualitative interview study with Indian managers of international outsourcing projects provided the first component of the framework: diversity features that are relevant for the success of ICT projects. These diversity features can be used to identify behavioral gaps within a project team.

Secondly, a systematic literature review provided the second component of the framework: techniques that support the externalization of implicit knowledge in ICT projects. The review imposingly showed the relevance of the topic through a large numbers of scientific works that were found. Nevertheless, few authors really described techniques that could be used for applying them in project work. In the end, only seven techniques were extracted from more than 1,000 publications.

Thirdly, the diversity techniques and the diversity features were used as basis for modeling an own workflow – the third component of the diversity workflow. The workflow is integrated into the Rational Unified Process to make it applicable for software development project, but also allows a generic use in non-software projects. This diversity workflow aimed at satisfying the obvious need for a comprehensive, yet practical guide. It consists of four major phases (that represent the four phases of the Rational Unified Process but with a different wording): initiation, elaboration, implementation, and re-assessment & learning. Each phase contains several workflow steps that are described in detail and visualized in UML 2.0 activity diagrams. Furthermore, each workflow step indicates which roles and artifacts are needed, and it provides examples for the artifacts. In addition, general conditions for applying the framework are described.

Finally, the entire framework was evaluated in three validation studies. For the first study – a qualitative research setting of expert interviews – a web-based prototype of the diversity workflow was developed. This representation of the diversity workflow was the basis for the expert interviews, which revealed potential for improving the workflow and provided insights on the applicability of the entire framework. Moreover, a quantitative online survey was used to validate the diversity features and gain data on economic factors that were relevant to the diversity workflow. Finally, a user-centered focus group study examined how potential persons affected by the framework perceive the elaboration phase of the workflow, and whether the users accept the various procedures suggested.

In summary, this work provides a comprehensive, empirically validated framework that embeds implicit knowledge aspects into ICT project management. Considering the current trends in project management theory and practice, the framework provides a significant element to managing the human factor in business effectively and moreover value its importance. Furthermore, the framework is generic and could be easily extended to other types of projects or even organizational units. Additionally, the framework is not limited to the factor diversity. It could be adapted for other social, implicit aspects that need to be externalized in project teams. Finally, the framework and this work adds up to the field of knowledge management and actually to all elements of the SECI process (Nonaka et al., 2000). When externalizing tacit aspects in the diversity workflow new knowledge in other fields can also be created. Tacit knowledge is built up in the pre-workshop and throughout the interactive ses-

sions of the diversity workflow. Furthermore, articulating diversity aspects and connecting those with images or visualizations will create explicit knowledge. This type of knowledge is further generated when the diversity aspects are documented and specified in written form. Finally, more tacit knowledge is produced when the solutions are embedded into the daily project work and project controlling.

Concluding, a considerably important gap in research and in practice was solved with this work. Future research should be performed to improve the present diversity framework and extend the principle to other fields and areas.

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8 APPENDIX

8.1 LIST OF BEHAVIOR-BASED DIVERSITY FEATURES

No.	Diversity Feature	Behaviors in Business that affected project success as those behaviors	No. of Mentioned Behaviors	% of total behaviors in this cluster
		<ul style="list-style-type: none"> made them feel uncomfortable, seemed irritating and confusing, made it difficult to meet their responsibilities or achieve their goals, negatively affected their work morale. 		
DF1	Communication	<ul style="list-style-type: none"> * Giving suggestions and asking questions to any level without regard to position * Disagreeing with your manager to her/his face is acceptable * Never contradicting older colleagues / partners * Never contradicting superiors * Shouting and screaming when disagreeing * When disagreeing, not yelling or shouting but politely telling what is on her/his mind * When disagreeing, nobody will tell directly * Listening without disagreeing, but ignoring what has been said * Demonstrating passive resistance * Being very persistent in discussions * Being very open and letting others know exactly what she/he is thinking * Taking disagreements off line in 1-on-1 meetings or outside the office * Never admitting mistakes in public * Not always telling the truth * Questioning and listening attentively to answers * Not voicing opinions or disputing facts * High need for face-to-face communication on site * No need for face-to-face communication * Reacting emotionally to problems * Reacting very factually in problem situations * Preferring brainstorming for discussing issues 	21	16.5%

DF2	How relationships are formed	<ul style="list-style-type: none"> * Having difficulties working with people that are very cold, reserved, or superficial * Having difficulties working with people who only talk about business * Asking others about work experience * Asking where someone grew up * Asking where someone went to school / university * Asking about someone's relationship status * Delving deeply into a person's family details * Intruding personal questions when meeting for the first time * Involving the (extended) family in social company events * Easy to know others superficially * Having small private space in friendships with colleagues / partners (talking about anything) * Having large private space in friendships with colleagues / partners * Touching colleagues casually in work situations * Connecting more easily outside the office than at work * Inviting others out to dinner * Inviting someone home for dinner * Starting projects without formal and sufficient 'getting to know each other' time * Having need for extensive face-to-face time * Having no need for face-to-face time * Having a need for knowing the business partner well 	20	15.7%
DF3	How decisions are made and who makes them	<ul style="list-style-type: none"> * Actively participating in brainstorming * Being quiet during brainstorming * Sticking to own ideas (institutional condescension) * Belittle ideas of others (institutional condescension) * Involving people in decision-making (micro-management) * Pointing persons who is responsible for building consensus * Making decisions only after investigation, agreement by all stakeholders, and documentation * Having difficulties to get to a decision * Not only one person is the decision maker (e.g. senior manager or function owner) * Senior managers never make decisions by themselves * Senior managers make decision by themselves * Decisions are made at the top and pushed down * Relatively easy to get meetings with business owner or group head * Having difficulties to get meeting with business owner or group head * Decisions are not made in meetings 	15	11.8%

DF4	How projects are planned, scheduled, and executed	<ul style="list-style-type: none"> * Prototyping to get things implemented * Detailed research and design prior to getting things implemented * Planning everything to the smallest detail * Not continuing to work through difficulties * Always continuing to work through difficulties * Putting things off until the last minute * Putting some preparation off completely * Emphasizing short-term costs over everything else * Always specifying well defined roles and responsibilities * Doing detailed project scheduling * Prioritizing everything (appear to be very focused) * Prioritizing nothing (appear to multi-task everything) * Finding solutions by making mistakes (trial-and-error) 	13	10.2%
DF5	Following defined processes	<ul style="list-style-type: none"> * Methodology is emphasized * Actual work approaches are emphasized * Not appearing to worry about life-cycle costs * No appointment needed for seeing the manager (no formal process) * Preferring to try and prototype new ways to do things * Willing to bypass change management in an emergency * Never deviating from defined processes * Being only able to following instructions * Implementing changes only after investigation, agreement, and documentation * Being precise with invoice payments 	10	7.9%
DF6	Recognizing and describing problems	<ul style="list-style-type: none"> * Immediately acknowledging problems * Not immediately acknowledging problems * Bringing up problems in a timely manner, but not accurately describing them * Having difficulties in discussing issues * Quickly seeing a problem * Not accepting that something cannot be done or made to work * Not discussing things with the boss (especially not asking for help when confused or when needing additional expertise) 	7	5.5%
DF7	How requirements are handled	<ul style="list-style-type: none"> * Contracts are only referenced when differences cannot be worked out * The contract is the way of working, so you reference it very often * Making unsolicited or un-requested incremental improvements * Not appearing to worry about life-cycle costs * Doing exactly what is requested 	5	3.9%
DF8	Appreciation of work	<ul style="list-style-type: none"> * People expect to be rewarded for simply working hard and trying * Simply working and putting in hours until everything gets done is important * People expect to be rewarded for accomplishing what is asked of them whether or not this requires hard work * People do not show appreciation for hard work without results 	4	3.1%

DF9	The importance of milestones	<ul style="list-style-type: none"> * Expecting small schedule changes to be approved * Detailed and rigid project scheduling (to avoid surprises) and doing exactly what is requested * Not considering small schedule changes to be important * Being punctual (milestones, tasks) 	4	3.1%
DF10	Problem escalation	<ul style="list-style-type: none"> * Not clearly saying 'it cannot be done' when you think something cannot be done * Not clearly saying 'I do not know' when you do not know * Being uneasy when in need of help * Openly requesting help to improve 	4	3.1%
DF11	Value of monitoring and business processes	<ul style="list-style-type: none"> * Not monitoring work effectiveness * Not monitoring work effort * Service Level Agreements (SLAs) are the only important consideration * Anecdotal management is better than data-driven management 	4	3.1%
DF12	Approaches to motivation	<ul style="list-style-type: none"> * Publicly rewarded and reprimanded * Rewarded and reprimanded in private * Not trumpeting ones successes * Praising and rewarding insignificant contributors 	4	3.1%
DF13	Types of information prospects are seeking	<ul style="list-style-type: none"> * Suggesting new ideas to prospects; telling what others are doing * Researching and suggesting best practices to prospects * Attempting to identify what the prospect wishes 	3	2.36%
DF14	Professional and personal time	<ul style="list-style-type: none"> * Clear separation of professional and personal time * Blurring of professional and personal time * Often working into the evening 	3	2.36%
DF15	Handling of passwords and access	<ul style="list-style-type: none"> * Placing passwords under keyboards * Using neighbor's passwords * Using user ID for password or writing down password and keeping it in a commonly understood place 	3	2.36%
DF16	Thinking and speaking patterns	<ul style="list-style-type: none"> * Talking straight and to the point * Talking randomly and circularly 	2	1.57%
DF17	Working on tasks	<ul style="list-style-type: none"> * Working better under pressure on more tasks * Single-threaded work style 	2	1.57%
DF18	Information flow	<ul style="list-style-type: none"> * Preventing direct communication between customer and offshore team * Restricting the flow of information (uncooperative customer staff) 	2	1.57%
DF19	Attention to detail	<ul style="list-style-type: none"> * Visual perfection (form versus outcome) and the attention to details (particularly in documents and planning) 	1	0.79%
		TOTAL	127	100%

Table 75: Appendix - List of behavior-based diversity features (adapted from Amster & Böhm, 2016)

8.2 DETAILED RESULTS OF SYSTEMATIC LITERATURE REVIEW

8.2.1 RESULTS OF SYSTEMATIC LITERATURE REVIEW

In the systematic literature review, a total of 1082 articles, book chapters, and conference papers were found. In a first screening (= practical screening) the abstract or short description was used for accepting or excluding the found articles. Out of 1,082 works, 37 articles were filtered for a second, in-depth screening (= methodological quality screen) (compare Chapter 3.3.2.2).

These 37 articles are described in the following table, which provides an overview of the searches and the accepted (black) and rejected papers (grey) in the detailed, methodological quality screening. Some papers appeared in two or more searches. Those papers are listed in this table but only analyzed in one category.

Author(s)	Title of publication	If rejected: full bibliographic information	Reason for rejection OR short description of technique
SEARCH 1a			
Science Direct	Search results: 41, filtered: 6, rejected: 4; Search String: TITLE-ABSTR-KEY(culture, technique, project) and FULL-TEXT(management, team); conducted on 31th March, 2015		
Vick, T. E., Nagano, M. S., & Popadiuk, S. (2015)	Information culture and its influences in knowledge creation: Evidence from university teams engaged in collaborative innovation projects	International Journal of Information Management, 35(3), 292-298	Rejected: does not present a technique
Kwak, Y. H., & Stoddard, J. (2004)	Project risk management: lessons learned from software development environment	Technovation, 24, 915-920	Rejected: does not present a technique
(Stern, 2013)	Analysis techniques for flexible and agile organizations		Interest based problem solving (IBPS) used to more deeply explore a problem scenario or unspoken interests or concerns
Gu, V. C., Cao, Q., & Duan, W. (2012)	Unified Modeling Language (UML) IT adoption — A holistic model of organizational capabilities perspective	Decision Support Systems, 54(1), 257-269	Rejected: does not present a technique
Austin, S., Newton, A., Steele, J., & Waskett, P. (2002)	Modeling and managing project complexity	International Journal of Project Management, 20(3), 191-198	Rejected: does not present a technique, but a generic framework
(Q. Wang & Hannes, 2014)	Photovoice project on socio-cultural adjustment among Asian and Belgian international students		Photovoice method combined with discussion rounds that enables participants to visually represent themselves or share lived experiences
JSTOR	Search results: 12, filtered: 0; Search String: (((((ab:(culture)) AND ab:(project)) AND (management)) AND (team)) AND ab:(technique))); conducted on 1st April, 2015		
IEEE Xplore	Search results: 42, filtered: 5, rejected: 4; Search String: (((("Abstract":Culture) AND "Abstract":Project) AND management) AND team) AND "Abstract":technique); conducted on 2nd April, 2015		
Jiang, D., & Pretorius, L. (2010)	Communication behaviour in international engineering projects: An empirical and comparative study between South Africa and China	Proceedings of PICMET'10: Technology Management for Global Economic Growth (pp. 1-8)	Rejected: does not present a technique, but a conceptual model for cultural differences in international projects
Skelton, T. M., & Thamhain, H. J. (2006)	A Stakeholder Approach to Minimizing Risks in Complex Projects	Proceedings of PICMET'06: Technology Management for Global Economic Growth (pp. 2203 –	Rejected: does not present a technique

		2208)	
Serce, F. C., Alpasian, F.-N., Swigger, K., Brazile, R., Dafoulas, G., Lopez, V., & Schumacker, R. (2009)	Exploring Collaboration Patterns among Global Software Development Teams	Proceedings of the Fourth IEEE International Conference on Global Software Engineering (pp. 61-70)	Rejected: does not present a technique
Mueller, J. (2010)	The Influence of Cultural Values on Knowledge Sharing across Organizational Boundaries	Proceedings of the 43rd Hawaii International Conference on System Sciences (pp. 1530-1605)	Rejected: does not present a technique
(Fernández-Sanz & Sanjay, 2011)	Analyzing influences of culture and gender on software requirements in multinational team work		Team benefit awareness is a technique to explore behavior of small teams

SEARCH 1b			
Science Direct	Search results: 149, filtered: 1, rejected: 1; Search String: TITLE-ABSTR-KEY(culture, technique) AND FULL-TEXT(project management, team) AND NOT FULL-TEXT(hospital); conducted on 31th March, 2015; first 6 results redundant with 1a and not counted for 1b (only in 1a)		
Vick, T. E., Nagano, M. S., & Popadiuk, S. (2015)	See Search 1a (database Science Direct)		
Kwak, Y. H., & Stoddard, J. (2004)	See Search 1a (database Science Direct)		
(Stern, 2013)	See Search 1a (database Science Direct)		
Gu, V. C., Cao, Q., & Duan, W. (2012)	See Search 1a (database Science Direct)		
Austin, S., Newton, A., Steele, J., & Waskett, P. (2002)	See Search 1a (database Science Direct)		
(Q. Wang & Hannes, 2014)	See Search 1a (database Science Direct)		
Nyugen, N. T. D., & Aoyama, A. (2014)	Achieving efficient technology transfer through a specific corporate culture facilitated by management practices	The Journal of High Technology Management Research, 25(2), 108-122	Rejected: does not present a technique, but a generic framework
(Commander et al., 2012)	Promoting cross-cultural understanding of education through online discussions		Using online discussions for enhancing cross-cultural understanding within a group
JSTOR	Search results: 131, filtered: 6; rejected: 3; Search String: (((((ab:(culture)) AND (project management)) AND (team)) AND ab:(method)) NOT (hospital)) AND la:(eng OR en) conducted on 1st April, 2015		
(Troman & Jeffrey, 2007)	Qualitative data analysis in cross-cultural projects		General research approach for qualitative data analysis in cross-cultural projects or environments that might be adaptable for ICT projects
Leung, K., Bhagat, R. S., Buchan, N. R., Erez, M., & Gibson, C. B. (2005)	Culture and International Business: Recent Advances and Their Implications for Future Research	Journal of International Business Studies, 36(4), 357-378	Rejected: does not present a technique, but an experimental research method that cannot be applied for explicating diversity aspects

(Schall, 1983)	Investigating organizational culture by focusing on a communication-rule approach		Method that supports researching organizational culture by investigating formal rules (using e.g. orientation meetings, influences style questionnaires, ratings and rankings, interviews, card sorting, etc.)
Harkness, S., Blom, M., Olivia, A., Moscardino, U., Zylicz, P. O., Bermudez, M. R., Feng, X., Carrasco-Zylicz, A., Axia, G., & Super, C. M. (2007)	Teachers' Ethnotheories of the 'Ideal Student' in Five Western Cultures	Comparative Education, 43(1), 113-135	Rejected: does not present a technique
(Piotrowski, 1982)	Using case methods in language training for non-native executives		Case method for learning that can be used as a guideline for group discussions
Sivakumar, K., & Nakata, C. (2001)	The Stampede toward Hofstede's Framework: Avoiding the Sample Design Pit in Cross-Cultural Research	Journal of International Business Studies, 32(3), 555-574	Rejected: does not present a technique, but a method for how to calculate multi-country examples based on Hofstede's data
IEEE Xplore	Search results: 145, filtered: 9; rejected: 7; Search String: (((("Abstract":culture) AND project management) AND team) AND "Abstract":method) NOT hospital); conducted on 2nd April, 2015		
Ehrlich, K., Valetto, G., & Helander, M. (2007)	Back to Results Seeing inside: Using social network analysis to understand patterns of collaboration and coordination in global software teams	Proceedings of International Conference on Global Software Engineering (pp. 297-298)	Rejected: does not present a technique, but only a conference workshop description
Suadamara, R., Werner, S., & Hunger, A. (2011)	Cultural Aspects in Groupware Application as an Intercultural Collaboration Technology	Proceedings of International Conference on Collaboration Technologies and Systems (CTS) (pp. 587-592)	Rejected: does not present a technique
(Karttunen et al., 2011)	Cultural differences in intra-organizational education in software service field		Cultural differences evaluation tool (based on Walsham's structural analysis (Walsham, 2002) and Hofstede's dimensions (Hofstede et al., 2010))
Suchan, J., & Hayzak, G. (2001)	The communication characteristics of virtual teams: a case study	IEEE Transactions on Professional Communication, 44(3), 174-186	Rejected: does not present a technique
Khuankrue, I., & Rivepiboon, W. (2012)	Model of Cross-Culture Risk Prediction base on Bayesian Belief Networks for Software Project	Proceedings of the International Conference on Innovation, Management and Technology Research (pp. 560-565)	Rejected: does not present a technique to explicate diversity, but how to structure a probability-impact matrix in risk management
(Hazzan & Dubinsky, 2005)	Relationship between software development methods and culture exemplified by the case of Israeli hi-tech industry and Extreme Programming (XP)		Technique is a five-dimensional model setting culture and the acceptance ('tightness') of a software development method in relation
Qui, R. C. (2010)	A People-centric Sensing Approach to Transforming Cross-Cultural Practices in a Global Virtual Team	Proceedings of the International Conference on Infor-	Rejected: does not present a technique, but a model

	Setting	mation Engineering (pp. 366-371)	
Daneshgar, F. (2005)	An Awareness-based Methodology for Collaborative Business Processes Under Various Organizational Cultures	Proceedings of the 2005 Symposium on Applications and the Internet Workshop (pp. 234-237)	Rejected: does not present a technique, but a process awareness framework
Prough, S. D., Ibieta, R., & Ohwada, A. (2002)	Cultural Impacts on Global Knowledge Management	Proceedings of the International Engineering Management Conference (pp. 172-177)	Rejected: does not present a technique

SEARCH 2

Science Direct	Search results: 24, filtered: 1; Search String: TITLE-ABSTR-KEY(diversity management, technique) AND FULL-TEXT(cultural, team); conducted on 31th March, 2015		
(Wilson, 2013)	Using encounters for diversity training as a different learning approach		Encounter group techniques, including two particular exercises with the goal to overcome stereotypes
JSTOR	Search results: 124, filtered: 1; rejected: 1; Search String: (((ab:(diversity management)) AND (cultural)) AND (team)) AND ab:(technique)) AND la:(eng OR en); conducted on 1st April, 2015		
Tractinsky, N., & Jarvenpaa, S. L. (1995)	Information Systems Design Decisions in a Global versus Domestic Context	MIS Quarterly, 19(4), 507-534	Rejected: does not present a technique
IEEE Xplore	Search results: 7, filtered: 2; rejected: 1; Search String: (((("Abstract":diversity management) AND cultural) AND team) AND "Abstract":technique); conducted on 2nd April, 2015		
(Li et al., 2004)	Enhancing process management by using knowledge management		Various techniques presented underlying the basic principles of process roadmapping, clustered in soft and hard system methodologies, and connected to the SECI model (Nonaka & Takeuchi, 1995)
Avritzer, A., Beecham, S., Kroll, J., Mena-sche, D. S., Noll, J., & Paaivaara, M. (2004)	Survivability Models for Global Software Engineering	Proceedings of the IEEE 9th International Conference on Global Software Engineering (pp. 101-109)	Rejected: does not present a technique

SEARCH 3

Science Direct	Search results: 152, filtered: 2; rejected: 2; Search String: TITLE-ABSTR-KEY(collaboration, cultural) and FULL-TEXT(behavior, technique); conducted on 31th March, 2015		
Popov, V., Noroozi, O., Barret, J. B., Biemans, H. J.A., Teasley, S. D., Slof, B., & Mulder, M. (2014)	Perceptions and experiences of, and outcomes for, university students in culturally diversified dyads in a computer-supported collaborative learning environment	Computers in Human Behavior, 32, 186-200	Rejected: does not present a technique
Dubé, L., & Robey, D. (1999)	Software stories: three cultural perspectives on the organizational practices of software development	Accounting, Management and Information Technologies, 9(4), 223-259	Rejected: does not present a technique
JSTOR	Search results: 22, filtered: 0; Search String: (((ab:(diversity management)) AND (cultural)) AND (team)) AND ab:(technique)) AND la:(eng OR en); conducted on 1st April, 2015		
IEEE Xplore	Search results: 44, filtered: 1; rejected: 1; Search String: (((("Abstract":Collaboration) AND "Abstract":cultural) AND behavior) AND technique); conducted on 2nd April, 2015		

Jablokow, K., & Myers, M. (2010)	Managing Cognitive and Cultural Diversity in Global IT Teams	Proceedings of the 5th IEEE International Conference on Global Software Engineering (pp. 77-86)	Rejected: does not present a particular technique
Qui, R. C. (2010)	See Search 1b (database IEEE Xplore)		

COMBINED SEARCH in database Springer Link			
(Horii et al., 2005)	Modeling and analyzing cultural influences through a computational simulation model		Computational simulation model for visualizing the effects between two or more cultural groups
Beck, R., & Schott, K. (2012)	The Interplay of Project Control and Inter-organizational Learning: Mitigating Effects on Cultural Differences in Global, Multi-source ISD Outsourcing Projects	Business & Information Systems Engineering, 4(4), 183-192	Rejected: does not present a technique

8.2.2 INTER-RATER RELIABILITY TESTING

8.2.2.1 TASK FORMULATION FOR INTER-RATER TEST

The leading research question for this systematic literature review is ‘Which techniques exist to support managing diversity in international projects?’ When searching for existing techniques, it was particularly interesting to review which techniques also include the components ICT, behavioral patterns or focus on explicating implicit knowledge regarding the topic. In order to include these aspects, but also to narrow down this general question, the further sub-questions were defined:

- 1) Which techniques are relevant to ICT?
- 2) Which techniques focus on behavior (rather than on cultural value dimensions)?
- 3) Which techniques include an “explication component”?

8.2.2.1.1 How to proceed as an inter-rater

Conduct the 3 searches described below (in 3 different databases) and list:

- how many hits the search produced in total.
- how many publications you accepted for the literature review, given the following acceptance and exclusion criteria.

8.2.2.1.2 Apply practical screen

Primary sources for the practical screenings for the criteria defined in the following table (for scientific articles and conference proceedings) or the short description or blurb (for books or book chapters).


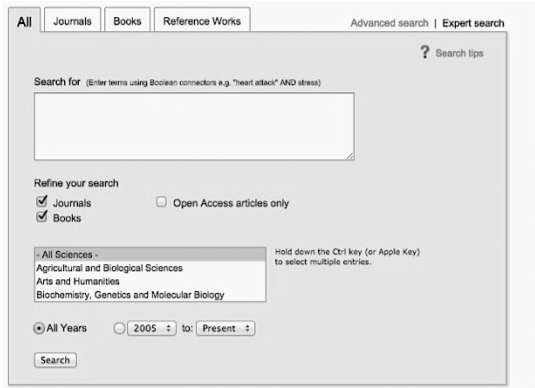
	Acceptance Criteria	Exclusion Criteria
Language:	English accepted	Other languages not considered.
Years searched:	No restrictions	No restrictions.
Content covered:	Empirical studies, conceptual and theoretical publications were accepted.	Papers dealing with quality management, safety culture, biology, architecture, or school education were not considered.
Quality of source:	Articles in scientific journals Books or book chapters Conference proceedings with a peer-reviewed selection procedure	Blogs. Websites. Abstracts without access to the full article outside the library network of the University of Vienna. This criterion only excluded a few articles, but was necessary due to economic constraints for the research.
Access to source:	Publication had to be available via the library network of the University of Vienna.	Publications that were not accessibly publicly through the access of the University of Vienna were not considered.

8.2.2.1.3 Apply methodological quality screen

After the practical screen, the methodological quality screen was performed. Therefore, several criteria were defined ahead for the screening of the discussion or conclusion section (for scientific articles and conference proceedings) or particular chapters in the publication (for all publications). These criteria are described in the following table.

	Acceptance Criteria	Exclusion Criteria
Investigated Sector:	Accepted sectors/areas were: Information and Communication Technologies Project Management Business Administration and General Management	Other research areas were not included.
Results:	Publications presenting a particular technique or method for managing culture or diversity in a business context (preferably ICT) were accepted.	Publications presenting high-level essays without a particular technique or method were not considered.

8.2.2.1.4 Search 1

Database:	ScienceDirect http://www.sciencedirect.com/
Search Procedure:	<p>Select option “Advanced search” on the main page:</p>  <p>Select “Expert search”:</p>  <p>Copy-Paste the search string (below) and click on “Search”.</p>
Search String:	TITLE-ABSTR-KEY(diversity management, technique) AND FULL-TEXT(cultural, team)
Total hits:	Please insert
Filtered hits:	Please insert
Cross-reference for literature review:	(Search 2, SD)

Results: Search 1

Examples:

Authors	Title of Publication	Year	Journal/ Proceedings	Issue	Pages	DOI
Vick, Thais Elaine, Nagano, Marcelo Seido, Popadiuk, Silvio	Information culture and its influences in knowledge creation: Evidence from university teams engaged in collaborative innovation projects	2015	International Journal of Information Management	35(3)	292-298	10.1016/j.ijinfomgt.2015.01.010
Stern, David	3 - A few important analysis techniques	2013	In: David Stern, How libraries make tough choices in difficult times: Purposeful Abandonment		37-103	ISBN: 978-1-84334-701-9

8.2.2.1.5 Search 2

Database:	JSTOR http://www.jstor.org/
Search Procedure:	<p>Insert the search string (below) in the search field and click on the search symbol.</p>  <p>Alternatively, you can also use this procedure: Select option “Advanced search”: Insert the following search terms and settings:</p>  <p>Click on “Search”.</p>
Search String:	(((ab:(culture)) AND ab:(project)) AND (management)) AND (team)) AND ab:(technique))
Expected total hits:	Please insert
Filtered hits:	Please insert
Cross-reference for literature review:	(Search 1, JSTOR)

8.2.2.1.6 Search 3

Database:	IEEE Xplore http://ieeexplore.ieee.org/Xplore/home.jsp
Search Procedure:	<p>Select option “Advanced search”:</p>  <p>Insert the following search terms and settings:</p>  <p>Click on “Search”.</p>
Search String:	((("Abstract":Collaboration) AND "Abstract":cultural) AND behavior) AND technique)
Expected total hits:	Please insert
Filtered hits:	Please insert
Cross-reference for literature review:	(Search 3, IEEE)

8.2.2.2 INTER-RATER TEST RESULTS

The inter-rater person sent the following results for the 3 conducted searches:

Results: Inter-rater Search 1

Total hits: 24

Filtered hits: 1

Conducted on May 9th, 2015

Compliance: 100%

Authors	Title of Publication	Year	Journal/ Proceedings	Issue	Pages	DOI
Helen F. Wilson	Learning to think differently: Diversity training and the 'good encounter'	2013	Geoforum	45	73-82	10.1016/j.geoforum.2012.10.001

Results: Inter-rater Search 2

Total hits: 18

Filtered hits: 0

Conducted on May 9th, 2015

Compliance: 100%

Authors	Title of Publication	Year	Journal/ Proceedings	Issue	Pages	DOI
-	-	-	-	-	-	-

Rater – Results: Search 3

Total hits: 44

Filtered hits: 2

Conducted on May 10th, 2015

Compliance: 100%

Authors	Title of Publication	Year	Journal/ Proceedings	Issue	Pages	DOI
Jablokow, K.; Myers, M.	Managing Cognitive and Cultural Diversity in Global IT Teams	2010	Proceedings of the 2010 5th IEEE International Conference on Global Software Engineering (ICGSE)	-	77 - 86	10.1109/ICGSE.2010.17
Qiu, R.G.	A People-centric Sensing Approach to Transforming Cross-Cultural Practices in a Global Virtual Team Setting	2010	Proceedings of the 2010 WASE International Conference on Information Engineering (ICIE)	-	366-371	10.1109/ICIE.2010.93

8.3 FOCUS GROUP INVESTIGATION ON HUMAN-CENTERED TRENDS IN PROJECT MANAGEMENT

The trends of human-centered principles in project management were investigated during a workshop at a project management symposium at the University of Applied Science bfi Vienna on 28th of May, 2015.

The symposium dealt with diversity in project management from three perspectives: processes, organization, and human aspects. The workshop ‘diverse behavior and how to steer in daily project work³’ was conducted in the stream ‘human aspects’. The main idea was formulated as follows: While several years ago the topic of diversity was discussed primarily in an international context and equated with interculturality, today one can discover heterogeneity and diversity in any group, team, or project. Handling diversity seems to be a key competence for current and future projects. Therefore, the main focus of the workshop was on how to uncover diversity in projects and how to steer it profitably.

The workshop consisted of two parts. The first part consisted of a group moderation where all 20 participants were asked to identify what affects project success in heterogeneous groups. Those factors were noted on cards and categorized in a second step. Besides general project management aspects, such as having clear role and task definition or how planning and implementation is done, the overwhelming majority of aspects regarded interpersonal behavior and aspects. For instance, communication and internal coordination, willingness to learn or being interested in other opinions or approaches, as well as personal traits (e.g. how people work under pressure, if they are introverted or extroverted, if someone is helpful and reliable or not) and ground rules for working together (e.g. keeping obligations, punctuality) were mentioned as such interpersonal aspects. Most interestingly, the participants mentioned trust, respect, openness, and empathy, and grouped these four factors together in a category.

In the second part of the workshop, the participants were asked to form four focus groups (Flick, 2002), choose one of the topics identified in the first part of the workshop, and bring up a real world case to illustrate the issue. Furthermore, the focus groups were to develop a solution strategy for this particular case, and describe how to integrate their solution in project management activities.

The focus groups dealt with the four topics of personal traits, communication, unclear requirements and different expectations, and different approaches towards planning and implementation.

Focus group 1: personal traits. This group discussed the case of a team member who is not reliable and does not keep obligations. The solution strategy involved a mix of group activities (team building; frequent, non-technical team meetings; supervision; setting ground rules), project management activities (clear role definitions) and interpersonal leadership activities (acknowledge the person; illustrate the impact of the person’s behavior on the team; personal conversations).

Focus group 2: communication. This group chose a practical case in which the customer is not communicating fairly and demands more than what was contracted. The focus group determined it to be essential to create trust by setting common ground rules, common prerequisites, as well as a common understanding for data and processes. Furthermore, an employee that understands both sides could help to build bridges between the cultures.

Focus group 3: unclear requirements and different expectations. The case dealt with a project facing several technical constraints and in which IT worked against business. The solution was to build an interdisciplinary group that dealt with the issues. Supported by intercultural training and team building, strong leadership, clear role definitions, frequent face-to-face communication, and understanding the power politics aspect, the case could be solved.

³ Original German title: Verhalten von Diversitäten im Projektalltag und deren Steuerung

Focus group 4: different approaches towards planning and implementation. This group dealt with the issue of finding a common procedure (agile versus traditional) together with the customer. The group found it essential to first illustrate both approaches with their pros and cons to create transparency and dispel fears. Next, they would try to identify commonalities in order to merge both approaches; working in an integrated project team would best support this merging. Furthermore, clarifying expectations, building a common understanding, and being transparent about controlling procedures can create trust. Finally, the group identified the acceptance by the users as another essential factor to be considered.

8.4 DETAILED RESULTS OF QUALITATIVE VALIDATION – INTERVIEWS WITH EXPERTS

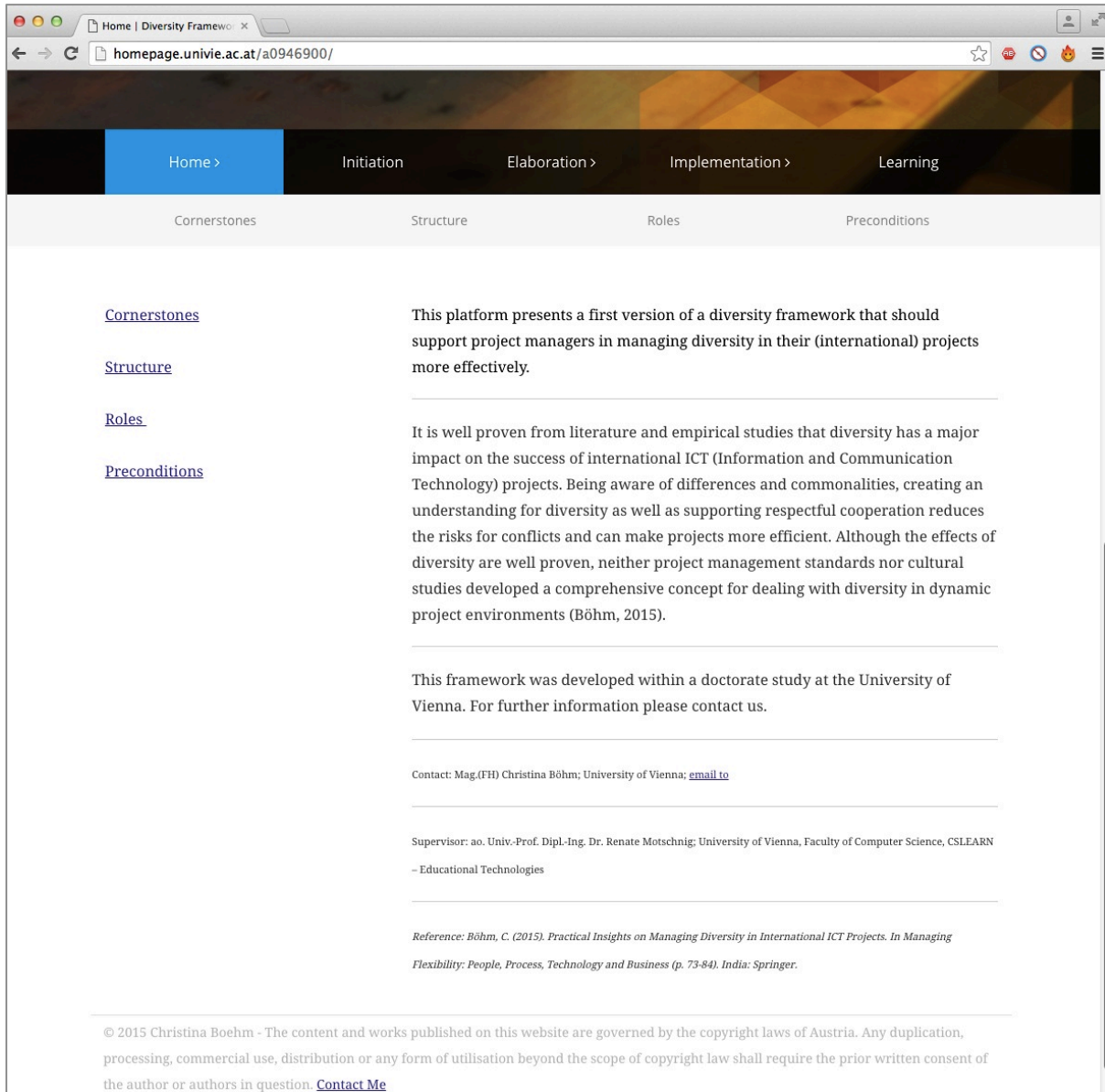
8.4.1 CATEGORIES

- Cont = Content: Is there any potential for improvements regarding the framework's content?
- S = Structure: Is the structure of the framework understandable? Would you improve something? What?
- A = Feasibility and Applicability: Is the framework practicable and feasible? Why? / Why not? Could you apply the framework in your project(s)? Why? Why not? If no, what needs to be done to make it applicable?
- Com = Completeness: Is the framework complete? If not, what are you missing?
- F = Flexibility / Adaptability: Is the framework flexible enough? Could you use the framework for different situations, different teams, different sizes of projects, etc.? Is it adaptable enough for your own practice?
- Innovation: Is the framework innovative? Is there any other approach that is better than the framework?
- Ease of Use / Learnability: Is it easy to learn? Could you estimate your effort to start using parts of it?
- Skills: What general conditions need to be in place in order to be able to use the framework in real-world settings (e.g. skills of project manager / project team)?
- Overall Impression: What is your overall impression about the framework? Would you recommend the framework to a colleague?

8.4.2 WEB PLATFORM

A web platform was created to allow a proper representation of the workshop and an in-depth validation. The platform consists of five major parts: a home section and the four phases of the diversity workflow.

8.4.2.1 HOME SECTION



8.4.2.2 INITIATION PHASE

Initiation | Diversity Frame

homepage.univie.ac.at/a0946900/page0/

Home > Initiation Elaboration > Implementation > Learning

This initial workflow can be applied in the first phase of a project. Here, the project manager evaluates if a diversity analysis is actually feasible and applicable (based on the team member's background and/or company-internal guidelines on diversity management).

If it was decided to conduct a diversity analysis, the project manager will initiate an orientation meeting with the entire project team.

1. Get information about project team
2. Organize orientation meeting

After deciding for performing a diversity analysis the project manager will arrange an orientation meeting for his project team. Hereby he needs to check the team members' availability, define a place, a setting (e.g. online or face-to-face workshop) and who will participate. Although it is highly depending on the project situation who will attend this orientation meeting, it is recommended to involve all core team members, the project owner and project sponsor, involved functional managers and a key person from the customer side as well as core users.

Furthermore, in this process step the project manager will also define agenda points for the meeting and produce a orientation meeting guideline.

Lead: Project Manager

Click to view [detailed activity diagram](#)

Orientation Meeting Guideline: The orientation meeting guideline can be used for the first initial meeting. It defines the participants, the setting of the meeting and provides a rough agenda. It is essential to clearly introduce the purpose, objectives and expected outcome of the meeting and ensure a safe, confidential environment for the participants.

Click to view [orientation meeting guideline template](#)

homepage.univie.ac.at/a0946900/page0/#1

8.4.2.3 ELABORATION PHASE – OVERVIEW AND WORKFLOW STEPS

Home > Initiation **Elaboration >** Implementation > Learning

Overview of Elaboration Workflow Elaboration Workflow Steps

This workflow sets the strategy for dealing with diversity aspects in a particular project.

After informing the project team about the purpose and benefits of conducting a diversity analysis, the project manager can choose (together with the team) between two basic options. Either the team performs the diversity analysis and develops solution strategies together in an **open, case-based discussion setting**, or the project manager uses a more **analytic procedure** and is primarily responsible for identifying diversity gaps within the team and developing a solution strategy. Both procedures are equally eligible. Which procedure is chosen is depending on the project context and the preferences of the project manager and the project team. For instance, an open discussion might not be the preferred procedure in predominantly Japanese teams, as the culture in general is known for avoiding conflicting situations within the team. In that case, an analytic procedure would be applicable and can also develop valuable results.

Open, Case-based Procedure

Alternatively, the project team can decide for an open discussion approach. In that case, the project manager still plays a key role in the process, but instead of collecting, analyzing and compiling data, the project manager acts as a moderator and facilitator throughout the process.

The open case-based procedure could be either conducted in one meeting (e.g. extending a kick-off meeting for a day) or in several smaller meetings. Anyhow, the meeting will start with discussing diversity features and identifying gaps within the team. For this discussion a pre-defined set of questions describing the diversity features can be used. After the gaps have been identified, the team ought to find realistic cases for the project. Collecting diversity cases for each diversity gap that will be dealt with after is important as it reduces the level of abstractness, which makes it easier to find

Analytic Procedure

In the analytic procedure the project manager has the tasks to initiate, investigate and analyze several diversity aspects for the project, combine the collected data, and generate a practical solution strategy for the project. The data, which the project manager will accumulate, are derived from three sources:

1. The project manager will initiate a survey based on certain diversity features that have an impact on project management. For this survey a pre-defined diversity questionnaire can be used. The questionnaire answers need to be analyzed and gaps need to be identified.
2. Furthermore, the project manager will search for formal rules that already exist for the involved organizations.

Home > Initiation **Elaboration >** Implementation > Learning

Overview of Elaboration Workflow Elaboration Workflow Steps

This workflow sets the strategy for dealing with diversity aspects in a particular project.

1. Hold orientation meeting

Option A)
Open, case-based discussion procedure chosen

2.1. Discuss diversity features and identify gaps

2.2. Find cases for identified gaps

Group discussion or visualization method?

Visualization method

2.3.1. Collect data for daily ,work story‘ for each case

2.3.2. Discuss ,work story‘

Group discussion

2.4. Identify coherence and deviations

Option B)
Analytic procedure chosen

3.a) Perform survey

3.b) Investigate formal rules

3.c) Discover informal rules

3.1. Combine collected data and identify gaps

3.2. Develop solution strategy

8.4.2.4 IMPLEMENTATION PHASE

Implementation Workflow Steps

homepage.univie.ac.at/a0946900/page3/page14/

Home > Initiation Elaboration > **Implementation >** Learning

Overview of Implementation Workflow Implementation Workflow Steps

This workflow provides a guideline on how to tackle arising diversity challenges during the project implementation phase.

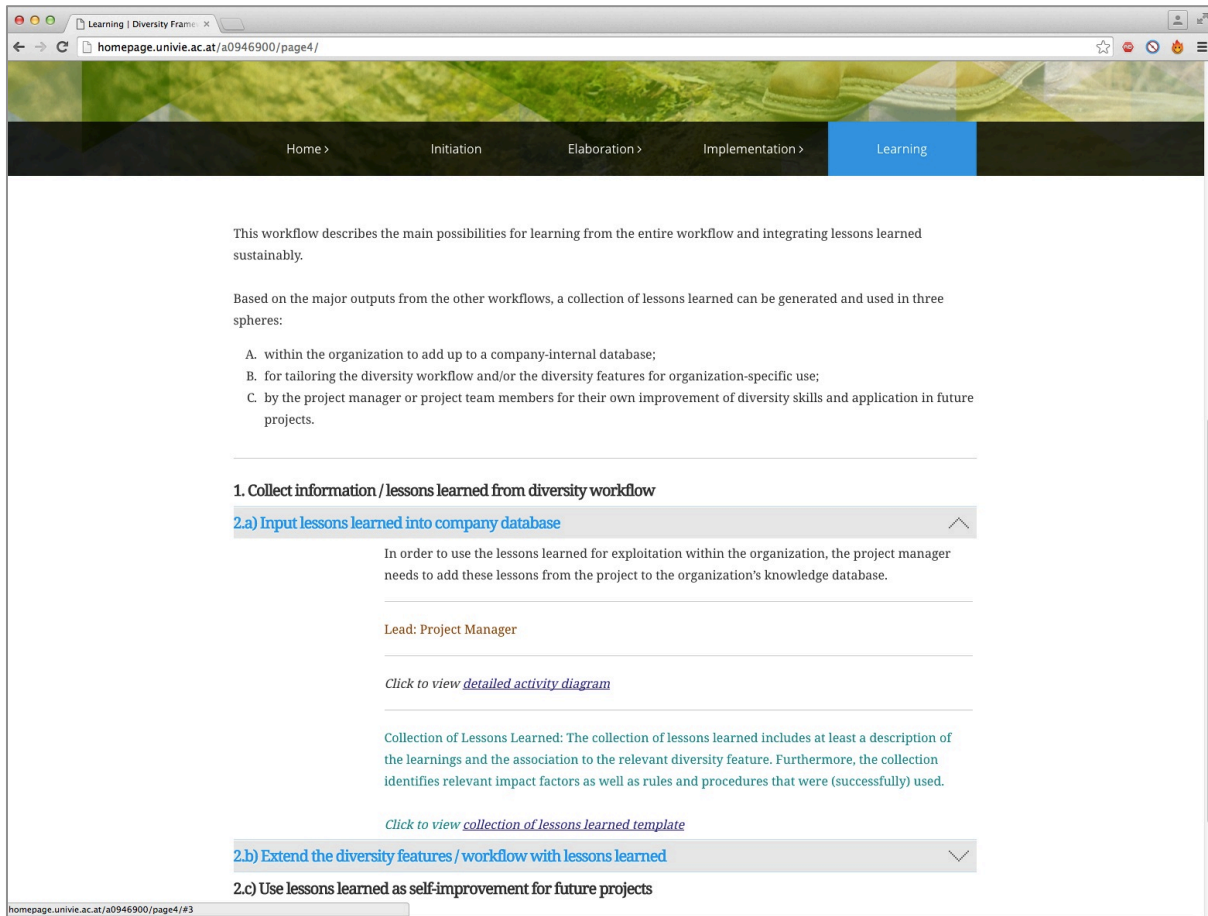
1. Assess challenge / chance and decide for procedure

Option A) Group-based procedure chosen	Option B) Individual-based procedure chosen
2.1. Organize team meeting	3.1. Identify challenge / chance and underlying reasons
2.2. Identify challenge / chance and underlying reasons	3.2. Identify individual interests
2.3. Identify individual interests	3.3. Visualize interests, conditions, questions, processes
2.4. Visualize interests, conditions, questions, processes	3.4. Formulate solution and inform project team
2.5. Formulate solution	

Help needed? Get explanation and notation of activity diagrams [here](#).

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8.4.2.5 LEARNING PHASE



8.4.3 INTERVIEWEES' PERCEPTION

8.4.3.1 STRUCTURE

Understandable:

Yes (10/10), because

- Top-down options (individual-based) and bottom-up (group-based) in elaboration and implementation phase is good.
- Diagrams are very good and clear; it is nice to read through it.
- The examples are most beneficial.
- Good to get awareness of gaps and know what to do with this information (as PM, instructor, supporter, consultant, etc.).
- UML diagrams were very clear.
- Role description between PM and team members was good and clear.
- Positive that learning, feedback, and improvement is possible in the entire process.
- Framework is very rational and logical.
- Nice design of the website.
- The role description is very helpful.
- Very clear structure.
- The link between diversity management and PM should be loose; so the framework it is not restricting
- Great description; the proposed solutions are very good. It is generic, but at the same time well defined.
- Examples are very good and the process and templates are well described. The structure and processes are logic and self-contained.

8.4.3.2 *FEASIBILITY / APPLICABILITY*

Practical:

Yes (9/10), because

- the topic is important and relevant in projects.

Not easy to apply in practice (1/10), because:

- as the project manager would still need more examples or templates (e.g. how a solution strategy could look for a specific gap).

Applicable:

Yes (10/10), because

- it works well for research or IT projects.
- it provides the PM with what he actually needs.
- it is user-friendly and practice-oriented (design, process, diagrams, templates, examples) and also practicable.
- it is very applicable in real projects.
- It is good that the framework deals with behavior and not values. When you talk about behavior this is not as judgmental. Simplifications are avoided and it is easier to talk about behaviors. It reduces the risks for stereotyping.
- But: there are high demands on the project manager.
- The EL has a high time-effort, but could be applied.
- Maybe it will be difficult in the next years (the industry is not ready for the topic yet), but in Scandinavia the workshop procedure would already work.

8.4.3.3 *COMPLETENESS*

- It is very complete; the interviewee was impressed by the profound information.
- The framework needs to be applied in practice to see if something is missing.
- Very thought-out concept.

8.4.3.4 *INNOVATION*

Innovative: Yes (10/10)

- There are some connecting aspects to things that already exist (e.g. skills of PMI or ICB). The framework is a logical progression of the existing standards, but has never been so specific and concrete.
- It is innovative, never seen something alike before.
- The connection to the PM process is well done and helps the project manager in the 'right' situations.
- The framework with its clear steps and methods is new.
- It is positive that it is designed as an open framework; it gives every culture the opportunity to adapt the framework for their cultural context.
- There is a diploma thesis by Stefanie Berman who tried to connect diversity management with Gareis' project management model. But this is quite different from this approach.
- Obviously Köster is an inspiration and starting point, but the difference is, that in her work culture (not diversity) is only a small part of international project management. Also, she uses values, not behaviors for her analysis.
- It is known (especially in international companies) that diversity is important, but often it is treated on the wrong level (in a ignorant, stereotyped manner). This manner generates even more stereotypes. But it is more important how a team wants to work together rather knowing differences between Americans and Austrians.
- Several elements of the framework exist, but the consistent, profound approach is new.
- Nothing seen that is balancing the topic diversity to project management.
- There are definitely companies that will let their employees take questionnaires and tell them their strengths and weaknesses, but there is nothing that links back to project management.
- The baseline to deal with differences seems familiar (which is positive), but there is no comprehensive, profound framework.
- Another PhD student at the University of Vienna deals with the same topic, but in a different manner. The framework provides a structured approach.

8.4.3.5 FLEXIBILITY / ADAPTABILITY

Flexible:	<ul style="list-style-type: none"> • Very flexible and adaptable, because the framework can be developed further. • The flexibility is very depending on the preconditions – if somebody is very reflective, maybe some steps could be skipped.
Team:	<ul style="list-style-type: none"> • Applicable in any teams, but preferable in teams or projects where diversity plays a bigger role. • Applicable for all teams, also for national teams or persons from the same organization. • No restrictions. • I would only use it with teams that are known and have worked together before (not with a new customer in a new project). Generally, in highly diverse it is always meaningful, especially in international context, but also with one country. • It always makes sense, independent of team size. Usually the team take such a diversity encounter very positive. • Some process steps are harder to implement in bigger groups (e.g. EL group-based procedure); 10 persons or more make the implementation more difficult. • Obviously international projects are suitable, but also inter-divisional projects (where communication might play the biggest role regarding the diversity features). • Also interesting: how important is collaboration in the project; is there a lot of interdependence between people? • No restrictions (only for virtual teams another procedure has to be provided). • It might be more difficult to organize it for international, distributed teams (as it is hard to bring them together). The individual-based procedure could be combined with a videoconference workshop to address virtual teams. • For smaller teams it might be hard to get budget for it. The project needs a certain size and duration to be able to argue the application of the framework. • Can be applied in different teams (only it might take longer in big teams to get them at the same location).
Project Size:	<ul style="list-style-type: none"> • All projects; could be differentiated for smaller or bigger projects, but tailoring is possible. • 10-15 people (medium-size) well applicable. The more people involved, the more complicated it will be for the manager with the group-based procedure. For only 2-3 people it might not make much sense for a group-based procedure; but still raising awareness (without a full workshop) in a small, structured f2f-discussion would make sense. • No restrictions. Also applicable for internal projects. Only: not clear if it works with an agile procedure? For short-term projects I need to select specific methods of the framework set and only do some essential parts (e.g. only awareness raising). • For all project sizes, also with only 2 or 3 people; for teams with 100 people several sessions with sub-teams (5-10 persons) could be done. • Rather for larger projects with 20 people or more (in a kick-off meeting with 4 or 5 persons that last only 1 hour would not be enough time); still, if the team is smaller you need less time for the workshop. • For small projects it would be helpful to have information about the cultures and a checklist of diversity features (maybe the first 5 to 7 on the list) that are most relevant to downscale the framework for shorter projects. • For long-term project it is more suitable and easier to sell, but of course – from a diversity perspective – it is also important for small project, but harder to integrate. • No restrictions. Only in big projects the steps might to be adapted (e.g. in a 15-years mega project you would start with the process, but after 2 years you need to start in the EL again, e.g. if team members changed). • No restrictions (only in big construction projects with 20 sub-project suppliers the group-based procedure would not harder and more time effort due to these natural restrictions). • Depending on the project size the duration of the framework will change; I can also do tailoring and take out logically connected parts.
Project Type:	<ul style="list-style-type: none"> • All. • Works well for IT and research projects; no restrictions. • All projects, also agile (because mainly there is a hybrid form in practice), but with the Re-Assessment in the agile cycle, not in the management cycle. • The corporate culture of an organization is more decisive than the type of project. Whenever people have to work together for a longer period of time, diversity will play a role. • For all. • No restrictions.

	<ul style="list-style-type: none"> • Can be used for different project types.
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8.4.3.6 LEARNABILITY

How long to learn?	<ul style="list-style-type: none"> • 4-6 months to integrate into a project; In particular: 3-4 months to understand the framework steps yourself and prepare templates; then 1-3 months to also 'feel' it. • 1 day to think through it and learn it (without a particular project). • A few hours to understand. • To really learn it one has to go through the particular steps and apply them. • Min. 4h to 1 day. • 1 entire run-through in a real project. Then one can understand the benefits, critical steps and knows where to pay special attention. • Any case, learning by doing is way easier than learning theory. • Applying it twice (1st application for creating all necessary templates and the 2nd application for being confident and competent with the framework). • Learning by doing (as most questions arise during an implementation / trial); this is more reasonable than theoretical learning.
Preconditions for applying:	<ul style="list-style-type: none"> • Only for people that already dealt with diversity before (will take longer for others). • Would require more context information (e.g. when and where can the framework be applied). • Learning online would be enough. • The project owner needs to agree on the procedure. • Before applying it would be good how to describe the benefits to the team.
How long to apply?	<ul style="list-style-type: none"> • 1 week is enough to initiate the first meeting and agenda. • The team-oriented procedure could be done instant, the individual-based procedure would be more time effort in the beginning. Generally, 1 month should be enough to prepare. • Also, only applying the first 2 steps (awareness raising) would be an option to start. First open the topic in the kick-off and then integrate it further in the project organization. • Reserving some hours for the topic at the beginning of the project and sensing if the team is interested; then it can be extended step-by-step if the team is motivated. • Many things can be easily integrated into daily business. • Could be started to apply within 1 month. • Depending on the team, the preparation might take 8-10 hours (if there are no hidden resistance or if the team does know each other). • With each trial the application could be extended → stage model: first only awareness building and then the next stage. In theory it would be also possible to switch from the group-based procedure to the individual-based.
First application in which team?	<ul style="list-style-type: none"> • Choosing a project that is not too big and has enough time would be wise. • Another premise would be that the team is highly interactive and not virtual. • Would try it with teams that are known and have worked together before (not with a new customer in a new project).
Supporter in the first application:	<ul style="list-style-type: none"> • Having a supervisor or supporter the first time would speed up the process of learning. • For the first and second tries it would be helpful to have a supporter that facilitates the entire process. • Definitely an experienced supporter or supervisor is needed (not for the steps themselves, but for designing the workshop and dealing with the results). • At least 1 project needs to be fully supervised; otherwise it would be too difficult to do it alone. • It is reasonable to have a supporter during the process, especially in the learning phase. After 3 or 4 applications in projects, the trained person can be a multiplier within the organization. • For the first tries, support or facilitation is a precondition. • In general, a co-trainer or co-facilitator would be needed for all projects. These co-facilitators could be also multipliers within the company (so they received the training before) and co-moderate the workshops. This also helps to avoid role conflicts for the PM (participant versus moderator). • In general an external person should always support the open team building (before EL). During the EL it is not necessary to have a trainer, but a co-moderator would be sufficient (as it is her or his core competence to elaborate solutions with the team – and this is also ex-

	pected by the team).
Issues for the application:	<ul style="list-style-type: none"> • Main problem will be that people will not have much time to spend on it (maybe 1 hour). This could be a barrier. • People who are not culturally aware will have a hard time learning the framework, whereas people that have cultural awareness might feel that the framework is too complicated and it would take several hours (around 4) to get an understanding of the framework.

8.4.3.7 SKILLS

Skills of project manager – experience:	<ul style="list-style-type: none"> • Addition to preconditions: experience with 2 or 3 challenging projects (e.g. in intercultural, global or very heterogeneous teams); then the project manager can really understand the steps; inexperienced managers need assistance or support. • Entrance level: medium, but not high – not appropriate for junior managers. • The skill level is depending on the options in the EL: A junior PM could do the individual-based options with the checklist, but she or he still needs to do the discussion with the team. In the group-based workshop options, where I talk about the real problem, I need more skills (interpersonal, experience with workshops, conflict solution, intervention techniques). • For workshop skills should be very high – good methods are needed for working in plenary, small groups, teams, 1-on-1, etc. • Generally, the organizational PM can help the technical PM with the workshops. • Project manager needs experience to be able to apply it.
Skills of project manager – intercultural competencies:	<ul style="list-style-type: none"> • The project manager needs to have intercultural competence (otherwise it will not work). If the manager is open, the team will in general be also more open if they worked together before. • A precondition would be that intercultural management or diversity management are known to the PM and she or he needs to have some experience (e.g. living in another country for several years, leading international projects), but also theoretic knowledge → therefore she or he needs to have some intercultural training. • Requirements for an appropriate PM would be a certain level of cultural and emotional intelligence. In general, the 4 elements (technical, methodical, social, personal) need to be in place. If I have an experienced PM I can provide intercultural training before. Still, the wiser choice would be for a PM that might not be certified, but has a lot of international experience. Therefore priority 1 = international experience; priority 2 = experience in leading project teams; priority 3 = methodical skills (these are less important as that could also be done by a good, maybe certified, project assistant). • The project manager always needs intercultural skills or even be a cross-cultural expert with high cultural awareness and sensitivity; highly skilled people needed (could also be support). • A training for the PM would help so she or he could do the workshop. • Intercultural trainings are often not effective as they often convey platitudes. Still, if you work in another country you need to know the basics of the particular culture.
Skills of project manager – personal attitude:	<ul style="list-style-type: none"> • There needs to be a certain openness (from practice/experience) and interest to apply the framework. • For others it works if the person is open-minded; one does not have to be on a very experience managerial level. • Premise is the motivation by the project manager.
Skills of project manager – inappropriate:	<ul style="list-style-type: none"> • Not suitable for junior managers (they are not so aware). • A junior PM would have to little authority and would be distracted by other basic things. → The basics need to be experienced and there needs to be a certain stability in the leadership style. • In theory it would be possible for junior managers, but they would be overexerted by the framework (or even do not get in positions where they lead this type of projects). • Project managers without experience should not perform the framework.
Supported process:	<ul style="list-style-type: none"> • If there is a moderator for the entire process, the PM does not need particular skills as she or he will not be moderating. • A mediator / supporter / external coach or consultant is a good idea as the resistance within the team would be reduced. Still, the external person should not be 'responsible' for the additional time effort.

	<ul style="list-style-type: none"> • It would even make sense to bring an observer to the workshop to have a chance for better feedback. • The responsible person needs to carry the group-dynamic process. Therefore she or he needs reflection, self-awareness and experience. The individual-based procedure could be done by the PM, the group-based procedure requires a trainer or supporter. • The role of the supporter could be an interesting service for the PMO (this should be included in the role description of the supporter). This would be quite positive, as the PMO employees have enough distance to the projects and standards could be introduced in the organization. • There are no certain requirements for the education as those who have been trained can act as multiplier in the organization.
Skills of project team members:	<ul style="list-style-type: none"> • Supporting if all persons in the team are open-minded, but not a realistic case. • Including Bennett's questionnaire (ethnocentric versus ethnorelative) is not necessary, because in any case I will not have a 'perfect' team in practice. • Premise is the motivation by the team members. • The acceptance of the team members will be good, if the team is prepared for the procedure (even if there is no high awareness for the topic). Only if the process consumes too much time, there could be some resistance (especially by people who are not fully assigned to the project).
Who performs which procedure?	<ul style="list-style-type: none"> • For smaller, less complex teams the project manager could do both procedures alone • Should not be done alone (especially not if the PM never dealt with the topic diversity before), but with a coach – especially for the starting phase. • The PM should not perform the workshop, rather the supporter. It is very important that the PM is not facilitating the workshop, but an external person. • Project manager might not be the best person to perform the workshop (as she or he might cause more issues than anybody else in the team). • A problem could be that even if the PM has interest for using the framework, she or he might not have time for it.
Preconditions:	<ul style="list-style-type: none"> • From a research perspective, the preconditions make perfect sense, but from a practical perspective too many preconditions could be perceived as barrier.

8.4.3.8 OVERALL IMPRESSION

Recommended:	Yes (6/10) Yes, but only with trainer or supporter (1/10) No answer (3/10)
General comments / impression:	<ul style="list-style-type: none"> • Framework seems trustworthy, reliable and creditable. The combination of soft aspects with methodical PM seems quite useful. • It is actually not so important which strategies are generated in the process, but that diversity is a topic at all. Any diverse behavior and communication in a project increases the complexity and can cause problem. Dealing with the topic proactively is a wise choice. • The framework carries something to surface that is already there. The tool does not trigger negative effects, but still it could irritate some persons. It also could be a battlefield for power games. The person-centered preconditions for the project manager should avoid this, but the need for an adequate training or consulting will be there. • The framework is good, but you need to invest effort into understanding it. The PM needs to be motivated to invest that time effort. An introduction in stages (first awareness raising, then further steps) would be good as it might be too complex at first. • It is a very nice process. • The framework suits well for project management. Still, there should be a good intercultural training (otherwise the risk is high that they just use Hofstede). • Good orientation guideline.

8.4.4 SUGGESTED IMPROVEMENTS

- Cont = Content
- S = Structure
- A = Application / Feasibility
- Comp = Completeness
- F = Flexibility / Adaptability
- L = Learnability / Ease of Use

No.	Sub-No.	Description	Acceptance / Rejection Comment
Cont1		Application examples	
	1.1	Application examples: Some examples from companies where it was applied would be good (to get a better idea).	No experiences at the moment; could be an aspect for future research and practice
Cont2		Additional examples / checklists	
	2.1	IMP: one example for chance could be that there is a new team member / for a challenge that there is a conflict arising	Included
	2.2	It is easier to deal with issues that are already on surface. Again, a checklist for some typical issues or problems and some possible causes for the problem in the implementation phase.	This is too dependent on the situation and therefore a generalization is not possible / out of scope
	2.3	For IN it would be good to have some assistance (similar to the questionnaires in EL) with questions that make the decision for using the framework easier and more arguable for the manager. In the IN a checklist would help which information I need about the team members (e.g. certain data from the CV). This could be a step that could be done by a project assistant (requested from HR department).	Included
	2.4	IN 1.2: include in agenda also success factors (e.g. an success factor could be that there will be a decision made how to deal with diversity management in the project (e.g. do the individual-based or group-based procedure).	Included in template
	2.5	The diversity features could be adapted to different project situations.	Out of scope
	2.6	EL3b – describe better how I get to formal rules (give examples).	Examples given in formal rules template
Cont3		2 procedure styles: Individual-based vs. group-based procedure	
	3.1	2 Options in Elaboration: one is checklist-oriented and does not consume so much time (individual-based), this could also be done by a project assistant. The other option is difficult on an emotional and social level (group-based) and I can get more insight into the team than with the other procedure.	Included
	3.2	Project manager should not perform the open discussion, but always the supporter should moderate this process steps.	Included
	3.3	In the individual-based procedure (EL) the formal rules are included, but it also should be visible in the group-based procedure.	Formal rules included also in group-based procedure
	3.4	Group-based procedure is more time effort in the implementation, but better acceptance; individual-based procedure is (apparently) easier in the data collection, but the solutions have to be carried by the team as well.	Included
	3.5	Workshops are more difficult on the social level, but will have higher acceptance then in the individual-based procedure (here there is a big issue with acceptance).	Included
	3.6	The decision in the EL for one option is also depending on the culture → potentially a third way that combines the two options could be a good idea (also for virtual teams).	Included as new procedure: “mixed”

		Also, in the EL a combined path would be good (Analysis first without team, but the solution finding with the team). Maybe there should be 2 options: one where the PM defines alone, 1 where the team elaborates the solutions in a workshop.	
	3.7	The questionnaire might be hard to fill out for some personalities who need more context (e.g. the team they are working with).	Included
	3.8	In the EL phase (not IMP) in the group procedure time will be a critical fact. This procedure could consume very much time (depending on the project size: for small projects at least 3 days, for big projects even more). Therefore, it would be advised to do the individual-based procedure, as I reach 90% of the results in fewer time compared to the group-based. There, the effort is higher for the PM, but way lower for the entire team. Still, the group-based is suitable for teambuilding.	Included
	3.9	The individual-based procedure could also be done in 1-on-1 interviews instead of using a questionnaire.	Included and extended as option for virtual teams
	3.10	In the IMP, the group procedure seems reasonable.	No change needed
	3.11	More information on how one could actually conduct the workshop in the elaboration would be useful.	Practical data / experience needed; out of scope
	3.12	Benefits might be higher in the group-based as I might have a problem with the acceptance of the solution. The analysis could be done by the PM alone, but still she or he needs acceptance for the solution by the team.	Included
	3.13	Provide a clear explanation when to use which procedure in the EL and IMP.	Included
Cont4		Learning throughout the project	
	4.1	Why only learn at the end (would make sense throughout the process)? Learning should be done not only at the end (as the energy is already low then), but after each main phase (based on the templates or diversity feature). The project manager can therefore learn directly for the project, not only for the organization (this leads to better results). The Re-Assessment could be combined with the learning process. Is it really reasonable to do the learning in the end? Does only the PM benefit from the last steps? Wouldn't it be better to have a activity together with the team in the end to reflection.	Included as iterative Re-Assessment & Learning phase
	4.2	There is no team approach for this phase; this could be integrated (same steps, but only a different role description in the 'lead' and diagrams).	Included
Cont5		Integration of solution strategy – integration into risk management	
	5.1	Integration of solution rather in the general project rules rather than integration in risk management. Only if there is budget needed for activities or solutions, it could be integrated in a risk list (to use the risk budget). Also define what happens if the rule is not followed.	Descriptions were changed in relevant workflow steps
	5.2	Integration of solution in risk list not so suitable, as I already have solutions – only open gaps should be included.	
	5.3	Instead: create a list of solutions and question regularly if they work or not.	Included in social project controlling in Re-Assessment phase
Cont6		Integration into PM	
	6.1	In IMP: there could be feedback loops (in an agile project integrated into the retrospective). Re-Assessment as a separate workflow / phase would be a good idea.	Include in Re-Assessment and Learning
	6.2	Integration into PM could be done with a Retrospective/Controlling – the framework could add to certain parts of the existing PM process (e.g. one part of the agile cycle, one part of lessons learned, one part of kick-off, etc.). How can the results of the solution strategy be integrated into project management? → the rules will add up to the general project rules. Also, there should be an integration into the project management plans. Critical or unsolved gaps could be inputted into a risk list – but as even in big concerns risk analysis is quite restricted, maybe this is not the best option and as it might not be visible at first sight.	Included

	6.3	The Re-Assessment should also provide an ad-hoc procedure (what happens if something does not work as planned?). In addition to the regular re-assessment (monthly, every 2 months) there needs to be a fast process for ad-hoc issues (gap is presented, reasons need to be found why it is not working, alternative solution is generated) e.g. in a project meeting.	Included as ad-hoc procedure in Re-Assessment
	6.4	Including solutions into PM through the PMO (makes more sense for the learning process). In addition to the 'company database' the PMO could be a source to 'input' the lessons learned in the learning phase. The step 'doing lessons learned' should be done in any case.	Changes performed in the Learning phase
	6.5	IMP: if there is an existing gap I would switch into the Re-assessment phase, otherwise I would do the implementation track.	Workflow was adapted
Cont7		Integrating DMIS scale / other existing questionnaires	
	7.1	The DMIS scale (Bennett; ethnocentric versus ethnorelative) could be used for the participants. If many participants are in the adoption or realization stage they will be aware of diversity and the issue, but if people are in a denial stage a different approach is needed. There are certain steps that bring people from the defense or denial stage in another higher stage. → for the project manager it could be good to know if she or he will face difficulties in that DMIS dimension. Bennett's model (ethnocentric/ethnorelative) would be suitable for a pre-selection of the team members. But also after the selection it could be valuable information to know if there are deniers in the team (then I would need an additional trainer).	Including further psychological aspects would exceed the scope. This would be a possible adaption and/or future research
	7.2	The questionnaire from the Norwegian researchers (diversity ice breaker) could be included as this also goes away from the traditional dimension model.	Including further psychological aspects would exceed the scope. This would be a possible adaption and/or future research
Cont8		Stage model	
	8.1	There could be a stage model: Awareness Building (EL) – Deeper Analysis (EL) – Solution Finding (EL) – Trouble Shooting (IMP) A stage model (Awareness Building – Solution Finding – Conflict Solving) makes sense. The more complex projects are (e.g. if new members join the team), the often I have to repeat certain steps. The PM needs to consider the cost-benefit ratio for the project and tailor the framework accordingly.	Adapted
	8.2	Not sure if a partial application of the framework is meaningful (only creating awareness does not solve conflicts – you need to go through the entire process). It could actually create more stereotypes in that way, but this could be avoided by talking about behaviors rather than cultures.	This was already solved through focusing on behaviors in the diversity features
	8.3	The customer should not be included in the group discussion (this could hinder the openness within the team and makes it harder to integrate introverted persons). Therefore, a stage-iteration would be recommendable: first the core team, later project owner and external customer.	Adapted
Cont9		Associations with / perception of diversity	
	9.1	IN EL 1: first the team should talk about how they perceive diversity (as problem or resource) before going into the diversity features. Why? – Unknowingly during the meeting people could sabotage it if they have negative associations with the topic. A solution would be to work e.g. with metaphors (everybody should draw a picture that she or he associates with diversity). If there were rather positive associations, the approach would be to argue that the workflow could help to find out strengths and use this for the project. If the people's attitude is rather negative, the approach would be to argue we can find out together where we are different and define a common way for the project and to reduce negativity, stress and effort.	Included in workflow step
Cont10		Questionnaire evaluation	
	10.1	The evaluation of the questionnaire is not so clear – there shouldn't be a mirroring of the results, but always 'disagree' and 'disagree' should go together in the evaluation (not in the questioning), so the graphs are easier to match (the mirroring is not really easy for the user to interpret).	An in depth description or tool would exceed the scope. Still, this could be easily solved

		Good to see two things from the evaluation: is there a bias in the answers and where are we in the project compared to where we want to go. This could also mean that I realize that one team member does not fit in the team.	with software and could be a topic for future research and practical implementation
	10.2	Better description of the questionnaire evaluation: what does the analysis mean in a small or big team – is the count of answers important and relevant or only the deviation? Should there be the names of the persons, their project roles or should it be anonymous?	Description in questionnaire evaluation template adapted
Cont11		Role definition	
	11.1	There could be a better differentiation between the PM and the Supporter.	Role description changed
	11.2	Also, a clear differentiation between the project team and stakeholder management should be good (possible for agile projects in stakeholder mgmt.). Role description should be improved: who belongs to the project team? In theory it should be team members, manager and owner, but not the external stakeholders. Possibly a stage model would be good here as well: in a 1 st iteration I perform the process only with the core team, in a 2 nd iteration I can include powerful stakeholders and customer. Stage model for core team (+ PM + project owner) and situative application of another step with customers, stakeholders, project workers. In theory, it would be best to have the entire project organization included, but this might not be practical. In any case, if I have separated groups I need to ensure a certain level of transparency between the groups.	Adapted
	11.3	‘Functional managers’ and ‘other stakeholders’ should not appear in the role description. Clearer definition who should be included in the process (stakeholders).	Role description changed
Cont12		Timing	
	12.1	Performing the EL following to the kick-off would be too early. The team needs to work together before. Otherwise they would be overburdened with the topic and the scope of the project. Of course, the team can be conceptually introduced into the topic. In a 1-years project the EL could be done as soon as WBS, work packages, etc. are clarified (which could be 1-2 weeks after the kick-off, but also 1-2 months later).	Included
	12.2	In theory I could skip the entire IN-phase if I already know the team.	Included
	12.3	Dealing with diversity should happen even before the kick-off (e.g. integrate a few sentences on the topic in the project charter). You cannot start too early with the topic.	Included
	12.4	The process should be started in the pre-project stage (if the team members are already known), or at least in the orientation phase. I need to prepare the team members what is done and why and how that helps the project. If the team works together for the first time I would first do awareness raising for the topic. Then, the topic should be also integrated into the project plans.	Included
	12.5	It is not appropriate to include stakeholders at an early stage.	Included
	12.6	Time line: it is not appropriate to have the EL workshop in the Kick-off (this would be too intense and if the people do not know each other they might just show off in this activity). It would be essential that the team members already have some experiences with each other.	Included
Cont13		Conflict solution	
	13.1	Conflicts should be on a constructive level; then I get to new solutions without straining the interpersonal relationship. Therefore conflicts should be kept at the factual level.	Included
Cont14		Wording	
	14.1	‘Diversity Case’ might not be the best wording; better would be e.g. ‘possible impacts, potential project situations, possible issues, possible challenges in project situations or ‘Diversity Gap Situations’.	Wording was changed
	14.2	The term ‘gap’ could be associated with a defect.	Change not essential.
Cont15		Modeling details	
	15.1	Change the decision in IN 1.1 (in the UML diagram) so it fits with IMP 1.1.	Changed
Cont16		Text improvements	

	16.1	IN 1.2: project manager she/he (should be gendered).	Changed
	16.2	EL: The example of Japan pulls exactly stereotyping strings. An alternative text would be: "In cultures where face saving is important and team members avoid the open discussion of conflicts so that no individual is publicly embarrassed (e.g. Southern Europe, Japan, Balkan region, etc.)".	Changed
	16.3	Sentence in EL on diverse teams should be changed (not only cultural-diverse team, but all heterogeneous teams).	Changed
	16.4	Description of "visualization" in ELAB: Better explanation of the steps that include 'visualization' (e.g. what means 'positioning in the room' etc.).	Changed
Cont17		General issues	
	17.1	How do I get to a decision, if I have several decision types in my team?	No change performed as this is dependent on the situation
	17.2	How can I argue that I need time and money for the topic? → because I will save time and money later; and there are several case studies for that.	Integrated into the overview of the workflow
S1		Big Picture	
	1.1	Big Picture. Create a big picture of the framework. A diagram that illustrates the connection and the framework would be good as an overview in the 'home' section.	Visualized in the overview
S2		Presentation and visualization of workflow steps	
	2.1	It would be also useful to know the benefit and outcome of each step.	Out of scope
	2.2	It would be perfect to have a checklist for when to stay in the workflow and when to get out and maybe get back to the process later.	This would reduce the overview and would be too complicated
	2.3	There could be a better guidance through the platform with symbols or small icons; e.g. which steps could be skipped, which steps needs to be done in any case; when are high trainer competencies needed.	Adapted
	2.4	Visually mark the stage model (Awareness Building (EL) – Deeper Analysis (EL) – Solution Finding (EL) – Trouble Shooting (IMP)) also on the platform; e.g. by using different colors as marker at the side of the platform. It should be obvious which steps I need to do and what are the minimum requirements.	Adapted
	2.5	The procedure options in the EL should be visually presented parallel (otherwise it is not clear that these are options).	Changed
S3		Labeling the workflow steps	
	3.1	Would make sense to not only use numbers but also acronyms in the steps (not 1,2,3,4, but also IN1, EL1, IMP1, LEA1, etc.).	Changed
	3.2	Keep the identification consistent within the templates (the numbers are not always consistent). Also here acronyms should be used (e.g. DF for Diversity Features).	Reworked
	3.3	Use similar structure for templates (e.g. formal rules, informal rules, analysis).	Reworked
S4		Decision support	
	4.1	Explanation when to use which option in the elaboration and implementation → decision basis for procedure, e.g. pro-contra list (practicability, effort, benefits, risks, user acceptance). It should be described in elaboration when to take which option (individual-based or group-based). Provide an overview of when to use which procedure in the EL (group-based will reach the goal, but is a lot of time-effort; individual-based procedure is limited and not as creative and the solution finding might not be accepted).	Included
S5		Redundancies on web platform	
	5.1	Reduce redundancies between the steps as this impacts the flow of reading (templates).	A change would affect the separate considera-

			tion of each step
	5.2	Redundancy with the templates.	A change would affect the separate consideration of each step
	5.3	There are some redundancies in the navigation of the platform which could be reduced (e.g. home site).	Out of scope, could be done to further improve the platform
	5.4	There is too much text for each process steps – this should be improved with adding more pictures between the texts. Still, the description is good and also that each steps can be viewed separately.	Out of scope
S6		Technical improvements on web platform	
	6.1	Would be good if there is an technical extension in the same window rather than opening a new window for each example/template/diagram.	Out of scope
	6.2	Glossary or interlinking the major terms with a definition and examples would be beneficial, as the templates and examples are ‘hidden’ in the steps.	Out of scope, could be done to further improve the platform
	6.3	The platform requires a lot of scrolling – there could be a technical improvement.	Out of scope
S7		Home Section	
	7.1	There could be a clearer definition of diversity in the ‘home’ section. Explain terms such as ‘diversity features’ already in the ‘home’ section → starting point / basic information (what is diversity in this context? – different work styles, etc.; what is the ‘diversity analysis’? why should one perform a diversity analysis?). These general words (that are used in the short descriptions of the workflows) could be explained and inter-linked.	Changed
	7.2	There should be a section that describes the specific benefit of the framework; why should someone perform the framework?	Sub-chapter added
	7.3	Purpose of the site was not clear – putting an idea or marketing?	No change required
	7.4	There should be a note on the platform that HR is not in the focus of the framework.	Included in description
	7.5	Different structure for ‘home’ section suggested: 1) How did the framework develop? Who am I? 2) In ‘cornerstones’ about diversity and explanation of the framework 3) in addition there could be a section ‘benefits’.	Different structure was chosen
	7.6	The ‘home’ section should include more criteria for choosing an appropriate PM for such an intercultural project → firm requirement profile (see also skills of PM). This would support the project owner (or PMO) for choosing the right PM.	Adapted
	7.7	There should be a definition of diversity for this purpose (intercultural teams, distributed teams, other differences?).	Adapted
	7.8	The platform is very simple, but diversity is not simple – it must be stated clearly at some point that doing checklists is not the aim and that the framework only gives an orientation.	Included in definition of diversity
	7.9	The content could be more detailed (e.g. project team, organization).	Out of scope
S8		Wording of phases on platform	
	8.1	Instead of noun, verbs could be used for describing the phases: Initiate, Elaborate, Implement, Learn (seems more attractive from a marketing perspective).	Could be considered later, but only for marketing purposes
	8.2	The phases have the same name as those from PM, but they are done with a time delay.	As this is very dependent on the project, no change was performed
	8.3	Elaboration might not be the best term – maybe analysis & recommendation or assessment would be a better wording.	Wording from RUP was chosen
	8.4	The wording of the phases could not be linked to the classic PM process, but should use terms from process management: Analyze; Structure; Define & Implement; Lessons Learned.	Wording from RUP was chosen
S9		Framework generic versus IT	
	9.1	In framework could be split: 1 as generic for PM and 1 specific for software development (e.g. iterative) → Generic framework with additional extension for IT-projects (therefore IT-related questions need to	Out of scope, but potential for later improvement

		be reduced in diversity feature list; more questions should be provided for the add-on).	
A1		Timeline	
	1.1	Illustration in a timeline would be very helpful to know when to apply it in the project (graphic with steps in the project timeline), including the duration of the phases; there should be 1 illustration just of the framework process, and 1 for the inclusion in PM and 1 for SW development. Having a time line or a visualization at which points of the project I have to do what and for how long would help as well.	Visualized in overview
A2		Further improvement of components	
	2.1	Diversity features and questionnaire could be further improved (e.g. with a diversity questionnaire tool), because the evaluation of the questionnaire is quite time-consuming.	Out of scope, but potential for future improvements
A3		More practical /real-world examples / guidance	
	3.1	More examples would be good (after dissertation), so people with little experience get an idea. Also, more context could help to make things clearer. More case studies to get a better orientation.	Out of scope, but potential for future improvements
	3.2	Would be good to know for which project the framework fit well (small, big, distributed teams, etc.) and have some best practices on the platform → giving recommendation for perfect group sizes or composition. This is especially valuable for persons that are new in the topic.	Include in description in “Home”
	3.3	There should be a section with benefits that tell me why I should do that (e.g. avoiding costs, project failure; but also adding value: different solutions; sustainable and more creative solutions; The framework shows where can I avoid risks and use opportunities.	Include in description in “Home”
A4		Additional information	
	4.1	How long do the steps take? An approximate recommendation would be got to know if I choose option A or B (in the EL and IMP).	There is no experience on the workflow and therefore no reliable data; potential for future research
	4.2	Some decisions criteria for applying would be: do I have enough time? Do I have enough support (from colleagues, superiors, team members)?	Adapted
A5		Focus on virtual projects	
	5.1	Focus on virtual projects: The framework in its current state is not really applicable for virtual projects, as direct communication in virtual teams gets more difficult (e.g. conference call). Although, a combination path in the ELAB might be suitable for virtual teams.	Combined path model: “mixed procedure”
A6		Preconditions	
	6.1	Precondition for application: management support / project owner support necessary!	Included
	6.2	Not sure, if companies would invest the time and money. Still, it is obvious that with an early implementation I can avoid conflicts later in the project.	Included
	6.3	How do I avoid discrimination in the process? This should not happen given the preconditions, but could still happen → maybe a professional trainer/supporter could help than.	Included
A7		Role definitions	
	7.1	The individual-based procedure seems harmless, but the workshop approach might overexert project managers. Therefore here the roles should be switched → the supporter should be mainly responsible whereas the project manager is only supporting (if at all). The project manager is part of the team and therefore should take part in the discussion, which she or he can't if she or he have to deal with the moderation. Therefore, somebody external should do this.	Included
A8		Supporter/Training	
	8.1	Talking to somebody before applying the framework would definitely	Included

		help.	
Comp1		Re-Assessment Cycle (7/10)	
	1.1	<p>Most important improvement regarding controlling: there should be an Re-Assessment cycle from the elaboration to implementation (or before essential stage gates after certain project phases (comparable to other controlling cycles in stakeholder, risk or communication management); 2 Options: either during implementation a iterative cycle (with reconnection to elaboration) OR a cycle between elaboration and implementation. The Re-Assessment could be done either at critical points during the project or periodically.</p> <p>What happens at the end, how do we continue? What happens if the problem was only partially solved (or not at all) → Re-Assessment cycle needed.</p> <p>Re-cycle with learning.</p> <p>Re-Assessment / Iterations should be included.</p> <p>Re-Assessment could be useful for teams that work together for longer; an early integration is good.</p> <p>Including the learning throughout the process, not only at the very end. The learning process should be also connected to the social project controlling (cycle: 3-6 weeks). This should be also explicitly illustrated in the framework, as not everybody will include social factors in the project controlling automatically.</p>	Integrated into framework
	1.2	What happens if the strategies are not implemented? → this could be integrated into the general project rules.	Included
Comp2		Psychological aspects / pre-workshop	
	2.1	Elements from psychology are not apparent – still, within the team building process I would need to take a look at the team's typology. E.g. if some are put up resistance, I can use certain strategies to include such persons into the project. These strategies are embedded in the pma baseline (Comment: out of scope of the framework, but the connection should be mentioned). Also, the Bennett-model (ethno-relative/-centric) would help if it was included.	This would exceed the scope, but potential aspects for future research
	2.2	In general, before the workshop / questionnaire, there should be some sort of intercultural teambuilding / workshop / training (comparable to classic team building elements). This element should take 1-2 days and let team members encounter culture and their cultures in general, but also people get to know each other better (integrative, intercultural team building activities).	Included pre-workshop as step in framework
	2.3	It would be helpful for the workshop procedure to have specific hints, games, techniques (e.g. from group-dynamics, systemic intervention, etc.).	Out of scope
Comp3		Intercultural aspects	
	3.1	Some aspects are missing: language, religion, etc. and their direct impacts on the project (e.g. 'Friday-beer' with team might exclude some persons; also having a glossary for the project in the persons' native language would be good; or having general communication rules for distributed teams → possibly there could be a list that give some hints, but is not within scope of the framework).	Mentioned in description of framework
Comp4		Link to agile procedures	
	4.1	How does the framework fit with agile PM procedures?	Adapted in the description (overview and some workflow steps)
Comp5		Integration into / Link to PM standards	
	5.1	It would be recommended to integrate the framework later in the PM standards of PMI or ipma.	This would exceed the scope, but potential aspects for future research
	5.2	Link (or at least brief comment) to existing PM methods or to PM standards (e.g. PMI knowledge areas in PMBok: stakeholder, communication, HR, risk management; or the Social skills in the PMBok or the	Linkage done in the general description of the framework

		Competency Development Framework (CDF)) or (e.g. for ipma: conflict, communication, etc. from ICB) or (e.g. PRINCE2 – Change standard from OGC). Link to classic PM methods (pma: project handbook, communication rules, project rules, risk management; PMI: linking to knowledge areas).	
	5.3	Upscaling to program management, e.g. integration into PMO who issue standards; especially in the learning phase of the workflow.	Out of scope
Comp6		Link to organizational strategy	
	6.1	Link to organizational strategy (especially HR management) to general diversity management.	This would exceed the scope, but potential aspects for future research
Comp7		Additional examples	
	7.1	In the EL there should be also solution examples for the solution strategy (similar to the diversity features).	Examples for solution strategy provided
	7.2	Better explanation for ‘individual interest’: are these motives or preferred working styles? More examples would make it easier. In general this steps seems quite complicated (maybe there is a way to simplify the entire IMP).	Examples for individual interests provided
F1		Flexibility for Agile Project Management	
	1.1	Basic matter: agile project management. Is it possible to use it in agile projects by e.g. tailoring; or is it rather a management model (that is a supporting process of the product-/SW-process)? This is not quite clear yet. If it is stated that it is applicable for agile project there also should be a guideline in how to do it. Comment: The development process can be iterative and agile, but the framework is a parallel supporting process and should be visualized accordingly.	Included
F2		Preconditions / Selection Criteria	
	2.1	How tight is the cohesion / solidarity within the team? This should also be a criterion. Application might be easier in teams that already worked together than in teams that collaborate for the first time and where team members are skeptical.	Included
F3		Mixed Procedure	
	3.1	Comment: Adapting the preferred procedure (e.g. in EL) to the company culture might be reasonable → e.g. in an analytic-oriented company the individual-based approach would make more sense.	This is too complex and therefore out of scope

8.5 DETAILED RESULTS OF QUALITATIVE VALIDATION – FOCUS GROUP WITH TEAMS

This appendix contains the participants' written reactions to the workshop study "Diversity in Project Teams".

8.5.1 GENERAL ASPECTS

8.5.1.1 DID YOU LEARN SOMETHING NEW ABOUT YOUR TEAM? DID YOU LEARN SOMETHING NEW ABOUT YOURSELF?

Team 1 – Member 1	<ul style="list-style-type: none"> • Learned new things about my team (especially through the questions of the different features). • Learned more about the team than about me. • I learned that some team members prefer a last-minute work approach while others start earlier with their tasks. We need to generally agree how we would deal with such situation. • It was very interesting to get to know the team members' opinions on different topics. • It was exciting to reflect on particular aspects and formulate an opinion.
Team 1 – Member 2	<ul style="list-style-type: none"> • Learned something new about the team (for instance their educational background). • The short introduction round was very important. I would also like to do this with unknown group members. • I cannot really answer whether or not I learned something new about me.
Team 1 – Member 3	<ul style="list-style-type: none"> • Our team worked together well and efficient before, so there was not so much new information. Still, some of my assumptions were confirmed during the workshop. • We found out that there is one person in the team that had extreme opinions compared to the other team members. And that I represent his counterpart.
Team 1 – Member 4	<ul style="list-style-type: none"> • I learned few new things about my team. • I learned about their attitude towards deadlines and their work ethic in general. We work well together, although their attitudes differ from mine. • I did not learn anything new about me. I learned about the others and got valuable information and know-how. This made the workshop valuable.
Team 2 – Member 1	<ul style="list-style-type: none"> • I learned that the team prefers to be in the background and want to attract as little attention as possible. • I only stood up for serious topics, when I felt disadvantaged. • I was surprised that also our project manager was rather avoiding attention.
Team 2 – Member 2	<ul style="list-style-type: none"> • The workshop was an extraordinary experience that brought up new things. • As we never learned about diversity before, it made the process of gaining knowledge even more intense.
Team 2 – Member 3	<ul style="list-style-type: none"> • I am not a type who distract others, so sometimes it was not easy to be heard – especially in the open discussion at the end of the workshop. Interestingly, that was never the case in our previous team meetings. • I share private interests with two team members, so I knew them quite well. When answering the question, differences appear where I expected them the least.
Team 2 – Member 4	<ul style="list-style-type: none"> • I got some new insights about my team colleagues. I might have seen them before, but they were not conscious to me. • We had very similar opinions, e.g. how we handle social interactions in team meetings. • I learned for myself that I have few experience from the real practice and that I need much information to be able to put myself in the situation.

8.5.1.2 HOW DID I EXPERIENCE THE PROCESS OF MAKING IMPLICIT WORK STYLES AND PERSONAL BEHAVIOR EXPLICIT DURING THE DISCUSSION?

Team 1 – Member 1	<ul style="list-style-type: none"> • I felt it was very interesting trying to transform implicit aspects into explicit. • It is rather hard to do this as those implicit aspects are hard to grasp, but with the used techniques in the workshop it was surprisingly easy.
Team 1 – Member 2	<ul style="list-style-type: none"> • It was a total new experience for me and I perceived it positive. It was difficult in the beginning, but got better throughout the workshop.

Team 1 – Member 3	<ul style="list-style-type: none"> • It was easy for me to express myself as I have a lot of self-confidence. • Even conflict situations seem rather amusing to me as I can demonstrate dominance with an opponent. If there are acceptable counter arguments I would use the feedback as an opportunity to improve for future discussions and act even more qualified.
Team 1 – Member 4	<ul style="list-style-type: none"> • In general, the workshop was enjoyable. • I think it is important to elaborate such work styles. • I brought in my own personal and mature work styles, as I want to discuss them with the team and generate a mutual level of understanding. • I also learned something about the work styles of the others, which helps me to improve my work approaches.
Team 2 – Member 1	<ul style="list-style-type: none"> • It was not as hard as I thought it would be. • Usually I rather listen and only talk, if somebody asks me to. But in the workshop I felt comfortable. • I started thinking about things I have not thought before (because they seemed natural). And I could not have said anything specific about the topic without being asked before.
Team 2 – Member 2	<ul style="list-style-type: none"> • It was very interesting to make the own way of working explicit, as I have not dealt with it before. Only during the workshop I had to reflect why I do things the way I do. • It was also interesting to see that others have different approaches that were not apparent to me before.
Team 2 – Member 3	<ul style="list-style-type: none"> • It was a bit unusual, because generally I would talk what needs to be done, which results do I need, but not with which work style I would be quickest, most effective or which I prefer the most. • As I was listening to the others, I also reflected on my own work styles more critical and if maybe one of theirs might be useful for me. • We could have talked more about behavior in conflict situation. Because I rather try to stay calm at the outside in conflicts, but it would be interesting how others react.
Team 2 – Member 4	<ul style="list-style-type: none"> • It was an interesting experience to analyze my own behavior and express it for others in words. • It was very personal and I tried to take care how I formulate things. • Still, I tried to be open, because sometimes you realize things when you talk about them – even such that have been unconscious before. For those unconscious decisions it helps to articulate them in order to sort your thoughts.

8.5.1.3 WHAT DID YOU LIKE / DISLIKE MOST? WHAT WOULD YOU CHANGE?

Team 1 – Member 1	<ul style="list-style-type: none"> • I liked the method with the positioning with figures very much, because the method delivered quick and clear results. • In contrast, the method of positioning in the room was rather unfavorable, as it got to tight and intimate and that can be unpleasant. • I would not change anything, but I think some methods are very depending on the group size.
Team 1 – Member 2	<ul style="list-style-type: none"> • In general I liked the workshop very much. • I was positively surprised, because I imagined the workshop to be more difficult. • Maybe it would have been good in the preparation phase to give some suggestions and examples that explain in which fields diversity can appear. That would make the start easier.
Team 1 – Member 3	<ul style="list-style-type: none"> • The discussion was very entertaining, because the main points were elaborated playfully. • It was very good to have different opinions in our group that lead to small (appropriate) discussions. • I did not like the questionnaire so much, but I can understand its purpose for the study.
Team 1 – Member 4	<ul style="list-style-type: none"> • It was interesting to evaluate the different methods and to prioritize the most important diversities (dealing with deadlines, sharing information, distribution of tasks).
Team 2 – Member 1	<ul style="list-style-type: none"> • I missed a longer discussion, because I rather avoid them; only if it is about topics that concern me I would participate. • I liked very much the openness during the workshop. I felt very comfortable and could talk openly and freely. That would not be possible if I did not know the team members so well. • I also liked that my opinions had room and were heard without being interrupted by others.
Team 2 – Member 2	<ul style="list-style-type: none"> • In general I liked the open discussion and the open interaction with my own weaknesses during the workshop.
Team 2 – Member 3	<ul style="list-style-type: none"> • The workshop was very entertaining and informative. • It was interesting trying out the four different procedures and the background of the topic.

	<ul style="list-style-type: none"> • I liked the connection between “work” and “personality”. • The workshop was comfortable and positive. That made it easier to articulate also unpleasant topics. And although the atmosphere was friendly, everybody was concentrated. • I did not like the questioning. For me the questions were too vague. It was hard for me to take a concrete position as I could identify with almost every answer. Therefore, I would use more specific situations for the questioning.
Team 2 – Member 4	<ul style="list-style-type: none"> • I liked that the atmosphere was loose and you could talk openly without any disapproval. • By using different types of discussion (e.g. figures) the three hours seemed way shorter. The variety is important to stay concentrated on the topic. • I did not like that I was nervous in the beginning and had problems to talk much. The reason was that the situation was unknown and there were persons that I was not so familiar with. Over time that changed and I think especially the drawing in the beginning reduced this tension for me. • The discussion without “tools” might have been nicer on the couch. In the end we used the couch and it was way more comfortable and a different atmosphere in the group.

8.5.1.4 WAS THE GUIDED PROCEDURE HELPFUL? OR COULD YOU HAVE DONE THE WORKSHOP WITH YOUR TEAM JUST WITH WRITTEN INSTRUCTIONS?

Team 1 – Member 1	<ul style="list-style-type: none"> • Especially for such topic I think it is necessary to have always one person that is familiar with the procedure and can lead the workshop. • If there was an instruction, none of the participants knew the topic and would have known what to do with problems that are not described in the instruction. I think it would have been very time consuming and difficult to solve such problems.
Team 1 – Member 2	<ul style="list-style-type: none"> • The guided procedure was very helpful, because it was always clear what should be done and how. Unclear aspects could be solved quickly in that case. • The advantage of a written instruction would be that you always have the rules and tasks visible and the participants can read through it during the workshop. Therefore, I would like a mixture of written and personal instructions.
Team 1 – Member 3	<ul style="list-style-type: none"> • With written instructions some things (but not everything) could be done alone. • Still, the quality would suffer and it could cause mistakes in the implementation if questions or tasks are interpreted incorrectly. Especially if the written instruction is insufficient that could lead to further problems and could, in the worst case, impact parts of the workshop and its target negatively.
Team 1 – Member 4	<ul style="list-style-type: none"> • It is more comfortable to have a person in the group that leads the discussion and guides it in a particular direction. Otherwise the discussion could go into wrong directions and the target of the workshop cannot be met. • It is possible to have one person that gets the written instructions and takes over the function of the supporter, but then he would be on a higher level than the rest of the team and that would not make a right picture of the team composition.
Team 2 – Member 1	<ul style="list-style-type: none"> • I could not have done the workshop only with written instruction. • It was helpful to have a guide there. If there were misunderstandings, it was explained that we could better understand. • Without such guidance it is likely that the workshop would have went in a different direction. Maybe we would have followed the instructions and if we do not understand something, we would have skipped it or interpreted it differently.
Team 2 – Member 2	<ul style="list-style-type: none"> • I think the guided procedure is indispensable. • There needs to be a push in the right direction so that the methods and exercises achieve the targeted effect. • Although our team does not seem likely to fight in the discussions, I still think it is important to have appropriate rules for the workshop. • Together we examined that specific information is important to be able to put oneself in the particular situation. • With written instructions it would not be possible to question if something is not clear. And this would be an additional barrier.
Team 2 – Member 3	<ul style="list-style-type: none"> • It is more useful to have guidance. • Paper does not respond if something is misunderstood or if the discussion wanders off the point. • Also, with guidance the members work on the task concentrated. Only with written instruction the members could try just to finish as soon as possible without deeper discussion of the

	<p>topics.</p> <ul style="list-style-type: none"> • If conflicts emerge it is better to have somebody who can bring everything back to the topic and mediate so that conflicts do not escalate.
Team 2 – Member 4	<ul style="list-style-type: none"> • I think that discussions are always difficult if there is no person that asks questions or bring up topics. Especially if the discussion is hindered, it is especially important to have somebody who keeps the discussion in flow. • Therefore, I do not think that a written instruction would be as good.

8.5.2 ABOUT THE EXPLICATION PROCESS

8.5.2.1 PLEASE REFLECT ABOUT THE 4 DIFFERENT PROCEDURES (OPEN DISCUSSION, POSITIONING WITH FIGURES, POSITIONING IN THE ROOM, TRADITIONAL QUESTIONNAIRE) THAT WERE USED TO REVEAL DIFFERENT WORK STYLES AND BEHAVIORS (DIVERSITY GAPS). WHAT DID YOU PERCEIVE AS GOOD/BAD, HELPFUL/HINDERING, EASY/HARD ETC.?

Team 1 – Member 1	<p>Open discussion:</p> <ul style="list-style-type: none"> • I liked about the open discussion that you could talk and interact more “freely”. • This could also show different work behaviors in the group. <p>Positioning with figures:</p> <ul style="list-style-type: none"> • It was the most appropriate method to get a concrete characterization for one work approach, because it is clear. • I personally felt it was easy to positioning myself, as the figure gave my anonymity. <p>Positioning in the room:</p> <ul style="list-style-type: none"> • It was interesting to do it, but I personally I liked this method the least, because you loose the overview quickly and with a certain count of people it would get rather close and crowded. Especially people who do not know each other could hold distance which might bias the result. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> • I think this method could be used in any situation, as it usually works and –depending on the design of the questionnaire – it will deliver relatively good results. • Still, I would only use this method in very large teams. • In comparison, the positioning with figures gave more insights.
Team 1 – Member 2	<p>Open discussion:</p> <ul style="list-style-type: none"> • The open discussion was easy as this was a known method to everybody. This lead, in my opinion, to a result quickly as the opinions could be discussed directly. • The only disadvantage is that people that participate later might not have any new inputs. And people that talk first have little time to sort their thoughts. <p>Positioning with figures:</p> <ul style="list-style-type: none"> • I liked the method where we positioned the small figures on a line. We had a good overview of the different opinions and that helped to positioning yourself. <p>Positioning in the room:</p> <ul style="list-style-type: none"> • I did not like the positioning in the room. I could not really see where the other participants positioned themselves and maybe you were too close to others and violated their comfort zone. Therefore you might not position yourself where you actually want to be. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> • The traditional questionnaire was very easy and quick to fill out and lead to quite good results. • We had enough time for answering the questions and were unaffected by the opinions of others. • I liked that I can see the questions and I can answer them alone. • I think that unpleasant questions would be rather answered openly in the questionnaire than in an open discussion.
Team 1 – Member 3	<p>Open discussion:</p> <ul style="list-style-type: none"> • I liked that method very much as I love to express my opinion. It was easy, but you need to have enough self-confidence. • You can see all participants, collect opinions and evaluate them. And you can also adapt your own opinion.

	<ul style="list-style-type: none"> • A negative aspect is that you might wander off the discussion easily. <p>Positioning with figures:</p> <ul style="list-style-type: none"> • In my opinion it is the best of all four methods. • It uses the positive aspects of the open discussion and also ensures that you stick with the particular question and do not get lost in other topics. <p>Positioning in the room:</p> <ul style="list-style-type: none"> • It is a good idea, but I was not a fan of this method. • It also included exchanging opinions and was rather goal-oriented, but I perceived it as rather irritating. • You can lose the overview easily. • And if all people have a different opinion that could lead to unintentional “group cuddle”, which would not be appropriate in bigger companies. • I would only do this with an experienced team. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> • The cheapest version. It is good if you are under time pressure. • The questionnaire delivers the results with a time delay (after the analysis). • Different questions could be interpreted differently, which could decrease the value of the information. To avoid this, the questions should be as clear and unambiguous as possible.
Team 1 – Member 4	<p>Open discussion:</p> <ul style="list-style-type: none"> • Positive: it has the most dynamic in the discussion and people can bring in ideas and opinions instantly. • Negative: it takes the most time effort and you can get off-topic. <p>Positioning with figures:</p> <ul style="list-style-type: none"> • Positive: it is good to have a small abstraction of the issue. It loosens the situation if you have funny figures. • You can position yourself freely and do not need to take the distance to other persons into account. • You have an overview of the issue due to the external view. • That was my favorite method. <p>Positioning in the room:</p> <ul style="list-style-type: none"> • Positive: you position yourself on a mental, but also on a physical level. This is more challenging. • Negative: There could be biased as people might want to protect their intimate space and change their position a bit. • It can be uncomfortable if the rest of the team is positioned “against” you and you can see this distance physically. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> • Positive: You can express your opinion anonymously without being influenced by others. • Negative: There is no dynamic and it is least enjoyable. Also somebody has to evaluate the answers.
Team 2 – Member 1	<p>Open discussion:</p> <ul style="list-style-type: none"> • The open discussion is only meaningful, if the participants are fond of discussions. • For this workshop the open discussion did not work so well, because we had very similar opinions. • I would avoid this method in practice as maybe not all can give their opinion and people might wander off the discussion. <p>Positioning (general):</p> <ul style="list-style-type: none"> • I preferred the positioning as it gave me more time to think. • Also, you see the opinion of others and how they change during the discussion, when you hear the arguments of the other participants. <p>Positioning in the room:</p> <ul style="list-style-type: none"> • I liked the positioning in the room as you could move around and not only sit. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> • The questionnaire is appropriate if I want to know the opinions of big groups. • Otherwise it is not appropriate, as there is only the scale and you cannot express your own opinion on the topic.
Team 2 – Member 2	<p>Open discussion:</p> <ul style="list-style-type: none"> • I preferred this method as I could explain my opinion and myself. <p>Positioning (general):</p>

	<ul style="list-style-type: none"> Although it might have seemed different from an observer's point of view, I did not experience much difference between the positioning with figures or in the room. Both methods have the disadvantage that exceptions or other dimensions cannot be considered in the classification. This was a problem, as I cannot classify myself on scales easily. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> The questionnaire did not consider particular situations or exception, so this would have been hard for me.
Team 2 – Member 3	<p>Open discussion:</p> <ul style="list-style-type: none"> The open discussion was the most comfortable method. You could question opinions and reveal misunderstandings at the same time. It was helpful that we set together and could see each other's faces and expressions. If somebody looked asking I could directly explain more. <p>Positioning with figures:</p> <ul style="list-style-type: none"> The method was funny, but also a bit ridiculous due to the funny figures. I know immediately in which half I want to position myself, but it was hard to find an exact position in that half. I think it was hindering that so many factors (time, effort, budget) were not considered, as the questions were not so specialized. I did not like that you eventually would end up in the discussion anyways, because you could not interpret the figures in detail. I had the feeling that with the positioning some misunderstandings were provoked and we had to solve it in the discussion, where we figured that there were actually no differences. <p>Positioning in the room:</p> <ul style="list-style-type: none"> The movement was good and loosened the workshop. The method was very similar to the positioning with figures. Only, with this method it could happen easier to create a feeling of exclusion, when you are positioned "against" each other. I think it is hindering for the team building process if one team member is positioned on the other side then the rest of the team. The discussion helped to neutralize the situation, but it would be better if we sat down to discuss the positioning and resolve the uncomfortable confrontation. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> In general I am not a fan of questionnaires as I have the feeling that I can be misunderstood in my answer. I think it is good to show tendencies, but you cannot go into deep as you can hardly interpret. I often use my smart phone for an online questionnaire, which makes it more time-intense and harder to write. Also, I would not write in such a detail. I especially do not like it if there are many choices (strongly agree, agree, rather agree, etc.). It makes it harder for me to differentiate.
Team 2 – Member 4	<p>Open discussion:</p> <ul style="list-style-type: none"> The open discussion was very good as you can express your opinion freely on each topic or question. Also, we were able to adapt the question if it was too ambiguous. <p>Positioning with figures:</p> <ul style="list-style-type: none"> The figure method was a good procedure for me. It was a different way of elaborating the question. You need to think first and could not talk and express your opinion immediately. <p>Positioning in the room:</p> <ul style="list-style-type: none"> This was very similar to the positioning with figures. When you stand directly opposite each other the conflict potential is also higher. <p>Traditional questionnaire:</p> <ul style="list-style-type: none"> I think the questionnaire would be too rigid for me and I could not gain so many insights. <p>I liked all procedures, because they were simple and helpful. Only the questionnaire was not so helpful.</p>

8.5.2.2 *HOW DID YOU EXPERIENCE THE PROCESS OF SEARCHING FOR SITUATIONS IN WHICH THE DIVERSITY GAPS COULD LEAD TO CONFLICT IN THE PROJECT?*

Team 1 – Member 1	<ul style="list-style-type: none"> The search seemed innovative and simple, as we could easily elaborate differences in work styles with the different methods.
Team 1 –	<ul style="list-style-type: none"> The search was quite easy and led to situations in our current project quickly.

Member 2	<ul style="list-style-type: none"> I think it was very good that we addressed these situations. Usually they would be only commented (“next time we do it differently”), but there are no further steps to getting to a solution for the problem.
Team 1 – Member 3	<ul style="list-style-type: none"> The search was quite easy as we had experiences in the field already. After some time these situations might be routine and you do not pay attention to trivial examples anymore.
Team 1 – Member 4	<ul style="list-style-type: none"> I think it was good and easy. The team was very competent and we could discuss neutral and tried to find the best solution.
Team 2 – Member 1	<ul style="list-style-type: none"> I felt that the search for different opinions was complicated as we often had similar opinions. When we found differences, we noted them down and went further to the next topic.
Team 2 – Member 2	<ul style="list-style-type: none"> As the conflict potential was not very high in our group, the process was a little bit difficult. I am glad that there was no role game where I had to take a strange opinion. Besides my personal preferences, I do not think it would make sense to evoke such problems to find a common solution.
Team 2 – Member 3	<ul style="list-style-type: none"> Overall it was very interesting to learn about the team members’ new opinions, but it was also a long process. The very open questions made it more time-consuming. If the questions were more specific, bigger diversity gaps would have been revealed quicker. I would have preferred if we stayed longer with one situation. It think it would have been interesting how the positions and opinions changed if you start with a very open question and specialize it more and more.
Team 2 – Member 4	<ul style="list-style-type: none"> It was interesting to experience which situations can cause such conflicts. Although this was hardly the case for us, I can imagine that many teams would really reveal conflicts.

8.5.2.3 *HOW DO YOU PERCEIVED THE EXERCISE AT THE BEGINNING (VISUALIZING YOUR ASSOCIATIONS WITH THE TOPIC DIVERSITY IN A DRAWING)?*

Team 1 – Member 1	<ul style="list-style-type: none"> The exercise was rather funny and entertaining, but also motivating. It helped to think what diversity really meant and delivered interesting information how the other team members perceive the topic.
Team 1 – Member 2	<ul style="list-style-type: none"> The method was nice, because we could get very creative and pictures can express very much. It made the introduction to the topic easier and showed the different positions of the other participants. It would be nice to have more time for this task.
Team 1 – Member 3	<ul style="list-style-type: none"> I felt it was very informative, because one can be quite restricted in the own opinions and I learned some new aspects.
Team 1 – Member 4	<ul style="list-style-type: none"> This was very abstract and you could see if people have rather positive or negative associations with the topic. But it is not really appropriate to get elementary information. I like if you sense the mood before going into the topic so people know what to expect. Then it is easier to talk about the topic.
Team 2 – Member 1	<ul style="list-style-type: none"> This part was quite amusing. It loosened the mood and you could also see how others perceive the topic and if they have dealt with the topic before.
Team 2 – Member 2	<ul style="list-style-type: none"> I liked the idea of reading personal attitudes and tendencies from a picture. Still, it was quite difficult to draw anything on the topic. I think this was similar for my colleagues and caused some common displeasure.
Team 2 – Member 3	<ul style="list-style-type: none"> I did not think what purpose the task had while drawing. I rather thought that it is just to loosening the situation and create a friendly atmosphere. That you can also see positive or negative associations came only apparent after the hint. It was important for me to explain what I drew and it was equally important to hear the others’ explanations, because you could interpret pictures differently.
Team 2 – Member 4	<ul style="list-style-type: none"> I was quite surprised by the task and did not know how to express. Then I just started drawing and I was not sure until the end if this was right and actually expresses what I was thinking. In the end it was good that we did this as it loosened the situation and I was more open afterwards. Also it was interesting to see and understand the other pictures.

8.5.3 ABOUT THE SOLUTION PROCESS

8.5.3.1 HOW WOULD YOU EVALUATE THE SOLUTION PROCESS (CREATING RULES AND PROCEDURES, IDENTIFYING RISKS/CHANCES FOR THE PROJECT, NAMING A RESPONSIBLE PERSON)? WERE THE ELABORATED SOLUTIONS REALLY GOOD AND APPROPRIATE FOR THE TEAM?

Team 1 – Member 1	<ul style="list-style-type: none"> • The solution process was easy and we went on quickly. • By creating rules and procedures we generated a common basis for the team how to react on particular situations. • By analyzing risks and chances we showed which effects different situations could have. • Having a person responsible for the situation was also an advantage, because everybody knows then the point of contact. • Bringing the solutions on paper was very appropriate. • I am curious how it will work in practice.
Team 1 – Member 2	<ul style="list-style-type: none"> • Creating rules and procedures was good and helpful for the project. Some complications in the project were reduced. • By identifying risks and chances it was clear for all project team members why it is important to stick to the rules. • It was also important to have a person responsible, because that will avoid problems during the project.
Team 1 – Member 3	<ul style="list-style-type: none"> • This process was quite trivial, as we had defined the different roles in our team before. Therefore it was easy to find the person responsible. • We created the rules and procedures based on the present work routine. • It was harder to identify risks and chances.
Team 1 – Member 4	<ul style="list-style-type: none"> • I was surprised of the results of the workshop. The elaborated procedures will help for sure in the future to bring the team quicker and better on the same track and to improve communication. I will use the rules and solutions for sure. • I would have never had the idea to discuss about this and construct a mutual procedure model for teamwork. • It was really good that we did this workshop.
Team 2 – Member 1	<ul style="list-style-type: none"> • The process for our fictive situation was interesting. • Although one member offered a solution in the beginning, we discussed how we could solve it in the best manner. • In the beginning the factor budget was most important and we couldn't find an appropriate solution. After some time the factor budget became secondary and we discussed how we would like to cooperate. Then we found a solution, which was the same that was suggested in the beginning.
Team 2 – Member 2	<ul style="list-style-type: none"> • The team did not really made it to go through the solution finding as it was intended to, because I did not really understand the task assignment. I think the goal was to generate compromises and commonly accepted codes of conduct. • I think it works better if conflicts are not artificially revealed, but it is hard to judge that with a fictive example.
Team 2 – Member 3	<ul style="list-style-type: none"> • This process was most difficult, as we were not clear about the situation and had different interpretations. • The responsible person was elaborated quickly due to the situation. • We had the same opinion about risks, but finding a common solution that satisfies everybody was difficult. • The solution was good, because I think it is important to talk about it together and involve everybody. Still, in practice the solution will be hard as the cooperation might build more upon price-performance ratio.
Team 2 – Member 4	<ul style="list-style-type: none"> • In some situation it might be good to have rules and procedures worked out before a conflict arises. • Still, this can be too time-consuming and expensive. • Risks should not be a topic at the beginning, but only when the problem appears. • In our discussion I realized that it is important that one person takes the responsibility and coordinates everything. • If we had more time for the discussion, we would have gotten to a more precise result.

8.5.3.2 *HOW WOULD YOU PROCEED IF YOU OBSERVE THAT THE AGREED UPON SOLUTIONS ARE NOT KEPT DURING THE PROJECT?*

Team 1 – Member 1	<ul style="list-style-type: none"> I would talk to the person concerned, ask for reasons and set measures if it is only occasionally. If the rules were broken all the time I would discuss this in a team meeting and work with the team on an alternative solution.
Team 1 – Member 2	<ul style="list-style-type: none"> In any case I would discuss the problem with the team (why it came to the situation) and optionally rework the solutions.
Team 1 – Member 3	<ul style="list-style-type: none"> I would openly address this. If we ignore the solutions that would mock the time and resource we invested to develop the solutions. If the situation and the rules cannot be followed anymore, there should be a better solution proposal.
Team 1 – Member 4	<ul style="list-style-type: none"> The rules are developed by the team and accepted as fair solution. We also set rules for the case if a rule is broken.
Team 2 – Member 1	<ul style="list-style-type: none"> I would try to find out why the solution did not work. Maybe something has changed during the project duration and another solution is needed. Then I would gather the team and develop a new solution. If only one colleague broke the rule I would directly approach her or him and see how he argues and maybe find a new solution or take consequential actions.
Team 2 – Member 2	<ul style="list-style-type: none"> In general, I think it is never possible to find a solution that everybody agrees upon a 100 percent. It depends on the intensity (of breaking the rules) and if other team members feel offended or betrayed by this violation. But a breach does not necessary need to lead to a conflict or an escalation.
Team 2 – Member 3	<ul style="list-style-type: none"> I would approach the topic. If there were aspects that cannot be met I would discuss them again and adapt them. In general everybody agreed upon the solution and needs to keep the rules therefore. You should learn from mistakes from previous projects and develop better solutions in future projects.
Team 2 – Member 4	<ul style="list-style-type: none"> I would ask the team why they reacted that way and remind them of the initial agreement. Either the team just forgot or we they changed their opinion. If they changed their opinion I would develop a new solution.

8.5.4 ABOUT THE EXTENDED, PRACTICAL CONTEXT

8.5.4.1 *WHAT WOULD YOU USE IN YOUR PRACTICE / JOB OR RESPECTIVELY WHAT SHOULD A PROJECT MANAGER APPLY? WOULD YOU APPROACH THE TOPIC DIVERSITY ACTIVELY IN REAL-WORLD PROJECT TEAMS?*

Team 1 – Member 1	<ul style="list-style-type: none"> I think that the process should be used for medium or big projects. I would expect the project manager to apply the method. I think diversity can play a very big role in projects and - especially for teams that have not worked together before – it is essential to apply the methods from the workshop.
Team 1 – Member 2	<ul style="list-style-type: none"> In professional life I can imagine to apply the positioning with figures as this is very easy to apply and easy to understand. In any case I would apply and open discussion to get to results quickly and work on numerous topics.
Team 1 – Member 3	<ul style="list-style-type: none"> It can be applied in big or medium projects. I can avoid problems if I deal with them in the very beginning. In smaller projects it is not so important to deal with the topic diversity, because in the worst case I use resources ineffective. If I already have experience with diversity from other projects I can include this in my normal routine, because it will not need so much time and resources anymore for applying the methods. It depends on the project itself and its size.

Team 1 – Member 4	<ul style="list-style-type: none"> • In organization I often have pre-defined processes and procedures that regulate many aspects. The project manager can add the other aspects. • If there are no rules an authority should reach an agreement with the team. • The bigger the project, the more accurate diversity should be elaborated.
Team 2 – Member 1	<ul style="list-style-type: none"> • It depends on the size of the team. • For small project with a duration of a few months I would use a short meeting for developing rules. • For big projects with many team members and longer duration I would include a trainer to find solutions. • In any case the project manager should deal with the different work approaches with the team. Then, task distribution can be done better and you could even take advantage from the different work behaviors.
Team 2 – Member 2	<ul style="list-style-type: none"> • I like the aspect of bringing different work and personal behaviors closer to get to improve collaboration. • I would like to see discussions on personal strengths, weaknesses, and preferences in a professional practice.
Team 2 – Member 3	<ul style="list-style-type: none"> • In my opinion this depends on the scope and type of collaboration in the team. • For small projects I would not make diversity a subject of discussion. • If you work longer and tight together it is important to talk about different work styles. • If a workshop is possible depends very much on the company. Still, the team leader always has the possibility to organize meetings and get to know the team better and talk about the work styles. • Depending on the type of project I think it would be good to have regular meetings (e.g. once a month) where you talk about the progress of the project, but also about personal tendencies and feelings. In additions, conflicts and misunderstandings can be solved here.
Team 2 – Member 4	<ul style="list-style-type: none"> • As I do not have experience in real project I am not sure what I would apply. • I think it is a good start to find more out about the team members' skills and include this in the task distribution. • Basic rules (e.g. how you want to communicate) should be set very early. • Talking about risks and changes might be better during the project. • I think diversity is not really a topic in project, but I think you should make it a topic to be discussed – at least briefly.

8.6 DETAILED RESULTS OF QUANTITATIVE VALIDATION – ONLINE SURVEY WITH 101 PARTICIPANTS

8.6.1 QUESTIONNAIRE

8.6.1.1 DESCRIPTION OF THE SURVEY

Managing Diversity in Project More Effectively

Dear project management professional,

It is well proven from literature and empirical studies that diversity has a major impact on the success of international ICT (Information and Communication Technology) projects. Being aware of differences and commonalities, creating an understanding for diversity as well as supporting respectful co-operation reduces the risks for conflicts and can make projects more efficient. Although the effects of diversity are well proven, neither project management standards nor cultural studies developed a comprehensive concept for dealing with diversity in dynamic project environments (Böhm, 2015).

This survey contributes to a comprehensive framework that was developed within a doctorate study at the University of Vienna. The survey will take approximately 15 minutes. Your data will be held strictly anonymously and confidential and will be only used for this research. If you have any questions about the survey, please contact me!

Thank you very much for your time and your support!

Reference: Böhm, C. (2015). Practical Insights on Managing Diversity in International ICT Projects. In *Managing Flexibility: People, Process, Technology and Business* (p. 73-84). India: Springer.

8.6.1.2 QUESTION SECTION I

Section 1: About you

None of the following questions can be used to identify you. Also note that all of your answers will be kept strictly confidential and will only be used in aggregate.

Questions marked with a * are required to be answered in order to proceed.

1.a What is your gender?*

- A. Female
- B. Male

1.b How old are you?*

- A. 25 or younger
- B. 26 to 35
- C. 36 to 45
- D. 46 to 55
- E. 56 or older

1.c What is your nationality?*

Afghanistan	Croatia	Jamaica	Niger	Swaziland
Albania	Cuba	Japan	Nigeria	Sweden
Algeria	Cyprus	Jordan	North Korea	Switzerland
Andorra	Czech Republic	Kazakhstan	Norway	Syria
Angola	Denmark	Kenya	Oman	Taiwan
Antigua & Deps	Djibouti	Kiribati	Pakistan	Tajikistan
Argentina	Dominica	Kosovo	Palau	Tanzania

Armenia	Dominican Republic	Kuwait	Panama	Thailand
Australia	East Timor	Kyrgyzstan	Papua New Guinea	Togo
Austria	Ecuador	Laos	Paraguay	Tonga
Azerbaijan	Egypt	Latvia	Peru	Trinidad & Tobago
Bahamas	El Salvador	Lebanon	Philippines	Tunisia
Bahrain	Equatorial Guinea	Lesotho	Poland	Turkey
Bangladesh	Eritrea	Liberia	Portugal	Turkmenistan
Barbados	Estonia	Libya	Qatar	Tuvalu
Belarus	Ethiopia	Liechtenstein	Romania	Uganda
Belgium	Fiji	Lithuania	Russian Federation	Ukraine
Belize	Finland	Luxembourg	Rwanda	United Arab Emirates
Benin	France	Macedonia	Saint Kitts & Nevis	United Kingdom
Bhutan	Gabon	Madagascar	Saint Lucia	United States
Bolivia	Gambia	Malawi	Saint Vincent & The Grenadines	Uruguay
Bosnia Herzegovina	Georgia	Malaysia	Samoa	Uzbekistan
Botswana	Germany	Maldives	San Marino	Vanuatu
Brazil	Ghana	Mali	São Tomé and Príncipe	Vatican City
Brunei	Greece	Malta	Saudi Arabia	Venezuela
Bulgaria	Grenada	Marshall Islands	Senegal	Vietnam
Burkina	Guatemala	Mauritania	Serbia	Yemen
Burundi	Guinea	Mauritius	Seychelles	Zambia
Cambodia	Guinea-Bissau	Mexico	Sierra Leone	Zimbabwe
Cameroon	Guyana	Micronesia	Singapore	
Canada	Haiti	Moldova	Slovakia	
Cape Verde	Honduras	Monaco	Slovenia	
Central African Rep	Hungary	Mongolia	Solomon Islands	
Chad	Iceland	Montenegro	Somalia	
Chile	India	Morocco	South Africa	
China	Indonesia	Mozambique	South Korea	
Colombia	Iran	Myanmar	South Sudan	
Comoros	Iraq	Namibia	Spain	
Congo	Ireland	Nauru	Sri Lanka	
Congo	Israel	Nepal	Sudan	
Costa Rica	Italy	Netherlands	Suriname	
	Ivory Coast	New Zealand		
		Nicaragua		

1.d How many years of experience as project manager do you have?*

- A. less than 2 years
- B. 2 to 5 years
- C. 6 to 10 years
- D. over 10 years
- E. none

1.e How many years of experience do you have in managing international projects?*

Please enter a number from 0 to 50.

1.f Which types of projects do you work on or are you most involved with?*

e.g. construction, software development, organizational development, change projects, banking, etc.

8.6.1.3 QUESTION SECTION 2

Section 2:

Diversity – for the purpose of this survey – includes all aspects in which people could behave differently (due to different culture, age, gender, ethics, education, work experiences, etc.) in daily project work.

2.a Are you managing diversity aspects in your projects actively?*

Y. Yes

N. No

2.b If yes, how? Which actions do you take?

2.c If no, why not?

2.d Would you like to have a comprehensive guideline that you can use in your projects to deal with diversity effectively?*

Y. Yes

N. No

2.e What should such a guideline offer? What do you need especially?

8.6.1.4 QUESTION SECTION 3

Section 3:

In this section you will investigate several diversity aspects that are exemplary illustrated by two extremes. You should evaluate the degree of impact on the project success assuming that there is a big range between these two extremes within your project team.

3.a Communication*

Example: Some team members openly disagree with a superior and like brainstorming sessions; other team members would never question a superior and prefer 1-on1 meetings to discuss issues.

Does this difference between the team members impact your project success?

No impact

Medium impact

High impact

3.b How relationships are formed*

Example: Some team members need to have personal relationship before doing business; other team members would start directly with business in the first meeting.

Does this difference between the team members impact your project success?

0. No impact

1.

2. Medium impact

3.

4. High impact

3.c How decisions are made and who makes them*

Example: Some team members want to be included in the decision making process; other team members want the project manager to decide. Also, some want that decisions are made in formal and official meetings, while others prefer personal, informal meetings.

Does this difference between the team members impact your project success?

0. No impact

1.

2. Medium impact

- 3.
- 4. High impact

3.d How projects are planned, scheduled, and executed*

Example: Some team members tend to follow a traditional project management approach (planning before implementation; fixed roles and responsibilities), while other team members prefer an agile approach (iterative procedures and higher flexibility).

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.e Following defined processes*

Example: Some team members prefer a trial-and error approach; other team members prefer following pre-defined processes and instructions.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.f Recognizing and describing problems*

Example: Some team members immediately report problems and provide detailed problem descriptions; other team members defer problems and provide rather vague problem descriptions.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.g How requirements are handled*

Example: Some team members stick to specific requirement and interpret a contract strictly, while other team members would also make un-requested improvements and perceive the contract rather flexible.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.h Appreciation of work*

Example: Some team members rather appreciate that one gets the work done; others feel that showing hard work and lots of effort is more important.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.i The importance of milestones*

Example: Some team members would tolerate small changes in the schedule; other team member would not tolerate small changes in the schedule.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.j Problem escalation*

Example: Some team members would openly ask for help if they face a problem during implementation; other team members would not ask for help and try to solve the problem by themselves.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.k Value of monitoring and business processes*

Example: Some team members think that monitoring should be very detailed and effectiveness and work effort should be tracked; other team members think that this is not so important.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.l Approaches towards motivation*

Example: Some team members prefer to be rewarded in public; other team members prefer to be rewarded privately.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.m Types of information prospects are seeking*

Example: Some team members would suggest new ideas to potential buyers in a sales pitch, while other team members would present best practices and to competition research results to the prospects.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.n Professional and personal time*

Example: Some team members like to separate professional and personal time; others like to have a connection between work and private life.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.

- 2. Medium impact
- 3.
- 4. High impact

3.o Handling of passwords and access*

Example: Some team members are very rigorous with their passwords, while other team members have a rather loose approach (and would, for example, share ID and passwords with colleagues).

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.p Thinking and speaking patterns*

Example: Some team members talk straight to the point, while other team members provide a lots of information and context first.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.q Working on tasks*

Example: Some team members work better when doing several tasks parallel (multi-tasking), but other team members prefer single-threaded tasks.

Does this difference between the team members impact your project success?

No impact

Medium impact

High impact

3.r Information flow*

Example: Some team members would rather prevent direct communication and information flow towards customers/external teams; other team members would rather foster open and direct communication and information flow towards external stakeholders and customers.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.s Attention to detail*

Example: Some team members pay a lot of attention to detail and perfect outcomes are very important to them; other team members don't pay so much attention and are rather pragmatic when it comes to outcomes.

Does this difference between the team members impact your project success?

- 0. No impact
- 1.
- 2. Medium impact
- 3.
- 4. High impact

3.t Are there any other diversity aspects that have a high impact on the project success if there is a big range in expectations?

Diversity aspects already mentioned:

Communication
How relationships are formed
How decisions are made and who makes them
How projects are planned, scheduled, and executed
Following defined processes
Recognizing and describing problems
How requirements are handled
Appreciation of work
The importance of milestones
Problem escalation
Value of monitoring and business processes
Approaches towards motivation
Types of information prospects are seeking
Professional and personal time
Handling of passwords and access
Thinking and speaking patterns
Working on tasks
Information flow
Attention to detail

3.u Which of the diversity aspects also have a medium or high impact if the differences are not within the team, but between the team and external stakeholders (e.g. customer)?*

- A. Communication
- B. How relationships are formed
- C. How decisions are made and who makes them
- D. How projects are planned, scheduled, and executed
- E. Following defined processes
- F. Recognizing and describing problems
- G. How requirements are handled
- H. Appreciation of work
- I. The importance of milestones
- J. Problem escalation
- K. Value of monitoring and business processes
- L. Approaches towards motivation
- M. Types of information prospects are seeking
- N. Professional and personal time
- O. Handling of passwords and access
- P. Thinking and speaking patterns
- Q. Working on tasks
- R. Information flow
- S. Attention to detail
- T. Other

8.6.1.5 QUESTION SECTION 4

Section 4:

Within my dissertation thesis I developed a so-called ‘diversity framework’.

This diversity framework is a generic guideline that supports project managers in managing diversity in their projects more effectively. It describes important steps, provides templates and an initial set of data for revealing relevant diversity aspects within a project.

This framework is flexibly applicable and adaptable to different situations and types of projects.

4.a How much time would you invest as a project manager into using such a diversity framework in a medium-sized project (6-12 months) in its initiation and planning phase?*

- A. less than 1 day
- B. 1 to 2 days
- C. 3 to 5 days
- D. 6 to 10 days

- E. more than 11 days
- F. none

4.b How much time would you invest as a project manager into using such a diversity framework in a medium-sized project (6-12 months) in its implementation and closure phase?*

- A. less than 1 day
- B. 1 to 2 days
- C. 3 to 5 days
- D. 6 to 10 days
- E. more than 11 days
- F. none

4.c How many days per team member would be worth investing into diversity management in a medium-size project (6-12 months) in total?*

This time could be used e.g. for collaborative group discussions or workshops on the topic diversity, but also 1-on-1 conversations or questionnaires to reveal diversity aspects.

- A. less than 1 day
- B. 1 to 2 days
- C. 3 to 5 days
- D. 6 to 10 days
- E. more than 11 days
- F. none

4.d How would you justify to a superior that you calculated this amount of time and money in your project plan? Which convincing arguments would you use?*

4.e In your opinion, how much time do diversity issues take to resolve in low diversity projects? (in days)*

Low diversity projects are characterized by little variance in work styles and behaviors (e.g. with very homogeneous teams).

Again we assume that our project is medium-sized (6 to 12 months).

Please enter a number from 0 to 100.

4.f In your opinion, how much time do diversity issues take to resolve in high diversity projects? (in days)*

High diversity projects are characterized by high variance in work styles and behaviors (e.g. with very heterogeneous teams or in an international context).

Again we assume that our project is medium-sized (6 to 12 months).

Please enter a number from 0 to 100.

8.6.1.6 PRE-TESTING WITH FOUR PERSONS

Prior to the online survey, four persons were asked to fill out the questionnaire and give feedback if everything is clear, consistent, and relevant. Furthermore, they were asked to note their time effort for conducting the survey. The results are presented in this chapter.

Test person 1:	Male, project manager
Time:	15 minutes without thinking long about the answers
Confusing aspects:	<ul style="list-style-type: none"> Section 4: „Appreciation for monitoring“ not understandable Please explain the * (=compulsory question)
Comments Christina:	<ul style="list-style-type: none"> There should be an open field at the end of section 4, so people can add their own diversity aspects. Possibly insert ‘control items’ for section 4 that do not have any impacts

Changes made according to the feedback of test person 1:

- Added in Section 1: “Questions marked with a * are required to be answered in order to proceed.”
- Added in Section 4: Open field at the end of the section for alternative answers.

Test person 2: FIRST TRIAL	Male, project manager
Time:	Not taken
Confusing aspects:	<ul style="list-style-type: none"> Section 4: the question is quite open. Who is meant – customer, project team, stakeholders? These groups have to be handled differently or different aspects are important. The questions with ‘or’ or ‘vs.’ were not clear; I was not able to decide if it is important or not. E.g. 4a: this question should only be named ‘communication’ – similar for other questions such as 4e or 4g, 4h
Comments Christina:	<ul style="list-style-type: none"> After talking with the test person, it became evident that the test person did not understand that it should be evaluated if a high difference in each category has an impact or not.

Changes made according to the feedback of test person 2:

- Section 4: Differentiate between team and customer/stakeholder
- Section 4: Clarify main question: For each topic two extremes are exemplary illustrated. You should evaluate the impact on the project if there is a big range between these two extremes within the particular project.
- Section 4 – Diversity aspects:
 - The headings of the diversity aspects should be consistent (either only the topic or always the range of the topic)
 - For each diversity aspects, there should not be questions, but the two extremes should be shown (e.g. some team members... other team members... Does this difference impact your project?)
 - Possibly there could be additional category (do not know) or a commentary function (would be even better)

Test person 3:	Female, university professor
Time:	35 minutes (including taking feedback notes)
Confusing aspects / positive aspects:	<ul style="list-style-type: none"> The font is light, small sometimes and the contrast is not very high. Positive: scrolling back and forth is quite good. The questions “How many days...” should have a comment field as this is so depending on other project characteristics. ‘Typeform’-advertisement in the end is confusing.
Comments Christina:	<ul style="list-style-type: none"> Fonts are fixed in the template and would need un-proportional effort to change

	(and it is also depending on the screen that is used). <ul style="list-style-type: none"> • ‘Typeform’-advertisement in the end can’t be changed in the free version. • Question: “How many days...” – commentary field not possible in the template.
--	---

Changes made according to the feedback of test person 3:

- Small changes in wording
- Changes in font sizes for Section 4 (diversity aspects) – increases usability.
- Optional field for comments (together with mail address) in the end of the questionnaire.

Test person 2: SECOND TRIAL	Male, project manager
Time:	10-15 minutes
Confusing aspects /positive aspects:	<ul style="list-style-type: none"> • Sometimes the scale is too big (e.g. for the experience in project management could be 30 years; 100 here is too high) • Before Section 4 I associated diversity to 80% to culture and/or gender. Maybe it is better to switch section 4 and 3 and first get examples.

Changes made according to the feedback of test person 2:

- Question 1e: Scale changed from ‘0 to 100’ to ‘0 to 50’
- Question 3e: Scale changed from ‘0 to 1000’ to ‘0 to 100’
- Question 3f: Scale changed from ‘0 to 1000’ to ‘0 to 100’
- Switching Section 4 and Section 3.

Test person 4:	Female, product manager
Time:	Approximately 10 minutes
Confusing aspects / positive aspects:	None

8.6.2 BASIC INFORMATION ON INTERPRETING THE DATA

This data analysis provides information on all variables used in the statistical analysis.

Firstly, a data overview is provided that shows the number of values within the variable (N) and if any values are missing (e.g. if somebody did not respond to the question). In addition, for ordinal and metric variables, the mode and median, the percentile values (25/50/75), and/or mean, standard error of mean, standard deviation and variance are presented in the overview table.

Secondly, separate tables show the values for each variable separately. Here, frequency, (valid) percent, and the cumulative percent are presented.

8.6.3 DEMOGRAPHIC INFORMATION ITEM

8.6.3.1 DATA OVERVIEW

		Gender	Age	Nationality	Managing Diversity Actively	Guideline Needed?
N	Valid	101	101	101	101	101
	Missing	0	0	0	0	0
Mode		1*	3**	1***	1****	1*****

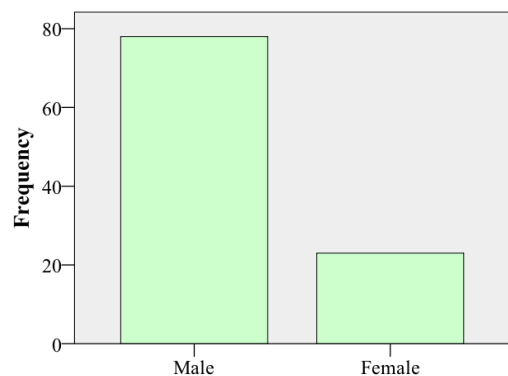
* 1 = male; 2 = female

** 1 = 25 or younger; 2 = 26 to 35; 3 = 36 to 45; 4 = 46 to 55; 5 = 56 or older

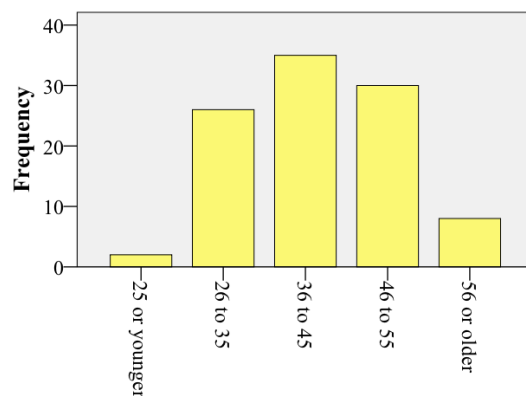
*** 1 = Austria; 2 = Columbia; 3 = Czech Republic; 4 = Ecuador; 5 = Germany; 6 = Hungary; 7 = Ireland; 8 = Israel; 9 = Italy; 10 = Palau; 11 = Poland; 12 = Slovakia; 13 = Spain; 14 = Turkey; 15 = United States of America

**** 0 = No; 1 = Yes

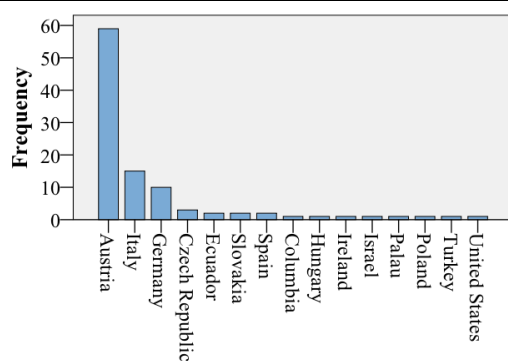
***** 0 = No; 1 = Yes



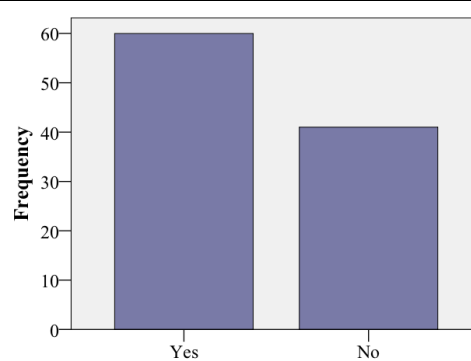
Graph 1: Frequency – Gender



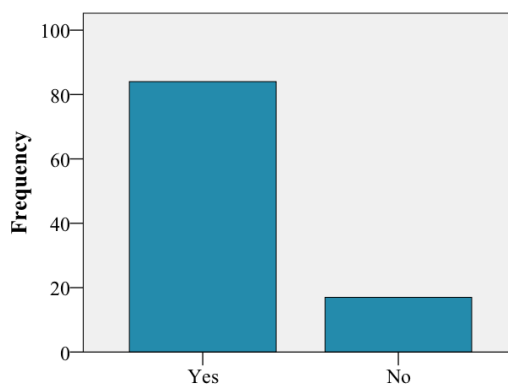
Graph 2: Frequency – Age



Graph 3: Frequency – Nationality



Graph 4: Frequency – Managing diversity actively



Graph 5: Frequency – Guideline needed?

8.6.3.2 GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	78	77.2	77.2	77.2
	Female	23	22.8	22.8	100.0
	Total	101	100.0	100.0	

8.6.3.3 AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	36 to 45	35	34.7	34.7	34.7
	46 to 55	30	29.7	29.7	64.4
	26 to 35	26	25.7	25.7	90.1
	56 or older	8	7.9	7.9	98.0
	25 or younger	2	2.0	2.0	100.0
	Total	101	100.0	100.0	

8.6.3.4 NATIONALITY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Austria	59	58.4	58.4	58.4
	Italy	15	14.9	14.9	73.3
	Germany	10	9.9	9.9	83.2
	Czech Republic	3	3.0	3.0	86.1
	Ecuador	2	2.0	2.0	88.1
	Slovakia	2	2.0	2.0	90.1
	Spain	2	2.0	2.0	92.1
	Columbia	1	1.0	1.0	93.1
	Hungary	1	1.0	1.0	94.1
	Ireland	1	1.0	1.0	95.0
	Israel	1	1.0	1.0	96.0
	Palau	1	1.0	1.0	97.0
	Poland	1	1.0	1.0	98.0
	Turkey	1	1.0	1.0	99.0
	United States	1	1.0	1.0	100.0
	Total	101	100.0	100.0	

8.6.3.5 ARE YOU MANAGING DIVERSITY ASPECTS IN YOUR PROJECTS ACTIVELY?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	60	59.4	59.4	59.4
	No	41	40.6	40.6	100.0
	Total	101	100.0	100.0	

8.6.3.5.1 If yes, how? Which actions do you take?

Action	Sub-Actions	Sub-Count	Total Count
Communication			17
	Focus on communication	4	
	Meetings	6	
	Discussion and Reflection	4	
	Intercultural communication	1	
	Formal project communication	1	
	Build communication channels over time zones	1	
Dealing with differences			16
	Awareness of differences	3	
	Evaluate differences in project team	5	
	Establish baseline and rules	3	
	Explain cultural differences / speak explicitly about it	2	
	Tips and tricks on different cultural habits	2	
	Overcome gaps	1	
Project management activities			10
	Consider diversity in project plans	2	
	Stakeholder management	2	
	Early discussion on the procedure	1	
	Share work packages fair	1	
	Formalities	1	
	Establish baseline of goals, rules, processes, tools	1	
	Commit team for project's big picture	1	

	Regularly inform and improve	1	
Listening & understanding			8
Team building activities			7
Adjusting tasks and communication			5
	Matching tasks and skills	2	
	Adjusting tasks and communication	1	
	Applying appropriate approaches	1	
	Treating stakeholders in their own individual kind	1	
Managing / Mediating conflicts			5
Respect			5
	Respect for behaviors / feelings	2	
	Respect for seniority	2	
	Respect for cultural differences	1	
Language			5
	Common language	2	
	Define common terms	1	
	Different set of languages	1	
	Language courses	1	
Adjusting own behavior			4
	Adjusting expressing myself	2	
	Adjusting behaviors	2	
Ethics			4
Selecting diverse team members			4
Focus on positive aspects			2
Other values			5

8.6.3.5.2 *If no, why not?*

Reason	Total Count
No need	11
Diversity is natural, no need to manage	7
Time constraints	6
No appreciation / importance / priority / acceptance	5
Out of scope / responsibility	4
No tool / method / knowledge	3
Naturally included in interaction with individuals	2
No diversity barriers in European projects	1
Not enough power to decide	1

8.6.3.6 *WOULD YOU LIKE TO HAVE A COMPREHENSIVE GUIDELINE THAT YOU CAN USE IN YOUR PROJECTS TO DEAL WITH DIVERSITY EFFECTIVELY?*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	84	83.2	83.2	83.2
	No	17	16.8	16.8	100.0
	Total	101	100.0	100.0	

8.6.3.6.1 *What should such a guideline offer? What do need especially?*

Needed Element	Sub-Element	Sub-Count	Total Count
Guide / Checklist			37
	Main cultural / diversity aspects to manage	7	
	Checklist	6	
	Practical guide / hints / technique	6	
	Processes, measures, actions for PM phases	5	
	How to integrate diversity into PM	4	
	Easy tool	4	
	Managing method	3	
	Definition / overview of diversity aspects	2	
Cultural aspects			20
	Information on cultures, their background and behavior	11	
	Do's and Don'ts / Behavioral guideline	7	
	Recommendations for nationalities	2	
Best practice & examples			12
	Best Practices	8	
	Examples	4	
Behavioral aspects & dynamics			5

	Behavioral aspects / patterns	4	
	Social and team dynamics	1	
Information about personality types			4
Solutions / Templates			4
	Behavioral aspects / patterns	3	
	Social and team dynamics	1	
Other aspects			17
	Organizational learning and guidelines	2	
	Increasing awareness and understanding for the topic	2	
	Differentiation in diversity areas	2	
	Suitable for all stakeholders	1	
	Globally applicable	1	
	Compatible with project management standards	1	
	Allows customizing	1	
	Provides recruiting tips	1	
	Well-documented handbook	1	
	Related literature	1	
	Empirical value	1	
	Hints on potential conflict situations	1	
	How to avoid negative reactions	1	
	How to manage aged stakeholders	1	

8.6.4 WORK EXPERIENCE

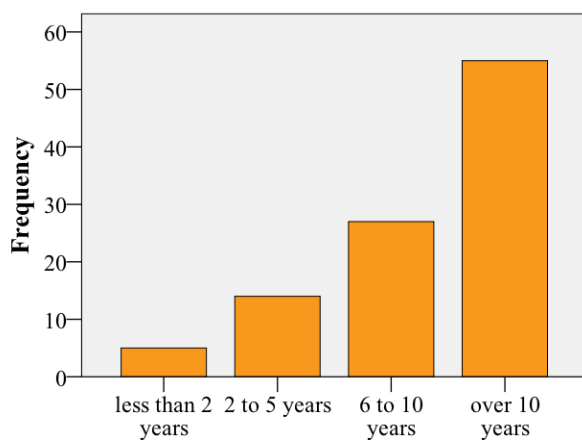
8.6.4.1 DATA OVERVIEW

	Experience (Project Management)	Experience (International Projects)
N	101	101
Valid	0	0
Missing		
Mean		7.31
Std. Error of Mean		0.691
Median	4.00*	5.00**
Mode	4*	3**
Std. Deviation		6.945
Variance		48.235
Percentiles		
25	3.00*	2.00**
50	4.00*	5.00**
75	4.00*	10.50**

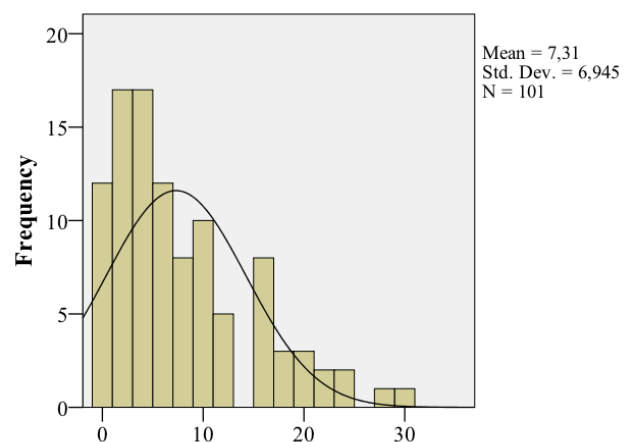
a = Comment: Multiple modes exist. The smallest value is shown.

* 0 = none; 1 = less than 2 years; 2 = 2 to 5 years; 3 = 6 to 10 years; over 10 years

** Metric scale; numbers = years



Graph 6: Frequency – Experience in project management



Graph 7: Frequency – Experience in international projects

8.6.4.2 EXPERIENCE IN PROJECT MANAGEMENT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 2 years	5	5.0	5.0	5.0
	2 to 5 years	14	13.9	13.9	18.8
	6 to 10 years	27	26.7	26.7	45.5
	over 10 years	55	54.5	54.5	100.0
	Total	101	100.0	100.0	

8.6.4.3 EXPERIENCE IN INTERNATIONAL PROJECTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	12	11.9	11.9	11.9
	1	8	7.9	7.9	19.8
	2	9	8.9	8.9	28.7
	3	15	14.9	14.9	43.6
	4	2	2.0	2.0	45.5
	5	10	9.9	9.9	55.4
	6	2	2.0	2.0	57.4
	7	2	2.0	2.0	59.4
	8	6	5.9	5.9	65.3
	9	1	1.0	1.0	66.3
	10	9	8.9	8.9	75.2
	11	4	4.0	4.0	79.2
	12	1	1.0	1.0	80.2
	15	7	6.9	6.9	87.1
	16	1	1.0	1.0	88.1
	17	2	2.0	2.0	90.1
	18	1	1.0	1.0	91.1
	20	3	3.0	3.0	94.1
	21	1	1.0	1.0	95.0
	22	1	1.0	1.0	96.0
	23	1	1.0	1.0	97.0
	24	1	1.0	1.0	98.0
	27	1	1.0	1.0	99.0
	30	1	1.0	1.0	100.0
	Total	101	100.0	100.0	

8.6.4.4 WHICH TYPES OF PROJECTS DO YOU WORK ON OR ARE YOU MOST INVOLVED WITH?

Multiple Response Set Description:

Label: Types of Projects; Coded as: Dichotomies; Data Type: Numeric.

Elementary Variables: Project: Software; Project: IT; Project: R&D; Project: Infrastructure; Project: Change; Project: Organizational; Project: Environment; Project: Telecommunication; Project: Product Development; Project: Logistics; Project: Agriculture; Project: Non-Profit; Project: Sales/Marketing; Project: Consultancy; Project: Process; Project: HR; Project: Banking; Project: Education

Comment: Multiple Response Set.

Results:

		Count	Column N %
Types of Projects	Project: Software	48	48.0%
	Project: IT	28	28.0%
	Project: Change	17	17.0%
	Project: Organizational	16	16.0%
	Project: R&D	9	9.0%
	Project: Infrastructure	7	7.0%
	Project: Product Dev.	7	7.0%
	Project: Telecommunication	4	4.0%
	Project: Sales/Marketing	4	4.0%
	Project: Process	4	4.0%
	Project: Banking	4	4.0%
	Project: Environment	3	3.0%
	Project: Consultancy	3	3.0%
	Project: Non-Profit	2	2.0%
	Project: HR	2	2.0%
	Project: Logistics	1	1.0%
	Project: Agriculture	1	1.0%
	Project: Education	1	1.0%

8.6.5 DIVERSITY FEATURES

8.6.5.1 DATA OVERVIEW

		DF1: Communication	DF2: How relationships are formed	DF3: How decisions are made and who makes them	DF4: How projects are planned, scheduled, and executed	DF5: Following defined processes
N	Valid	101	101	101	101	101
	Missing	0	0	0	0	0
Median		3.00*	2.00*	2.00*	3.00*	3.00*
Mode		3*	2*	2*	3a*	3*
Percentiles	25	2.00*	1.00*	2.00*	2.00*	2.00*
	50	3.00*	2.00*	2.00*	3.00*	3.00*
	75	3.00*	3.00*	3.00*	4.00*	3.00*

* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact

a = Comment: Multiple modes exist. The smallest value is shown.

		DF6: Recognizing and describing problems	DF7: How requirements are handled	DF8: Appreciation of work	DF9: The importance of milestones	DF10: Problem escalation
N	Valid	101	101	101	101	101
	Missing	0	0	0	0	0
Median		3.00*	3.00*	2.00*	2.00*	3.00*
Mode		3*	3*	1*	2*	3*
Percentiles	25	2.00*	2.00*	1.00*	1.00*	2.00*
	50	3.00*	3.00*	2.00*	2.00*	3.00*
	75	4.00*	3.00*	3.00*	3.00*	4.00*

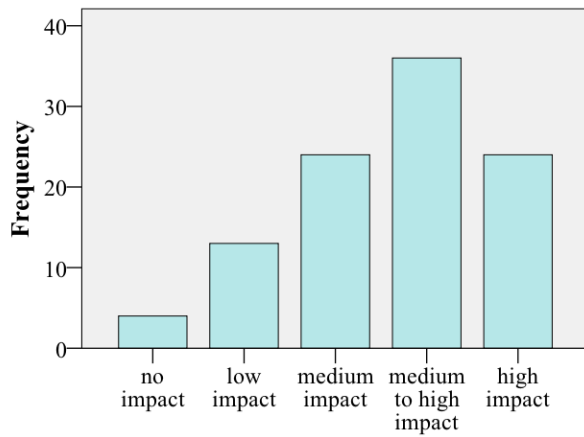
* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact

		DF11: Value of monitoring and business processes	DF12: Approaches to motivation	DF13: Types of information prospects are seeking	DF14: Professional and personal time	DF15: Handling of passwords and access
N	Valid	101	101	101	101	101
	Missing	0	0	0	0	0
Median		2.00*	1.00*	2.00*	2.00*	1.00*
Mode		2*	1*	1*	1*	0*
Percentiles	25	1.00*	1.00*	1.00*	.00*	.00*
	50	2.00*	2.00*	2.00*	1.00*	1.00*
	75	3.00*	2.00*	3.00*	3.00*	3.00*

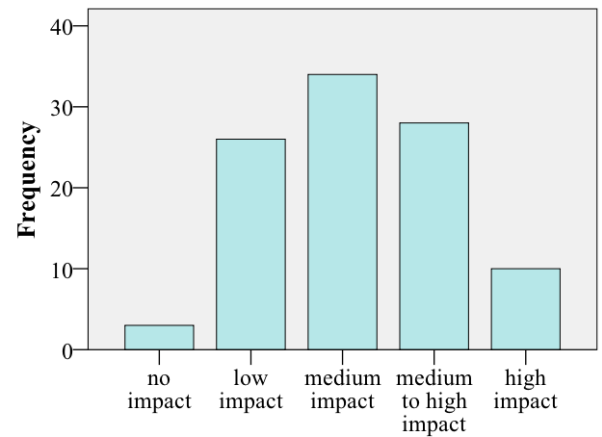
* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact

		DF16: Thinking and speaking patterns	DF17: Working on tasks	DF18: Information flow	DF19: Attention to details
N	101	101	101	101	101
	0	0	0	0	0
Median		2.00*	2.00*	3.00*	3.00*
Mode		2*	2*	3*	3*
Percentiles	1.00	1.00*	2.00*	2.00*	2.00*
	2.00	2.00*	3.00*	3.00*	3.00*
	3.00	3.00*	3.00*	3.00*	3.00*

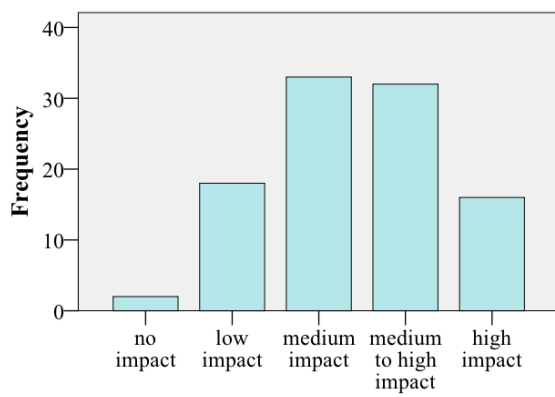
* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact



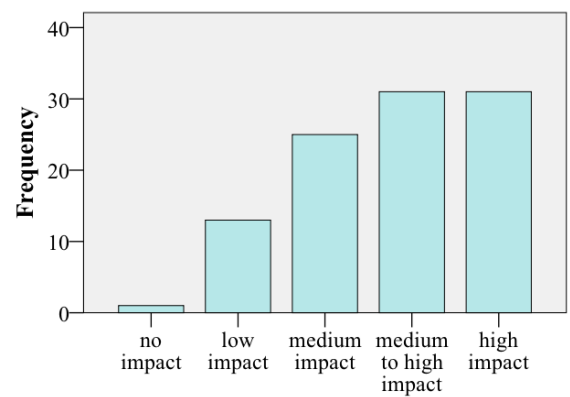
Graph 8: Frequency – Diversity Feature 1: Communication



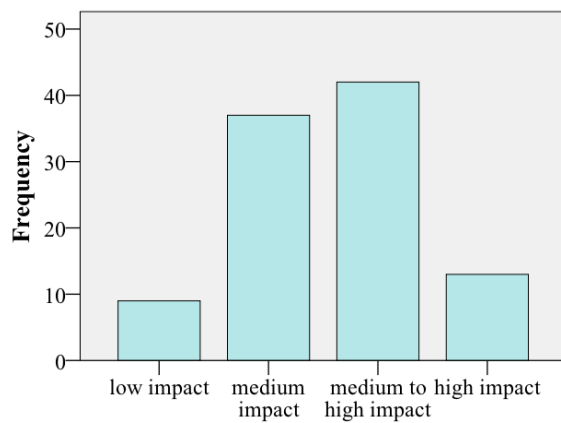
Graph 9: Frequency – Diversity Feature 2: How relationships are formed



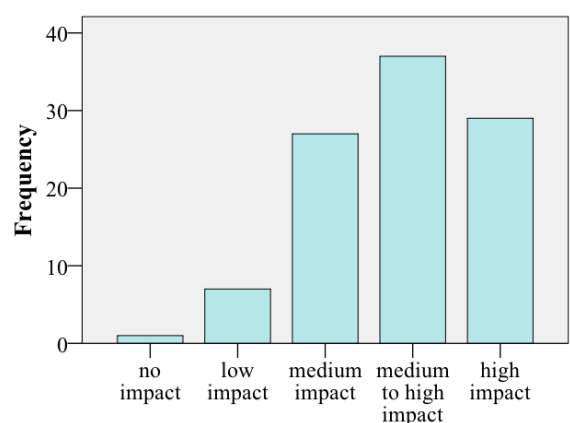
Graph 10: Frequency – Diversity Feature 3: How decisions are made and who makes them



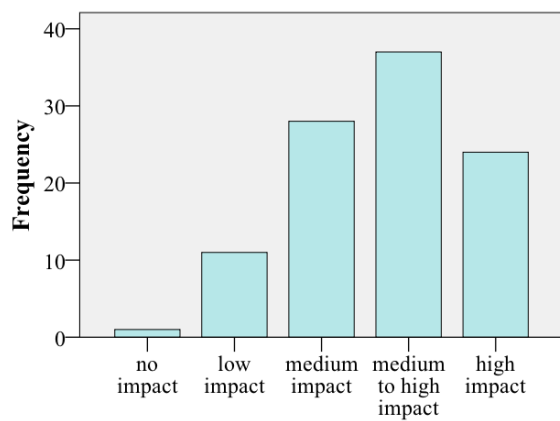
Graph 11: Frequency – Diversity Feature 4: How projects are planned, scheduled, and executed



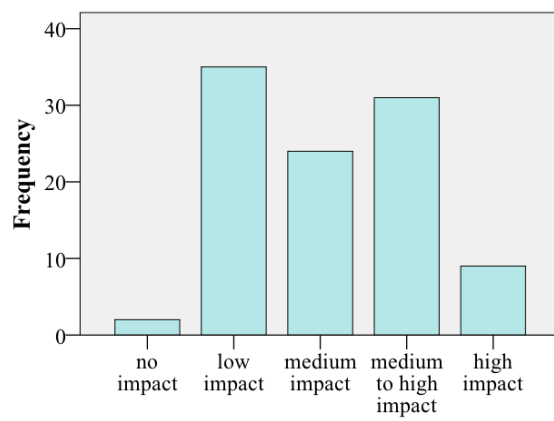
Graph 12: Frequency - Diversity Feature 5: Following defined processes



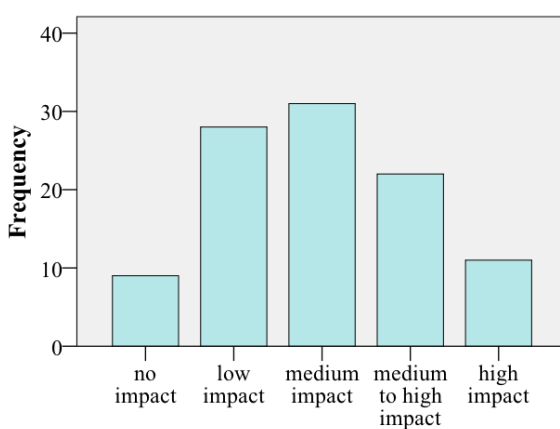
Graph 13: Frequency - Diversity Feature 6: Recognizing and describing problems



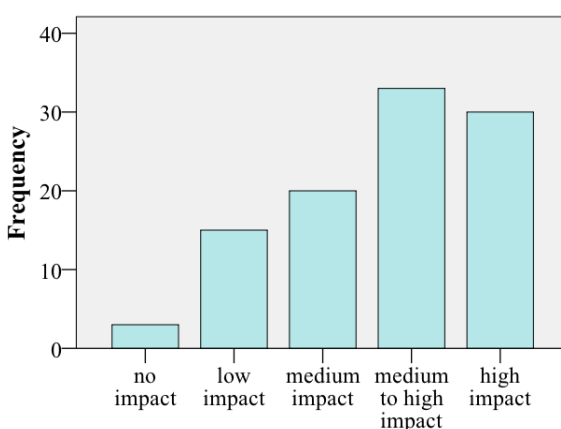
Graph 14: Frequency - Diversity Feature 7: How requirements are handled



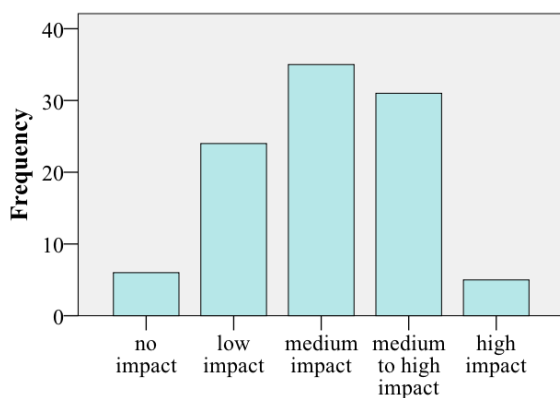
Graph 15: Frequency - Diversity Feature 8: Appreciation of work



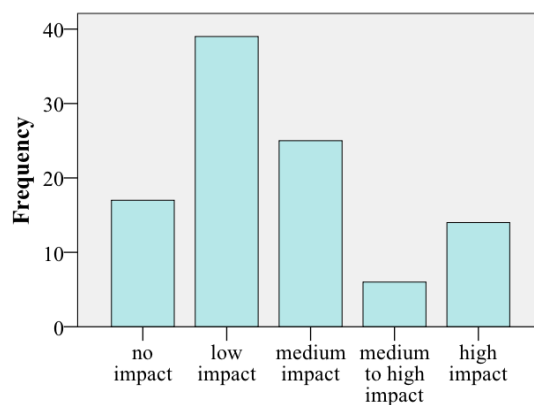
Graph 16: Frequency - Diversity Feature 9: The importance of milestones



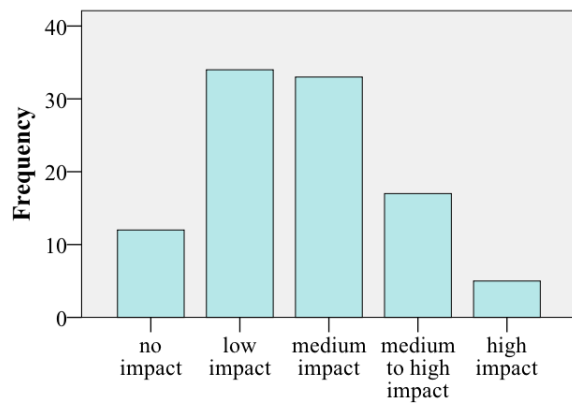
Graph 17: Frequency - Diversity Feature 10: Problem escalation



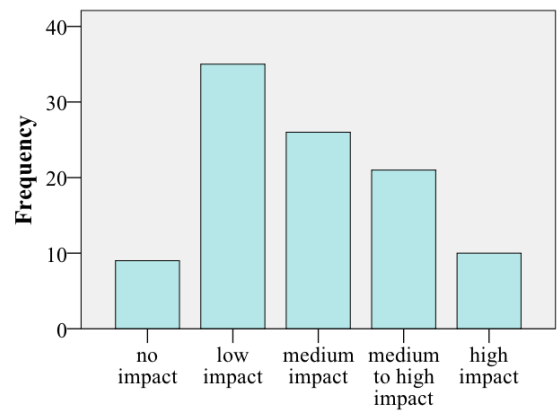
Graph 18: Frequency - Diversity Feature 11: Value of monitoring and business processes



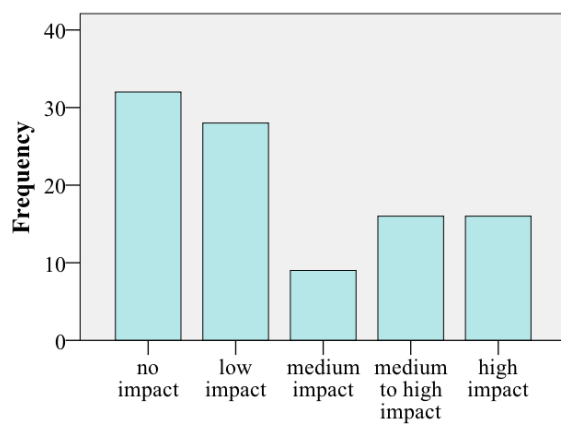
Graph 19: Frequency - Diversity Feature 12: Approaches to motivation



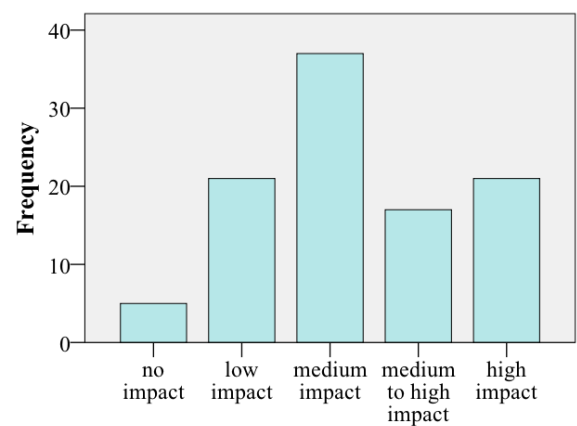
Graph 20: Frequency - Diversity Features 13: Types of information prospects are seeking



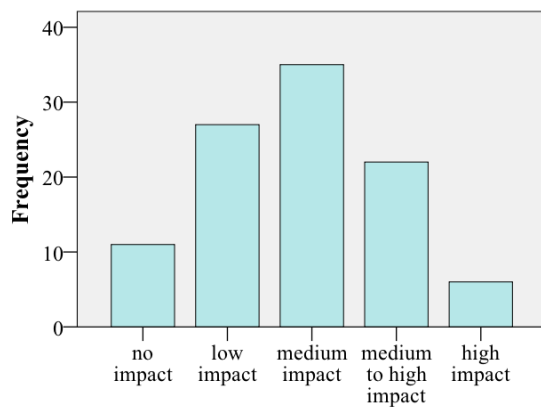
Graph 21: Frequency - Diversity Feature 14: Professional and personal time



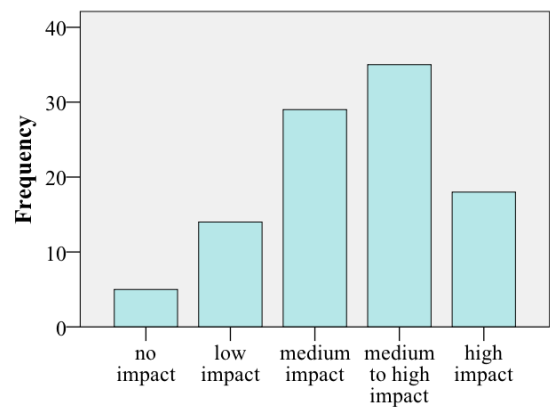
Graph 22: Frequency - Diversity Feature 15: Handling of passwords and access



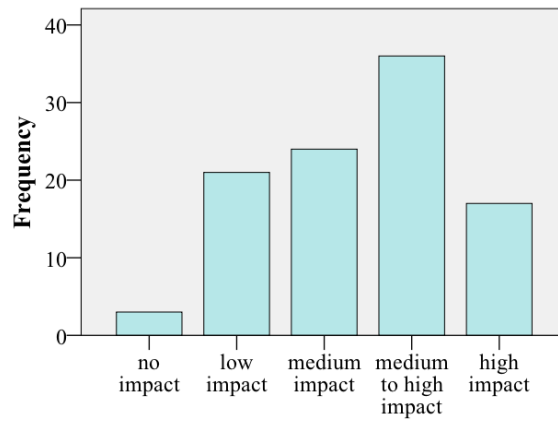
Graph 23: Frequency - Diversity Feature 16: Thinking and speaking patterns



Graph 24: Frequency - Diversity Feature 17: Working on tasks



Graph 25: Frequency - Diversity Feature 18: Information flow



Graph 26: Frequency - Diversity Feature 19: Attention to details

8.6.5.2 DIVERSITY FEATURE 1: COMMUNICATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	4	4.0	4.0	4.0
	low impact	13	12.9	12.9	16.8
	medium impact	24	23.8	23.8	40.6
	medium to high impact	36	35.6	35.6	76.2
	high impact	24	23.8	23.8	100.0
	Total	101	100.0	100.0	

8.6.5.3 DIVERSITY FEATURE 2: HOW RELATIONSHIPS ARE FORMED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	3	3.0	3.0	3.0
	low impact	26	25.7	25.7	28.7
	medium impact	34	33.7	33.7	62.4
	medium to high impact	28	27.7	27.7	90.1
	high impact	10	9.9	9.9	100.0
	Total	101	100.0	100.0	

8.6.5.4 DIVERSITY FEATURE 3: HOW DECISIONS ARE MADE AND WHO MAKES THEM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	2	2.0	2.0	2.0
	low impact	18	17.8	17.8	19.8
	medium impact	33	32.7	32.7	52.5
	medium to high impact	32	31.7	31.7	84.2
	high impact	16	15.8	15.8	100.0
	Total	101	100.0	100.0	

8.6.5.5 DIVERSITY FEATURE 4: HOW PROJECTS ARE PLANNED, SCHEDULED, AND EXECUTED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	1	1.0	1.0	1.0
	low impact	13	12.9	12.9	13.9
	medium impact	25	24.8	24.8	38.6
	medium to high impact	31	30.7	30.7	69.3
	high impact	31	30.7	30.7	100.0
	Total	101	100.0	100.0	

8.6.5.6 DIVERSITY FEATURE 5: FOLLOWING DEFINED PROCESSES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low impact	9	8.9	8.9	8.9
	medium impact	37	36.6	36.6	45.5
	medium to high impact	42	41.6	41.6	87.1
	high impact	13	12.9	12.9	100.0
	Total	101	100.0	100.0	

8.6.5.7 DIVERSITY FEATURE 6: RECOGNIZING AND DESCRIBING PROBLEMS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	1	1.0	1.0	1.0
	low impact	7	6.9	6.9	7.9
	medium impact	27	26.7	26.7	34.7
	medium to high impact	37	36.6	36.6	71.3
	high impact	29	28.7	28.7	100.0
	Total	101	100.0	100.0	

8.6.5.8 DIVERSITY FEATURE 7: HOW REQUIREMENTS ARE HANDLED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	1	1.0	1.0	1.0
	low impact	11	10.9	10.9	11.9
	medium impact	28	27.7	27.7	39.6
	medium to high impact	37	36.6	36.6	76.2
	high impact	24	23.8	23.8	100.0
	Total	101	100.0	100.0	

8.6.5.9 DIVERSITY FEATURE 8: APPRECIATION OF WORK

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	2	2.0	2.0	2.0
	low impact	35	34.7	34.7	36.6
	medium impact	24	23.8	23.8	60.4
	medium to high impact	31	30.7	30.7	91.1
	high impact	9	8.9	8.9	100.0
	Total	101	100.0	100.0	

8.6.5.10 DIVERSITY FEATURE 9: THE IMPORTANCE OF MILESTONES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	9	8.9	8.9	8.9
	low impact	28	27.7	27.7	36.6
	medium impact	31	30.7	30.7	67.3
	medium to high impact	22	21.8	21.8	89.1
	high impact	11	10.9	10.9	100.0
	Total	101	100.0	100.0	

8.6.5.11 DIVERSITY FEATURE 10: PROBLEM ESCALATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	3	3.0	3.0	3.0
	low impact	15	14.9	14.9	17.8
	medium impact	20	19.8	19.8	37.6
	medium to high impact	33	32.7	32.7	70.3
	high impact	30	29.7	29.7	100.0
	Total	101	100.0	100.0	

8.6.5.12 DIVERSITY FEATURE 11: VALUE OF MONITORING AND BUSINESS PROCESSES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	6	5.9	5.9	5.9
	low impact	24	23.8	23.8	29.7
	medium impact	35	34.7	34.7	64.4
	medium to high impact	31	30.7	30.7	95.0
	high impact	5	5.0	5.0	100.0
	Total	101	100.0	100.0	

8.6.5.13 DIVERSITY FEATURE 12: APPROACHES TO MOTIVATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	17	16.8	16.8	16.8
	low impact	39	38.6	38.6	55.4
	medium impact	25	24.8	24.8	80.2
	medium to high impact	6	5.9	5.9	86.1
	high impact	14	13.9	13.9	100.0
	Total	101	100.0	100.0	

8.6.5.14 DIVERSITY FEATURES 13: TYPES OF INFORMATION PROSPECTS ARE SEEKING

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	12	11.9	11.9	11.9
	low impact	34	33.7	33.7	45.5
	medium impact	33	32.7	32.7	78.2
	medium to high impact	17	16.8	16.8	95.0
	high impact	5	5.0	5.0	100.0
	Total	101	100.0	100.0	

8.6.5.15 DIVERSITY FEATURE 14: PROFESSIONAL AND PERSONAL TIME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	9	8.9	8.9	8.9
	low impact	35	34.7	34.7	43.6
	medium impact	26	25.7	25.7	69.3
	medium to high impact	21	20.8	20.8	90.1
	high impact	10	9.9	9.9	100.0
	Total	101	100.0	100.0	

8.6.5.16 DIVERSITY FEATURE 15: HANDLING OF PASSWORDS AND ACCESS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	32	31.7	31.7	31.7
	low impact	28	27.7	27.7	59.4
	medium impact	9	8.9	8.9	68.3
	medium to high impact	16	15.8	15.8	84.2
	high impact	16	15.8	15.8	100.0
	Total	101	100.0	100.0	

8.6.5.17 DIVERSITY FEATURE 16: THINKING AND SPEAKING PATTERNS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	5	5.0	5.0	5.0
	low impact	21	20.8	20.8	25.7
	medium impact	37	36.6	36.6	62.4
	medium to high impact	17	16.8	16.8	79.2
	high impact	21	20.8	20.8	100.0
	Total	101	100.0	100.0	

8.6.5.18 DIVERSITY FEATURE 17: WORKING ON TASKS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	11	10.9	10.9	10.9
	low impact	27	26.7	26.7	37.6
	medium impact	35	34.7	34.7	72.3
	medium to high impact	22	21.8	21.8	94.1
	high impact	6	5.9	5.9	100.0
	Total	101	100.0	100.0	

8.6.5.19 DIVERSITY FEATURE 18: INFORMATION FLOW

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	5	5.0	5.0	5.0
	low impact	14	13.9	13.9	18.8
	medium impact	29	28.7	28.7	47.5
	medium to high impact	35	34.7	34.7	82.2
	high impact	18	17.8	17.8	100.0
	Total	101	100.0	100.0	

8.6.5.20 DIVERSITY FEATURE 19: ATTENTION TO DETAILS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no impact	3	3.0	3.0	3.0
	low impact	21	20.8	20.8	23.8
	medium impact	24	23.8	23.8	47.5
	medium to high impact	36	35.6	35.6	83.2
	high impact	17	16.8	16.8	100.0
	Total	101	100.0	100.0	

8.6.5.21 ARE THERE ANY OTHER DIVERSITY ASPECTS THAT HAVE A HIGH IMPACT ON THE PROJECT SUCCESS IF THERE IS A BIG RANGE IN EXPECTATIONS?

Other Diversity Aspects with Impact	Sub-Element	Sub-Count	Total Count
Behaviors			15
	Behaviors already included in diversity feature list	3	
	Saying "no" or not	1	
	Dealing with issues and faults	1	
	Communication	1	
	Behaviors not included diversity feature list	12	
	Conflict resolution	1	
	Understanding of quality	1	
	Proactive versus reactive mindset	1	
	Setting priorities (easy tasks first or hard tasks)	1	
	Mind set (systemic versus chaotic)	1	
	Importance of hierarchy	1	
	Change requests	1	
	Application of past lessons learned	1	
	Respect for people	1	
	Use of communication tools	1	
	Openness for receiving feedback	1	
	Timeliness	1	
Other factors			37
	Personal profile	19	
	Cultures	6	
	Language	2	
	Junior versus senior	1	
	Full time versus part time employees	1	
	Work-life balance	1	
	Mobility	1	
	Motivations for working in an international team	1	
	Male versus Female	1	
	With/without children	1	
	Differences in ethic and moral values	1	
	Personal skills	1	
	Personal objectives	1	
	Different training / learning expectations	1	
	Managerial aspects	18	
	Time zones	3	
	Working hours	2	
	Experience with project management culture	1	
	Politics	1	
	Influence on line management	1	
	Commitment to project's success	1	
	Management attention	1	
	Trust	1	
	Daily routines	1	
	Accountability	1	
	Used tools	1	
	Contract management	1	
	Risk	1	
	Stakeholder	1	
	Crisis	1	

8.6.5.22 WHICH OF THE DIVERSITY ASPECTS ALSO HAVE A MEDIUM OR HIGH IMPACT IF THE DIFFERENCES ARE NOT WITHIN THE TEAM, BUT BETWEEN THE TEAM AND EXTERNAL STAKEHOLDERS (E.G. CUSTOMER)?

	Count	Column N %	
Which diversity aspects also have a medium or high impact if the differences are between the team and external stakeholders (e.g. customer)?	SH1: Communication	97	96.0%
	SH2: How requirements are handled	59	58.4%
	SH3: Problem escalation	59	58.4%
	SH4: Information flow	58	57.4%
	SH5: How relationships are formed	47	46.5%
	SH6: How decisions are made and who makes them	47	46.5%

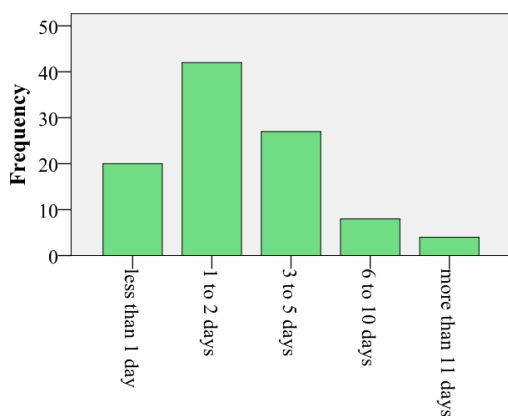
SH7: Recognizing and describing problems	45	44.6%
SH8: The importance of milestones	43	42.6%
SH9: How projects are planned, scheduled, and executed	42	41.6%
SH10: Attention to details	30	29.7%
SH11: Thinking and speaking patterns	28	27.7%
SH12: Following defined processes	27	26.7%
SH13: Value of monitoring and business processes	19	18.8%
SH14: Working on tasks	18	17.8%
SH15: Appreciation of work	15	14.9%
SH16: Approaches to motivation	13	12.9%
SH17: Professional and personal time	13	12.9%
SH18: Types of information prospects are seeking	12	11.9%
SH19: Passwords	11	10.9%

8.6.6 TIME EFFORT

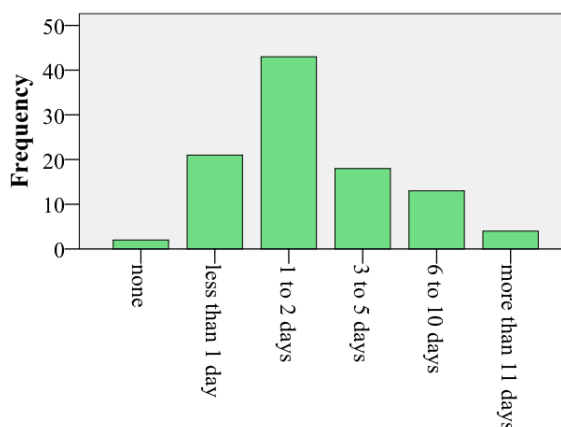
8.6.6.1 DATA OVERVIEW

		Time invested in initiation and planning phase	Time invested in implementation and closure phase	Time invested per team member
N	Valid	101	101	101
	Missing	0	0	0
Median		2.00*	2.00*	2.00*
Mode		2*	2*	1*
Percentiles	25	2.00*	2.00*	1.00*
	50	2.00*	2.00*	2.00*
	75	3.00*	3.00*	3.00*

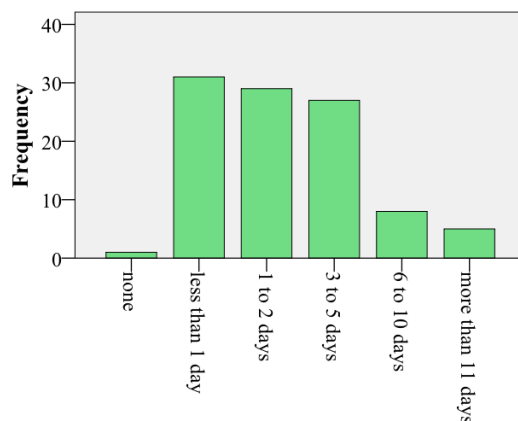
- 0 = none; 1 = less than 1 day; 2 = 1 to 2 days; 3 = 3 to 5 days; 4 = 6 to 10 days; 5 = more than 11 days



Graph 27: Frequency - Time invested in initiation and planning phase



Graph 28: Frequency - Time invested in implementation and closure phase



Graph 29: Frequency - Time invested per team member

8.6.6.2 *HOW MUCH TIME WOULD YOU INVEST AS A PROJECT MANAGER INTO USING SUCH A DIVERSITY FRAMEWORK IN A MEDIUM-SIZED PROJECT (6-12 MONTHS) IN ITS INITIATION AND PLANNING PHASE?*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 1 day	20	19.8	19.8	19.8
	1 to 2 days	42	41.6	41.6	61.4
	3 to 5 days	27	26.7	26.7	88.1
	6 to 10 days	8	7.9	7.9	96.0
	more than 11 days	4	4.0	4.0	100.0
	Total	101	100.0	100.0	

8.6.6.3 *HOW MUCH TIME WOULD YOU INVEST AS A PROJECT MANAGER INTO USING SUCH A DIVERSITY FRAMEWORK IN A MEDIUM-SIZED PROJECT (6-12 MONTHS) IN ITS IMPLEMENTATION AND CLOSURE PHASE?*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	2	2.0	2.0	2.0
	less than 1 day	21	20.8	20.8	22.8
	1 to 2 days	43	42.6	42.6	65.3
	3 to 5 days	18	17.8	17.8	83.2
	6 to 10 days	13	12.9	12.9	96.0
	more than 11 days	4	4.0	4.0	100.0
	Total	101	100.0	100.0	

8.6.6.4 *HOW MANY DAYS PER TEAM MEMBER WOULD BE WORTH INVESTING INTO DIVERSITY MANAGEMENT IN A MEDIUM-SIZE PROJECT (6-12 MONTHS) IN TOTAL?*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none	1	1.0	1.0	1.0
	less than 1 day	31	30.7	30.7	31.7
	1 to 2 days	29	28.7	28.7	60.4
	3 to 5 days	27	26.7	26.7	87.1
	6 to 10 days	8	7.9	7.9	95.0
	more than 11 days	5	5.0	5.0	100.0
	Total	101	100.0	100.0	

8.6.6.5 *HOW WOULD YOU JUSTIFY TO A SUPERIOR THAT YOU CALCULATED THIS AMOUNT OF TIME AND MONEY IN YOUR PROJECT PLAN? WHICH CONVINCING ARGUMENTS WOULD YOU USE?*

Other Diversity Aspects with Impact	Sub-Element	Sub-Count	Total Count
Team Collaboration	Improving collaboration / teamwork	8	22
	Improving motivation	8	
	Improving team building	6	
Better results / better quality			15
Ensuring project success			14
Conflict prevention			13
Improving communication			10
Reducing / managing risks			10
Higher efficiency / effectiveness			10
Reducing costs			7
Important as essential part of project management			6
Saving time			4
Valuing the importance of people in projects			4
Investment that pays off during the project			4
Show benefits, best practices and risks			4
Customer relationships / satisfaction			3
Sustainability			2
Others	Assign the right persons to the right task	1	5
	Importance of estimates	1	
	Highlight the importance of diverse workplaces	1	
	Build up skills	1	
	Call it stakeholder complexity	1	

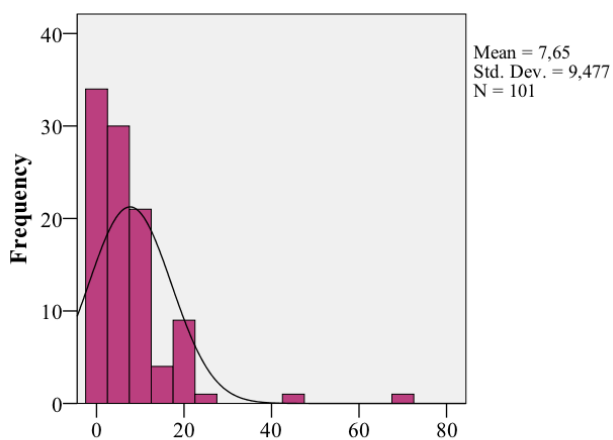
8.6.7 TIME EFFORT TO RESOLVE DIVERSITY ISSUES

8.6.7.1 DATA OVERVIEW

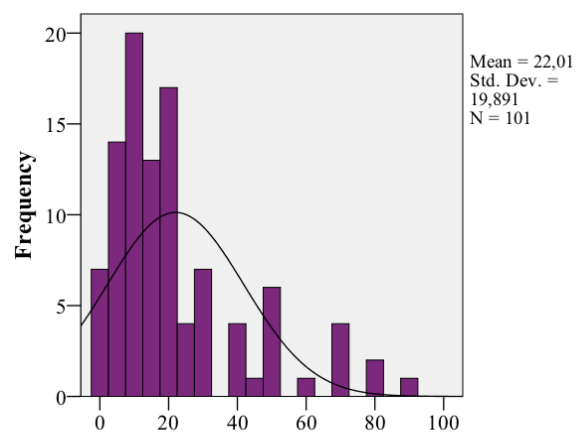
		Days to resolve issues in low diversity projects	Days to resolve issues in high diversity projects
N	Valid	101	101
	Missing	0	0
Mean		7.65*	22.01*
Std. Error of Mean		.943	1.979
Median		5.00*	15.00*
Mode		5*	10a*
Std. Deviation		9.477	19.891
Variance		89.809	395.670
Percentiles	25	2.00*	10.00*
	50	5.00*	15.00*
	75	10.00*	30.00*

* Metric scale; numbers = days

a = Comment: Multiple modes exist. The smallest value is shown.



Graph 30: Frequency - Days to resolve issues in low diversity projects



Graph 31: Frequency - Days to resolve issues in high diversity projects

8.6.7.2 IN YOUR OPINION, HOW MUCH TIME DO DIVERSITY ISSUES TAKE TO RESOLVE IN LOW DIVERSITY PROJECTS? (IN DAYS)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	5	5.0	5.0	5.0
	1	11	10.9	10.9	15.8
	2	18	17.8	17.8	33.7
	3	8	7.9	7.9	41.6
	5	20	19.8	19.8	61.4
	6	2	2.0	2.0	63.4
	8	1	1.0	1.0	64.4
	10	19	18.8	18.8	83.2
	12	1	1.0	1.0	84.2
	14	1	1.0	1.0	85.1
	15	3	3.0	3.0	88.1
	20	8	7.9	7.9	96.0
	21	1	1.0	1.0	97.0
	25	1	1.0	1.0	98.0
	45	1	1.0	1.0	99.0
	70	1	1.0	1.0	100.0
Total		101	100.0	100.0	

8.6.7.3 *IN YOUR OPINION, HOW MUCH TIME DO DIVERSITY ISSUES TAKE TO RESOLVE IN HIGH DIVERSITY PROJECTS? (IN DAYS)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	2.0	2.0	2.0
	1	2	2.0	2.0	4.0
	2	3	3.0	3.0	6.9
	3	1	1.0	1.0	7.9
	5	8	7.9	7.9	15.8
	6	3	3.0	3.0	18.8
	7	2	2.0	2.0	20.8
	8	1	1.0	1.0	21.8
	9	1	1.0	1.0	22.8
	10	16	15.8	15.8	38.6
	12	2	2.0	2.0	40.6
	14	2	2.0	2.0	42.6
	15	11	10.9	10.9	53.5
	20	16	15.8	15.8	69.3
	21	1	1.0	1.0	70.3
	25	4	4.0	4.0	74.3
	30	7	6.9	6.9	81.2
	40	4	4.0	4.0	85.1
	45	1	1.0	1.0	86.1
	50	6	5.9	5.9	92.1
	60	1	1.0	1.0	93.1
	70	4	4.0	4.0	97.0
	80	2	2.0	2.0	99.0
	90	1	1.0	1.0	100.0
Total		101	100.0	100.0	

8.6.8 NATIONALITY COMPARISON

8.6.8.1 DEMOGRAPHIC INFORMATION ITEM – NATIONAL COMPARISON

As the nationality variable did not show an equal distribution, all variables were also analyzed for the major nationalities, Austria and Italy and a cluster of all ‘other’ nationalities. This following chapter shows the commonalities and slight differences in the evaluation when taking a look at the different nationality clusters (Austria, Italy, and others).

8.6.8.1.1 Data Overview

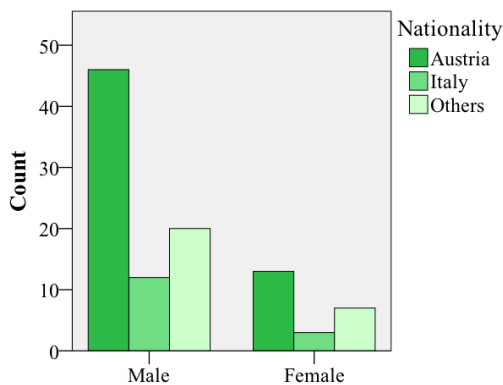
Nationality Comparison			Gender	Age	Managing Diversity Actively	Guideline Needed?
Austria	N	Valid	59	59	59	59
		Missing	0	0	0	0
	Mode		1*	4**	1***	1****
Italy	N	Valid	15	15	15	15
		Missing	0	0	0	0
	Mode		1*	3**	1***	1****
Others	N	Valid	27	27	27	27
		Missing	0	0	0	0
	Mode		1*	3**	1***	1****

* 1 = male; 2 = female

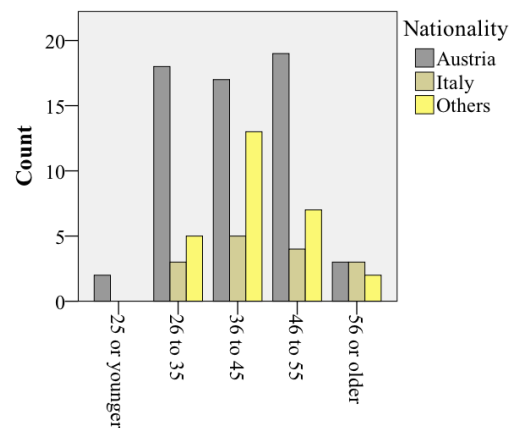
** 1 = 25 or younger; 2 = 26 to 35; 3 = 36 to 45; 4 = 46 to 55; 5 = 56 or older

*** 0 = No; 1 = Yes

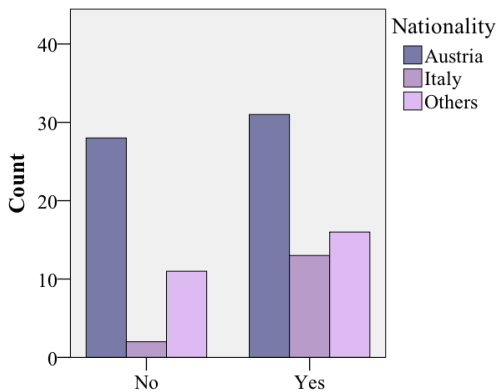
**** 0 = No; 1 = Yes



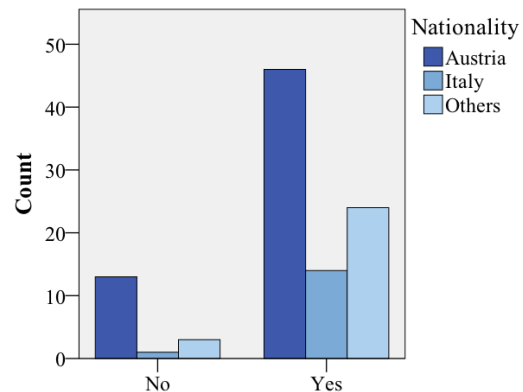
Graph 32: National Comparison - Gender



Graph 33: National Comparison - Age



Graph 34: National Comparison - Managing diversity actively



Graph 35: National Comparison - Guideline needed?

8.6.8.1.2 Gender

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	Female	13	22.0	22.0	22.0
		Male	46	78.0	78.0	100.0
		Total	59	100.0	100.0	
Italy	Valid	Female	3	20.0	20.0	20.0
		Male	12	80.0	80.0	100.0
		Total	15	100.0	100.0	
Others	Valid	Female	7	25.9	25.9	25.9
		Male	20	74.1	74.1	100.0
		Total	27	100.0	100.0	

8.6.8.1.3 Age

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	25 or younger	2	3.4	3.4	3.4
		56 or older	3	5.1	5.1	8.5
		36 to 45	17	28.8	28.8	37.3
		26 to 35	18	30.5	30.5	67.8
		46 to 55	19	32.2	32.2	100.0
		Total	59	100.0	100.0	
Italy	Valid	26 to 35	3	20.0	20.0	20.0
		56 or older	3	20.0	20.0	40.0
		46 to 55	4	26.7	26.7	66.7
		36 to 45	5	33.3	33.3	100.0
		Total	15	100.0	100.0	
Others	Valid	56 or older	2	7.4	7.4	7.4
		26 to 35	5	18.5	18.5	25.9
		46 to 55	7	25.9	25.9	51.9
		36 to 45	13	48.1	48.1	100.0
		Total	27	100.0	100.0	

8.6.8.1.4 Are you managing diversity aspects in your projects actively?

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	No	28	47.5	47.5	47.5
		Yes	31	52.5	52.5	100.0
		Total	59	100.0	100.0	
Italy	Valid	No	2	13.3	13.3	13.3
		Yes	13	86.7	86.7	100.0
		Total	15	100.0	100.0	
Others	Valid	No	11	40.7	40.7	40.7
		Yes	16	59.3	59.3	100.0
		Total	27	100.0	100.0	

8.6.8.1.5 Would you like to have a comprehensive guideline that you can use in your projects to deal with diversity effectively?

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	No	13	22.0	22.0	22.0
		Yes	46	78.0	78.0	100.0
		Total	59	100.0	100.0	
Italy	Valid	No	1	6.7	6.7	6.7
		Yes	14	93.3	93.3	100.0
		Total	15	100.0	100.0	
Others	Valid	No	3	11.1	11.1	11.1
		Yes	24	88.9	88.9	100.0
		Total	27	100.0	100.0	

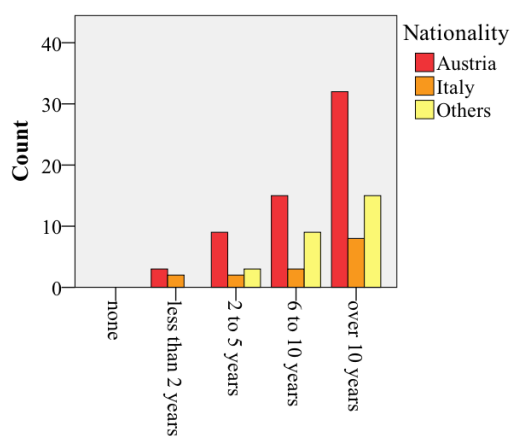
8.6.8.2 WORK EXPERIENCE – NATIONALITY COMPARISON

8.6.8.2.1 Data Overview

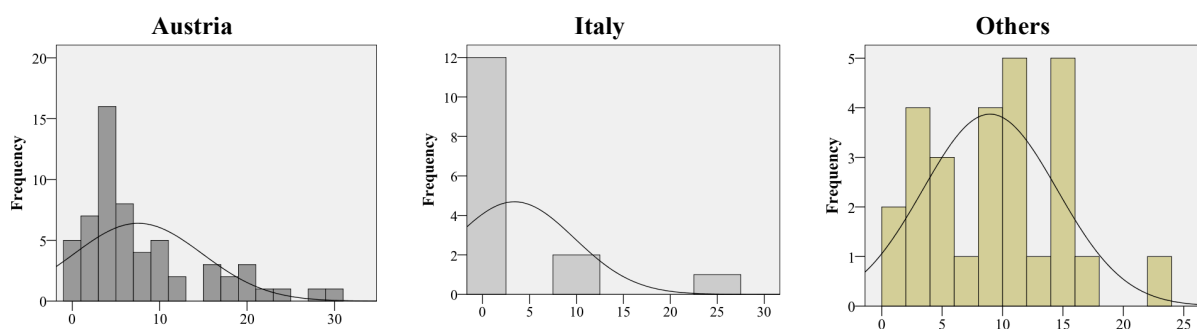
Nationality Comparison			Experience (Project Management)
Austria	N	Valid	59
		Missing	0
	Median		5.00**
	Mode		3**
	Percentiles	25	3.00*
		50	4.00*
		75	4.00*
Italy	N	Valid	15
		Missing	0
	Median		1.00**
	Mode		0**
	Percentiles	25	2.00*
		50	4.00*
		75	4.00*
Others	N	Valid	27
		Missing	0
	Median		8.00**
	Mode		15**
	Percentiles	25	3.00*
		50	4.00*
		75	4.00*

* 0 = none; 1 = less than 2 years; 2 = 2 to 5 years; 3 = 6 to 10 years; over 10 years

** Metric scale; numbers = years



Graph 36: National Comparison - Experience in Project Management



Graph 37: National Comparison – Experience in International Projects

8.6.8.2.2 Experience in Project Management

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	less than 2 years	3	5.1	5.1	5.1
		2 to 5 years	9	15.3	15.3	20.3
		6 to 10 years	15	25.4	25.4	45.8
		over 10 years	32	54.2	54.2	100.0
		Total	59	100.0	100.0	
Italy	Valid	less than 2 years	2	13.3	13.3	13.3
		2 to 5 years	2	13.3	13.3	26.7
		6 to 10 years	3	20.0	20.0	46.7
		over 10 years	8	53.3	53.3	100.0
		Total	15	100.0	100.0	
Others	Valid	2 to 5 years	3	11.1	11.1	11.1
		6 to 10 years	9	33.3	33.3	44.4
		over 10 years	15	55.6	55.6	100.0
		Total	27	100.0	100.0	

8.6.8.2.3 Experience in International Projects

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	0	5	8.5	8.5	8.5
		1	4	6.8	6.8	15.3
		2	3	5.1	5.1	20.3
		3	14	23.7	23.7	44.1
		4	2	3.4	3.4	47.5
		5	7	11.9	11.9	59.3
		6	1	1.7	1.7	61.0
		7	2	3.4	3.4	64.4
		8	2	3.4	3.4	67.8
		9	1	1.7	1.7	69.5
		10	4	6.8	6.8	76.3
		11	2	3.4	3.4	79.7
		15	2	3.4	3.4	83.1
		16	1	1.7	1.7	84.7
		17	1	1.7	1.7	86.4
		18	1	1.7	1.7	88.1
		20	3	5.1	5.1	93.2
		21	1	1.7	1.7	94.9
		24	1	1.7	1.7	96.6
		27	1	1.7	1.7	98.3
		30	1	1.7	1.7	100.0
		Total	59	100.0	100.0	
Italy	Valid	0	7	46.7	46.7	46.7
		1	2	13.3	13.3	60.0
		2	3	20.0	20.0	80.0
		10	2	13.3	13.3	93.3
		23	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	1	2	7.4	7.4	7.4
		2	3	11.1	11.1	18.5
		3	1	3.7	3.7	22.2
		5	3	11.1	11.1	33.3
		6	1	3.7	3.7	37.0
		8	4	14.8	14.8	51.9
		10	3	11.1	11.1	63.0
		11	2	7.4	7.4	70.4
		12	1	3.7	3.7	74.1
		15	5	18.5	18.5	92.6
		17	1	3.7	3.7	96.3
		22	1	3.7	3.7	100.0
		Total	27	100.0	100.0	

8.6.8.3 DIVERSITY FEATURES – NATIONALITY COMPARISON

8.6.8.3.1 Data Overview

Nationality Comparison			DF1: Communication	DF2: How relationships are formed	DF3: How decisions are made and who makes them	DF4: How projects are planned, scheduled, and executed
Austria	N	Valid	59	59	59	59
		Missing	0	0	0	0
	Median		2.00*	2.00*	2.00*	3.00*
	Mode		2*	1*	3*	3*
	Percentiles	25	2.00*	1.00*	1.00*	2.00*
		50	2.00*	2.00*	2.00*	3.00*
		75	3.00*	3.00*	3.00*	4.00*
Italy	N	Valid	15	15	15	15
		Missing	0	0	0	0
	Median		3.00*	2.00*	3.00*	2.00*
	Mode		3*	2*	3*	2a*
	Percentiles	25	3.00*	2.00*	2.00*	2.00*
		50	3.00*	2.00*	3.00*	2.00*
		75	3.00*	3.00*	3.00*	3.00*
Others	N	Valid	27	27	27	27
		Missing	0	0	0	0
	Median		3.00*	2.00*	2.00*	3.00*
	Mode		4*	2*	2*	4*
	Percentiles	25	2.00*	1.00*	2.00*	2.00*
		50	3.00*	2.00*	2.00*	3.00*
		75	4.00*	3.00*	3.00*	4.00*

* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact

a = Comment: Multiple modes exist. The smallest value is shown.

Nationality Comparison			DF5: Following defined processes	DF6: Recognizing and describing problems	DF7: How requirements are handled	DF8: Appreciation of work	DF9: The importance of milestones
Austria	N	Valid	59	59	59	59	59
		Missing	0	0	0	0	0
	Median		3.00*	3.00*	3.00*	2.00*	2.00*
	Mode		2a*	3*	3*	1*	2*
	Percentiles	25	2.00*	2.00*	2.00*	1.00*	1.00*
		50	3.00*	3.00*	3.00*	2.00*	2.00*
		75	3.00*	3.00*	3.00*	3.00*	3.00*
Italy	N	Valid	15	15	15	15	15
		Missing	0	0	0	0	0
	Median		3.00*	3.00*	3.00*	3.00*	3.00*
	Mode		3*	4*	2a*	3*	3*
	Percentiles	25	2.00*	2.00*	2.00*	2.00*	2.00*
		50	3.00*	3.00*	3.00*	3.00*	3.00*
		75	3.00*	4.00*	3.00*	3.00*	3.00*
Others	N	Valid	27	27	27	27	27
		Missing	0	0	0	0	0
	Median		3.00*	4.00*	3.00*	2.00*	2.00*
	Mode		3*	4*	3*	2*	1*
	Percentiles	25	2.00*	3.00*	2.00*	1.00*	1.00*
		50	3.00*	4.00*	3.00*	2.00*	2.00*
		75	3.00*	4.00*	4.00*	3.00*	3.00*

* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact

a = Comment: Multiple modes exist. The smallest value is shown.

Nationality Comparison			DF10: Problem escalation	DF11: Value of monitoring and business processes	DF12: Approaches to motivation	DF13: Types of information prospects are seeking	DF14: Professional and personal time
Austria	N	Valid	59	59	59	59	59
		Missing	0	0	0	0	0
	Median		3.00*	2.00*	1.00*	2.00*	2.00*
	Mode		3*	1*	1*	1*	1*
	Percentiles	25	2.00*	1.00*	1.00*	1.00*	1.00*
		50	3.00*	2.00*	1.00*	2.00*	2.00*

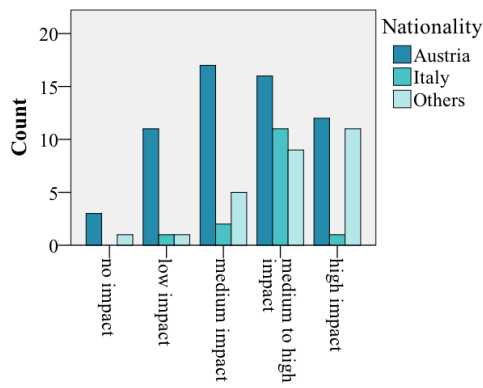
			75	4.00*	3.00*	2.00*	2.00*	3.00*
Italy	N	Valid	15	15	15	15	15	15
		Missing	0	0	0	0	0	0
	Median			3.00*	3.00*	2.00*	2.00*	2.00*
	Mode			3*	3*	2*	2a*	2*
	Percentiles	25		2.00*	2.00*	1.00*	1.00*	2.00*
		50		3.00*	3.00*	2.00*	2.00*	2.00*
		75		4.00*	3.00*	4.00*	3.00*	3.00*
Others	N	Valid	27	27	27	27	27	27
		Missing	0	0	0	0	0	0
	Median			3.00*	2.00*	2.00*	2.00*	1.00*
	Mode			3a*	2*	1a*	1*	1*
	Percentiles	25		2.00*	2.00*	1.00*	1.00*	1.00*
		50		3.00*	2.00*	2.00*	2.00*	1.00*
		75		4.00*	3.00*	2.00*	3.00*	2.00*

* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact

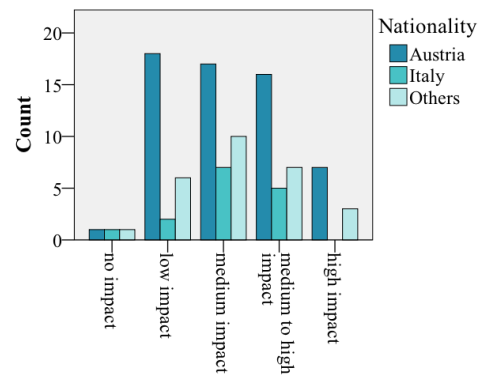
a = Comment: Multiple modes exist. The smallest value is shown.

Nationality Comparison			DF15: Handling of pass- words and access	DF16: Thinking and speaking patterns	DF17: Working on tasks	DF18: Infor- mation flow	DF19: Attention to details
Austria	N	Valid	59	59	59	59	59
		Missing	0	0	0	0	0
	Median		1.00*	2.00*	2.00*	2.00*	3.00*
	Mode		0*	2*	2*	3*	3*
	Percentiles	25	.00*	2.00*	1.00*	1.00*	1.00*
		50	1.00*	2.00*	2.00*	2.00*	3.00*
		75	3.00*	3.00*	2.00*	3.00*	3.00*
Italy	N	Valid	15	15	15	15	15
		Missing	0	0	0	0	0
	Median		2.00*	2.00*	2.00*	3.00*	3.00*
	Mode		3*	2*	2*	3*	3*
	Percentiles	25	1.00*	1.00*	1.00*	2.00*	2.00*
		50	2.00*	2.00*	2.00*	3.00*	3.00*
		75	3.00*	3.00*	3.00*	3.00*	3.00*
Others	N	Valid	27	27	27	27	27
		Missing	0	0	0	0	0
	Median		1.00*	2.00*	2.00*	3.00*	2.00*
	Mode		0*	2*	2*	3*	3*
	Percentiles	25	.00*	1.00*	1.00*	2.00*	1.00*
		50	1.00*	2.00*	2.00*	3.00*	2.00*
		75	3.00*	3.00*	3.00*	3.00*	3.00*

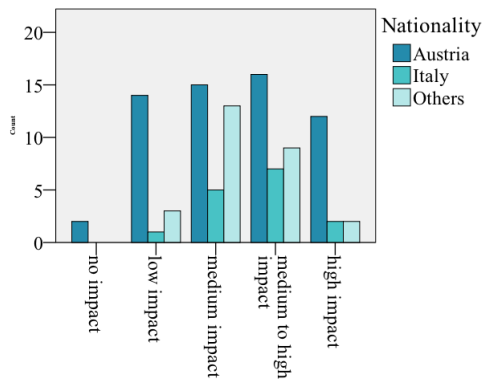
* 0 = no impact; 1 = low impact; 2 = medium impact; 3 = medium to high impact; 4 = high impact



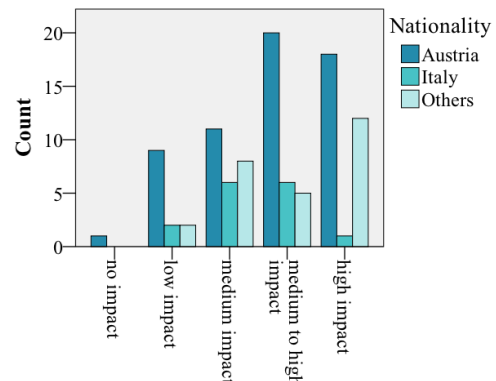
Graph 38: National Comparison - Diversity Feature 1



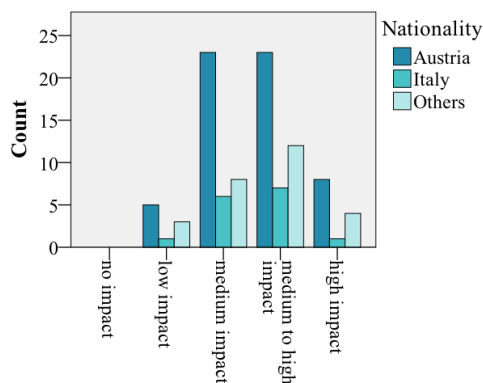
Graph 39: National Comparison - Diversity Feature 2



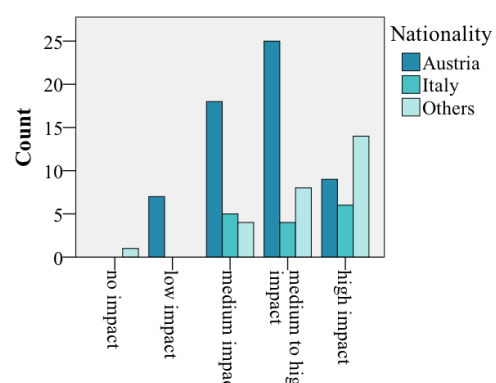
Graph 40: National Comparison - Diversity Feature 3



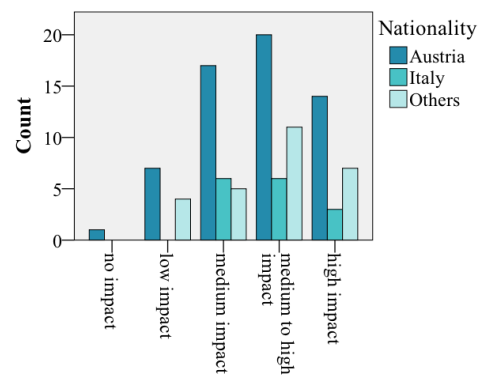
Graph 41: National Comparison - Diversity Feature 4



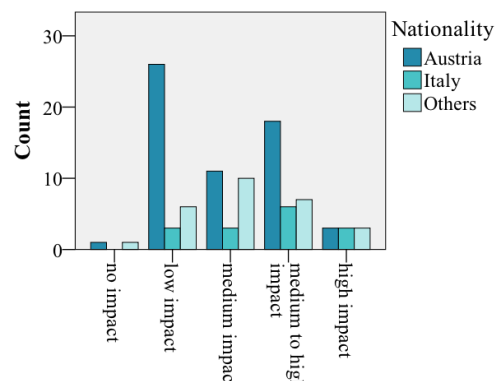
Graph 42: National Comparison - Diversity Feature 5



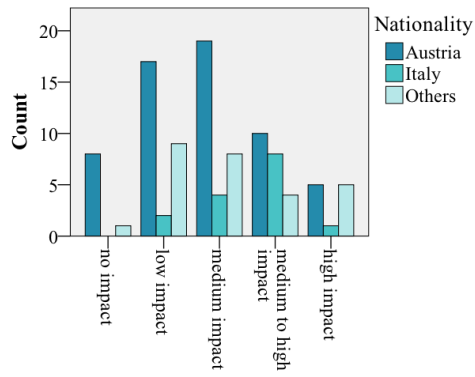
Graph 43: National Comparison - Diversity Feature 6



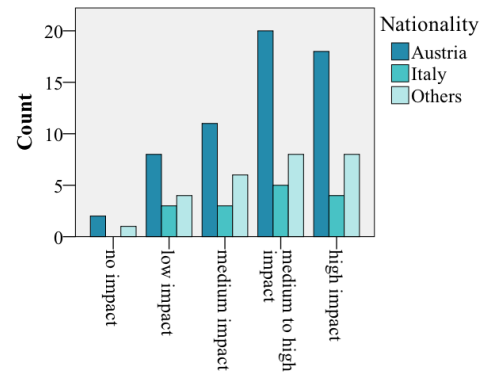
Graph 44: National Comparison - Diversity Feature 7



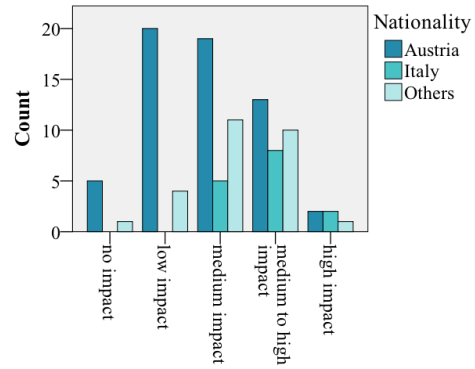
Graph 45: National Comparison - Diversity Feature 8



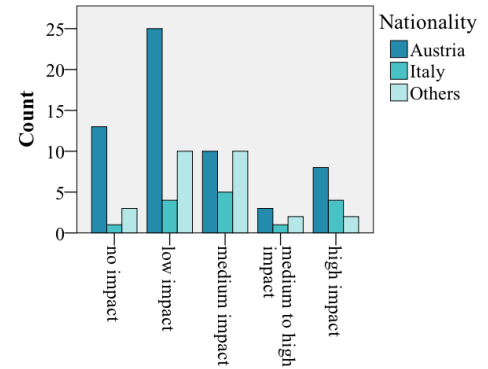
Graph 46: National Comparison - Diversity Feature 9



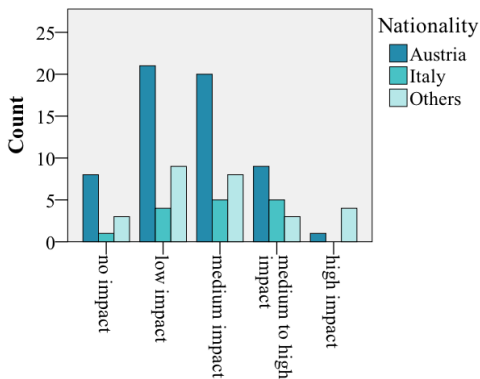
Graph 47: National Comparison - Diversity Feature 10



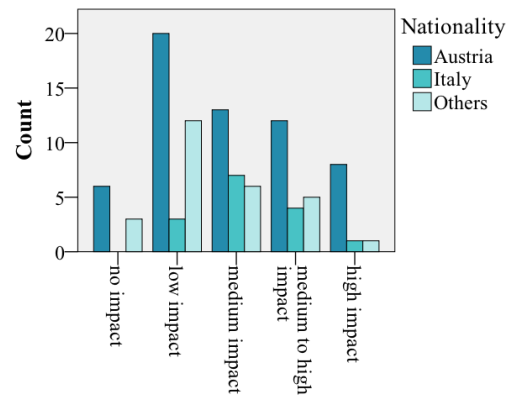
Graph 48: National Comparison - Diversity Feature 11



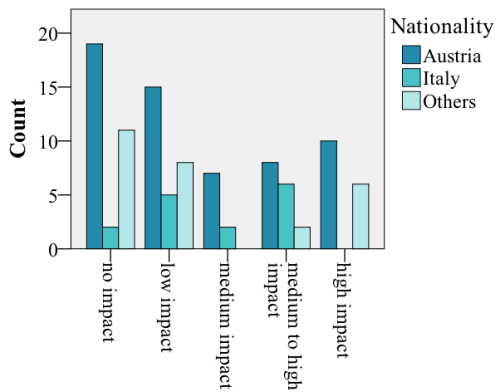
Graph 49: National Comparison - Diversity Feature 12



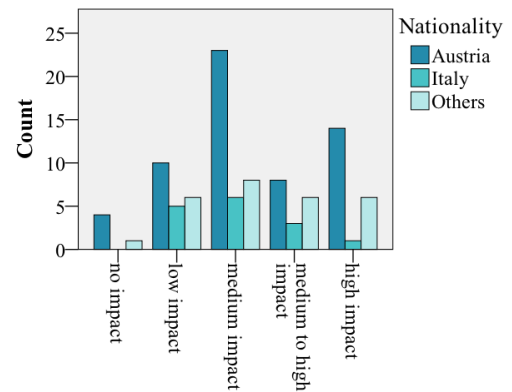
Graph 50: National Comparison - Diversity Feature 13



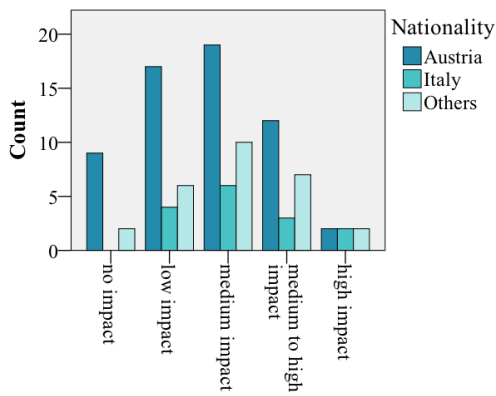
Graph 51: National Comparison - Diversity Feature 14



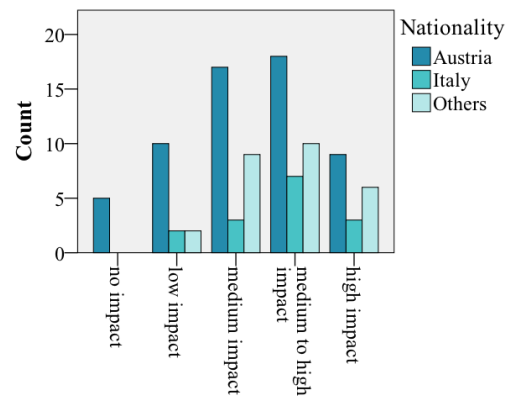
Graph 52: National Comparison - Diversity Feature 15



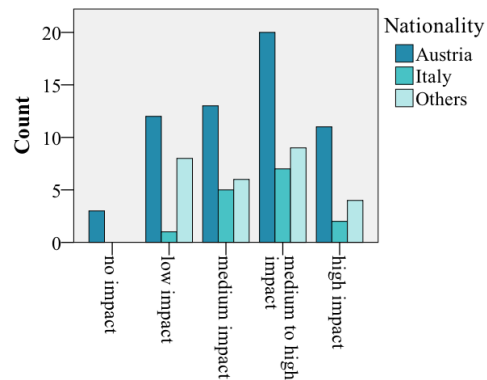
Graph 53: National Comparison - Diversity Feature 16



Graph 54: National Comparison - Diversity Feature 17



Graph 55: National Comparison - Diversity Feature 18



Graph 56: National Comparison - Diversity Feature 19

8.6.8.3.2 Diversity Feature 1: Communication

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	3	5.1	5.1	5.1
		low impact	11	18.6	18.6	23.7
		medium impact	17	28.8	28.8	52.5
		medium to high impact	16	27.1	27.1	79.7
		high impact	12	20.3	20.3	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	1	6.7	6.7	6.7
		medium impact	2	13.3	13.3	20.0
		medium to high impact	11	73.3	73.3	93.3
		high impact	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		low impact	1	3.7	3.7	7.4
		medium impact	5	18.5	18.5	25.9
		medium to high impact	9	33.3	33.3	59.3
		high impact	11	40.7	40.7	100.0
		Total	27	100.0	100.0	

8.6.8.3.3 Diversity Feature 2: How Relationships are Formed

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	1	1.7	1.7	1.7
		low impact	18	30.5	30.5	32.2
		medium impact	17	28.8	28.8	61.0
		medium to high impact	16	27.1	27.1	88.1
		high impact	7	11.9	11.9	100.0
		Total	59	100.0	100.0	
Italy	Valid	no impact	1	6.7	6.7	6.7
		low impact	2	13.3	13.3	20.0
		medium impact	7	46.7	46.7	66.7

		medium to high impact	5	33.3	33.3	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		low impact	6	22.2	22.2	25.9
		medium impact	10	37.0	37.0	63.0
		medium to high impact	7	25.9	25.9	88.9
		high impact	3	11.1	11.1	100.0
		Total	27	100.0	100.0	

8.6.8.3.4 Diversity Feature 3: How Decision Are Made and Who Makes Them

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	2	3.4	3.4	3.4
		low impact	14	23.7	23.7	27.1
		medium impact	15	25.4	25.4	52.5
		medium to high impact	16	27.1	27.1	79.7
		high impact	12	20.3	20.3	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	1	6.7	6.7	6.7
		medium impact	5	33.3	33.3	40.0
		medium to high impact	7	46.7	46.7	86.7
		high impact	2	13.3	13.3	100.0
		Total	15	100.0	100.0	
Others	Valid	low impact	3	11.1	11.1	11.1
		medium impact	13	48.1	48.1	59.3
		medium to high impact	9	33.3	33.3	92.6
		high impact	2	7.4	7.4	100.0
		Total	27	100.0	100.0	

8.6.8.3.5 Diversity Feature 4: How Projects Are Planned, Scheduled, and Executed

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	1	1.7	1.7	1.7
		low impact	9	15.3	15.3	16.9
		medium impact	11	18.6	18.6	35.6
		medium to high impact	20	33.9	33.9	69.5
		high impact	18	30.5	30.5	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	2	13.3	13.3	13.3
		medium impact	6	40.0	40.0	53.3
		medium to high impact	6	40.0	40.0	93.3
		high impact	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	low impact	2	7.4	7.4	7.4
		medium impact	8	29.6	29.6	37.0
		medium to high impact	5	18.5	18.5	55.6
		high impact	12	44.4	44.4	100.0
		Total	27	100.0	100.0	

8.6.8.3.6 Diversity Feature 5: Following Defined Processes

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	low impact	5	8.5	8.5	8.5
		medium impact	23	39.0	39.0	47.5
		medium to high impact	23	39.0	39.0	86.4
		high impact	8	13.6	13.6	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	1	6.7	6.7	6.7
		medium impact	6	40.0	40.0	46.7
		medium to high impact	7	46.7	46.7	93.3
		high impact	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	low impact	3	11.1	11.1	11.1
		medium impact	8	29.6	29.6	40.7
		medium to high impact	12	44.4	44.4	85.2
		high impact	4	14.8	14.8	100.0
		Total	27	100.0	100.0	

8.6.8.3.7 Diversity Feature 6: Recognizing and Describing Problems

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	low impact	7	11.9	11.9	11.9
		medium impact	18	30.5	30.5	42.4
		medium to high impact	25	42.4	42.4	84.7
		high impact	9	15.3	15.3	100.0
		Total	59	100.0	100.0	
Italy	Valid	medium impact	5	33.3	33.3	33.3
		medium to high impact	4	26.7	26.7	60.0
		high impact	6	40.0	40.0	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		medium impact	4	14.8	14.8	18.5
		medium to high impact	8	29.6	29.6	48.1
		high impact	14	51.9	51.9	100.0
		Total	27	100.0	100.0	

8.6.8.3.8 Diversity Feature 7: How Requirements are Handled

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	1	1.7	1.7	1.7
		low impact	7	11.9	11.9	13.6
		medium impact	17	28.8	28.8	42.4
		medium to high impact	20	33.9	33.9	76.3
		high impact	14	23.7	23.7	100.0
		Total	59	100.0	100.0	
Italy	Valid	medium impact	6	40.0	40.0	40.0
		medium to high impact	6	40.0	40.0	80.0
		high impact	3	20.0	20.0	100.0
		Total	15	100.0	100.0	
Others	Valid	low impact	4	14.8	14.8	14.8
		medium impact	5	18.5	18.5	33.3
		medium to high impact	11	40.7	40.7	74.1
		high impact	7	25.9	25.9	100.0
		Total	27	100.0	100.0	

8.6.8.3.9 Diversity Feature 8: Appreciation of Work

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	1	1.7	1.7	1.7
		low impact	26	44.1	44.1	45.8
		medium impact	11	18.6	18.6	64.4
		medium to high impact	18	30.5	30.5	94.9
		high impact	3	5.1	5.1	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	3	20.0	20.0	20.0
		medium impact	3	20.0	20.0	40.0
		medium to high impact	6	40.0	40.0	80.0
		high impact	3	20.0	20.0	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		low impact	6	22.2	22.2	25.9
		medium impact	10	37.0	37.0	63.0
		medium to high impact	7	25.9	25.9	88.9
		high impact	3	11.1	11.1	100.0
		Total	27	100.0	100.0	

8.6.8.3.10 Diversity Feature 9: The Importance of Milestones

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	8	13.6	13.6	13.6
		low impact	17	28.8	28.8	42.4
		medium impact	19	32.2	32.2	74.6
		medium to high impact	10	16.9	16.9	91.5
		high impact	5	8.5	8.5	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	2	13.3	13.3	13.3
		medium impact	4	26.7	26.7	40.0
		medium to high impact	8	53.3	53.3	93.3

		high impact	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		low impact	9	33.3	33.3	37.0
		medium impact	8	29.6	29.6	66.7
		medium to high impact	4	14.8	14.8	81.5
		high impact	5	18.5	18.5	100.0
		Total	27	100.0	100.0	

8.6.8.3.11 Diversity Feature 10: Problem Escalation

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	2	3.4	3.4	3.4
		low impact	8	13.6	13.6	16.9
		medium impact	11	18.6	18.6	35.6
		medium to high impact	20	33.9	33.9	69.5
		high impact	18	30.5	30.5	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	3	20.0	20.0	20.0
		medium impact	3	20.0	20.0	40.0
		medium to high impact	5	33.3	33.3	73.3
		high impact	4	26.7	26.7	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		low impact	4	14.8	14.8	18.5
		medium impact	6	22.2	22.2	40.7
		medium to high impact	8	29.6	29.6	70.4
		high impact	8	29.6	29.6	100.0
		Total	27	100.0	100.0	

8.6.8.3.12 Diversity Feature 11: Value of Monitoring and Business Processes

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	5	8.5	8.5	8.5
		low impact	20	33.9	33.9	42.4
		medium impact	19	32.2	32.2	74.6
		medium to high impact	13	22.0	22.0	96.6
		high impact	2	3.4	3.4	100.0
		Total	59	100.0	100.0	
Italy	Valid	medium impact	5	33.3	33.3	33.3
		medium to high impact	8	53.3	53.3	86.7
		high impact	2	13.3	13.3	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		low impact	4	14.8	14.8	18.5
		medium impact	11	40.7	40.7	59.3
		medium to high impact	10	37.0	37.0	96.3
		high impact	1	3.7	3.7	100.0
		Total	27	100.0	100.0	

8.6.8.3.13 Diversity Feature 12: Approaches to Motivation

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	13	22.0	22.0	22.0
		low impact	25	42.4	42.4	64.4
		medium impact	10	16.9	16.9	81.4
		medium to high impact	3	5.1	5.1	86.4
		high impact	8	13.6	13.6	100.0
		Total	59	100.0	100.0	
Italy	Valid	no impact	1	6.7	6.7	6.7
		low impact	4	26.7	26.7	33.3
		medium impact	5	33.3	33.3	66.7
		medium to high impact	1	6.7	6.7	73.3
		high impact	4	26.7	26.7	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	3	11.1	11.1	11.1
		low impact	10	37.0	37.0	48.1
		medium impact	10	37.0	37.0	85.2
		medium to high impact	2	7.4	7.4	92.6

high impact	2	7.4	7.4	100.0
Total	27	100.0	100.0	

8.6.8.3.14 Diversity Features 13: Types of Information Prospects are Seeking

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	8	13.6	13.6	13.6
		low impact	21	35.6	35.6	49.2
		medium impact	20	33.9	33.9	83.1
		medium to high impact	9	15.3	15.3	98.3
		high impact	1	1.7	1.7	100.0
		Total	59	100.0	100.0	
Italy	Valid	no impact	1	6.7	6.7	6.7
		low impact	4	26.7	26.7	33.3
		medium impact	5	33.3	33.3	66.7
		medium to high impact	5	33.3	33.3	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	3	11.1	11.1	11.1
		low impact	9	33.3	33.3	44.4
		medium impact	8	29.6	29.6	74.1
		medium to high impact	3	11.1	11.1	85.2
		high impact	4	14.8	14.8	100.0
		Total	27	100.0	100.0	

8.6.8.3.15 Diversity Feature 14: Professional and Personal Time

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	6	10.2	10.2	10.2
		low impact	20	33.9	33.9	44.1
		medium impact	13	22.0	22.0	66.1
		medium to high impact	12	20.3	20.3	86.4
		high impact	8	13.6	13.6	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	3	20.0	20.0	20.0
		medium impact	7	46.7	46.7	66.7
		medium to high impact	4	26.7	26.7	93.3
		high impact	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	3	11.1	11.1	11.1
		low impact	12	44.4	44.4	55.6
		medium impact	6	22.2	22.2	77.8
		medium to high impact	5	18.5	18.5	96.3
		high impact	1	3.7	3.7	100.0
		Total	27	100.0	100.0	

8.6.8.3.16 Diversity Feature 15: Handling of Passwords and Access

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	19	32.2	32.2	32.2
		low impact	15	25.4	25.4	57.6
		medium impact	7	11.9	11.9	69.5
		medium to high impact	8	13.6	13.6	83.1
		high impact	10	16.9	16.9	100.0
		Total	59	100.0	100.0	
Italy	Valid	no impact	2	13.3	13.3	13.3
		low impact	5	33.3	33.3	46.7
		medium impact	2	13.3	13.3	60.0
		medium to high impact	6	40.0	40.0	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	11	40.7	40.7	40.7
		low impact	8	29.6	29.6	70.4
		medium to high impact	2	7.4	7.4	77.8
		high impact	6	22.2	22.2	100.0
		Total	27	100.0	100.0	

8.6.8.3.17 Diversity Feature 16: Thinking and Speaking Patterns

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	4	6.8	6.8	6.8

		low impact	10	16.9	16.9	23.7
		medium impact	23	39.0	39.0	62.7
		medium to high impact	8	13.6	13.6	76.3
		high impact	14	23.7	23.7	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	5	33.3	33.3	33.3
		medium impact	6	40.0	40.0	73.3
		medium to high impact	3	20.0	20.0	93.3
		high impact	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	1	3.7	3.7	3.7
		low impact	6	22.2	22.2	25.9
		medium impact	8	29.6	29.6	55.6
		medium to high impact	6	22.2	22.2	77.8
		high impact	6	22.2	22.2	100.0
		Total	27	100.0	100.0	

8.6.8.3.18 Diversity Feature 17: Working on Tasks

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	9	15.3	15.3	15.3
		low impact	17	28.8	28.8	44.1
		medium impact	19	32.2	32.2	76.3
		medium to high impact	12	20.3	20.3	96.6
		high impact	2	3.4	3.4	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	4	26.7	26.7	26.7
		medium impact	6	40.0	40.0	66.7
		medium to high impact	3	20.0	20.0	86.7
		high impact	2	13.3	13.3	100.0
		Total	15	100.0	100.0	
Others	Valid	no impact	2	7.4	7.4	7.4
		low impact	6	22.2	22.2	29.6
		medium impact	10	37.0	37.0	66.7
		medium to high impact	7	25.9	25.9	92.6
		high impact	2	7.4	7.4	100.0
		Total	27	100.0	100.0	

8.6.8.3.19 Diversity Feature 18: Information Flow

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	5	8.5	8.5	8.5
		low impact	10	16.9	16.9	25.4
		medium impact	17	28.8	28.8	54.2
		medium to high impact	18	30.5	30.5	84.7
		high impact	9	15.3	15.3	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	2	13.3	13.3	13.3
		medium impact	3	20.0	20.0	33.3
		medium to high impact	7	46.7	46.7	80.0
		high impact	3	20.0	20.0	100.0
		Total	15	100.0	100.0	
Others	Valid	low impact	2	7.4	7.4	7.4
		medium impact	9	33.3	33.3	40.7
		medium to high impact	10	37.0	37.0	77.8
		high impact	6	22.2	22.2	100.0
		Total	27	100.0	100.0	

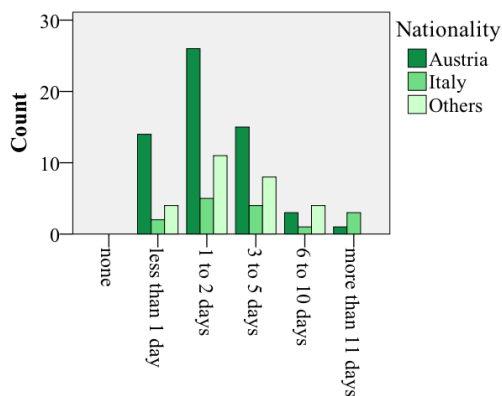
8.6.8.3.20 Diversity Feature 19: Attention to Details

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	no impact	3	5.1	5.1	5.1
		low impact	12	20.3	20.3	25.4
		medium impact	13	22.0	22.0	47.5
		medium to high impact	20	33.9	33.9	81.4
		high impact	11	18.6	18.6	100.0
		Total	59	100.0	100.0	
Italy	Valid	low impact	1	6.7	6.7	6.7
		medium impact	5	33.3	33.3	40.0

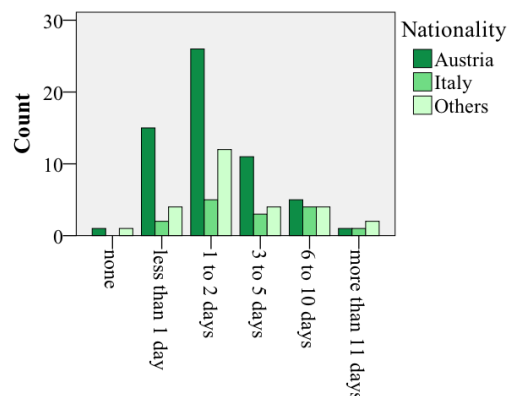
		medium to high impact	7	46.7	46.7	86.7
		high impact	2	13.3	13.3	100.0
		Total	15	100.0	100.0	
Others	Valid	low impact	8	29.6	29.6	29.6
		medium impact	6	22.2	22.2	51.9
		medium to high impact	9	33.3	33.3	85.2
		high impact	4	14.8	14.8	100.0
		Total	27	100.0	100.0	

8.6.8.4 TIME EFFORT – NATIONALITY COMPARISON

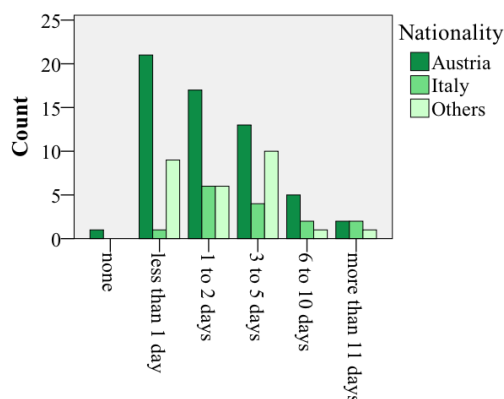
8.6.8.4.1 Data Overview



Graph 57: National Comparison - Time effort in initiation and planning phase



Graph 58: National Comparison - Time effort in implementation and closure phase



Graph 59: National Comparison - Time effort per team member

Nationality Comparison			Time invested in initiation and planning phase	Time invested in implementation and closure phase	Time invested per team member
Austria	N	Valid	59	59	59
		Missing	0	0	0
	Median		2.00*	2.00*	2.00*
	Mode		2*	2*	1*
	Percentiles	25	2.00*	1.00*	1.00*
		50	2.00*	2.00*	2.00*
		75	3.00*	3.00*	3.00*
Italy	N	Valid	15	15	15
		Missing	0	0	0
	Median		3.00*	3.00*	3.00*
	Mode		2*	2*	2*
	Percentiles	25	2.00*	2.00*	2.00*
		50	3.00*	3.00*	3.00*
		75	4.00*	4.00*	4.00*
Others	N	Valid	27	27	27
		Missing	0	0	0

Median	2.00*	2.00*	2.00*
Mode	2*	2*	3*
Percentiles			
25	2.00*	2.00*	1.00*
50	2.00*	2.00*	2.00*
75	3.00*	3.00*	3.00*

- 0 = none; 1 = less than 1 day; 2 = 1 to 2 days; 3 = 3 to 5 days; 4 = 6 to 10 days; 5 = more than 11 days

8.6.8.4.2 How much time would you invest as a project manager into using such a diversity framework in a medium-sized project (6-12 months) in its initiation and planning phase?

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	less than 1 day	14	23.7	23.7	23.7
		1 to 2 days	26	44.1	44.1	67.8
		3 to 5 days	15	25.4	25.4	93.2
		6 to 10 days	3	5.1	5.1	98.3
		more than 11 days	1	1.7	1.7	100.0
		Total	59	100.0	100.0	
Italy	Valid	less than 1 day	2	13.3	13.3	13.3
		1 to 2 days	5	33.3	33.3	46.7
		3 to 5 days	4	26.7	26.7	73.3
		6 to 10 days	1	6.7	6.7	80.0
		more than 11 days	3	20.0	20.0	100.0
		Total	15	100.0	100.0	
Others	Valid	less than 1 day	4	14.8	14.8	14.8
		1 to 2 days	11	40.7	40.7	55.6
		3 to 5 days	8	29.6	29.6	85.2
		6 to 10 days	4	14.8	14.8	100.0
		Total	27	100.0	100.0	

8.6.8.4.3 How much time would you invest as a project manager into using such a diversity framework in a medium-sized project (6-12 months) in its implementation and closure phase?

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	none	1	1.7	1.7	1.7
		less than 1 day	15	25.4	25.4	27.1
		1 to 2 days	26	44.1	44.1	71.2
		3 to 5 days	11	18.6	18.6	89.8
		6 to 10 days	5	8.5	8.5	98.3
		more than 11 days	1	1.7	1.7	100.0
		Total	59	100.0	100.0	
Italy	Valid	less than 1 day	2	13.3	13.3	13.3
		1 to 2 days	5	33.3	33.3	46.7
		3 to 5 days	3	20.0	20.0	66.7
		6 to 10 days	4	26.7	26.7	93.3
		more than 11 days	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	none	1	3.7	3.7	3.7
		less than 1 day	4	14.8	14.8	18.5
		1 to 2 days	12	44.4	44.4	63.0
		3 to 5 days	4	14.8	14.8	77.8
		6 to 10 days	4	14.8	14.8	92.6
		more than 11 days	2	7.4	7.4	100.0
		Total	27	100.0	100.0	

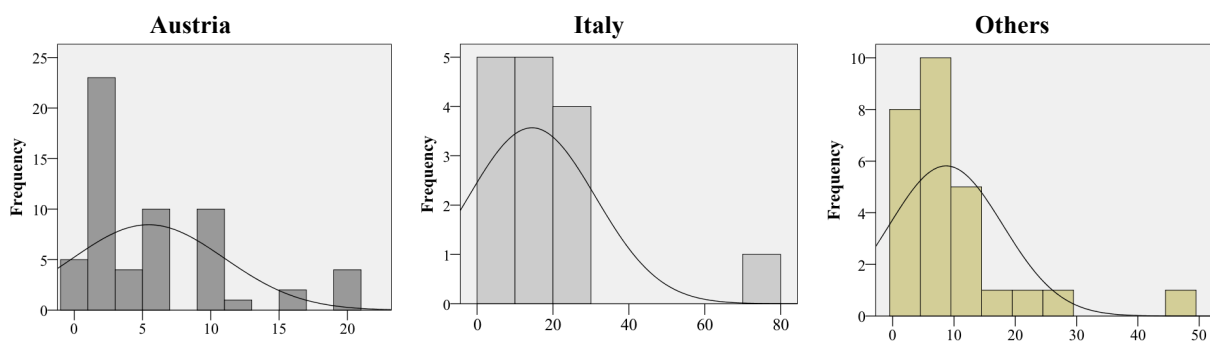
8.6.8.4.4 How many days per team member would be worth investing into diversity management in a medium-size project (6-12 months) in total?

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	none	1	1.7	1.7	1.7
		less than 1 day	21	35.6	35.6	37.3
		1 to 2 days	17	28.8	28.8	66.1
		3 to 5 days	13	22.0	22.0	88.1
		6 to 10 days	5	8.5	8.5	96.6
		more than 11 days	2	3.4	3.4	100.0
		Total	59	100.0	100.0	
Italy	Valid	less than 1 day	1	6.7	6.7	6.7
		1 to 2 days	6	40.0	40.0	46.7

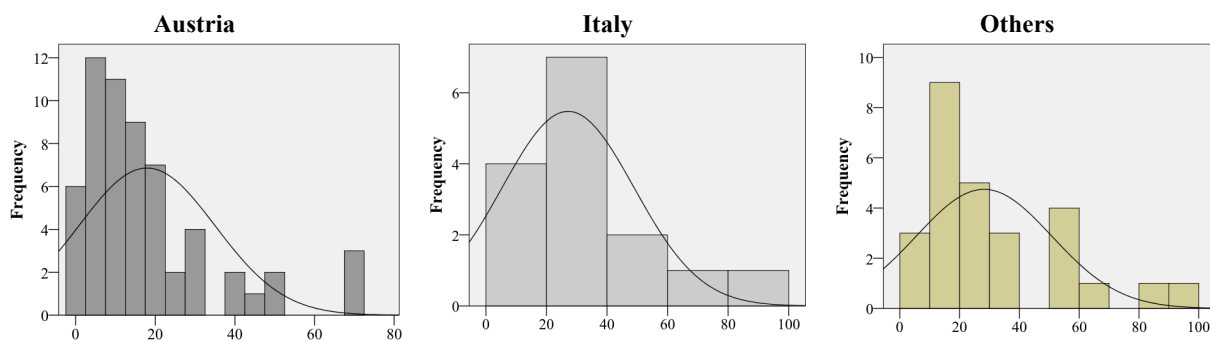
		3 to 5 days	4	26.7	26.7	73.3
		6 to 10 days	2	13.3	13.3	86.7
		more than 11 days	2	13.3	13.3	100.0
		Total	15	100.0	100.0	
Others	Valid	less than 1 day	9	33.3	33.3	33.3
		1 to 2 days	6	22.2	22.2	55.6
		3 to 5 days	10	37.0	37.0	92.6
		6 to 10 days	1	3.7	3.7	96.3
		more than 11 days	1	3.7	3.7	100.0
		Total	27	100.0	100.0	

8.6.8.5 TIME EFFORT TO RESOLVE DIVERSITY ISSUES – NATIONALITY COMPARISON

8.6.8.5.1 Data Overview



Graph 60: National Comparison - Time effort to resolve diversity issues in low diversity projects



Graph 61: National Comparison - Time effort to resolve diversity issues in high diversity projects

Nationality Comparison			Days to resolve issues in low diversity projects	Days to resolve issues in high diversity projects
Austria	N	Valid	59	59
		Missing	0	0
	Mean		5.44*	17.90*
	Std. Error of Mean		.725	2.233
	Median		3.00*	14.00*
	Mode		2*	10*
	Std. Deviation		5.569	17.155
	Variance		31.009	294.300
	Percentiles	25	2.00*	6.00*
Italy	N	Valid	15	15
		Missing	0	0
	Mean		14.47*	27.13*
	Std. Error of Mean		4.330	5.642
	Median		10.00*	20.00*
	Mode		10*	20*
	Std. Deviation		16.771	21.853
	Variance		281.267	477.552

Others	Percentiles	25	5.00*	15.00*
		50	10.00*	20.00*
		75	20.00*	40.00*
	N	Valid	27	27
		Missing	0	0
	Mean		8.70*	28.15*
	Std. Error of Mean		1.782	4.370
	Median		5.00*	20.00*
	Mode		5*	10a*
	Std. Deviation		9.260	22.705
	Variance		85.755	515.516
	Percentiles	25	3.00*	10.00*
		50	5.00*	20.00*
		75	10.00*	50.00*

* Metric scale; numbers = days

a. Multiple modes exist. The smallest value is shown.

8.6.8.5.2 *In your opinion, how much time do diversity issues take to resolve in low diversity projects? (in days)*

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	0	5	8.5	8.5	8.5
		1	9	15.3	15.3	23.7
		2	14	23.7	23.7	47.5
		3	4	6.8	6.8	54.2
		5	10	16.9	16.9	71.2
		10	10	16.9	16.9	88.1
		12	1	1.7	1.7	89.8
		15	2	3.4	3.4	93.2
		20	4	6.8	6.8	100.0
		Total	59	100.0	100.0	
Italy	Valid	1	2	13.3	13.3	13.3
		5	3	20.0	20.0	33.3
		10	5	33.3	33.3	66.7
		20	4	26.7	26.7	93.3
		70	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	2	4	14.8	14.8	14.8
		3	4	14.8	14.8	29.6
		5	7	25.9	25.9	55.6
		6	2	7.4	7.4	63.0
		8	1	3.7	3.7	66.7
		10	4	14.8	14.8	81.5
		14	1	3.7	3.7	85.2
		15	1	3.7	3.7	88.9
		21	1	3.7	3.7	92.6
		25	1	3.7	3.7	96.3
		45	1	3.7	3.7	100.0
		Total	27	100.0	100.0	

8.6.8.5.3 *In your opinion, how much time do diversity issues take to resolve in high diversity projects? (in days)*

Nationality Comparison			Frequency	Percent	Valid Percent	Cumulative Percent
Austria	Valid	0	2	3.4	3.4	3.4
		1	2	3.4	3.4	6.8
		2	2	3.4	3.4	10.2
		3	1	1.7	1.7	11.9
		5	7	11.9	11.9	23.7
		6	2	3.4	3.4	27.1
		7	2	3.4	3.4	30.5
		8	1	1.7	1.7	32.2
		10	10	16.9	16.9	49.2
		14	2	3.4	3.4	52.5
		15	7	11.9	11.9	64.4
		20	7	11.9	11.9	76.3
		25	2	3.4	3.4	79.7
		30	4	6.8	6.8	86.4

		40	2	3.4	3.4	89.8
		45	1	1.7	1.7	91.5
		50	2	3.4	3.4	94.9
		70	3	5.1	5.1	100.0
		Total	59	100.0	100.0	
Italy	Valid	2	1	6.7	6.7	6.7
		10	2	13.3	13.3	20.0
		15	1	6.7	6.7	26.7
		20	7	46.7	46.7	73.3
		40	2	13.3	13.3	86.7
		70	1	6.7	6.7	93.3
		80	1	6.7	6.7	100.0
		Total	15	100.0	100.0	
Others	Valid	5	1	3.7	3.7	3.7
		6	1	3.7	3.7	7.4
		9	1	3.7	3.7	11.1
		10	4	14.8	14.8	25.9
		12	2	7.4	7.4	33.3
		15	3	11.1	11.1	44.4
		20	2	7.4	7.4	51.9
		21	1	3.7	3.7	55.6
		25	2	7.4	7.4	63.0
		30	3	11.1	11.1	74.1
		50	4	14.8	14.8	88.9
		60	1	3.7	3.7	92.6
		80	1	3.7	3.7	96.3
		90	1	3.7	3.7	100.0
		Total	27	100.0	100.0	

8.6.8.6 CORRELATIONS TESTS

For several items it was checked whether the nationality of the participants or their work experience had any impact on their answers.

For nominal-scaled variables, Chi-Square tests were performed and Cramer's V was calculated as a measure of association (see Chapters 8.6.8.6.1, 8.6.8.6.2, 8.6.8.6.3, 8.6.8.6.4, 8.6.8.6.5).

During the interpretation of the Chi-Square tests and Cramer's V, the following values were in the focus and evaluated as follows in the table.

Cramer's V – Value:	0 = no relationship < 0.2 = low relationship 0.2 – 0.3 = moderate relationship > 0.3 = strong relationship
Cramer's V – Approximate Significance (p) (equals Pearson Chi-Square – Asymptotic Significance (2-sided)):	<0.01 = highly significant <0.05 = significant >=0.05 = non significant

For ordinal-scaled variables, Kendall's Tau b was calculated as the measure of correlation between the variables (see Chapters 8.6.8.6.6, 8.6.8.6.7, 8.6.8.6.8, 8.6.8.6.9). For interpreting the Kendall's Tau b value, the following scale was used for the interpretation.

Kendall's Tau b:	-1 = negative association 0 = no association 1 = positive association
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8.6.8.6.1 Correlation between 3 Nationalities and the Diversity Features

The combined variable for Nationality does not view all Nationalities, but clustered the nationalities according to their frequency into 3 clusters: Austria, Italy, and Others.

Overview

DF	Cramer's V – Value	Cramer's V – Approximate Significance
DF1	.305*	.016
DF2	.170	.666
DF3	.231	.217
DF4	.229	.277
DF5	.087	.957
DF6	.318**	.009
DF7	.155	.771
DF8	.223	.206
DF9	.275	.054
DF10	.075	.997
DF11	.281*	.043
DF12	.217	.302
DF13	.236	.189
DF14	.206	.378
DF15	.281*	.043
DF16	.172	.653
DF17	.172	.653
DF18	.185	.549
DF19	.175	.629

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

3 Nationalities; DF1: Communication

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.791 ^a	8	.016
Likelihood Ratio	18.962	8	.015
Linear-by-Linear Association	6.748	1	.009
N of Valid Cases	101		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .59.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.431	.016
	Cramer's V	.305	.016
N of Valid Cases		101	

3 Nationalities; DF2: How relationships are formed

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.831 ^a	8	.666
Likelihood Ratio	7.273	8	.507
Linear-by-Linear Association	.000	1	.994
N of Valid Cases	101		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .45.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.240	.666
	Cramer's V	.170	.666
N of Valid Cases		101	

3 Nationalities; DF3: How decisions are made and who makes them

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.738 ^a	8	.217
Likelihood Ratio	11.744	8	.163
Linear-by-Linear Association	.022	1	.883
N of Valid Cases	101		

a. 9 cells (60.0%) have expected count less than 5. The minimum expected count is .30.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.326	.217
	Cramer's V	.231	.217
N of Valid Cases		101	

3 Nationalities; DF4: How projects are planned, scheduled, and executed

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.569 ^a	8	.227
Likelihood Ratio	12.178	8	.143
Linear-by-Linear Association	.531	1	.466
N of Valid Cases	101		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .15.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.323	.227
	Cramer's V	.229	.227
N of Valid Cases		101	

3 Nationalities; DF5: Following defined processes

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.533 ^a	6	.957
Likelihood Ratio	1.643	6	.949
Linear-by-Linear Association	.055	1	.814
N of Valid Cases	101		

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.34.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.123	.957
	Cramer's V	.087	.957
N of Valid Cases		101	

3 Nationalities; DF6: Recognizing and describing problems

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.439 ^a	8	.009
Likelihood Ratio	22.890	8	.004
Linear-by-Linear Association	9.257	1	.002
N of Valid Cases	101		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .15.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.450	.009
	Cramer's V	.318	.009
N of Valid Cases		101	

3 Nationalities; DF7: How requirements are handled

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.878 ^a	8	.771
Likelihood Ratio	6.847	8	.553
Linear-by-Linear Association	.316	1	.574
N of Valid Cases	101		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .15.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.220	.771
	Cramer's V	.155	.771
N of Valid Cases		101	

3 Nationalities; DF8: Appreciation of work

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.921 ^a	8	.206
Likelihood Ratio	10.721	8	.218
Linear-by-Linear Association	1.790	1	.181
N of Valid Cases	101		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .30.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.329	.206
	Cramer's V	.233	.206
N of Valid Cases		101	

3 Nationalities; DF9: The importance of milestones

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.268 ^a	8	.054
Likelihood Ratio	14.843	8	.062
Linear-by-Linear Association	2.395	1	.122
N of Valid Cases	101		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is 1.34.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.389	.054
	Cramer's V	.275	.054
N of Valid Cases		101	

3 Nationalities; DF10: Problem escalation

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.149 ^a	8	.997
Likelihood Ratio	1.566	8	.992
Linear-by-Linear Association	.104	1	.747
N of Valid Cases	101		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .45.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.107	.997
	Cramer's V	.075	.997
N of Valid Cases		101	

3 Nationalities; DF11: Value of monitoring and business processes

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.984 ^a	8	.043
Likelihood Ratio	19.272	8	.013
Linear-by-Linear Association	5.656	1	.017
N of Valid Cases	101		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .74.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.398	.043
	Cramer's V	.281	.043
N of Valid Cases		101	

3 Nationalities; DF12: Approaches to motivation

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.499 ^a	8	.302
Likelihood Ratio	9.525	8	.300
Linear-by-Linear	.796	1	.372

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.307	.302
	Cramer's V	.217	.302
N of Valid Cases		101	

Association							
N of Valid Cases	101						

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .89.

3 Nationalities; DF13: Types of information prospects are seeking

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.238 ^a	8	.189
Likelihood Ratio	10.159	8	.254
Linear-by-Linear Association	1.786	1	.181
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.334	.189
	Cramer's V	.236	.189
N of Valid Cases		101	

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .74.

3 Nationalities; DF14: Professional and personal time

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.596 ^a	8	.378
Likelihood Ratio	9.799	8	.279
Linear-by-Linear Association	1.178	1	.278
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.292	.378
	Cramer's V	.206	.378
N of Valid Cases		101	

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is 1.34.

3 Nationalities; DF15: Handling of passwords and access

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.978 ^a	8	.043
Likelihood Ratio	19.617	8	.012
Linear-by-Linear Association	.148	1	.700
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.398	.043
	Cramer's V	.281	.043
N of Valid Cases		101	

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is 1.34.

3 Nationalities; DF16: Thinking and speaking patterns

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.945 ^a	8	.653
Likelihood Ratio	7.018	8	.535
Linear-by-Linear Association	.007	1	.931
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.243	.653
	Cramer's V	.172	.653
N of Valid Cases		101	

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .74.

3 Nationalities; DF17: Working on tasks

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.952 ^a	8	.653
Likelihood Ratio	7.253	8	.510
Linear-by-Linear Association	2.670	1	.102
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.243	.653
	Cramer's V	.172	.653
N of Valid Cases		101	

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .89.

3 Nationalities; DF18: Information flow

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)

Symmetric Measures			
		Value	Approximate Significance

Pearson Chi-Square	6.890 ^a	8	.549
Likelihood Ratio	8.822	8	.358
Linear-by-Linear Association	3.949	1	.047
N of Valid Cases	101		

Nominal by Nominal	Phi	.261	.549
	Cramer's V	.185	.549
N of Valid Cases		101	

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .74.

3 Nationalities; DF19: Attention to detail

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.166 ^a	8	.629
Likelihood Ratio	7.561	8	.478
Linear-by-Linear Association	.021	1	.885
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.247	.629
	Cramer's V	.175	.629
N of Valid Cases		101	

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .45.

8.6.8.6.2 Correlation between Nationality and the Diversity Features

Overview

DF	Cramer's V – Value	Cramer's V – Approximate Significance
DF1	.387	.316
DF2	.429	.050
DF3	.317	.939
DF4	.292	.990
DF5	.401	.222
DF6	.587**	.000
DF7	.328	.888
DF8	.520**	.000
DF9	.403	.179
DF10	.425	.065
DF11	.359	.620
DF12	.365	.553
DF13	.420	.083
DF14	.385	.336
DF15	.388	.308
DF16	.400	.198
DF17	.332	.862
DF18	.319	.993
DF19	.337	.883

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Nationality; DF1: Communication

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	60.513 ^a	56	.316
Likelihood Ratio	55.809	56	.482
Linear-by-Linear Association	2.795	1	.095
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.774	.316
	Cramer's V	.387	.316
N of Valid Cases		101	

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .04.

Nationality; DF2: How relationships are formed

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	74.505 ^a	56	.050
Likelihood Ratio	55.630	56	.489
Linear-by-Linear Association	.049	1	.825
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.859	.050
	Cramer's V	.429	.050
N of Valid Cases		101	

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .03.

Nationality; DF3: How decisions are made and who makes them

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	40.617 ^a	56	.939
Likelihood Ratio	42.974	56	.899
Linear-by-Linear Association	.025	1	.875
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.634	.939
	Cramer's V	.317	.939
N of Valid Cases		101	

a. 71 cells (94.7%) have expected count less than 5. The minimum expected count is .02.

Nationality; DF4: How projects are planned, scheduled, and executed

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.336 ^a	56	.990
Likelihood Ratio	37.871	56	.970
Linear-by-Linear Association	.042	1	.837
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.583	.990
	Cramer's V	.292	.990
N of Valid Cases		101	

a. 71 cells (94.7%) have expected count less than 5. The minimum expected count is .01.

Nationality; DF5: Following defined processes

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	48.676 ^a	42	.222
Likelihood Ratio	35.792	42	.739
Linear-by-Linear Association	.000	1	.992
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.694	.222
	Cramer's V	.401	.222
N of Valid Cases		101	

a. 54 cells (90.0%) have expected count less than 5. The minimum expected count is .09.

Nationality; DF6: Recognizing and describing problems

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	139.298 ^a	56	.000
Likelihood Ratio	54.379	56	.536
Linear-by-Linear Association	3.499	1	.061
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.174	.000
	Cramer's V	.587	.000
N of Valid Cases		101	

a. 71 cells (94.7%) have expected count less than 5. The minimum expected count is .01.

Nationality; DF7: How requirements are handled

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.534 ^a	56	.888
Likelihood Ratio	41.633	56	.924
Linear-by-Linear Association	.288	1	.591
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.657	.888
	Cramer's V	.328	.888
N of Valid Cases		101	

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .01.

Nationality; DF8: Appreciation of work

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	109.106 ^a	56	.000
Likelihood Ratio	57.213	56	.430
Linear-by-Linear	.570	1	.450

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.039	.000
	Cramer's V	.520	.000
N of Valid Cases		101	

Association							
N of Valid Cases	101						

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .02.

Nationality; DF9: The importance of milestones

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	65.571 ^a	56	.179
Likelihood Ratio	55.078	56	.510
Linear-by-Linear Association	1.712	1	.191
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.806	.179
	Cramer's V	.403	.179
N of Valid Cases		101	

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .09.

Nationality; DF10: Problem escalation

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	72.821 ^a	56	.065
Likelihood Ratio	45.446	56	.842
Linear-by-Linear Association	.755	1	.385
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.849	.065
	Cramer's V	.425	.065
N of Valid Cases		101	

a. 71 cells (94.7%) have expected count less than 5. The minimum expected count is .03.

Nationality; DF11: Value of monitoring and business processes

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	52.189 ^a	56	.620
Likelihood Ratio	56.209	56	.467
Linear-by-Linear Association	9.130	1	.003
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.719	.620
	Cramer's V	.359	.620
N of Valid Cases		101	

a. 71 cells (94.7%) have expected count less than 5. The minimum expected count is .05.

Nationality; DF12: Approaches to motivation

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	53.936 ^a	56	.553
Likelihood Ratio	49.345	56	.723
Linear-by-Linear Association	3.060	1	.080
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.731	.553
	Cramer's V	.365	.553
N of Valid Cases		101	

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .06.

Nationality; DF13: Types of information prospects are seeking

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	71.209 ^a	56	.083
Likelihood Ratio	52.259	56	.617
Linear-by-Linear Association	.527	1	.468
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.840	.083
	Cramer's V	.420	.083
N of Valid Cases		101	

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .05

Nationality; DF14: Professional and personal time

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)

Symmetric Measures			
		Value	Approximate Significance

Pearson Chi-Square	59.908 ^a	56	.336
Likelihood Ratio	56.626	56	.451
Linear-by-Linear Association	1.161	1	.281
N of Valid Cases	101		

a. 69 cells (92.0%) have expected count less than 5. The minimum expected count is .09.

Nominal by Nominal	Phi	.770	.336
	Cramer's V	.385	.336
N of Valid Cases		101	

Nationality; DF15: Handling of passwords and access

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	60.763 ^a	56	.308
Likelihood Ratio	58.924	56	.369
Linear-by-Linear Association	.264	1	.608
N of Valid Cases	101		

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .09.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.776	.308
	Cramer's V	.388	.308
N of Valid Cases		101	

Nationality; DF16: Thinking and speaking patterns

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	64.752 ^a	56	.198
Likelihood Ratio	57.261	56	.428
Linear-by-Linear Association	.953	1	.329
N of Valid Cases	101		

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .05.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.801	.198
	Cramer's V	.400	.198
N of Valid Cases		101	

Nationality; DF17: Working on tasks

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	44.660 ^a	56	.862
Likelihood Ratio	42.655	56	.906
Linear-by-Linear Association	.997	1	.318
N of Valid Cases	101		

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .06.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.665	.862
	Cramer's V	.332	.862
N of Valid Cases		101	

Nationality; DF18: Information flow

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	41.028 ^a	56	.933
Likelihood Ratio	43.007	56	.899
Linear-by-Linear Association	1.977	1	.160
N of Valid Cases	101		

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .05.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.637	.933
	Cramer's V	.319	.933
N of Valid Cases		101	

Nationality; DF19: Attention to detail

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	45.786 ^a	56	.833
Likelihood Ratio	45.162	56	.850
Linear-by-Linear Association	1.179	1	.278
N of Valid Cases	101		

a. 70 cells (93.3%) have expected count less than 5. The minimum expected count is .03.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.673	.833
	Cramer's V	.337	.833
N of Valid Cases		101	

8.6.8.6.3 Correlation between Nationality and Time invested in initiation and planning phase

Overview

DF	Cramer's V – Value	Cramer's V – Approximate Significance
DF1	.420	.081

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	71.324 ^a	56	.081
Likelihood Ratio	51.334	56	.652
Linear-by-Linear Association	3.726	1	.054
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.840	.081
	Cramer's V	.420	.081
N of Valid Cases		101	

a. 71 cells (94.7%) have expected count less than 5. The minimum expected count is .04.

8.6.8.6.4 Correlation between Nationality and Time invested in implementation and closure phase

Overview

DF	Cramer's V – Value	Cramer's V – Approximate Significance
DF1	.451**	.007

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	102.660 ^a	70	.007
Likelihood Ratio	56.070	70	.887
Linear-by-Linear Association	1.805	1	.179
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.008	.007
	Cramer's V	.451	.007
N of Valid Cases		101	

a. 85 cells (94.4%) have expected count less than 5. The minimum expected count is .02.

8.6.8.6.5 Correlation between Nationality and Time invested per team member

Overview

DF	Cramer's V – Value	Cramer's V – Approximate Significance
DF1	.360	.631

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	65.464 ^a	70	.631
Likelihood Ratio	49.474	70	.970
Linear-by-Linear Association	1.030	1	.310
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.805	.631
	Cramer's V	.360	.631
N of Valid Cases		101	

a. 85 cells (94.4%) have expected count less than 5. The minimum expected count is .02.

8.6.8.6.6 Correlation between the Rating of the Diversity Features

Kendall's tau_b		DF1	DF2	DF3	DF4	DF5	DF6	DF7	DF8	DF9
DF1	Correlation Coefficient	1.000	.231**	.196*	.059	.020	.139	.144	.155	.190*
	Sig. (2-tailed)	.	.006	.019	.479	.817	.099	.087	.064	.022
	N	101	101	101	101	101	101	101	101	101
DF2	Correlation Coefficient	.231**	1.000	.304**	.095	.132	.242**	.077	.245**	.250**

	Sig. (2-tailed)	.006	.	.000	.257	.124	.004	.362	.004	.003
	N	101	101	101	101	101	101	101	101	101
DF3	Correlation	.196*	.304**	1.000	.241**	.193*	.216*	.175*	.305**	.283**
	Coefficient									
	Sig. (2-tailed)	.019	.000	.	.004	.024	.011	.038	.000	.001
	N	101	101	101	101	101	101	101	101	101
DF4	Correlation	.059	.095	.241**	1.000	.436**	.085	.226**	.099	.095
	Coefficient									
	Sig. (2-tailed)	.479	.257	.004	.	.000	.315	.007	.242	.250
	N	101	101	101	101	101	101	101	101	101
DF5	Correlation	.020	.132	.193*	.436**	1.000	.149	.247**	.266**	.232**
	Coefficient									
	Sig. (2-tailed)	.817	.124	.024	.000	.	.086	.004	.002	.006
	N	101	101	101	101	101	101	101	101	101
DF6	Correlation	.139	.242**	.216*	.085	.149	1.000	.350**	.244**	.247**
	Coefficient									
	Sig. (2-tailed)	.099	.004	.011	.315	.086	.	.000	.004	.003
	N	101	101	101	101	101	101	101	101	101
DF7	Correlation	.144	.077	.175*	.226**	.247**	.350**	1.000	.210*	.320**
	Coefficient									
	Sig. (2-tailed)	.087	.362	.038	.007	.004	.000	.	.013	.000
	N	101	101	101	101	101	101	101	101	101
DF8	Correlation	.155	.245**	.305**	.099	.266**	.244**	.210*	1.000	.367**
	Coefficient									
	Sig. (2-tailed)	.064	.004	.000	.242	.002	.004	.013	.	.000
	N	101	101	101	101	101	101	101	101	1010
DF9	Correlation	.190*	.250**	.283**	.095	.232**	.247**	.320**	.367**	1.000
	Coefficient									
	Sig. (2-tailed)	.022	.003	.001	.250	.006	.003	.000	.000	.
	N	101	101	101	101	101	101	101	101	101
DF10	Correlation	.124	.184*	.210*	.161	.136	.346**	.193*	.239**	.180*
	Coefficient									
	Sig. (2-tailed)	.138	.028	.012	.054	.112	.000	.021	.004	.030
	N	101	101	101	101	101	101	101	101	101
DF11	Correlation	.215*	.166*	.291**	.159	.257**	.214*	.243**	.358**	.285**
	Coefficient									
	Sig. (2-tailed)	.010	.049	.001	.059	.003	.012	.004	.000	.001
	N	101	101	101	101	101	101	101	101	101
DF12	Correlation	.272**	.343**	.435**	.066	.128	.255**	.061	.431**	.320**
	Coefficient									
	Sig. (2-tailed)	.001	.000	.000	.429	.132	.003	.467	.000	.000
	N	101	101	101	101	101	101	101	101	101
DF13	Correlation	.272**	.261**	.303**	.277**	.203*	.141	.088	.317**	.187*
	Coefficient									
	Sig. (2-tailed)	.001	.002	.000	.001	.017	.095	.298	.000	.024
	N	101	101	101	101	101	101	101	101	101
DF14	Correlation	.042	.259**	.253**	.023	-.006	.140	.052	.220**	.185*
	Coefficient									
	Sig. (2-tailed)	.612	.002	.002	.785	.940	.096	.532	.009	.025
	N	101	101	101	101	101	101	101	101	101
DF15	Correlation	-.068	.186*	.233**	.216**	.101	.060	.159	.126	.249**
	Coefficient									
	Sig. (2-tailed)	.410	.025	.005	.009	.233	.474	.056	.129	.002
	N	101	101	101	101	101	101	101	101	101
DF16	Correlation	.088	.078	.131	.137	.108	.086	.088	.189*	.142
	Coefficient									
	Sig. (2-tailed)	.288	.350	.116	.100	.203	.307	.291	.024	.084
	N	101	101	101	101	101	101	101	101	101
DF17	Correlation	.099	.125	.223**	.066	.180*	.089	.099	.288**	.233**
	Coefficient									
	Sig. (2-tailed)	.234	.133	.007	.429	.035	.292	.238	.001	.005
	N	101	101	101	101	101	101	101	101	101
DF18	Correlation	.200*	.331**	.286**	.274**	.309**	.333**	.245**	.325**	.293**
	Coefficient									
	Sig. (2-tailed)	.016	.000	.001	.001	.000	.000	.003	.000	.000
	N	101	101	101	101	101	101	101	101	101
DF19	Correlation	-.098	.139	.124	.049	.089	.238**	.134	.181*	.180*
	Coefficient									
	Sig. (2-tailed)	.239	.096	.136	.559	.295	.005	.111	.031	.030
	N	101	101	101	101	101	101	101	101	101

Kendall's tau_b		DF10	DF11	DF12	DF13	DF14	DF15	DF16	DF17	DF18	DF19
DF1	Correlation Coefficient	.124	.215*	.272**	.272**	.042	-.068	.088	.099	.200*	-.098
	Sig. (2-tailed)	.138	.010	.001	.001	.612	.410	.288	.234	.016	.239
	N	101	101	101	101	101	101	101	101	101	101
DF2	Correlation Coefficient	.184*	.166*	.343**	.261**	.259**	.186*	.078	.125	.331**	.139
	Sig. (2-tailed)	.028	.049	.000	.002	.002	.025	.350	.133	.000	.096
	N	101	101	101	101	101	101	101	101	101	101
DF3	Correlation Coefficient	.210*	.291**	.435**	.303**	.253**	.233**	.131	.223**	.286**	.124
	Sig. (2-tailed)	.012	.001	.000	.000	.002	.005	.116	.007	.001	.136
	N	101	101	101	101	101	101	101	101	101	101
DF4	Correlation Coefficient	.161	.159	.066	.277**	.023	.216**	.137	.066	.274**	.049
	Sig. (2-tailed)	.054	.059	.429	.001	.785	.009	.100	.429	.001	.559
	N	101	101	101	101	101	101	101	101	101	101
DF5	Correlation Coefficient	.136	.257**	.128	.203*	-.006	.101	.108	.180*	.309**	.089
	Sig. (2-tailed)	.112	.003	.132	.017	.940	.233	.203	.035	.000	.295
	N	101	101	101	101	101	101	101	101	101	101
DF6	Correlation Coefficient	.346**	.214*	.255**	.141	.140	.060	.086	.089	.333**	.238**
	Sig. (2-tailed)	.000	.012	.003	.095	.096	.474	.307	.292	.000	.005
	N	101	101	101	101	101	101	101	101	101	101
DF7	Correlation Coefficient	.193*	.243**	.061	.088	.052	.159	.088	.099	.245**	.134
	Sig. (2-tailed)	.021	.004	.467	.298	.532	.056	.291	.238	.003	.111
	N	101	101	101	101	101	101	101	101	101	101
DF8	Correlation Coefficient	.239**	.358**	.431**	.317**	.220**	.126	.189*	.288**	.325**	.181*
	Sig. (2-tailed)	.004	.000	.000	.000	.009	.129	.024	.001	.000	0.31
	N	101	101	101	101	101	101	101	101	101	101
DF9	Correlation Coefficient	.180*	.285**	.320**	.187*	.185*	.249**	.142	.233**	.293**	.180*
	Sig. (2-tailed)	.030	.001	.000	.024	.025	.002	.084	.005	.000	.030
	N	101	101	101	101	101	101	101	101	101	101
DF10	Correlation Coefficient	1.000	.276**	.189*	.132	.186*	.134	.365**	.167*	.449**	.232**
	Sig. (2-tailed)	.	.001	.023	.113	.025	.104	.000	.044	.000	.005
	N	101	101	101	101	101	101	101	101	101	101
DF11	Correlation Coefficient	.276**	1.000	.261**	.405**	.180*	.186*	.148	.364**	.302**	.266**
	Sig. (2-tailed)	.001	.	.002	.000	.031	.025	.076	.000	.000	.001
	N	101	101	101	101	101	101	101	101	101	101
DF12	Correlation Coefficient	.189*	.261**	1.000	.328**	.393**	.099	.164*	.302**	.418**	.044
	Sig. (2-tailed)	.023	.002	.	.000	.000	.232	.048	.000	.000	.597
	N	101	101	101	101	101	101	101	101	101	101
DF13	Correlation Coefficient	.132	.405**	.328**	1.000	.245**	.314**	.095	.295**	.307**	.211*
	Sig. (2-tailed)	.113	.000	.000	.	.003	.000	.252	.000	.000	.011
	N	101	101	101	101	101	101	101	101	101	101
DF14	Correlation Coefficient	.186*	.180*	.393**	.245**	1.000	.250**	.330**	.307**	.214**	.303**
	Sig. (2-tailed)	.025	.031	.000	.003	.	.002	.000	.000	.010	.000
	N	101	101	101	101	101	101	101	101	101	101
DF15	Correlation Coefficient	.134	.186*	.099	.314**	.250**	1.000	.141	.217**	.200*	.235**
	Sig. (2-tailed)	.104	.025	.232	.000	.002	.	.087	.008	.015	.004
	N	101	101	101	101	101	101	101	101	101	101
DF16	Correlation Coefficient	.365**	.148	.164*	.095	.330**	.141	1.000	.263**	.175*	.230**
	Sig. (2-tailed)	.000	.076	.048	.252	.000	.087	.	.001	.034	.005
	N	101	101	101	101	101	101	101	101	101	101
DF17	Correlation Coefficient	.167*	.364**	.302**	.295**	.307**	.217**	.263**	1.000	.334**	.375**
	Sig. (2-tailed)	.044	.000	.000	.000	.000	.008	.001	.	.000	.000
	N	101	101	101	101	101	101	101	101	101	101

	N	101	101	101	101	101	101	101	101	101	101
DF18	Correlation Coefficient	.449**	.302**	.418**	.307**	.214**	.200*	.175*	.334**	1.000	.139
	Sig. (2-tailed)	.000	.000	.000	.000	.010	.015	.034	.000	.	.093
	N	101	101	101	101	101	101	101	101	101	101
DF19	Correlation Coefficient	.232**	.266**	.044	.211*	.303**	.235**	.230**	.375**	.139	1.000
	Sig. (2-tailed)	.005	.001	.597	.011	.000	.004	.005	.000	.093	.
	N	101	101	101	101	101	101	101	101	101	101

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

8.6.8.6.7 Correlation between Experience and Time invested in initiation and planning phase

			Experience (Project Management)	Time invested in initiation and planning phase
Kendall's tau_b	Experience (Project Management)	Correlation Coefficient	1.000	.043
		Sig. (2-tailed)	.	.622
		N	101	101
	Time invested in initiation and planning phase	Correlation Coefficient	.043	1.000
		Sig. (2-tailed)	.622	.
		N	101	101

8.6.8.6.8 Correlation between Experience and Time invested in implementation and closure phase

			Experience (Project Management)	Time invested in implementation and closure phase
Kendall's tau_b	Experience (Project Management)	Correlation Coefficient	1.000	-.039
		Sig. (2-tailed)	.	.654
		N	101	101
	Time invested in implementation and closure phase	Correlation Coefficient	-.039	1.000
		Sig. (2-tailed)	.654	.
		N	101	101

8.6.8.6.9 Correlation between Experience and Time invested per team member

			Experience (Project Management)	Time invested per team member
Kendall's tau_b	Experience (Project Management)	Correlation Coefficient	1.000	.036
		Sig. (2-tailed)	.	.680
		N	101	101
	Time invested per team member	Correlation Coefficient	.036	1.000
		Sig. (2-tailed)	.680	.
		N	101	101

8.6.9 RELIABILITY TESTS

8.6.9.1 INTERNAL VALIDITY FOR DIVERSITY FEATURE ITEMS

Reliability Statistics:

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.860	.863	19

Item Statistics:

	Mean	Std. Deviation	N
DF1: Communication	2.62	1.103	101
DF2: How relationships are formed	2.16	1.017	101
DF3: How decisions are made and who makes them	2.42	1.022	101
DF4: How projects are planned, scheduled, and executed	2.77	1.057	101
DF5: Following defined processes	2.58	.828	101
DF6: Recognizing and describing problems	2.85	.953	101
DF7: How requirements are handled	2.71	.983	101
DF8: Appreciation of work	2.10	1.044	101
DF9: The importance of milestones	1.98	1.140	101
DF10: Problem escalation	2.71	1.134	101
DF11: Value of monitoring and business processes	2.05	.994	101
DF12: Approaches to motivation	1.61	1.241	101
DF13: Types of information prospects are seeking	1.69	1.046	101
DF14: Professional and personal time	1.88	1.143	101
DF15: Handling of passwords and access	1.56	1.473	101
DF16: Thinking and speaking patterns	2.28	1.159	101
DF17: Working on tasks	1.85	1.071	101
DF18: Information flow	2.47	1.091	101
DF19: Attention to details	2.43	1.089	101

Inter-Item Correlation Matrix:

	DF1: Communication	DF2: How relationships are formed	DF3: How decisions are made and who makes them	DF4: How projects are planned, scheduled, and executed	DF5: Following defined processes	DF6: Recognizing and describing problems
DF1: Communication	1.000	.294	.264	.063	.013	.137
DF2: How relationships are formed	.294	1.000	.369	.127	.174	.272
DF3: How decisions are made and who makes them	.264	.369	1.000	.301	.230	.259
DF4: How projects are planned, scheduled, and executed	.063	.127	.301	1.000	.485	.115
DF5: Following defined processes	.013	.174	.230	.485	1.000	.200
DF6: Recognizing and describing problems	.137	.272	.259	.115	.200	1.000
DF7: How requirements are handled	.130	.076	.229	.264	.294	.392
DF8: Appreciation of work	.215	.286	.364	.120	.314	.276
DF9: The importance of milestones	.256	.279	.342	.104	.277	.292
DF10: Problem escalation	.161	.239	.268	.245	.212	.432
DF11: Value of monitoring and business processes	.282	.200	.344	.201	.281	.261
DF12: Approaches to motivation	.324	.429	.483	.039	.105	.289
DF13: Types of information prospects are seeking	.341	.281	.373	.325	.221	.164
DF14: Professional and personal time	.059	.309	.299	.010	-.021	.177
DF15: Handling of passwords and access	-.065	.213	.274	.276	.096	.075
DF16: Thinking and speaking patterns	.106	.098	.163	.142	.111	.092
DF17: Working on tasks	.155	.169	.303	.102	.178	.115
DF18: Information flow	.238	.392	.389	.353	.382	.394
DF19: Attention to details	-.090	.173	.154	.042	.121	.283

	DF7: How requirements are handled	DF8: Appreciation of work	DF9: The importance of milestones	DF10: Problem escalation	DF11: Value of monitoring and business processes	DF12: Approaches to motivation
DF1: Communication	.130	.215	.256	.161	.282	.324
DF2: How relationships are formed	.076	.286	.279	.239	.200	.429
DF3: How decisions are made and who makes them	.229	.364	.342	.268	.344	.483

DF4: How projects are planned, scheduled, and executed	.264	.120	.104	.245	.201	.039
DF5: Following defined processes	.294	.314	.277	.212	.281	.105
DF6: Recognizing and describing problems	.392	.276	.292	.432	.261	.289
DF7: How requirements are handled	1.000	.262	.405	.239	.332	.064
DF8: Appreciation of work	.262	1.000	.422	.311	.419	.454
DF9: The importance of milestones	.405	.422	1.000	.251	.363	.320
DF10: Problem escalation	.239	.311	.251	1.000	.350	.247
DF11: Value of monitoring and business processes	.332	.419	.363	.350	1.000	.308
DF12: Approaches to motivation	.064	.454	.320	.247	.308	1.000
DF13: Types of information prospects are seeking	.137	.367	.230	.178	.505	.393
DF14: Professional and personal time	.094	.245	.182	.220	.225	.532
DF15: Handling of passwords and access	.182	.119	.269	.146	.206	.099
DF16: Thinking and speaking patterns	.123	.217	.163	.411	.196	.207
DF17: Working on tasks	.149	.326	.284	.195	.458	.363
DF18: Information flow	.303	.389	.385	.505	.357	.459
DF19: Attention to details	.190	.191	.200	.270	.313	.034

	DF13: Types of information prospects are seeking	DF14: Professional and personal time	DF15: Handling of passwords and access	DF16: Thinking and speaking patterns	DF17: Working on tasks	DF18: Information flow	DF19: Attention to details
DF1: Communication	.341	.059	-.065	.106	.155	.238	-.090
DF2: How relationships are formed	.281	.309	.213	.098	.169	.392	.173
DF3: How decisions are made and who makes them	.373	.299	.274	.163	.303	.389	.154
DF4: How projects are planned, scheduled, and executed	.325	.010	.276	.142	.102	.353	.042
DF5: Following defined processes	.221	-.021	.096	.111	.178	.382	.121
DF6: Recognizing and describing problems	.164	.177	.075	.092	.115	.394	.283
DF7: How requirements are handled	.137	.094	.182	.123	.149	.303	.190
DF8: Appreciation of work	.367	.245	.119	.217	.326	.389	.191
DF9: The importance of milestones	.230	.182	.269	.163	.284	.385	.200
DF10: Problem escalation	.178	.220	.146	.411	.195	.505	.270
DF11: Value of monitoring and business processes	.505	.225	.206	.196	.458	.357	.313
DF12: Approaches to motivation	.393	.532	.099	.207	.363	.459	.034
DF13: Types of information prospects are seeking	1.000	.295	.386	.129	.378	.380	.274
DF14: Professional and personal time	.295	1.000	.260	.418	.369	.245	.346
DF15: Handling of passwords and access	.386	.260	1.000	.154	.276	.239	.285
DF16: Thinking and speaking patterns	.129	.418	.154	1.000	.299	.221	.270
DF17: Working on tasks	.378	.369	.276	.299	1.000	.419	.457
DF18: Information flow	.380	.245	.239	.221	.419	1.000	.168
DF19: Attention to details	.274	.346	.285	.270	.457	.168	1.000

Item-Total Statistics:

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DF1: Communication	40.11	114.218	.287	.356	.860
DF2: How relationships are formed	40.57	111.387	.455	.349	.854
DF3: How decisions are made and who makes them	40.32	109.079	.565	.389	.849
DF4: How projects are planned, scheduled, and executed	39.96	113.658	.329	.426	.859
DF5: Following defined processes	40.15	115.008	.366	.393	.857
DF6: Recognizing and describing problems	39.88	112.626	.428	.392	.855
DF7: How requirements are handled	40.02	113.120	.388	.360	.856
DF8: Appreciation of work	40.63	109.214	.545	.398	.850
DF9: The importance of milestones	40.75	108.608	.517	.393	.851
DF10: Problem escalation	40.02	109.060	.500	.470	.852
DF11: Value of monitoring and business processes	40.68	109.179	.579	.465	.849
DF12: Approaches to motivation	41.12	106.986	.533	.621	.850

DF13: Types of information prospects are seeking	41.04	108.818	.563	.525	.849
DF14: Professional and personal time	40.85	110.028	.453	.502	.854
DF15: Handling of passwords and access	41.17	109.081	.356	.359	.860
DF16: Thinking and speaking patterns	40.46	111.910	.365	.346	.858
DF17: Working on tasks	40.88	109.306	.524	.492	.851
DF18: Information flow	40.27	106.418	.648	.556	.846
DF19: Attention to details	40.31	112.275	.378	.472	.857

Scale Statistics:

Mean	Variance	Std. Deviation	N of Items
42.73	122.198	11.054	19

8.6.9.2 INTERNAL VALIDITY FOR TIME EFFORT ITEMS

Reliability Statistics:

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.761	.765	3

Item Statistics:

	Mean	Std. Deviation	N
Time invested in initiation and planning phase	2.35	1.014	101
Time invested in implementation and closure phase	2.31	1.120	101
Time invested per team member	2.25	1.152	101

Inter-Item Correlation Matrix:

	Time invested in initiation and planning phase	Time invested in implementation and closure phase	Time invested per team member
Time invested in initiation and planning phase	1.000	.662	.456
Time invested in implementation and closure phase	.662	1.000	.444
Time invested per team member	.456	.444	1.000

Item-Total Statistics:

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Time invested in initiation and planning phase	4.55	3.730	.657	.472	.615
Time invested in implementation and closure phase	4.59	3.424	.640	.464	.623
Time invested per team member	4.65	3.789	.493	.244	.795

Scale Statistics:

Mean	Variance	Std. Deviation	N of Items
6.90	7.330	2.707	3