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A Comparative Case of the Lufthansa and ANA Groups“

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Table of Contents

LIST OF TABLES	vi
LIST OF FIGURES	vii
1. Introduction	1
2. Background	3
2.1. Economical Background	3
2.1.1. Emergence of Knowledge Economy	3
2.1.2. Airline Industry	3
2.1.2.1. Airline Deregulation Act, Open Skies, and Low-Cost Carrier (LCC)	4
2.1.2.2. Emergence of Airline within Airlines (AWA)	4
2.1.2.3. Airline Industry in Numbers	5
3. Literature Review	6
3.1. Knowledge Management	6
3.1.1. Definition of “Knowledge” and “Knowledge Management	6
3.1.2. KM Models	8
3.2. Knowledge Management and Organizational Culture	11
3.3. Knowledge Management in Eastern and Western Cultures	14
4. Theory	16
5. Research Questions	19
6. Methodology and Data	20

7. KM Analytical Framework	21
8. Case Studies	26
8.1. Selected Case Study Airline Groups	26
8.1.1. Lufthansa Group	26
8.1.2. ANA Group	27
8.2. Cultural analyses between Germany and Japan	29
8.2.1. Motivational factors	29
8.2.2. Cultural Dimension Differences	30
8.2.3. High vs. Low Context cultures	33
8.2.4. Leadership Styles—the GLOBE Project	34
8.2.5. Organizational Characteristics	35
8.2.5.1 The Japanese Model	35
8.2.5.2. The European Union Model	35
8.2.6. Conclusion	36
8.3. KM in Lufthansa Group	37
8.3.1. Knowledge Creation	38
8.3.2. Acquisition and Learning	40
8.3.3. Dissemination and Transfer	46
8.3.4. Application and Exploitation	50
8.3.5. People Competency	50

8.3.6. Leadership and Support	52
8.3.7. Storage and Maintenance	54
8.3.8. Technology and Infrastructure	54
8.3.9. Conclusion	58
8.4. KM in ANA Group	60
8.4.1. Knowledge Creation	60
8.4.2. Acquisition and Learning	62
8.4.3. Dissemination and Transfer	66
8.4.4. Application and Exploitation	69
8.4.5. People Competency	69
8.4.6. Leadership and Support	70
8.4.7. Storage and Maintenance	71
8.4.8. Technology and Infrastructure	73
8.4.9. Conclusion	77
8.5. Comparison of KM at Lufthansa and ANA Groups	79
9. Findings and Discussion	80
10. Conclusion	84
References	86

Abstract

Diese Arbeit ist eine Vergleichsanalyse zwischen zwei Airline-Konzernen, der Lufthansa Group und der ANA Group, um die dynamischen Aspekte des Wissensmanagements und der Organisationskulturen besser zu verstehen. Das zentrale Thema ist es, herauszufinden, wie Wissensmanagement zwischen zwei Airline-Konzernen mit signifikant unterschiedlichen Organisationskulturen gemanagt wird. Das Verständnis der unterschiedlichen Sichtweisen ist entscheidend für den Einsatz eines effektiven Managements im internationalen Umfeld, insbesondere für ein besseres kulturübergreifendes Verständnis und einen erfolgreichen Wissenstransfer. Es wurde ein theoretischer Rahmen entwickelt, der eine analytische Perspektive auf die konstituierenden Dimensionen des Wissensmanagements in den vier Ebenen, Individuum, Gruppe, Organisation und interorganisationaler Bereich, bietet. Das Ergebnis des Vergleichs der Wissensmanagement-Implementierung zwischen diesen beiden Konzernen ermöglicht darüber hinaus ein besseres Verständnis für den Einsatz von Wissensmanagement in verschiedenen Segmenten, auch in anderen Branchen.

Schlüsselwörter: Wissensmanagement, Organisationskultur, Airline-Industrie, Wissenstransfer, Wissensaustausch

Abstract

This paper proposes a comparison analysis between two airline groups, Lufthansa Group and ANA Group, for a better understanding of the dynamic aspects of Knowledge Management (KM) and organizational cultures. Its central theme is to find out how KM is managed with a comparison between two airline groups with significantly different organizational cultures. An understanding of differing views is crucial for employing effective management in the international sphere, specifically for providing a means for better cross-cultural understanding and successful knowledge transfer. A theoretical framework is developed which provides an analytical perspective on the constituent dimensions of KM in four levels: individual, group, organizational and interorganizational domain. With the result of comparing the KM implementation between these two groups, we can furthermore have a better understanding of employing KM in different segments even in other industries.

Keywords: knowledge management, organizational culture, airline industry, knowledge transfer, knowledge sharing

LIST OF TABLES

Table 3. 1 Definitions of culture, national culture and organizational culture.....	12
Table 3. 2 Western vs. eastern approaches of KM	14
Table 4. 1 A Comparison of three management models	17
Table 4. 2 Differences between Eastern and Western KM approaches.....	18
Table 7. 1 Dimensions of Knowledge Management Measurement	23
Table 7. 2 Analytical Framework Outline	25
Table 8. 1 Lufthansa Group and ANA Group in numbers (as of year 2019)	28
Table 8. 2 Cultural differences indicating motivational factors (from Harris and Moran, 1987) .	30
Table 8. 3 Summary of cultural comparison between Germany and Japan	36
Table 8. 4 Lufthansa Group Personnel Data (2008-2019)	37
Table 8. 5 KM implementation in Lufthansa Group	58
Table 8. 6 Lufthansa Group's KM in four levels	59
Table 8. 7 ANA Group Employee engagement.....	70
Table 8. 8 KM implementation in ANA Group	77
Table 8. 9 ANA Group's KM in four levels.....	78
Table 8. 10 Comparison of KM at Lufthansa and ANA Groups	79
Table 9. 1 Theories on differences between Eastern and Western KM approaches.....	81
Table 9. 2 Summary of cultural comparison between Germany and Japan	82
Table 9. 3 Comparison of KM at Lufthansa and ANA Groups in four levels.....	83

LIST OF FIGURES

Figure 3. 1 The SECI Model	8
Figure 3. 2 The updated SECI Model	10
Figure 3. 3 Hedlund's KM Model	11
Figure 4. 1 Middle-Up-Down Management Model	17
Figure 7. 1 Four Pillars of Knowledge Management (Stankosky, Calabrese & Baldanza, 2003)	22
Figure 7. 2 Alignment of KM dimensions with Four Pillars	24
Figure 8. 1 Lufthansa Group business segments' share of group external revenue	27
Figure 8. 2 ANA Group business segments' share of group external revenue	28
Figure 8. 4 Country, national culture and organizational culture	29
Figure 8. 5 Cultural dimensions comparison (Germany vs. Japan)	30
Figure 8. 6 Cultural dimensions comparison (Lufthansa Group)	32
Figure 8. 7 The contextual continuum of differing cultures	33
Figure 8. 8 Leadership scores for outstanding leadership (Germanic Europe vs. Japan)	34
Figure 8. 9 Lufthansa Learning Culture "open mind"	42
Figure 8. 10 Japanese style washitsu "Ba" for knowledge transfer in ANA Blue Base	69

1. Introduction

Starting from the mid-1980s, the rising roles of knowledge and knowledge-based economy have caught attentions from individual and organizations in the competitive environment (Wiig, 1997a, 1997b). Knowledge is not only a primary resource, but also a crucial source of competitive advantages in organizations (Jasimuddin and Zhang, 2014; Chang and Lin, 2015, Tckhakaia, Cabras and Rodrigues, 2015). Nonaka and Takeuchi (1994, 2000, 2003, and 2019) continually regard “knowledge creation” as innovation generator, following by other scholars advocating that a well-employed Knowledge Management (KM) strategy generates innovations by the same token (Goh, 2005; Jasimuddin & Zhang, 2014; Chang & Lin, 2015). KM strategy influences a wide range of aspects in organizations, from the forming of organizational strategy and to the improvement of customers’ experience (Tckhakaia *et al*, 2015).

On the other hand, many studies have pointed out that organizational culture is one of the most important factors for effective KM implementation (Du Plessis, 2006; Zheng, Yang, and McLean, 2010; Patil & Kant, 2012; Chang & Lin, 2015). Similarly, Du Plessis (2006) argues that organizational culture is the element with the biggest impact in implementation of KM yet the least visible element of all elements in KM. Cultural factors should be incorporated when designing KM initiatives to improve organizational performance (Jennex & Smolnik, 2010). Scholars generally accept that in order to establish a competitive advantage, knowledge management practices need to complement the corporate context (Davenport and Prusak, 1998). A series of recent studies have indicated that KM has significant influence on organizational performance. Thus, many questions are asked to figure out how companies can reach higher performance results by establishing a well-designed and well-implemented KM strategy considering cultural factors. Both the question and answers are complex.

How KM has been applied in the airline industry? KM plays an even more important role in the airline industry taking account of the scale and complexity of the industry. Dynamic market and competitive conditions, including growing exogenous uncertainties and changes in the value chain, remain characterized by the airline industry. This involve modern data-driven decision-making techniques that have a growing effect on the distribution of airlines, intensified investment in the

repair sector of aircraft and engine suppliers, and an increasingly uncertain political and macro-economic environment. This dynamism makes success factors of mobility and flexible cost structures extremely significant (Lufthansa Group, 2019a). The dynamic, fast-moving, and rapid-changing environment requires each airline company to stay constantly updated and innovative in order to remain competitive (Tckhakaia et al, 2015; Raynes & Tsui, 2019). On the other hand, according to Kwong and Lee (2009), for the service-providing sector, consumer knowledge is extremely persuasive. The airline industry fits into this group.

Over the decades, we see greater-than-ever competitions in the airline industry due to the reasons such as lower cost fuels and the emergence of Low-Cost Carriers (LCC) in the market. Doganis (2006) points out that challenge in the airline industry not only comes from within the industry such as industrial action and improved technology, but also from external factors such as government policies, regulatory bodies, natural disasters and terrorism. Raynes and Tsui (2019) argue that full-service airlines must urgently invest in their KM strategy in order to provide better services and to compete with LCC in the market. On the other hand, in response to LCC and many other competition challenges, some airlines adopt to the strategy of becoming an **Airline within Airlines (AWA)** business model, which combines full-service and low-cost carriers to integrate a superior network carrier with LCC in their brand (Doganis, 2008; Gillen & Gados, 2008).

In addition, this paper aims to find out how KM is managed with a comparison between two airline groups with significantly different organizational cultures. An understanding of differing views is crucial for employing effective management in the international sphere, specifically for providing a means for better cross-cultural understanding and successful knowledge transfer (Jelavic and Ogilvie, 2010). By comparing the KM implementation between these two groups, we can furthermore have a better understanding of employing KM in different segments. In order to answer the question how organizational culture affects KM policies and implementation, this paper compares two case studies from Lufthansa Group (Germany) and ANA Group (Japanese). These two airline groups are chosen due to not only the similarity of their organizational structure (both groups have transformed into AWA business model), but also the contrast of their organizational cultures. Lufthansa Group represents the German/western organizational culture whereas the ANA group as Japanese/East Asian organizational culture.

The paper uses a **quantitative method** with both overall data (Skytrax, AERO International, AirlineRating, IATA, ICAO, AQPC) and precise data (directly airline official websites and official annual reports). **Comparative Case Study Method**, based on the theory of Yin (2018), is selected due to the reason that it includes examining and synthesizing similarities, differences, or patterns between two or more cases that have a similar emphasis or aim to explain why and how some implementation or policies success or vice versa (Goodrick, 2014). The comparison of KM practices between two companies in airline industry is given in order to understand similar and different approaches of KM. By comparing the KM implementation between these two groups, we can furthermore have a better understanding of employing KM in different segments even in other industries.

2. Background

2.1. Economical Background

2.1.1. Emergence of Knowledge Economy

In the late 1950s, the emerging new knowledge-based and information-based technologies such as personal computers and the internet have transformed the nature of work. The global economy has transited to a so-called “knowledge economy.” The knowledge economy, or the knowledge-based economy, relies on a great deal of intellectual resources instead of physical inputs or natural capitals (Powell and Snellman, 2004). That is to say, the role and significance of knowledge has changed fundamentally as an input to economic processes (Smith, 2002). In addition, “human capital” is regarded as a competitive advantage and crucial asset for organizations. Due to this big transformation from industrialization to IoT and digitalization, a huge amount of data-driven information has driven knowledge as one of the most important assets and KM as one of the most top priorities for organizations (Jasimuddin and Zhang, 2014; Chang and Lin, 2015, Tckhakaia, Cabras and Rodrigues, 2015).

2.1.2. Airline Industry

Dynamic market and competitive conditions, including growing exogenous uncertainties and changes in the value chain, remain characterized by the airline industry. This involve modern data-driven decision-making techniques that have a growing effect on the distribution of airlines,

intensified investment in the repair sector of aircraft and engine suppliers, and an increasingly uncertain political and macro-economic environment. This dynamism makes success factors of mobility and flexible cost structures extremely significant (Lufthansa Group, 2019b). The airline has gone through numerous changes and challenges in the past decades. The U.S. Twin Tower terrorist attack negatively affected how people view flying as a safe option or not. Global pandemic like SARS in 2003 and the most recent COVID-19 crisis strikes the industry harshly. An updated report has been published by the International Air Transport Association (IATA) revealing that the COVID-19 pandemic delivered the largest shock to air travel and the aviation industry since the Second World War (IATA, 2020). Airlines are expected to lose \$118 billion in 2020, a 66% decline compared to 2019, and a further \$38 billion lost in 2021 (IATA, 2020). However, due to the fact that the aftermath of COVID-19 on airline industry is still unforeseeable, data collected for this paper is dated until 2019.

2.1.2.1. Airline Deregulation Act, Open Skies, and Low-Cost Carrier (LCC)

Starting in 1978 in the United States, *Airline Deregulation Act* introduced the removal of governmental control over fares, routes and market entry of new airlines. It initiated a free market and liberalization in the commercial airline industry. European Union also introduced deregulation in 1987. By April 1997, any EU airline is allowed to fly between two points anywhere within the Union (European Commission, 1996). Partial deregulation was introduced in Japan in 1985. Later in 1997, the Japanese government added deregulation of allowing new airlines into the domestic market (Aviation Strategy, 1999). Complied with a less regulated economic environment, continuously signed Open Skies Agreements between countries, lower air travel prices, and the thriving expansion of the LCCs have significantly transformed the airline industry and the way that network airlines operate (Detzen et al., 2012). Another significant policy is “the single European sky” in 2008: the EU Commission and the European air traffic control agency Eurocontrol launched the “Single European Sky Air Traffic Management Research Program” (SESAR) with the aim of realizing the standardized European airspace by 2020 (Lufthansa Group, 2015).

2.1.2.2. Emergence of Airline within Airlines (AWA)

In response to the emergence of LCC and many other competition challenges, some airlines adapt to the strategy of becoming an AWA (Airline within Airlines), in other words, a superior network carrier with LCC in their brand. AWAs became a typical strategy of competing with the world's

growing number of LCCs during the 1980s and particularly the 1990s (Doganis, 2008; Gillen & Gados, 2008).

2.1.2.3. Airline Industry in Numbers

In line with slower growth in passenger traffic, the global airline industry also see weaker earnings performance . The airline industry is worth over USD 35.5 billion (directly, indirectly, and induced effects), employs about 2.9 million people in 2019 (IATA, 2019). In 2019, passenger demand in the airline industry blooms, with industry-wide revenue passenger kilometers (RPK) increasing 7.4% compared to 2018 (IATA, 2019). An average 5.5% of growth rate in passenger travel remains in the last ten years (IATA, 2019). Passenger load factors continued their slight upward trend from 81.5% in 2017 to 81.9% in 2018 and are expected to hit 82.1% in 2019 (KPMG, 2019). An updated report has been published by the International Air Transport Association (IATA) revealing that the COVID-19 pandemic delivered the largest shock to air travel and the aviation industry since the Second World War (IATA, 2020). Airlines are expected to lose \$118 billion in 2020, a 66% decline compared to 2019, and a further \$38 billion lost in 2021 (IATA, 2020). However, due to the fact that the aftermath of COVID-19 on airline industry is still unforeseeable, data collected for this paper is dated until 2019.

3. Literature Review

This section presents a review of recent literature on Knowledge Management and Organizational Cultures. A lot of research has been done to answer the questions such as how KM plays a significant role in organizations, in the terms of organization performance and innovation. Whereas there are many literatures on the effect of organizational culture on KM, there is a lack of literature in comparison of KM in East and West. As now many organizations have a global level, such a comparison will help such companies to adapt more efficiently.

3.1. Knowledge Management

3.1.1. Definition of “Knowledge” and “Knowledge Management

3.1.1.1. *Knowledge*

Prior to defining Knowledge Management, the term “knowledge” has to be specified. There are numerous definitions of “knowledge”, yet Oxford Online Dictionary defines knowledge as “the information, understanding and skills that one gain through education or experience” (Knowledge, 2019). While Drucker (1998) indicates “information” as data endowed with relevance and purpose, Davenport *et al.* (1998, p.5) characterizes “knowledge” as “information combined with experience, context, interpretation, and reflection.” Organizations can use knowledge to support systems and knowledge can be captured from personal experience or the experience of others (Ackoff, 1996). Another widely used influential definition of “knowledge” is established by Nonaka and his colleagues, they argue that knowledge is dynamic, context-specific, and humanistic (Nonaka, Toyama and Konno, 2000). In other words, knowledge is dynamic due to the reason that it is created in social interactions amongst either individuals or organizations. Knowledge is context-specific, because without being put into a context (depending on a particular time and space), it is just information, not knowledge. Lastly, knowledge is humanistic, as “information becomes knowledge when it is interpreted by individuals and given a context and anchored in the beliefs and commitments of individuals” (Nonaka et al., 2000, p.7). There are, according to Polanyi (1962), two different types of knowledge. **Tacit knowledge** is firstly defined by him, indicating that tacit knowledge is “nonverbalized or even non-verbalizable, intuitive and unarticulated” (Hedlund,

1994, p.75). On the other hand, **articulated knowledge**, or **implicit knowledge**, is specified either orally or in writing, computer programs, patents, drawings and so on.

3.1.1.2. Knowledge Management

As knowledge is said to be information integrated with dynamic interactions, experience, context, humanistic interpretation and reflection. Needless to say, it is very difficult to boil down to only one definition of Knowledge Management. To begin with, one of the most classic definitions is as Davenport (1994) states, KM is the effective process of **capturing, distributing, and using** knowledge. In like manner, it is a strategy of acquiring the right knowledge at the right time and to help people share and to take action in ways to improve their organizational performance (O'Dell & Grayson, 1998). Japanese scholars Nonaka and Takeuchi (1995) pioneer a serial of research on KM, defined it as the process of introducing a systemic approach to knowledge gathering, structuring, management and distribution within an organization to work quicker, reuse best practices and minimize inefficient rework. By the same token, Du Plessis (2006) thinks KM is in line with its business strategy, a planned, systematic approach to managing the development, sharing, harvesting and leveraging of knowledge as an organizational asset to improve the capacity, speed and effectiveness of a company in providing goods or services for the benefit of customers. In addition, KM is a practice that encourages an organized approach to identify, capture, analyze, recover, and exchange all information assets of an organization. Such assets can include individual employees' databases, records, strategies, processes, and previously uncaptured knowledge and experience (Duhon, 1998). Lastly, KM focuses on combining people, processes, and technology. It centralizes multi-disciplinary actions by using the best processes involved in the acquisition, formation, sharing and application of information to achieve organizational goals. Organizational creativity is perceived to improve the overall corporate plan and is passed on in management practices (Bano, Kashif-ur-Rehman & Khan, 2010). All of these definitions share an orientation towards organizations. In summary, we can conclude that KM, combining people process and technology, is a system of acquiring, capturing, sharing, storing, developing, capitalizing, disseminating, and utilizing knowledge efficiently in organizations.

3.1.2. KM Models

A KM Model is a tool for us to better understand and systematize our knowledge about KM. This paper focuses on the KM Models of Nonaka (1994) and Hedlund (1994) due to fact that both emphassize on the difference between west and east compared to other models. The first widely adopted KM model was the SECI Model in 1994 proposed by Nonaka. Throughout the years, revised and updated SECI Model has been developed. Many other alternatives KM Models are Based on SECI model.

3.1.2.1. SECI Model (1994, 2003, 2019)

SECI Model, as shown in Figure 3.1, capture recognition as a useful approach to describe the ways knowledge is generated, transferred, and recreated in organizations. Nonaka (1994) introduced two types of knowledge and four different types of knowledge conversion: socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit) and internalization (explicit to tacit).

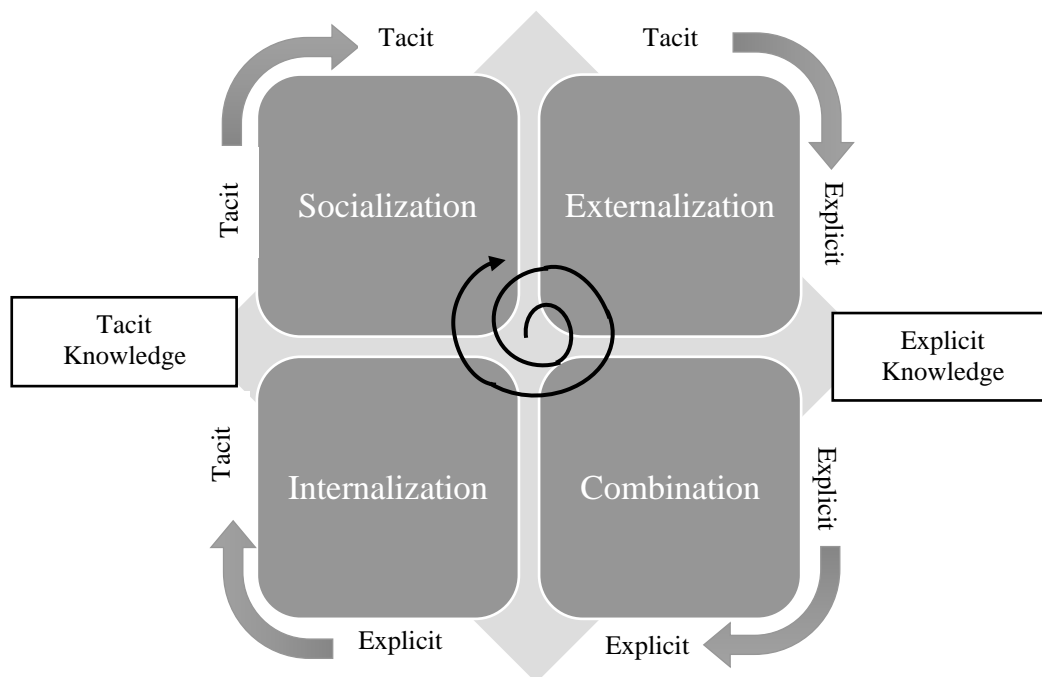


Figure 3. 1 The SECI Model

Note: Adapted from *The knowledge-creating company: How Japanese companies create the dynamics of innovation* (Nonaka and Takeuchi, 1995, p.62&71) and *The wise company: How companies create continuous innovation* (Nonaka and Takeuchi, 2019, p.61)

The SECI Model interprets how tacit knowledge and explicit knowledge are converted in an organization. And through repeating these conversions, new knowledge or innovation is created. The foundation of this model is “internalization” and “externalization”: that is to say, to make personal knowledge accessible and applicable to other people in the organization. The process of knowledge creation take place at all levels of the organization and occurs repeatedly, which leads to so-called “the SECI Spiral” which comes from the spiraling up of the SECI process (Nonaka & Takeuchi, 1995, 2019).

Later on, Nonaka, Toyama and Konno (2000, 2001) added a culture assumption to the SECI Model: the Japanese concept of “*Ba*.” “*Ba*” refers a physical, relational, and spiritual elements of “place” or “context” rooted in Japanese society (Pasha & Pasha, 2012). “*Ba*” corresponds to the definition of knowledge by Nonaka and Takeuchi (1995) as they suggested that knowledge is “context-dependent.” More precisely, we cannot separate knowledge from its “*Ba*” and that each knowledge-creating process have need for a “*Ba*.” (Pasha & Pasha, 2012). Pasha & Pasha (2012) even argues that organization should focus more on the development of its “*Bas*” because the reward is more when an organizational by developing the environment around knowledge processes than efforts put in the processes themselves.

From their latest publish, Nonaka and Takeuchi (2019) admit that the SECI Model was introduced originally to show how an organization creates new knowledge, but later find that a complete process, from knowledge creation to knowledge practice, is also demonstrated. In other words, knowledge is created through knowledge practice. Further, Nonaka and Takeuchi (2019) argue that the previous SECI Model failed to present how knowledge is enlarged over time and did not illustrate the interactive processes that take place in the ontological dimension over time. Thus, Nonaka and Takeuchi (2019, p.62) revise their SECI Model and present “the importance of the interactions that occur among individuals who create knowledge, among team members, within the organization containing teams, within the inter-organizational community, as well as within society at large.”

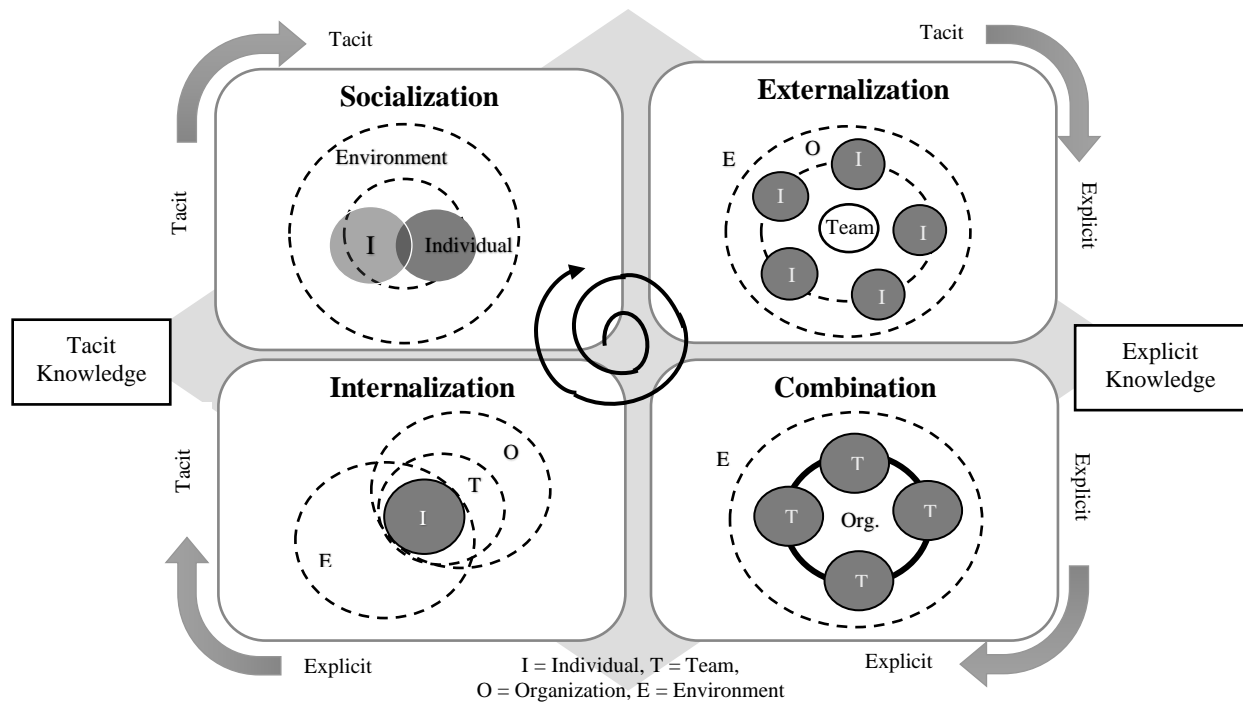


Figure 3. 2 The updated SECI Model

Note: Adapted from *The wise company: How companies create continuous innovation* (Nonaka and Takeuchi, 2019, p.62)

Compared to the old SECI Model, the updated SECI Model points out the agent level of Externalization and Combination. Socialization stays similarly the same as where individuals share tacit knowledge through direct interactions and absorb tacit knowledge about the environment. In the process of Externalization, individual exchanges the tacit knowledge learned by socialization **at the level of the team**. Combination is, on the other hand, to collect and combine explicit knowledge from either outside or inside the organization **at the organizational level**. Lastly, Internalization is where individual put explicit knowledge amplified by Combination into practice within the context in the organization and the environment.

3.1.2.2. Hedlund KM Model (1994)

Hedlund (1994) developed a KM model that considers the individual, the small group, the organization, and the inter-organizational domain as four distinct levels of association between articulated and tacit knowledge. Considering organizational features, such as employment systems, career patterns, and organizational structure, the model reveals the variations between Western and Japanese patterns of knowledge management (Hedlund, 1994). Hedlund and Nonaka (1993) claim

for the descriptive directness of the model in capturing essential differences between the Japanese and western archetypical systems of knowledge management. In large Japanese organizations, at the individual as well as at group and organizational levels, tacitness and tacit transfer of knowledge tend to be more significant. In comparison, the collective and inter-organizational levels tend to be more important to the Japanese model, while in the Western one, individual and organizational levels take priority. The Japanese dominance in fields dependent on specified critical components or patents, the tendency to export goods rather than sell know-how; the strength in fields involving a great deal of intra-and inter-organizational coordination (Hedlund, 1994).

	INDIVIDUAL	GROUP	ORGANIZATON	INTERORGANIZATIONAL DOMAIN
ARTICULATED KNOWLEDGE/ INFORMATION Cognitive Skills Embodied	Knowing calculus	Quality circle'S documented analysis of its performnace	Organization chart	Suppliers' patents and documented practices
TACIT KNOWLEDGE/ INFORMATION Cognitive Skills Embodied	Cross-cultural negotiation skills	Team coordination in complex work	Corporate culture	Customers's attitudes to products and expectations

Figure 3. 3 Hedlund's KM Model

Note: Adapted from Hedlund (1994, p.75)

3.2. Knowledge Management and Organizational Culture

There exists a very extensive literature on the topic in the influence of organizational cultures on KM. A series of recent studies has indicated the close relationships intertwining between organizational culture and knowledge management. To firstly state what organizational culture means, Hofstede (1980) clarifies each term with following definitions shown in Table 3.1.

Table 3. 1 Definitions of culture, national culture and organizational culture

	Definitions
Culture	the collective programming of the mind which distinguishes the members of one group from another
National culture	the collective programming of the mind acquired by growing up in a particular party
Organizational culture	the collective programming of the mind that distinguishes the members of one organizational to another

Note: adapted from *Culture's consequences: International differences in work-related values* (Hofstede, 1980, p.520)

Hofstede (1980, p.520) describes organizational culture as “the collective programming of the mind that distinguishes the members of one organizational to another.” Similarly, Du Plessis (2006) defines organizational culture as the amalgamation of people's principles and beliefs in an organization. Jelavic & Ogilvie (2010, p.63) by the same token refer organizational culture as “the norms and perspectives that are rooted within a specific organization” but with an extra emphasis on the significant correlation with national culture.

Chouikha (2016) conducted a survey of 431 European and American organizations with the result showing culture is the most crucial determining factor in KM. Here, according the author, “culture” is in a boarder term: it can be either national, organizational or professional culture. Moreover, it is generally agreed that knowledge management approaches need to be consistent with the organizational context in order to build a competitive edge (Davenport and Prusak, 1998).

De Long and Fahey (2000) firstly argue since culture determines the behaviors related to knowledge creation, sharing and use, it becomes a main barrier for organizations to leverage their intellectual assets. Similarly, Du Plessis (2006) suggests that organizational culture is the element with the biggest impact in implementation of KM yet the least visible element of all elements in knowledge management. In other words, many organizations treat knowledge management as technical program with a typical strategy, structure, processes and action plan and underestimate the impact of culture in implementing KM (Du Plessis, 2006). In order to dealt with the problem of culture as a factor to KM, numerous authors have conducted research for a better understanding of the relationships.

While many researches mentioned above have confirmed that organizational culture affects KM, the study of Alavi, Kayworth and Leidner (2005) found that culture in particular influences the use of **KM technologies** and its outcomes. Al-Alawi, A. I., Al-Marzooqi, N. Y., & Mohammed, Y. F. (2007) confirm **trust, communication, information systems, rewards and organization structure** are positively related to knowledge sharing in organizations. In addition, Zheng et al. (2010) have also pursued similar work. The result of their study advocates that how well cultural values are converted into organizational values is strongly correlated with how well the knowledge management is. The explanation behind it is that the basic beliefs, values and norms, which directly connect to propose and process of organizational knowledge generation, sharing, and utilization, are determined by culture. Moreover, their study also implies that "Knowledge management completely facilitates the organizational culture's impact on organizational efficiency (Zheng et al., 2010).

On the other hand, a study of Patil and Kant (2012) shows that organizational culture can help organizations to defeat the barriers of Knowledge Management and further achieve competitive advantage. They specifically point out aspects of organizational culture as such: **organizational structure, education and training, reward and incentives, open communication, worker involvement and workforce flexibility** (Patil & Kant, 2012).

Another research by Jasimuddin and Zhang (2014) suggests that if an organization has a strategy based upon a **conducive and encouraging organizational culture**, it not only makes the process of internal knowledge replication easier, but also presents difficulty in external imitation by competitors. The organizational cultural fit can be refined by ideal KM strategies, which also result in enlarging the profit of the organization (Jasimuddin & Zhang, 2014).

Next, based on the behavioral perspectives culture of Hofstede et al. (1990), the study by Chang and Lin (2015) have shown that **results-oriented and job-oriented cultures** are positively correlated on employee intention in the KM process compared to, respectively, process-oriented and employee-oriented cultures. Moreover, a tightly controlled culture does not improve the effectiveness of the KM process. Other result of data analysis in the year of 2015 by Mojibi, Hosseinzadeh and Khojasteh show that there are significant relationships between knowledge management strategies and organizational culture. Their research adapted the Denison Model of

organizational culture (Denison, 2000) and indicated that all four dimensions (mission, adaptability, involvement, consistency) have positive impacts on knowledge management. Furthermore, the results additionally suggest that involvement plays as the most important factor, followed by adaptability, consistency and lastly mission (Mojibi et al, 2015).

3.3. Knowledge Management in Eastern and Western Cultures

While there exists a great deal of research on KM, comparatively way less is done with the focus in comparing KM approaches from the west and east prospects. Redding (1980) thinks that a major dissimilarity between western society and the eastern is that the western focuses on sequential links between cause and effect based on analytical thinking while the eastern is more intuitive. In like manner, Takeuchi (2001) hints that for Japanese perspective, knowledge is constructed instincts and values, involving emotion and is not just data that can be codified and stored in information systems. Similarly, Nisbett, Peng, Choi and Norenzayan (2001) found eastern Asians to be more “holistic” that they depend on dialectical reasoning, whereas westerners are more analytical, using categories, guidelines and logical reasoning. Cohen (1998) suggests that the west tended to re-use explicit knowledge management whereas the east focused on the creation of tacit knowledge. The west not only focus on explicit knowledge but also on tangible motivational factors of individualism. On the contrast, the east on tacit knowledge and abstract workplace principles (Jelavic and Ogilvie, 2010). Gueldenberg and Helting (2007) reason that in the context of Nonaka (1994)’s philosophy, the Western notion of space does not capture the essential feature of the lived time-space to which he wished to refer, so that he introduced the Japanese word Ba to characterize the place where time and space are provided to materialize the knowledge creation process. Last but not least, Skovira (2012) adverts that the western narrative of KM consists of many sub-narratives on the locus of knowledge (making the explanation and analysis very complex): in individuals' minds, in social reality, or in organizational realities. To sum up, the major differences can be concluded in the Table 3.2 as follow:

Table 3. 2 Western vs. eastern approaches of KM

	Western	Eastern
Redding (1980)	Analytical thinking and focusing on sequential links between cause and effect	Intuitive
Cohen (1998)	Reuse of explicit knowledge Management of projects and markets	Creation of tacit knowledge Management of communities

Takeuchi (2001)		Knowledge as “socially constructed intuition and values, involving emotion”
Nisbett, Peng, Choi and Norenzayan (2001)	analytical, utilizing categories, rules and formal logic to understand behavior	holisit whilst relying on dialectical reasoning
Gueldenberg, S., & Helting, H. (2007).		Japanese BA
(Jelavic and Ogilvie, 2010).	Explicit knowledge tangible individualist motivational factors	Tacit knowledge Abstract workplace principles
Skovira, R. J. (2012).	Sub-narratives about the locus of knowledge	

Note: adapted from Jelavic& Ogilvie (2010, pp.54-60) and Skovira (2012, p.684).

4. Theory

There is still a source of debate but, the generally accepted theory comparing KM approaches between the West and East is suggested by Nonaka and Takeuchi (1995). They have argued a significant difference in the regard of knowledge creation. “The very ethnic and cultural homogeneity that has facilitated the sharing of rich tacit knowledge among the Japanese has the potential of becoming a competitive disadvantage in the ethnically and culturally diverse global economy” (Nonaka & Takeuchi, 1995, p.197). The key main difference between the Japanese and western approaches to organizational knowledge creation is in the interaction between tacit and explicit knowledge. The interaction between tacit and explicit knowledge in Japan is widely happened in the group level. Middle managers lead knowledge-creating project teams to share tacit knowledge interacted with explicit knowledge, such as a grand concept by top management and information from the business front line. On the other hand, it occurs usually in individual level on the western side: concepts tend to be created through the externalization efforts of top leaders or product champions. They combine each individual knowledge organizationally into archetypes of new products, services, or management system.

Nonaka (1994, pp.29-31) thinks the Japanese firms are unique as they practice “**middle-up-down**” management model. In particular, this model serves as a suitable tool for promoting the creation of knowledge in organizations as it takes all members, including top, middle and lower management as important actors with wide scope of cooperation. All members are responsible for creating new knowledge. What deserves an extra look would be the role of the middle managers in this model. They are regarded as catalysts or “knowledge engineers”, as they make explicit knowledge from the tacit knowledge synthesized from both frontline employees and top managers and apply them into new technologies and products. Organizations with middle-top-up management are considered good at forming self-reorganized teams. Thus, middle-up down management has been offered as practical proposals for implementing more effective knowledge creation. The concept of Middle-Up-Down Management model is shown in Figure 4.1.

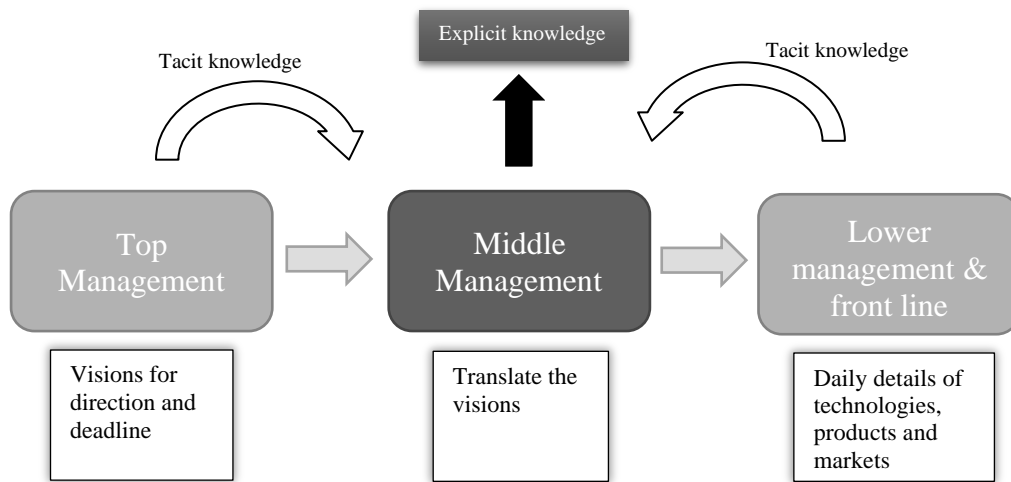


Figure 4. 1 Middle-Up-Down Management Model

Note: Adapted from Nonaka (1994, p.29)

Moreover, Table 4.1 provides a detailed description of the context among three different types of management models.

Table 4. 1 A Comparison of three management models

	Top-Down	Middle-Up-Down	Bottom-Up
Agent of Knowledge Creation	Top management	Self-organizing team (with middle managers as team leaders)	Entrepreneurial individual (intrapreneur)
Resource Allocation	hierarchically	From diverse viewpoints	Self-organizing principle
Pursued synergy	Synergy of money	Synergy of knowledge	Synergy of people
organization	Big and powerful HQ staff use manuals	Team-oriented affiliated firms by intrapreneurs	Self-organizing suborganizations
Management Processes	Leaders as commanders Emphasis on informational processing Chaos not allowed	Leaders as catalysts Create organizational knowledge Create/amplify Chaos/noise	Leaders as sponsors Create personal information Chaos/noise premised
Accumulated knowledge	Explicit Computerized/documented	Explicit and tacit Shared in diverse forms	Tacit incarnated in individuals
Weakness	High dependency on top management	Human exhaustion Lack of overall control of the organization	Time consuming difficult to coordinate individuals

Note: Adapted from Nonaka (1994, p.31)

In addition, Hedlund and Nonaka (1993) point out that in large Japanese corporations, tacitness and tacit transfer of knowledge seem to be crucial at every level. However, the group and interorganizational levels seem to be the most important for Japanese model, while the individual and organizational levels dominate the western model. The Japanese way of innovation strategy is to take a step at one time (“incrementalism”) whereas the Western takes “large step” strategy. More importantly, instead of selling their know-hows, Japanese focus more on specific patents, prespecified important components and the propensity to export products. The authors think that it requires a huge amount of intra-and interorganizational coordination.

To conclude the theories which are most relevant to this paper, Table 4.2 offers a detailed comparisons between Eastern and Western KM approaches.

Table 4. 2 Differences between Eastern and Western KM approaches

Western	Eastern
Individual-based	Group-based
Individual decision-making	Group decision-making
Tacit to explicit: individual level	Tacit to explicit: group level
Explicit knowledge oriented	Tacit knowledge oriented
Externalization and combination	Socialization and internalization
Analysis	Experience
Top-down and bottom-up	Middle-up-down and bottom-up
Acquiring external knowledge	Acquiring internal knowledge
Relatively less knowledge redundancy	Relatively more knowledge redundancy
Organizational learning (individual level focus)	Organizational learning (group level focus)
Managing and measuring knowledge	Nurturing and loving knowledge
Knowledge re-use	Knowledge creation
“large step” innovation	Incrementalistic innovation

Note: adapted from Hedlund and Nonaka (1993, p.125), Nonaka (1994, pp.29-31), Nonaka & Takeuchi (1995, pp.198-99), Cohen (1998, P.24)

5. Research Questions

Hofstede (2010, p.338) points out that “lack of awareness of national limits causes management and organization ideas and theories to be exported without regard for the values context in which they were developed.” By the same token, Jelavic and Ogilvie (2010, p.51) implies that “an understanding of these differing views is therefore necessary for effective management in the international sphere, specifically for providing a means for better cross-cultural understanding and successful knowledge transfer.” This paper, with the aim to provide the airline industry a better understanding of employing KM in different segments, is set to answer questions listed as follow:

➔ **How does organizational culture influence KM?**

In order to know how organizational culture influences KM, the paper compares KM approaches implemented by two airline groups, Lufthansa Group representing the West and ANA Group representing the East Asian side. How do two different organizational cultures affect their KM implementation? To answer this question, this paper compares the KM patterns between these two groups. By comparing two different representative airline groups, the next question unfolds:

➔ **How does KM differ in the Lufthansa and ANA Groups?**

This paper analyzes KM from a western and an eastern standpoint, in particular, to respond to the theories of Hedlund and Nonaka (1993), Nonaka (1994), Nonaka & Takeuchi (1995) and Cohen (1998) and to see how different KM is implemented in the four networking levels: individual, group, organization, and interorganizational domain.

6. Methodology and Data

6.1. Methodology

This paper uses a **quantitative method** which focus on using existing database to analyzes the differences between Lufthansa Group and ANA Group. **The Comparative Case Study Method** is based on the theory of Yin (2018). This method is selected due to the reason that it includes examining and synthesizing similarities, differences, or patterns between two or more cases that have a similar emphasis or aim to explain why and how some implementation or policies success or vice versa (Goodrick, 2014). The comparison of KM practices between two companies in airline industry is given in order to understand similar and different approaches of KM. By comparing the KM implementation between these two groups, we can furthermore have a better understanding of employing KM in different segments even in other industries.

6.2. Data collection:

Data are collected from as early as 2008 to the most recent 2019/2020 to track a tendency and propensity of these two groups through the years. **Secondary data** are collected for the analysis in this paper. In order to maximize the objectives of secondary data, this paper collects both overall data and precise data.

- ➔ Overall data: they are taken from online KM and airline industrial publications, such as Skytrax, IATA, ICAO, AQPC, KMWorld, Flight Global, AeroTime, AERO International, Aviation Voice, Aviation24, AirlineRating, ...
- ➔ Precise data: they are taken directly from the airline official website and official annual reports. The undertaken research utilizes Lufthansa Group Sustainability Report “Balance” from 2008 to 2019, Lufthansa Group Annual Reports from 2010 to 2019. At the same direction, ANA Group CSR Report from 2005 to 2009 and ANA Group Annual Report from 2010 to 2019 are being analyzed.

7. KM Analytical Framework

This paper adapts and combines analytical frameworks from Stankosky, Calabrese and Baldanza (2003), Rodrigues and Pai (2005) and Hedlund and Nonaka (1993) to set up a solid suitable framework designed to analyze the KM implementations in Lufthansa Group and ANA Group in four different levels: individual, group, organizational, interorganizational.

To begin with, Stankosky, Calabrese and Baldanza (2003) proposed four pillars of KM. These are **“Leadership,” “Organization,” “Technology,” and “Learning.”** As shown in Figure 7.1., these four pillars indicates the fields that have continually shown the ability to include all aspects of effective sharing of knowledge and collaborative cultures (Stankosky, Calabrese, & Baldanza, 2003). Leadership works with decision-making and strategic coordination with business objectives for KM initiatives. The organization-related pillar stresses the structural redesign and alignment of organizational structures and policies to ensure the effectiveness of the organization-wide KM initiative. The technology pillar establishes the value of the supporting technical framework that helps KM in the organization and without which it would be almost possible to implement KM in any organization. Finally, learning is defined as the acquiring of information or skills through analysis, experience or training and stresses the fact that KM must be handled by the company to promote strategies such as increasing internal communications, fostering cross-functional teams, and building a learning environment. This research focuses on the four foundations of the system that management should leverage to increase organizational efficiency (Stankosky, Calabrese, & Baldanza, 2003).

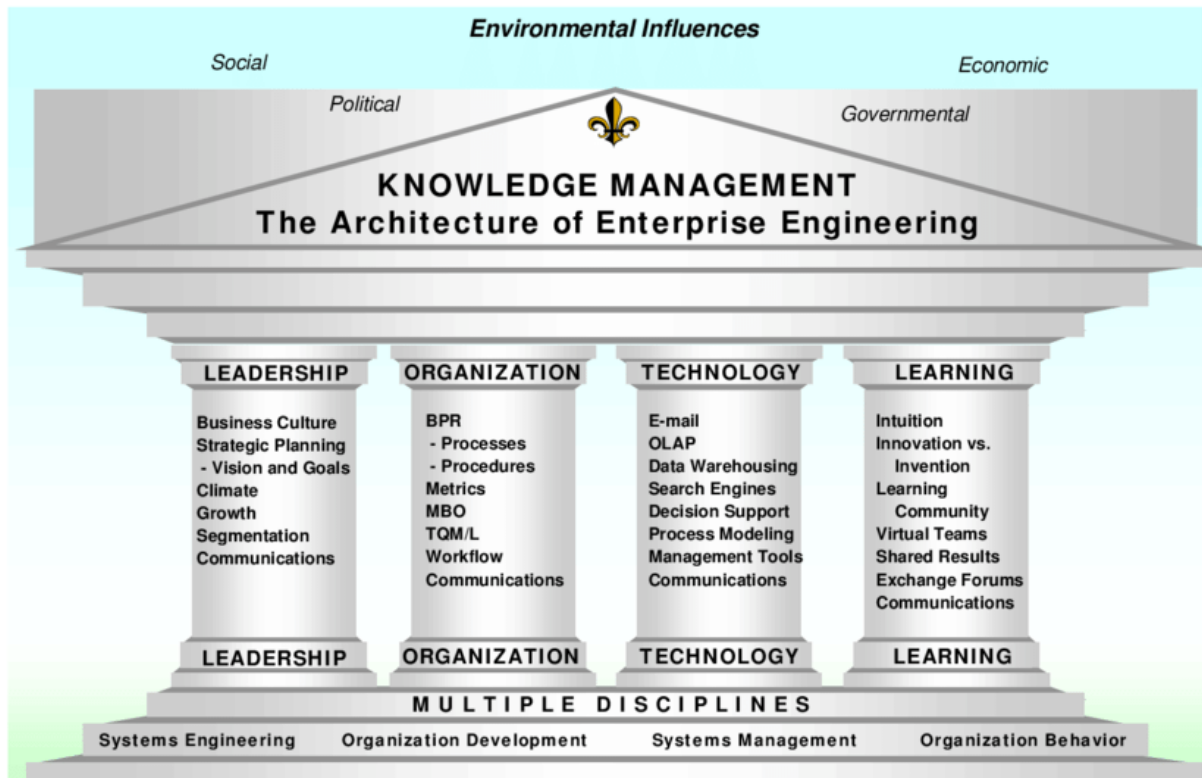


Figure 7. 1 Four Pillars of Knowledge Management (Stankosky, Calabrese & Baldanza, 2003)

Note: Adapted from Calitz & Cullen (2017, p.340)

On the other hand, the study of Rodrigues and Pai (2005) provides a result of a meta-analysis of literature leads them to the 32 key variables which significantly influence the KM performance. Further, with these variables, the measurement instrument defines KM as a function of a set of independent variables given as: $KM \text{ Performance} = f(kc, al, sm, dt, ae, pc, ti, ls)$ (Rodrigues & Pai, 2005, p.587). They developed a valid instrument that can be used for KM performance measurement in service sectors, which is best fit for this paper. Their result is shown as in Table 7.1.

Table 7. 1 Dimensions of Knowledge Management Measurement

Dimension	Description	Sample item
Knowledge Creation	Ability of an organization to develop novel and useful ideas and solutions (Marakas, 1999). A Continuous and dynamic interaction between tacit and explicit knowledge, which takes place mainly due to socialization (Nonaka and Takeuchi, 1995).	There are collaboration programmes to tap knowledge from other sources
Acquisition & Learning	Knowledge acquisition may be intentional (searching) or unintentional (noticing) (Lasky, 2002).	The practice to acquire knowledge sources is adequate enough
Dissemination & Transfer	The interaction between people, techniques and technology to transfer from one location to the other (Bhat, 2001).	The institute provides a conducive environment for the dissemination & transfer of knowledge.
Storage & Maintenance	The storage and maintenance in the form of hard copy, video/audio, books, soft copy, optical media, internet/intranet and many other forms	The institute has sufficient IT resources for effective knowledge storage and maintenance.
Application & Exploitation	Making knowledge more active and relevant for the firm in creating values (Bhat, 2001).	Applied/exploited knowledge is favourable to the institution and is used in the decision-making requirements
People Competency	This deals with the topic of KM which concern individual “soft factors”. These include classical HR topics such as personnel selection, development and support as well as topics related to responsibility management and self-management.	People competencies are clearly quantified.
Technology & Infrastructure	This key area deals with the aspects of information management with the help of IT systems (hard ware).	There is proper technology utilization to enhance knowledge.
Leadership & Support	This deals with the roles played by the higher authorities and other participants. It also covers the support, encouragement and involvement of top management and immediate bosses in the knowledge related activities.	Top management supports KM initiatives

Note: Adapted from Rodrigues and Pai (2005, p.587)

To combine the Four Pillars of KM (Stankosky, Calabrese & Baldanza, 2003) and selected KM dimensions by Rodrigues and Pai (2005), an aligned framework of KM dimensions and the Four Pillars is shown as Figure 7.2.

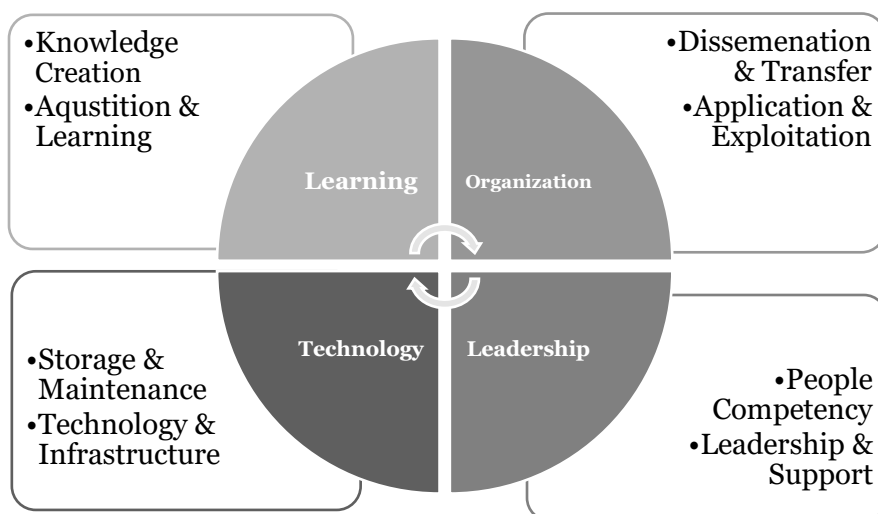


Figure 7. 2 Alignment of KM dimensions with Four Pillars

Note: Adapted from Rodrigues and Pai (2005, p.587) and Calitz & Cullen (2017, p.340)

To further develop a framework designed for the analysis between western and eastern KM, the levels of knowledge networking are added into the prototype framework as shown in Figure 7.2. The previous research has recognized three levels of knowledge networking: individual level, group level, and organizational level (Nonaka 1994, 2019; Du Plessis, 2006). Hedlund (1994) adds a fourth level “interorganizational domain” and argues that the group and interorganizational levels seem to be the most important for Japanese model, while the individual and organizational levels are most consequential in the Western model. Thus, the analytical framework will look into these four levels in Lufthansa Group and ANA Group. Table 7.2 indicates the analytical framework outline for this paper.

Table 7. 2 Analytical Framework Outline

KM Four Pillars	KM Dimensions	Lufthansa Group	ANA Group
Learning	Knowledge Creation	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational
	Acquisition & Learning	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization
Organization	Dissemination & Transfer	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization
	Application & Exploitation	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational
Leadership	People Competency	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational
	Leadership & Support	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational
Technology	Storage & Maintenance	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational
	Technology & Infrastructure	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational 	<ul style="list-style-type: none"> ▪ Individual ▪ Group ▪ Organization ▪ Interorganizational

8. Case Studies

This paper uses the Comparative Case Study method, which is based on the theory of Yin (2018). This method is selected due to the reason that it includes examining and synthesizing similarities, differences, or patterns between two or more cases that have a similar emphasis or aim to explain why and how some implementation or policies success or vice versa (Goodrick, 2014). The comparison of KM practices between two companies in airline industry is given in order to understand similar and different approaches of KM.

8.1. Selected Case Study Airline Groups

The case studies are Lufthansa Group (Germany) and ANA All Nippon Airways Group (Japan). Both groups are members of Star Alliance, the world's largest alliance with 26 airline members¹. According to SkyTrax (World Airline and Airport Rating), ANA ranked in the 3rd place of "World's Top 100 Airlines 2019" and Lufthansa in the 9th place².

These two airline groups are chosen due to not only the similarity of their organizational structure: both groups have transformed into **Airline within Airlines (AWA)** business model, which combines full-service and low-cost carriers, but also the contrast of their organizational cultures. Lufthansa Group represents the German/Western organizational culture whereas the ANA group as Japanese/Eastern Asian organizational culture.

8.1.1. Lufthansa Group

Lufthansa Group is a leading European airline group with operations worldwide. It composes of Network Airlines, Eurowings and Aviation services. Their "Network Airlines" include Lufthansa German Airlines (IATA code LH), Austrian Airlines (OS), and SWISS (LX). With 135,534 employees, the Lufthansa Group generated revenue of EUR 36,424m (US\$ 43.22billion) in the financial year 2019³. Figure 8.1 indicates the revenue share of each segments. A majority of 73%

¹ <https://www.staralliance.com/en/about>

² <https://www.worldairlineawards.com/worlds-top-100-airlines-2019/>

³ <https://investor-relations.lufthansagroup.com/en/corporate-facts/key-data/lufthansa-group.html>

is from air transport, in which Network Airlines contributes 61% and Eurowings 12%. Another 25% generates from airline related services (MRO 12%, Logistics 7%, Catering 7%). Lastly, 1% are from additional businesses and group functions, which include Lufthansa AirPlus, Lufthansa Aviation Training and the IT companies. All segments maintain a leading position in their respective markets (Lufthansa Group, 2020).

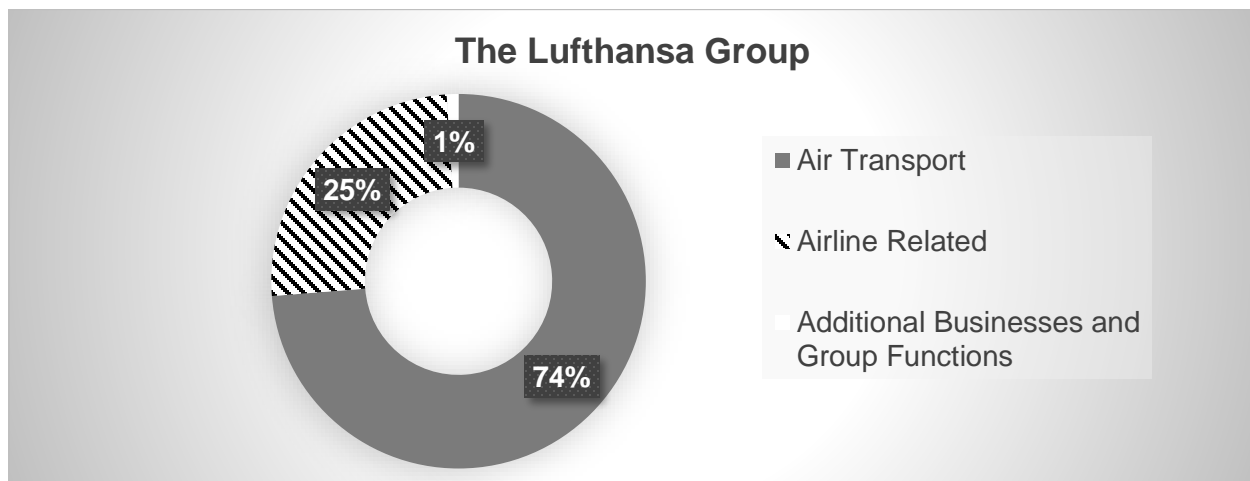


Figure 8. 1 Lufthansa Group business segments' share of group external revenue

Adapted from *Annual Report 2019*. (Lufthansa Group, 2019a, p.1)

8.1.2. ANA Group

All Nippon Airways (ANA), IATA code NH, is the largest airline in Japan by revenues and passenger numbers. ANA Holdings Inc., the holding company of the ANA Group, was founded in April 2013 and is the parent company of ANA (full-service carrier) and Vanilla Air and Peach Aviation (LCCs). It generates a revenue of 1.97 trillion Yen (US\$ 19.05 billion) in fiscal year 2019 (ANA Group, 2020). Airport transportation business composes 74.1% of the operating revenues and 11% by airline related Business. Travel services and retail compose 6% each (ANA Group, 2019).

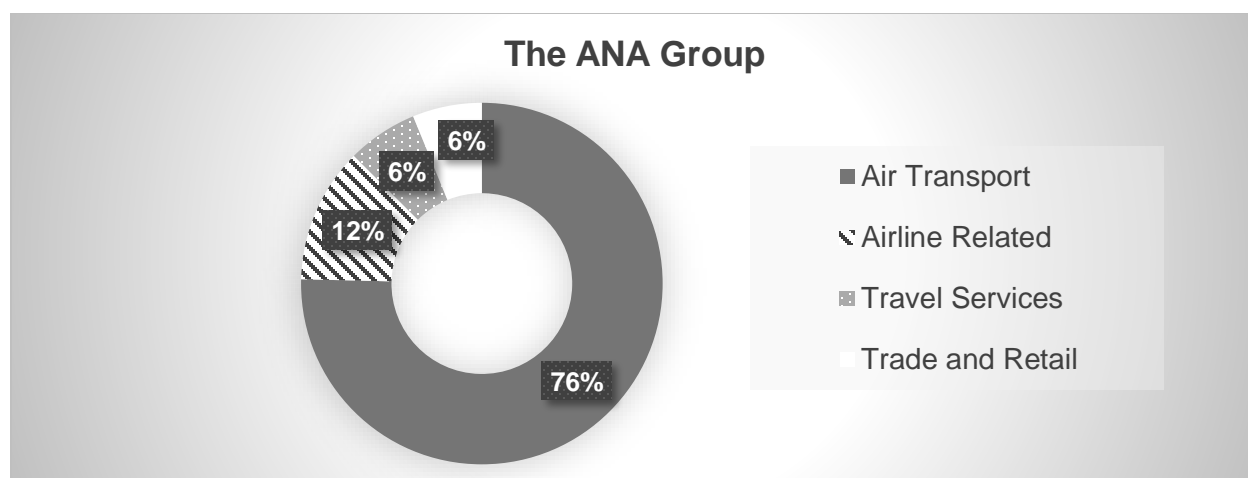


Figure 8. 2 ANA Group business segments' share of group external revenue.

Adapted from *Annual Report 2019* (ANA Group, 2019, p.8)

Table 8.1 shows a comparison of Lufthansa Group and ANA Group in numbers in the fiscal year 2019. Lufthansa Group is larger scale than ANA group in terms of numbers of aircrafts, employees, transported passenger, and destinations. The sales revenue of Lufthansa Group is approximately 2.5 times more than ANA Group.

Table 8. 1 Lufthansa Group and ANA Group in numbers (as of year 2019)

	LH ⁴	NH ⁵
Number of aircraft	763	307
Number of employees	135,353	45,849
Passengers per year	142.3 million	59.6 million
Sales Revenue (in US\$)	36.4 billion Euros (US\$ 43.22billion)	1.97 trillion Yen (US\$ 19.05 billion)
Number of scheduled destinations	343	94
Date of entry	1926	1952
Frequent flyer program	Miles & More	ANA Mileage Club
Hubs	Frankfurt, Munich, Zurich, Vienna	Tokyo, Osaka

⁴ <https://www.lufthansagroup.com/en/company/company-portrait.html>

⁵ <https://www.ana.co.jp/group/en/about-us/by-the-numbers/>

8.2. Cultural analyses between Germany and Japan

According to Gerhart (2009), national culture and organizational culture closely intertwine with each other. As shown in Figure 8.4, the paper will compare the national cultures of Germany (Lufthansa Group) and Japan (ANA Group) on “motivational factors,” “cultural dimension,” “cultural context,” “leadership styles” and lastly “organizational characteristics.”

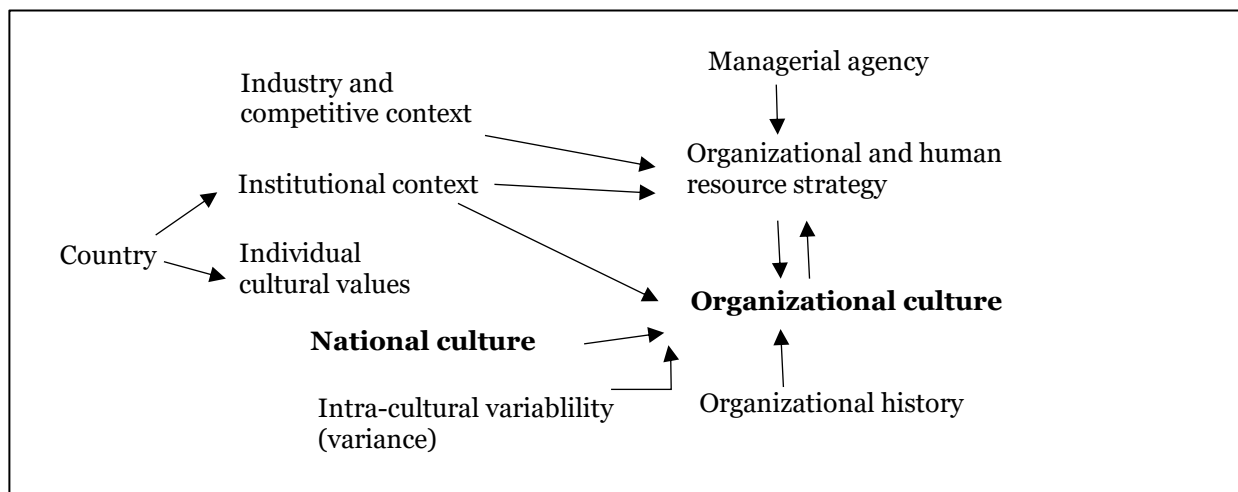


Figure 8. 3 Country, national culture and organizational culture

Note: Adapted from How much does national culture constrain organizational culture? *Management and Organization Review* (Gerhart, 2009, p.247)

8.2.1. Motivational factors

Lufthansa Group and ANA Group are selected for the contrary of their characteristic organizational cultures. ANA Group represents a Japanese/East Asian organizational culture while Lufthansa Group a German/Western one. According to Jackson (2002), Table 8.2 shows the different motivational factors that drives their employees between East Asian and Western: East Asian culture tends to focus more on collectivism and harmony within the group. In contrast, western culture is said to be individual-oriented with a flat organizational structure and less hierarchy.

Table 8. 2 Cultural differences indicating motivational factors (from Harris and Moran, 1987)

Motivators	
Western	East Asian
Wealth	Equity
Individual	Group
Consumption	Saving
Nuclear and mobile family	Extended family relations
Decline in work ethic and hierarchy	Highly disciplined/motivated workforce
Informality and personal competence	Protocol, rank and status
Conflict to be managed	Avoid conflict

Note: Adapted from *International HRM: A cross-cultural approach* (Jackson, 2002, p.90).

8.2.2. Cultural Dimension Differences

Based on G. Hofstede, G. J. Hofstede, and Minkov (2010), Figure 8.5 shows the contrast of Germany and Japan in terms of their cultural dimensions.

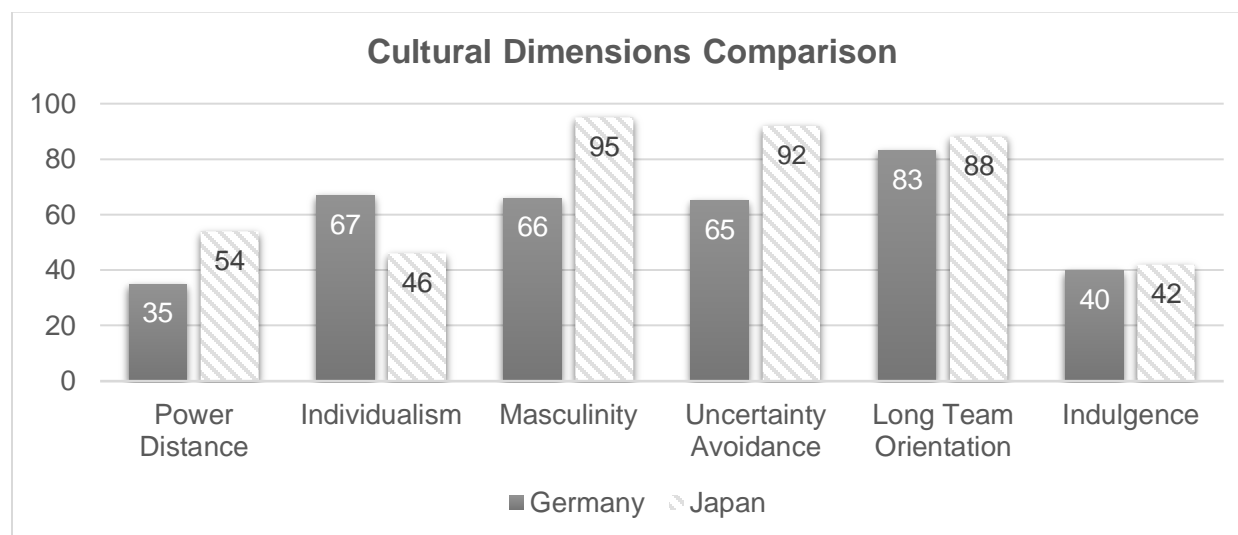


Figure 8. 4 Cultural dimensions comparison (Germany vs. Japan)

Note: Adapted from *Cultures and organizations: Software of the mind* (Hofstede et al., 2010). Data retrieved from <https://www.hofstede-insights.com/>

Japan is among the highest point countries of “Masculinity” and “Uncertainty Avoidance.” A high-score masculine society stands for a society that is driven by competition, achievement and success (Hofstede et al., 2010). However, combining with their collectivism, they tend to compete as a group or team, not individually (Jackson, 2002). You can see another example of Japanese

masculinity: workaholism. With their masculine tradition of hard and long working hours, it is also difficult for women to climb the corporate ladders in Japan (Jackson, 2002). In organizations and associated job mobility, differences in masculinity scores are also expressed in the types of career opportunities available. Germany is still considered a masculine culture, with a score of 66.

An uncertainty avoidant country is a country where members of a culture are threatened by unexpected or unknown situations and have developed beliefs and institutions aimed at preventing them (Hofstede et al., 2010). At 92 Japan is one of the most uncertainty avoiding countries on earth. A lot of time and money is poured into feasibility studies in corporate Japan and all the risk factors must be sorted out before any project can begin. Before taking any action, administrators inquire for all the detailed statistics and figures. One of the reasons why improvements in Japan are too hard to realize is this high need for Uncertainty Avoidance. Germany is one of the countries avoiding uncertainty (65): in combination with its low power distance, where the assurance of own judgments is not subject to the greater burden of the manager, Germans tend to remedy their higher uncertainty by relying heavily on expertise.

Both Germany (83) and Japan (88) have very high long-term orientation. On the other hand, those with a high-scoring culture take a more realistic approach: they promote thrift and modern education efforts as a way to plan for the future. In pragmatic-oriented cultures, people assume that reality depends very much on the situation, meaning, and time. They display in Germany the potential to quickly adapt customs to changing situations, a clear propensity to save and invest, thriftiness and perseverance in producing results. In corporate Japan, long-term orientation can be seen in the consistently high rate of R&D investment, even in economically challenging times, the higher rate of own capital, the priority of steady market share growth rather than quarterly profit, etc. They all serve the company's endurance.

The organizational distance can be used to recognize in an organisation the interactions between managers and their subordinates. Germany (34) has lower power distance than Japan (54). This factor deals with the idea that not all individuals in societies are equal: it represents the culture's attitude toward these differences within us. Some believe that because of their slow decision process, there is an intense hierarchy in Japan that needs to be investigated by each hierarchical

layer. This paradoxically demonstrates, though, that there is no top guy in Japanese society who can take decisions as in more hierarchical societies.

German society is genuinely individualist (67), while Japan scores 46 on the dimension of individualism. People are expected to look after themselves and their immediate families only in individualistic societies. Individuals belong to 'groups' in collectivist communities that take care of them in return for loyalty. Japanese culture definitely reflects all of the aspects of a collectivist society.

Finally, Germany, like Japan, has the same low degree of indulgence. Both of them reflect a restricted society in which cultures do not place much focus on leisure time and govern the fulfillment of their desires. People with this orientation have the impression that social expectations limit their behavior and believe that indulging themselves is somewhat incorrect.

As Lufthansa Group is composed of three Germanic European countries, Figure 8.6 shows the comparison within these three countries. These countries are expected to share similar cultures and values; however, Austria scores way lower in power distance, which makes Austria one of the countries with the lowest power distance in their society.

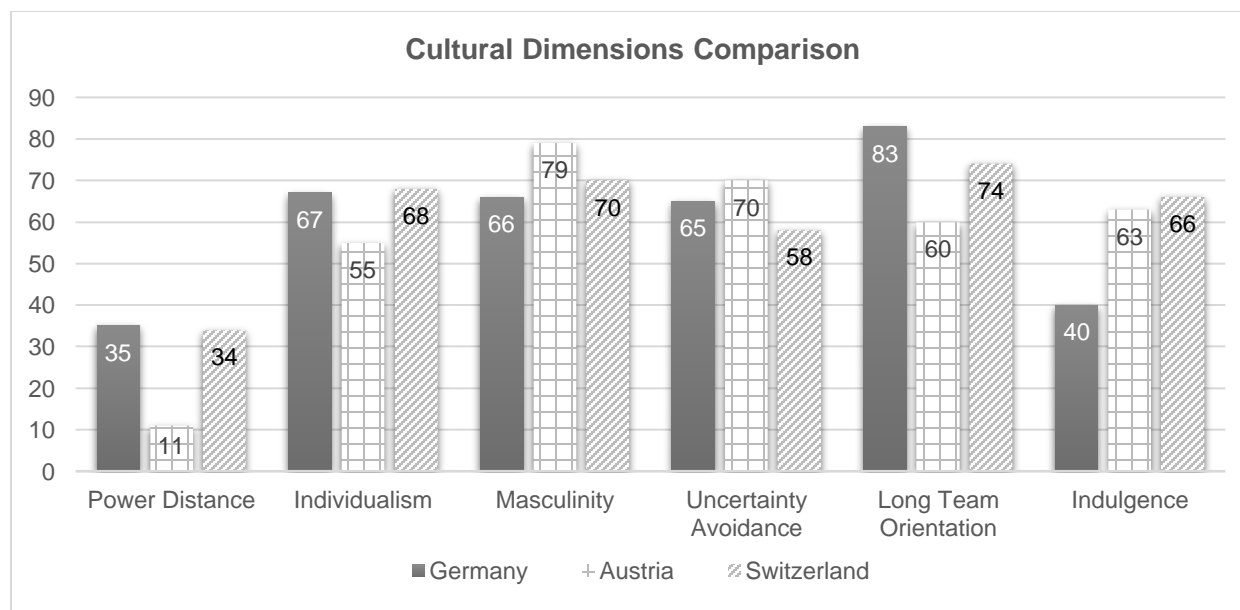


Figure 8. 5 Cultural dimensions comparison (Lufthansa Group)

Note: Adapted from *Cultures and organizations: Software of the mind* (Hofstede *et al.*, 2010). Data retrieved from <https://www.hofstede-insights.com/>

8.2.3. High vs. Low Context cultures

In order to understand different cultural orientations, Hall (1960) proposed the concept of high and low contexts. Japan and Germany are two extremes in terms of high and low context cultures. In a high context culture, like Japanese, context is implicit: information is in symbolism or indirect verbal expression. Words can have different meaning depending the context; thus, there is a High degree of complexity in communication. They are relationship-oriented and focus on group development (Hollensen, 2017). On the other hand, for low context cultures like German, most of the information is contained explicitly in words. They are deal-oriented: with the intention to be efficient, it must be direct and unambiguous so there is a low degree of complexity in communication. Figure 8.7 demonstrates the contextual continuum of different cultures. Japanese is amongst the highest context culture and has most usage of implicit messages while German is the opposite.

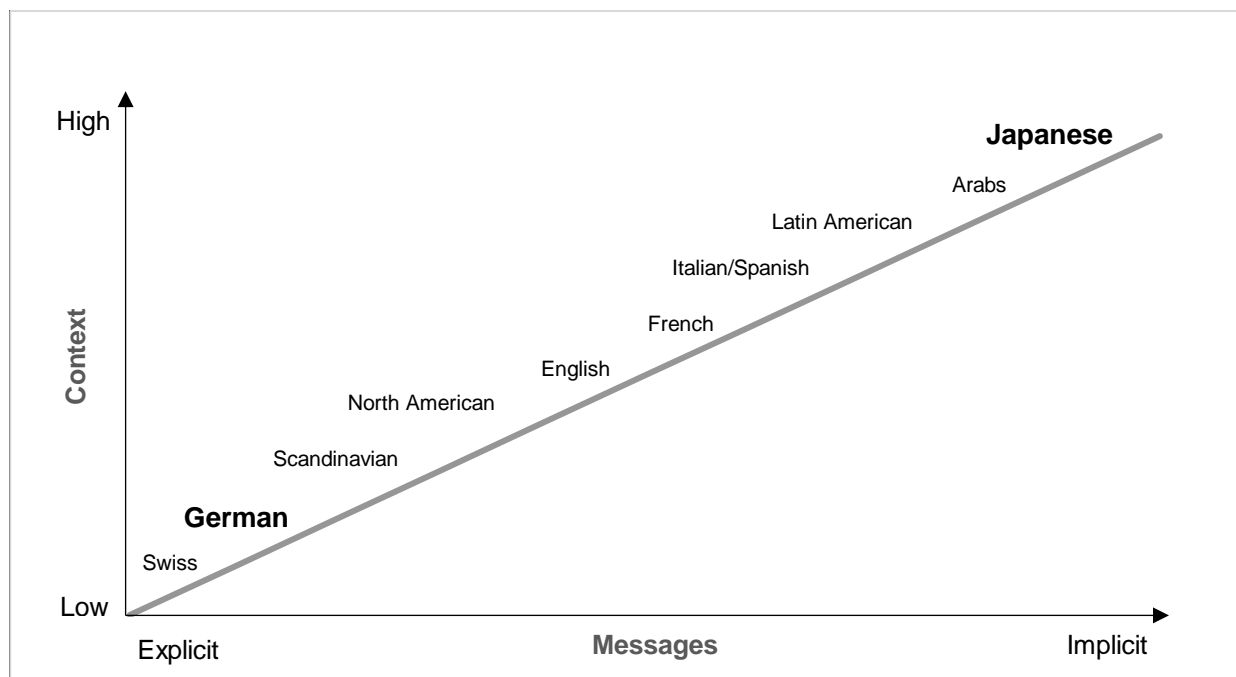


Figure 8. 6 The contextual continuum of differing cultures

Adapted from *Global marketing* (Hollensen, 2017, p.256)

8.2.4. Leadership Styles—the GLOBE Project

House et al. (2004) conducted the research program The GLOBE (Global Leadership and Organizational Behavior Effectiveness) examining the interrelationships between societal culture, societal effectiveness and organizational leadership. Figure 6 exhibits the visualization of leadership of Germany and Japan. A relatively significant difference between German and Japanese leaders is the “participative degree,” which means the degree to which managers involve others in decision-making and implementation. As shown in Figure 8.8, German leadership scores higher (5.86) than the average (5.33) whereas Japan is lower than the average (5.07). Conversely, in terms of “self-protective” degree, the degree to which leadership focuses on ensuring the safety and security of the individual and group through status enhancement and face saving, German leadership scores lower (3.03) than the average (3.47) whereas Japan (3.6) is slightly higher than the average score. In addition, the autonomous degree (independent and individualist leadership) of German leadership (4.16) is higher than average (3.85) and higher than Japanese one (3.67). Both German and Japanese share very similar points in terms of “team-oriented” and “humane oriented.”

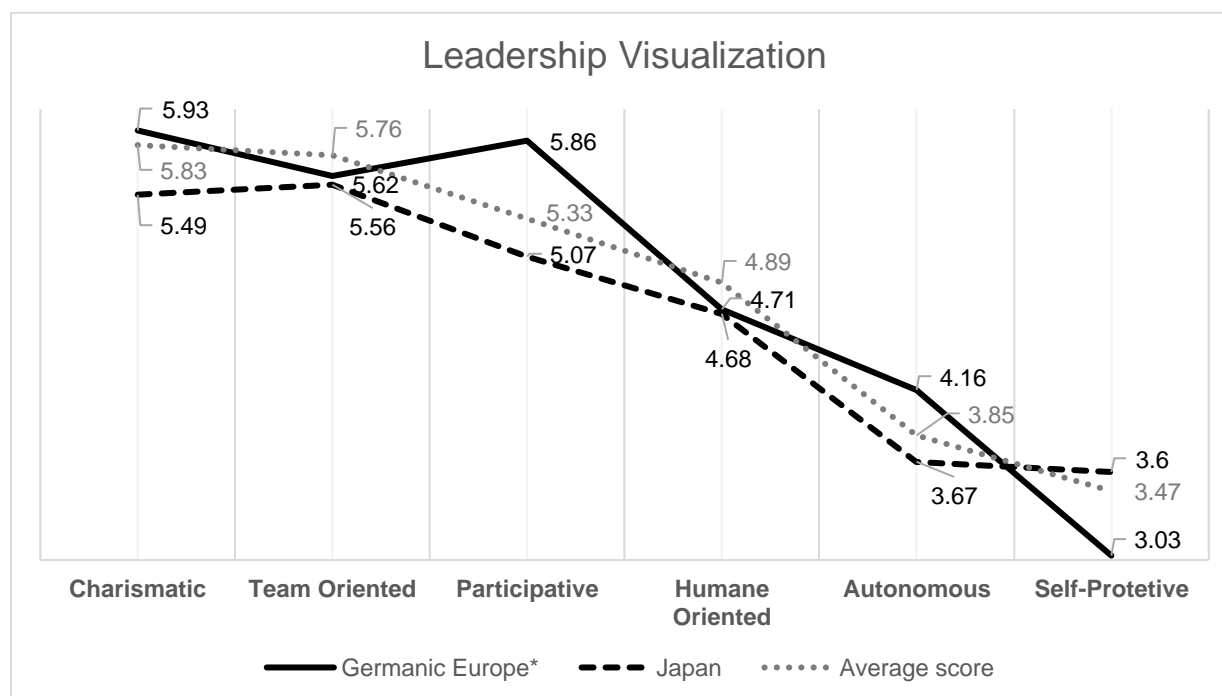


Figure 8. 7 Leadership scores for outstanding leadership (Germanic Europe vs. Japan)

*Germanic Europe includes Austria, Germany, Netherland and Switzerland

Adapted from *Culture, leadership, and organizations: The GLOBE study of 62 societies*. (House et al., 2004). Data retrieved from <https://globeproject.com/>

8.2.5. Organizational Characteristics

8.2.5.1 *The Japanese Model*

Yoneyama (1994) argues that “**life employment**” policy marks Japanese organizational culture one of the most unique ones. It distinguishes itself greatly from other organizational cultures. Life employment follows suit with seniority-based pay and promotion system. In this group-orientated step-by-step approach, pay and promotion by seniority rewards the long-term commitment to the corporation. In addition, Japanese organizations tend to employ **young graduates without working experiences**, so that they can be effortlessly integrated into the corporate community. With lifetime employment, Japanese organizations invest hugely in in-house training. They extensively use **mentor system** for novices (Senpai and kōhai interpersonal relationship) and **job rotation** for their employees to get to know a variation of jobs and to build a network (Jackson, 2002). McClelland (1987) criticizes that Japanese organizations implement methods which focus too much on gaining mutual commitment of people and the corporation, which may not directly boost individual achievement motivation.

8.2.5.2. *The European Union Model*

Compared to the uniqueness of the Japanese Model, European Union Model is more focused on its adaptability accordingly to the legislations of each EU countries. Jackson (2002, p.121) explains the European model of people management from Brewster (1995): “European organizations operate with restricted autonomy: constrained at the international (European Union) level and the national level by culture and legislation, at the organizational level by patterns of ownership, and at the HRM level by trade union involvement and consultative arrangements. ” In other words, European HRM is influenced by state regulation and companies have a narrower scope of choice. Nevertheless, in Germany, high level of employee involvement is observed: “employee representatives can resort to the courts to prevent managerial decisions in areas such as recruitment, termination, and changing work practices” (Jackson, 2002, p.122).

8.2.6. Conclusion

To summarize the first part of the analysis of the case study, Table 8.3 concludes the results for a better and clear overview.

Table 8. 3 Summary of cultural comparison between Germany and Japan

	Germany	Japan
Motivations	wealth, individual, personal competence, flat hierarchy	equity, group, rank and status, avoid conflict
Cultural Dimensions	low power distance and high individualist culture	high masculine and uncertainty avoidant culture, collectivism
Context Culture	low	high
Leadership Style	charismatic, participative, autonomous	self-protective
Organizational Characteristics	flexibility and adaptability	lifetime employment, mentor system, job rotation

8.3. KM in Lufthansa Group

Lufthansa Group has put knowledge and their employees as one of the biggest assets in a long run. Analyzing their financial and sustainability reports, one could find that employee development and HR are categorized into the section of “social responsibility.” As early as 2009, they introduced “employee feedback management” which regards their employee as of central importance in their pursuit of value-oriented corporate management. Dr. Martin Schmitt, Senior Vice President Executive Personnel at Lufthansa back in 2009 pointed out that “in a globalized industrial environment, a company’s success will depend to an even greater extent on the **knowledge and competence of the people it employs**. Thus, training and continuing education are key investments in the future of both the company and its employees.” (Lufthansa, 2009, p.36) The budget for investment in internal education indeed grows year after year. Table 8.4 shows the personnel data of Lufthansa Group from 2008 to 2019.

Table 8. 4 Lufthansa Group Personnel Data (2008-2019)

Personnel Date	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of employees (thousand)	107	117	117	116	116	118	118	120	124	129	135	138
Staff costs (million euro)	5,692	5,996	6,659	6,678	7,052	7,356	7,335	8,075	7,354	8,172	8,811	9,121
Staff costs /revenue (%)	22.9	26.9	24.4	23.2	23.4	24.5	24.4	25.2	23.2	23	24.6	25

Note: Data adapted from Lufthansa Group Annual Reports (2008-2019). Retrieved from <https://investor-relations.lufthansagroup.com/en/publications/financial-reports.html>

Lufthansa Group has invested heavily in internal education. For them, training young people is also an important social responsibility. Starting as early as back in 2008, the budget in training and continuing education for its employees was 194 million euros (Lufthansa Group, 2009). In 2009, regardless of the world economic crisis and depression, the budget declined by only 7 percent to 99 million euros (Lufthansa Group, 2010). Ever since then, the budget has increased annually. Reportedly, 500 million euros has been invested by 2020 in innovation to improve products and services (Aviation Voice, 2017). In addition, KM is a highlight in their sustainability report 2009. Lufthansa Group regarded KM as a competitive advantage and focused on areas including “knowledge transfer, knowledge assessment, glossaries and libraries” and to motivate their

employees to pass on personal knowledge (Lufthansa 2009, p.39). The focus of Lufthansa's innovative educational strategy is on linking the development of its employees as individuals to the development of the company as a whole. In order to do so, Lufthansa Global Business Services (LGBS) offers "Business Process Analyst" in Knowledge Management to make sure the organization's know-how, information and experience is maintained and shared inside and outside the organization (Mintzberg, Ghoshal, Lampel & Quinn, 2003). Their emphasis on the core business field also takes account of the restructures of the Management Board in terms of roles and individuals (Lufthansa Group, 2019a). These essential topics will be defined as separate roles within the Board by setting up the two new functions Customer & Corporate Responsibility and the IT, Digital & Innovation, for the Lufthansa Group (Lufthansa Group, 2019a). KM implementation in the Lufthansa Group are analyzed according to the framework as follows:

8.3.1. Knowledge Creation

Constantly working on providing innovative products, Lufthansa Group run the projects both individually and across segments. They are executed sometimes centrally but most of the time in the individual segments with the focus on different areas (Lufthansa Group, 2018b). In 2019, the Group restructured the the Executive Board and created two new functions: "Customer& Corporate Responsibility" and "IT, Digital & Innovation." By pointing "IT, Digital & Innovation" out and creating a section for it, Lufthansa Group shows a determination on their concentration on the core business segment and on knowledge creation (Lufthansa Group, 2019a).

➔ Lufthansa Innovation Hub

The Lufthansa Innovation Hub was established in 2014 in Berlin, with the ambition to develop the Group's "distinct innovation culture and power," in which they design and testify innovative business models and provide innovative solutions (Lufthansa Group, 2019a, 2019b). To do justice to the enormous relevance of the Asian market for travel and mobility start-ups, the Lufthansa Innovation Hub opened a second site in Singapore in 2019. By 2020, there are three Lufthansa Innovation Hubs worldwide, in Berlin, Singapore and Shanghai.

➔ Joint scientific research

Lufthansa Group participates in numerous researches with other organizations such as aircraft manufacturers, airports, fuel producers and scientific institutions in order to generate new knowledge and to trigger innovation (Lufthansa Group, 2019b). For example, with the intention of providing environmental-friendly solutions, Lufthansa has actively devoted in the noise research network “Quiet Traffic” with partners like the German Aerospace Center since 2009 to acquire new knowledge and develop solutions for noise reduction (Lufthansa Group, 2012b, 2015b). Similarly, Lufthansa Group also participates in climate research and electromobility to cooperations with science and research (Lufthansa Group, 2013b). Furthermore, SWISS took part in a research by ETH Zürich and St. Gallen University (HSG) on developing of air, ground and land transport up to 2050 (Lufthansa Group, 2016b).

➔ InventIT, Lufthansa Impulse and Impulse International

An intranet platform to collect innovative ideas from their employees, “InventIT” was firstly introduced in the end of 2007 (Lufthansa Group, 2008). The idea behind it was to standardize and organize efficiently the ideas concerning new products and processes. Through this platform, innovations are made sure to receive the necessary space. Later on, they developed a group-wide ideas management platform “Lufthansa Impulse,” employees of the Lufthansa group can make suggestions concerning cost savings, simplification of existing processes and improvement of products and services. All the ideas are stored online into the “Impluse” Ideas portal on the intranet eBase. This approach creates a rich store of knowledge available for improvements (Lufthansa Group, 2008). Thanks to thousands of ideas contributed from their employees, in 2009 alone, 8.5 million euros are saved in cost (Lufthansa Group, 2010b). In April 2009, they launched “Impulse International” to expand this practice for group employees abroad (Lufthansa Group, 2010b).

➔ Lufthansa Case Challenge

Interaction with the young professionals seems to be a method for the Lufthansa Group to gain new knowledge through this kind of “Socialization.” “Lufthansa Case Challenge” is one of the examples: it is an international student competition held by Lufthansa Group and the Aviation Management Institute of the EBS Business School since 2010. The participating student teams are asked to solve the tasks of real Lufthansa Group issues. “Everyone involved benefits. The students

gain insights into the work practice, while Lufthansa gains impulses from the international academic community and hones its profile as an innovative company” (Lufthansa Group, 2011b, P.57).

➔ Talent Management „ProTeam“

Similar to the idea of “Lufthansa Case Challenge,” Lufthansa also offers university graduates an attractive professional start with the “ProTeam General Management Trainee” program. During the first month of this international program, attendees can discover about the Group's great diversity of demonstrations and hands-on experiences in various areas of the organization. In 2011, Lufthansa hired 12 ProTeam trainees, of whom 30 percent have an international background (Lufthansa Group, 2012b, 2019b).

8.3.2. Acquisition and Learning

8.3.2.1. Acquisition

➔ Customers survey

In order to provide the best quality of services possible, Lufthansa group acquires customer knowledge through periodic worldwide basis customer surveys and conducts additional detailed surveys. The feedback and insights from surveys based on the satisfaction ratings are differentiated: the wishes and expectations from the customers are immediately shown. It is a great tool as indicators for future improvements of services and products (Lufthansa Group, 2014b).

➔ “Lufthansa Flying Lab”

“Lufthansa Flying Lab” is customer event for the group to collect customer feedback. Passenger on selected flights get the first chance to try innovative products and services live on board. Their feedback afterwards is crucial for improvements (Lufthansa Group, 2019b)

➔ Employee Feedback Management (EFM)

Besides getting knowledge from the customers, the group also gather knowledge from their own employees under “Employee Feedback Management (EFM),” where “360° Feedback” is accessible to all employees on the Lufthansa Group’s intranet. Through this platform, every employee could seek for feedback from managers and colleagues. In 2016, around 900 employees

used this platform and got feedback from more than 11,500 managers, colleagues and customers. (Lufthansa Group, 2017b).

➔ “involve me!”

Another way to gain knowledge from the employees is to conduct a trailer-made employee survey. “involve me” is the first group-wide standardized employee survey being in office since 2015. It is conducted every two years and voluntarily by the employees. The results of survey are submitted to not only to the Supervisory Board and the Executive Board and have an impact on the Executive Board’s variable remuneration but also also communicated at management level and within individual teams. Employees themselves were able to view the results for their department online for the first time in 2019 (Lufthansa Group, 2019a). It creates transparency and promotes dialogues between the members, especially between managers and employees, and provides the drivers of constant improvements within the group (Lufthansa Group, 2015b). Again, it helps management to make a direct comparison of data from individual Group companies and promote a transparent and Groupwide dialogue (Lufthansa Group, 2017b).

➔ “Engagement Index” (EI)

“involve me” survey also provides the basis for the calculation of the “Engagement Index” (EI). This ratio was first introduced by the Executive Board in 2016 and indicates “to which degree employees feel committed to the Company and to which degree they are willing to lend their support to their employer” (Lufthansa Group, 2017b, p.69). An Engagement Index of 2.2 was reported in 2019, a scale from 1 (best) to 5 (worst). The index is now once more on a par with similar companies in Germany (Lufthansa Group, 2019a, p.95).

8.3.2.2. *Learning*

Based on the “open mind” concept which represents the new culture of lifelong learning, Lufthansa Group covers for all topics concerning learning and acquiring new qualifications under this “open mind” umbrella (Lufthansa Group, 2019b).

Figure 8. 8 Lufthansa Learning Culture “open mind”

Source: Lufthansa Group (2019b, p.74)



➔ eLearning

Lufthansa Group has begun to implement e-learning and knowledge management in the form of parallel projects around the early 1990s. A competence center for e-learning was established in 2001 and e-learning received new impetus primarily as a result of the booming technological growth of e-learning facilities (Wilkesmann & Wilkesmann, 2011). Automated IT processes ensure that all Lufthansa Group personnel and board members routinely engage in web-based compliance training (e-Learning courses) that is important to them (Lufthansa Group, 2015b). Each employee engages actively in the execution of the enforcement program at Lufthansa with the use of eLearning modules.. The eLearning method is being applied step by step by the subsidiaries (Lufthansa Group, 2014b). The employees of the group have access to these e-learning courses and are now partly connected to electronic mailings or participating in corresponding company-specific processes. For example, IT-based anti-corruption training is required for all administrators, team leaders and personnel in specific fields to warn them of potential risks (Lufthansa Group, 2018b). Via an in-house technology portal that complements current training offers, all Lufthansa Group employees have access to more than 17,000 innovative learning offers from LinkedIn Learning (Lufthansa Group, 2019a).

➔ Learning facilities

○ The Lufthansa School of Business (LHSB)

The Lufthansa School of Business (LHSB) founded in 1998 is Germany's first corporate university. It provides “the needs-oriented interdisciplinary continuing education of managers and employees from the entire Lufthansa Group (Lufthansa Group, 2009b, p.39). With LHSB, employees get to

learn tailor-made knowledge through the internal continuing education offers so that they can expand their competence and skills. It is a win-win situation for both the company and the employee: when an employee has more know-hows, it also improves their personal level of employability (Lufthansa Group, 2009b). In 2012, outstanding projects and best-practice models in the area of technology-supported knowledge management are supported by LHSB (Lufthansa Group, 2013b).

- Lufthansa Aviation Training

Lufthansa Aviation Training (LAT) based in Munich, trains the next generation of cockpit and cabin crew and offers overall vocational and professional training specially for the Lufthansa Group airlines and other airlines. With no doubt, the top priority for LAT is to train and maintain the highly competent cockpit and cabin crew and to ensure safe and efficient flight operations within the Lufthansa Group (Lufthansa Group, 2019a). In 2019, LAT has extensively invested not only in training facilities, new equipment but also in innovative products and digitalization to secure its leading role as an aviation training provider (Lufthansa Group, 2019a).

- The Lufthansa Training & Conference Center (LTCC)

The reopening in February 2009 of the Lufthansa Training & Conference Center (LTCC) in Seeheim marked a significant landmark in the company's internal education scheme, which has always been at a high standard. Around EUR 100 million has been invested in its new education and meeting centre (Lufthansa Group, 2009). The Lufthansa Training & Conference Center is the center of seminars and conferences for the group. Since 1973, administrators, workers and politicians have gathered in LTCC for training and knowledge transfers (Lufthansa Group, 2014b).

- The Lufthansa CAMPUS

The Lufthansa CAMPUS, which is assessable to all employees, provides numerous strategic initiatives for cultural and operational growth. A new business culture of teamwork and aid with team growth and cultural transformation is assisted by qualification courses for managers and top management (Lufthansa Group, 2019a).

➔ Professional trainings

Professional preparation of employees takes place both centrally and in a decentralized manner within the group. In addition, operational instruction and in-house workshops are coordinated and carried out for pilots, flight attendants and aircraft technicians within the respective Group companies. In addition, in order to share information and organize events, all those responsible for preparation meet periodically in expert rounds. (Lufthansa Group, 2014b). In addition to daily training programs, in particular in safety-related fields, a committee composed of HR personnel from the top management of major company organizations meets periodically to discuss, in a formal process, the impact of the new transition on the competency profiles needed of established classes of workers. In this sense, a framework was created in 2019 to allow administrative personnel, in particular, to evaluate the potential feasibility of their own competences and to compare them with the current and future requirements of their position. All employees of the Lufthansa Group have access to more than 17,000 creative curriculum offers from LinkedIn Learning through an in-house learning portal that complements current training offerings (Lufthansa Group, 2019b).

➔ “explorers”

Another project that creates more internationality in the Lufthansa Group is the company-wide Explorers programme, the 8th edition of which was unveiled in November 2011, with 147 young managers from all the Group companies involved. The "explorers" forum serves the individual growth of technical and personal knowledge, the establishment of one's own networks within the group and the promotion of international collaboration between the Group companies (Lufthansa Group, 2012b). This trainee program was completed for the first time in 2013 Group-wide. In addition, Swiss has given "Swiss Experience", a one-year trainee program, since 2013. The International Airline Professional (IAP) English-language trainee program is designed primarily for international candidates who are eligible for possible deployment in their home countries (Lufthansa Group, 2014b).

➔ Talent Management: „ProTEAM“

Lufthansa offers university graduates an attractive professional start with the “ProTeam General Management Trainee” program. During the first month of this international program, attendees

can discover about the Group's great diversity of demonstrations and hands-on experiences in various areas of the organization. In 2011, Lufthansa hired 12 ProTeam trainees, of whom 30 percent have an international background (Lufthansa Group, 2012b, 2019b).

➔ “Makers of Tomorrow”.

In 2019, the Lufthansa Group introduced the platform-based Company-wide program “Makers of Tomorrow.” Its aim is to set up a recognition and growth program for talent below the top management level that forms the future – without restricting formal requirements such as working for a single group company or finishing university studies. The selection was made on the basis of future-relevant expertise and competencies, as well as feedback and assessments from peers. Fifty among the more than 1,200 applicants worldwide have been included in the scheme. Participants are presented with an individual career plan and access to an existing Lufthansa Group Network. "Makers of Tomorrow" continued in 2019 (Lufthansa Group, 2019b)

➔ Intercultural Knowledge Learning: Kulturraum

In order to increase the understanding of “national particularities and also impart knowledge about religion and concerning conflict avoidance”, or so-called “intercultural knowledge,” since May 2010, the cabin crew had the ability to revisit or extend their understanding of the cultures they visited in the context of their jobs. Lufthansa set up the “Kulturraum,” which means area of culture in German, at Frankfurt Airport for this purpose. Under the slogans "Go Japan," "Go China," "Go Korea" and "Go India," intercultural expertise specialists, international flight attendants and colleagues from the distribution function are available to provide comprehensive information on the demands and preferences of consumers from the respective countries. The culture of the main Lufthansa markets of India, Japan, China and Korea are the highlight of these continuing education activities over many days. (Lufthansa Group, 2011b, p.55; 2012b, p.51; 2013b, p.51).

➔ Service Management Professional

A new "Service Management Professional" role was implemented for Lufthansa cabin crew and accepted by the German Chamber of Commerce as a specialized further training programme. In order to apply for other service jobs, employees can obtain this certification in addition to the

regular flight attendant training. In 2019, about 500 workers have received this certification and over 1,000 more are currently in training (Lufthansa Group, 2019a)

8.3.3. Dissemination and Transfer

8.3.3.1. Dissemination

➔ “One”

Lufthansa Group disseminates continuously knowledge through communication via the formats pooled in the product group “One”: regularly published employee magazine “One,” news app “One,” intranet news “eBase One,” community on the social intranet “Connection One,” and “Screens One,” the newly introduced large screens at central locations (Lufthansa Group, 2019b, p.28) At the same token, reports on current data protection topics are sent via a weekly internal blog (Lufthansa Group, 2016b).

8.3.3.2. Transfer

Lufthansa group takes tailor-made knowledge transfer as part of the company’s strategy, due to the reason that the development of each employee also benefits the development of the Group (Lufthansa Group, 2009).

➔ Knowledge Relay

“Knowledge Relay” ensures that any relevant input from their predecessors is obtained by workers who start in new jobs and take advantage of their acquired experience. A qualified moderator uses a structured method to help the individual who offers information recognize and convey his or her subconsciously internalized know-how in particular. The moderator works closely with the receiver in a second step to discover potential "knowledge gaps" and then balances the different subject areas. In addition, consultations, probable mistakes and repetitive work can be avoided for those involved. This type of comprehensive support and orientation for the new employee is particularly motivational for successors, while allowing knowledge providers to fully complete their previous tasks (Lufthansa Group, 2009).

➔ Communities of Practice (CoPs)

CoPs are groups of people with common interests who meet together to tell stories in person or virtually, share and discuss challenges and opportunities, discuss best practices, and speak about lessons learned (Wenger, 1998; Wenger & Snyder, 1999). Examples of CoPs in the Lufthansa group are as follows: All fuel efficiency experts in the Group are interconnected in the regular Fuel Efficiency Group (FEG) Conference through internal knowledge exchange (Lufthansa Group, 2014b). In the same manner, they initiated an internal energy forum where experts from all parts of the group took part in transferring the knowledge and best practice in 2014 (Lufthansa Group, 2014b).

➔ “ProInnovation” and “ProSocial”

Two new modules were launched by the Lufthansa Group in 2017. A tandem concept is used to create the module "ProInnovation," which will be extended in 2018. It integrates the expertise of chosen workers (expert experts and supervisors from various hierarchy levels in the Company, as well as employees representative committee and the supervisory committee) with employees from various trainee systems. The purpose of "eye level" interaction is to shape the future with the aid of diversity in age, education, hierarchy and specialist expertise (Lufthansa Group, 2018b).

➔ “myTurn”

The "myTurn" program for Deutsche Lufthansa AG administrative employees was launched in 2018. The goals were to establish a movement to support the growth of existing staff by transferring jobs both internally and externally, while at the same time allowing new talents to be recruited from outside with important future-oriented skills. More than 300 employees have chosen one of the product offers outside the Lufthansa group for professional reorientation, like starting up a company or self-employed business, study course, or a bridge model for retirement. (Lufthansa Group, 2019b).

➔ Intra company transfers

The Lufthansa Group has adopted a new talent management philosophy based on the "Every employee has talent!" concept since 2014, in accordance with the 'Strategic Personnel Training' Initiative to guide and handle demographic changes uncertainties (Lufthansa Group 2015).

Lufthansa Group support employees with special potential by transferring them all at the same level or through promotion to different positions. Transfers between companies of the Lufthansa Group are possible, not just in one company. The complete transparency of open positions guaranteed by the Lufthansa Group greatly helps workers in this regard (Lufthansa Group, 2019a). The transfer opportunity is not just limited in Germany but also to a foreign country. These transfers involved approximately 700 employees in 2008; some 700 more worked for short periods, up to six months, for a foreign subsidiary (Lufthansa Group, 2009). Such kind of intra company transfer is one of the best examples of knowledge transfer.

➔ Intercompany Cross-mentoring Program

In 1998, Lufthansa started a cross-company mentoring program to support and accompany female managers in their careers. In this respect, a Lufthansa female employee with a responsible workforce and a large company mentor, a male or a female mentee, usually for a one-year period of time at a higher level of hierarchy such as Bosch, Deutsche Bank or Merck. In turn, Lufthansa's mentorship manager advises young managers from other companies taking part in this program. Regular discussions of next professional steps, the realization of specific objectives, and networking between enterprises are central to mentoring. At the beginning, at the midpoint and at the end of a mentoring project, participants can compare their experiences with the program and provide feedback to the project team during accompanying events. A total of 112 participants participated in the cross-mentoring in 2010 (Lufthansa Group, 2011b).

➔ “Scope of Age” Management

It refers to the transfer of knowledge from old to young managers in response to secure management resources in a board scope in age distribution. “Scope of Age” is an early plan for and institutional anchoring the transfer of expertise to future management generations. Michaels Böttcher, manager of Project Executive Landscape 2020, states that “A greater degree of age variance secures our new generation of management, provides more perspectives due to different backgrounds of experience and allows us an effective steering of the knowledge and experience transfers at the higher management levels” (Lufthansa Group, 2012b, p.37).

➔ Knowledge transfer with the Board

"Breakfast with the Board" offers employees from multiple business sectors the ability to speak with a member of the Board and thus get details from their own viewpoint on the current position of the Lufthansa Group (Lufthansa Group, 2013b). Similar, the Group also introduced a group-wide range of events in dialog format "Board in Dialogue" in which the executive board specifically responds to all concerns asked by management and staff in a kind of road show (Lufthansa Group, 2014b). Live talks and dialog events for various employee groups and executives called "Business conferences" has been established. In addition, three dialog events with executives and the CEO of the Lufthansa Group in the regions of Asia/Pacific, Middle East and North/South America (Lufthansa Group, 2016b).

➔ Dialogue with employees

In order to learn more about the expectations, wishes and needs of employees working in the cabin and particularly on the ground, the Lufthansa Group organizes daily discussion activities around the organization (Lufthansa Group, 2012b). For example, "Ask Franz" is a dialogue platform on the intranet where employees are able to raise questions concerning current topics directly (Lufthansa Group, 2013b). On the other hand, decentralized Town Meetings and employee gatherings on particular subjects are examples (Lufthansa Group, 2012b). In addition, there are also regular open-door events in the offices of the Group Executive Board Manager in charge of Aviation Facilities and Human Resources (Lufthansa Group, 2009). Local managers maintain daily dialog with staff, as shown by the example of the 'm.i.n.d.' Lufthansa German Airlines lounge (German acronym for "employees – information – news – dialogue") at Lufthansa German Airlines (Lufthansa Group, 2013b, p.28).

➔ Virtual and physical "Bas" for knowledge transfer

Examples are as follows: "eTeaming" is an internal online platform expanded for closer exchanges and discussions (Lufthansa Group, 2011b); Communications room for station employees (m.i.n.d. lounge) as a place for knowledge/information and dialogue (Lufthansa Group, 2011b); Kulturraum where the cabin crew exchange intercultural knowledge; the Lufthansa CAMPUS and so on. Various "Bas" are set up either online or in real life to promote a culture of knowledge sharing.

8.3.4. Application and Exploitation

Intensive and continuous dialogue with representatives of the federal and state governments of Germany is maintained by Lufthansa. At the international level, as well, the Group takes a stand on legal and regulatory guidelines and makes its practical knowledge available (Lufthansa Group, 2012b). In addition, there are monthly inflight magazine and regular newsletter to provide informative and useful insights for the customers (Lufthansa Group, 2019a). With their customer data base, Lufthansa InTouch Service Centers guarantee 24-hour accessibility for all inquiries about flight reservations (Lufthansa Group, 2019b).

8.3.5. People Competency

✈ Talent Management

The talent management of the Lufthansa Group is directed to all employees and is not restricted to vertical promotions. It leads significantly to the growth of defined competencies, talent recognition and advancement of employment for specific work families. The sizes range from apprenticeships and mentoring to top management programs. Strategic workforce training will still take into account the multiple staff life stages. The Lufthansa Group's primary aim is to supply all lower management positions with their own talents (Lufthansa Group, 2019b, p.85). Another main aim of Lufthansa's training and education program is to encourage the employability of its employees and to ensure that its managers and trainees receive and sustain their qualifications. A further goal is to ensure the transfer of knowledge and know-how through the whole organization (Lufthansa Group, 2014b). In a similar way, previously mentioned “explorers” platform promotes “the individual development of professional and personal competencies, the creation of one’s own networks within the Group and the promotion of international cooperation between the Group companies” (Lufthansa Group, 2012, p.58). Moreover, Lufthansa Group support employees with special potential by transferring them all at the same level or through promotion to different positions. Transfers between companies of the Lufthansa Group are possible, not just in one company. Thus, the Group help its employees to maintain the competency (Lufthansa Group, 2019a). Last but that least, adaptability to constant change in the market conditions requires continuous training of staff competencies. It is crucial for their employees to keep the knowledge

and skills up to date. The Lufthansa Group has offered a wide range of digital and non-digital training opportunities for many years (Lufthansa Group, 2019a).

➔ Strategic Personnel Planning (SPP)

To make sure the knowledge and resources are well maintained in the Group, Lufthansa introduced Strategic Personnel Planning (SPP) in 2014, which plays a significant role on “securing the medium- and long-term personnel resources needed for implementing the Group’s and business segments’ strategie” (Lufthansa Group, 2016b, p.91). Its goal is to make the procedure transparent, either the development of existing staff or the requirements for the future employees. As a result, they have a data basis where HR and talent management can seek for the support for steering of personnel resources (Lufthansa Group, 2016b, p.91).

➔ COMPASS

Correspondingly to the talent management, COMPASS was established in 2013, offering consultation in a protected space so that employees and even managers are able to reorient themselves professionally, and further to maintain their competency. In 2014, approximately 700 employees are currently taking advantage of the consultation offer (Lufthansa Group, 2014b).

➔ PROFILE

To make sure its employee keeping up with high qualification and competency, PROFILE (potential and performance assessment of management personnel), the corporate management grading system was newly redesigned. Since 2014, the managers are supported with modern tool “eProfile,” which is transparent Group-wide in a standardized format. More importantly, “eProfile” also promotes the culture of dialogue within the Lufthansa Group (Lufthansa Group, 2014b, p.83).

➔ The Engagement Index

The next indicator is the Engagement Index. The competence, the ideas, the enthusiasm and the health of its employees are regarded as the success of the Lufthansa Group. In order to ensure its employees’ satisfactions, the Group-wide employee survey, shows that focused activities strengthened employee commitment. (Lufthansa Group, 2018a). Change management initiatives

are therefore increasingly being implemented and communications activities initiated to improve employees' commitment with as attractive personal development and qualification opportunities tailored to the different employee groups (Lufthansa Group, 2019a). The Engagement Index rose again year on-year by 0.1 points to 2.2 points (Lufthansa Group, 2018a).

➔ Staff structure

Differences between the strategic HR criteria, the current competence of employees and the manner in which they are spread through companies in the Lufthansa Group constitute a systemic HR risk. This risk is handled by the Lufthansa Group by strategic human resources strategy, the implementation of a skills model and the procurement of training courses for all staff in the Group. Overall, human capital risks remain relatively stable relative to the previous year (Lufthansa Group, 2019a).

8.3.6. Leadership and Support

This part looks into top management, business culture and strategic leadership.

➔ Interactions with CEO and the Executive Board

The Executive Board and representatives of the expanded top management of the Lufthansa Group participate frequently with the employees on updating the company's development and to listen to their expectations. To begin with, "Breakfast with the Board" offers employees from multiple business sectors the ability to speak with a member of the Board and thus get details from their own viewpoint on the current position of the Lufthansa Group (Lufthansa Group, 2013b). Similar, the Group also introduced a Group-wide range of events in dialogue format "Board in Dialogue" in which the executive board specifically responds to all concerns asked by management and staff in a kind of road show (Lufthansa Group, 2014b). In 2013, more than 50 "Board in Dialogue" events are held at the Group's worldwide locations (Lufthansa Group, 2013b). Live talks and dialog events for various employee groups and executives called "Business conferences" has been established. In addition, three dialog events with executives and the CEO of the Lufthansa Group in the regions of Asia/Pacific, Middle East and North/South America (Lufthansa Group, 2016b). In addition, regular Town Meetings (members of the Executive Board in dialogue with employees) are organized in different Lufthansa areas (Lufthansa Group, 2009, 2011b).

➤ Providing leadership

It is essential for a supervisor to provide leadership for employees, in spite of their hierarchical levels. Lufthansa Group regards the interaction between manager and employees as one of the crucial levers in fulfilling the goals of the Group (Lufthansa Group, 2010b, p.36). In addition, In this period of transformation, the managers of the Lufthansa Group play an important part, as beliefs, expectations and convictions are shaped by role models that provide orientation in periods of cultural change (Lufthansa Group, 2019b, p.74).

➤ Employees as their core culture

Lufthansa Group put the training, the development and the employability of its employees as one of the corporate social responsibilities. Employees are the pillars of the company's culture and crucial for the success of the Group (Lufthansa Group, 2010b).

➤ The Lufthansa Innovation Award

The "Lufthansa Innovation Award" started in 2007, which forms a business culture of praise, compliments and gratitude. It motivates employees to be constantly committed to improvement and contributes to the Group's striving for innovation (Lufthansa Group, 2011b).

➤ Strategy

In 2019, the Group restructured the the Executive Board and created two new functions: "Customer& Corporate Responsibility" and "IT, Digital & Innovation." By pointing "IT, Digital & Innovation" out and creating a section for it, Lufthansa Group shows a determination on their concentration on the core business segment and on knowledge creation (Lufthansa Group, 2019a). Another strategic project of the group is to unlock data. That is to say, to make certain operational data accessible to the outsiders, so that external developer can use them. Lufthansa Group taps into a broader ecosystem of talent so that there are higher potentials for innovative products, apps and value-added services that will increase the group's competitive advantages. The move to open its data to developers is said to be a game-changer for the whole aviation industry (KMWorld, 2020b).

8.3.7. Storage and Maintenance

Lufthansa had connected the databases of 139 airlines worldwide to its etix database by the end of 2008 (Lufthansa Group, 2009). Internal data are stored and maintained via their internal platforms.

➔ eTeaming: the Internal Lufthansa Web 2.0 application

Since 2009, eTeaming has been used Group-widely as the internal Lufthansa Web 2.0 application. This application allows an efficient way of communication and cooperation, and even more importantly, it offers worldwide discussion forums as well as blogs that update the Group members. Employees from the Group, regardless of their locations, can work together via this platform or even to address issues of everyday life. All the information are stored in eTeaming, from project cooperation to vacation tips (Lufthansa Group, 2010b).

➔ Cloud-based office software

For 45,000 administrative personnel of the Lufthansa Group in 2019, a cloud-based office software was successfully rolled out. Through training courses customized for each department, all Lufthansa Group areas can now collaborate transparently and efficiently. This includes working securely on mobile terminal devices that have been largely replaced by newer models. Operational personnel with access to computer workstations benefit from this as software. Modern information and collaboration formats are offered to all Lufthansa Group employees that focus internationally on effective and networked work and span all hierarchical formats. Grades and that empower individual end users (Lufthansa Group, 2019a)

8.3.8. Technology and Infrastructure

8.3.8.1. *Technology*

➔ Lufthansa Systems

Lufthansa Systems is an IT service provider for the Lufthansa Group and also the aviation industry. It provides industry solutions as well as the operation applications in the data centers of the Group.

Lufthansa Systems was originally the Group's IT department but later turned into a legally independent company in 1995 (Lufthansa Systems, 2020)

➔ AI

Lufthansa Group is applying Watson Ads Builder by IBM, a self-service advertising solution with artificial intelligence (AI), aiming to build engaging, one-on-one conversations between the company and consumers digitally. Watson Ads Builder understands the Group's information and create unique dialogues to each customer, boosting customer engagement and brand loyalty (KMWorld, 2019b). By the same token, Lufthansa Group applies "Usabilla", a voice of customer (VoC) technology provider, to collect analyze and provide real-time user feedback to improve their products and customer experience (KMWorld, 2019b)

➔ Innovative technologies

In other business segments of the Lufthansa Group, innovative products are also continuously developed. For instance, two new, future-oriented technologies have been implemented at Lufthansa Technik with the Cyclean Engine Wash and the Advanced Recontouring Process (ARP) (Lufthansa Group, 2019b).

➔ Lufthansa Innovation Hub

The Lufthansa Innovation Hub, established in 2014 in Berlin, aims to design and testify innovative business models and provide innovative solutions (Lufthansa Group, 2019a, 2019b). They create new innovative technologies with various cooperation either internally or externally. Successful examples for the development of innovative digital business models are the carbon offset platform "Compensaid" and "the Rydes" app for intermodal loyalty among young customer groups (Lufthansa Group, 2019a, p.18) Moreover, the Lufthansa Group invests in the Canadian start-up "Hopper," a complementary digital model company ((Lufthansa Group, 2019a).

➔ Microsoft Office 365

The Lufthansa Group started carrying out Microsoft Office 365 in the administrative areas in 2018 with intense staff involvement. This software allows networks and teams to collaborate transparently and efficiently, and thus promotes the exchange of ideas across departmental

boundaries. This not only creates transparency, but it also contributes to making the Lufthansa Group as a whole more agile. It is followed by new mobile work facilities being carried out. For operational staff who work on computers at least some of the time, the new software is also a gain (Lufthansa Group, 2019b)

➔ AVIATAR

With data-based products and services such as the AVIATAR computing platform, Lufthansa Technik is expanding its portfolio in the area of intelligent maintenance management (Lufthansa Group, 2019a, p.27). The AVIATAR open platform, built for digital MRO, is also contributing to this area. In order to benefit from optimized running times lower follow-up costs and smoother and more efficient fleet operations, more than 1,000 aircraft are currently residing on this platform (Lufthansa Group, 2019b).

8.3.8.2. *Infrastructure*

➔ LH New Workspace

The Lufthansa Group successfully concluded the "LH New Workspace" pilot project in April 2014. Over the course of six months, at the Lufthansa Aviation Center (LAC) in Frankfurt, supervisory and human resources staff tested innovative workstations and work configurations designed to take account of the increased demands of a mobile and flexible work environment and to improve the compatibility of professional and family life. The Executive Board decided, following positive feedback from participants, to implement the concept throughout the LAC by the first quarter of 2016. The introduction of the New Workspace has already started in other places. Information activities are accompanied by the shift from conventional, mainly closed office structures to open space concepts that include "hot desking" in which workers use temporary workstations instead of fixed desks (Lufthansa Group, 2014b, 2015b).

➔ Developing working environments

The principal building blocks of future working environments will be mobility and flexibility. For 45,000 administrative personnel of the Lufthansa Group in 2019, a cloud-based office software was successfully rolled out. Through training courses customized for each department, all

Lufthansa Group areas can now collaborate transparently and efficiently. This includes working securely on mobile terminal devices that have been largely replaced by newer models. Operational personnel with access to computer workstations benefit from this updated software. Modern information and collaboration formats are offered to all Lufthansa Group employees that focus internationally on effective, well-networking and span all hierarchical format that empower individual end users (Lufthansa Group, 2019a).

8.3.9. Conclusion

To sum up, the implementation followed by the analytical framework in Lufthansa Group are shown as in Table 8.5 as for a better and clear overview.

Table 8. 5 KM implementation in Lufthansa Group

	Individual	Group	Organization	Interorganization al
Knowledge Creation	→ InventIT, Lufthansa Impulse, Impulse International	→ Lufthansa Case Challenge → ProTeam	→ Innovation Hub → InventIT, Lufthansa Impulse, Impulse International	→ Innovation Hub → cooperation with scientific research institutions
Acquisition & Learning	→ E-learning → Makers of Tomorrow → Professional trainings	→ Kulturraum → Service Management Professional	→ “Involve me” → EFM & EI → Various learning facilities → “explorers”	→ Customer survey → Lufthansa Flying Lab
Dissemination & Transfer	→ Email, intranet → Newsletter → Social networking applications	→ Knowledge Relay → CoPs → ProInnovation; ProSocial → Dialogues between different groups	→ “One” → CoPs → “my Turn” → Position transfers → CAMPUS → Scope of Age → Knowledge transfer Bas	→ “my Turn” → Position transfers → Cross-mentoring →
Application & Exploitation	→ Inflight Magazines → Newsletter	→	→ Storage of legal and regulatory guidelines	→
People Competency	→ Talent Management	→ Talent Management	→ Talent Management → SPP → COMPASS → PROFILE → EI → Staff Structure	→
Leadership & Support	→ Direct interaction with CEO and the Board	→ Direct interaction with CEO and the Board	→ Direct interaction with CEO and the Board → Employee as core culture → Lufthansa Innovation Award → Strategic Leadership	→
Storage & Maintenance	→ E-teaming	→ E-teaming	→ E-teaming → Cloud-based software	→
Technology & Infrastructure	→	→	→ Lufthansa Systems → Innovation Hub → Microsoft office 365 → AVIATAR → LH New Workspace	→ Lufthansa Systems → AI → Innovative technologies → Innovation Hub

Table 8. 6 Lufthansa Group's KM in four levels

KM Four Pillars	KM Dimensions	Lufthansa Group			
		Individual	Group	Organization	Inter-organizational
Learning	Knowledge Creation	√√	√	√√	√√√
	Acquisition & Learning	√√	√√	√√√√	√
Organization	Dissemination & Transfer	√	√	√√√√	√√√
	Application & Exploitation	√		√	
Leadership	People Competency	√	√	√√√	
	Leadership & Support	√	√	√√√√	
Technology	Storage & Maintenance	√		√√	
	Technology & Infrastructure			√√√√	√√√

Table 8.6 additionally analyzed KM implementation in Lufthansa Group accordingly into individual, group, organizational, and interorganizational levels. We can observe a tendency that Lufthansa Group is relatively active in individual and organizational level.

8.4. KM in ANA Group

ANA Group has put knowledge and their employees as one of the biggest assets in a long run. Based on their financial and sustainability reports, ANA Group regards their employees as “stakeholders;” HR and employee development also fall into this section. The personnel expenses increased 2.9 % in 2018 to ¥207.8 billion (ANA Group, 2019). The ANA Group invested in aircraft for our air transportation business and in the building of ANA Blue Base, the ANA Group training centre, among other investments during fiscal 2018. As a result, capital spending amounted to ¥375.8 billion yen for fiscal 2018, an improvement of 23.4 percent compared to the previous fiscal year (ANA Group, 2019) Shinichiro Ito, Chairman of the Board, Chairman of the Board of Directors ANA HOLDINGS INC, view their employees as “the engine for growth” and that the top management targets on “provide more opportunities to observe the situation at the front lines of our business and listen to the true opinions of employees” (ANA Group, 2018, p.80).

8.4.1. Knowledge Creation

➔ ANA Blue Base

In April 2019, ANA Blue Base, an integrated training center for the ANA Group, was opened. This is one of the largest training facilities in Japan, integrating the training and educational functions located around Haneda Airport into one. This new training center would allow the Group to meet the expanded standards for training that follow the growth of the Group. It is considered as an innovation test field integrated with training facilities, aiming to promote open innovation and joint development, as well as to create innovation This strategy strengthens ANA Blue Base's capacity to act as a hub for people who go out into the world to develop, to communicate the safety culture that is the core of our business, and to improve quality and services. Work-Style Reform Communication Lounge” is used as a satellite office and a base for tele-working (ANA Group, 2020a).

➔ Joint development

ANA Group has participated in several partnerships with other companies and organizations to generate new ideas and new products. Examples are as follow:

- Toyota Industries : Automate Technology

As part of an initiative initiated by the Japanese Ministry of Property, Infrastructure, Transport and Tourism to promote the development of innovative new aviation technologies, the ANA Group and Toyota Industries have worked together to establish autonomous towing tractor operations (ANA Group, 2020b). ANA has been a pioneer in the implementation of emerging technology and will continue to look for opportunities to leverage innovation (ANA Group, 2020b)

- POLA ORBIS HOLDINGS

ANA Group partners with POLA ORBIS HOLDINGS to establish the "CosmoSkin" project for space-friendly cosmetics. More precisely, it is a "CosmoSkin" Joint Product Development Project to manufacture cosmetics that can be worn safely in zero gravity. Together with the cosmetics company POLA ORBIS, ANA Group will launch the joint production of cosmetics that can be used in space, with the goal of bringing to market the first ever space-friendly cosmetics in 2023 (ANA Group, 2020c).

- Japan Aerospace Exploration Agency

Japan Aerospace Exploration Agency (JAXA) and ANA Group are launching collaborative studies on the use of commercial aircraft for the study of atmospheric elements in city areas through remote sensing. They also cooperate in the production of algae as a raw material for biojet fuel provided by Japan. Two big issues in the air travel industry are the prevention of illegal trade in animals and human trafficking by using aircrafts. To tackle these problems, JAXA and ANA collaborate closely with government departments, NGOs, NPOs, and other businesses in the sector (Lufthansa Group, 2020d).

- ➔ ANA X

ANA X Inc. was founded in December 2016, as a corporation charged with marketing activities targeting the customers of the ANA Group. The goal of this organization is to enrich people and societies worldwide through consumer co-creation. ANA X would generate unparalleled value by integrating the strengths of consumers, companies, employees, and all of the other members of the ANA Group to multiply these strengths. With a lineup that can permeate all corners of our lives, ANA X is expected to deploy a wide variety of distinctive offerings. Prominent offerings include the ANA Card and other payment services; contributions from ANA Regional Vitalization; ANA

Theater and ANA Phone, which allow ANA Mileage to accumulate in one's everyday life; and ANA Global Service, which provides funding for hotels, rental cars and other forms of travel. ANA X is set to create synergies with the Group's airline activities by evolving marketing practices based on members of the ANA Mileage Club while creating a business model that includes the creation of an economic domain of the ANA. This constitutes the strategy of ANA X to increase the productivity of the company (ANA Group 2017).

8.4.2. Acquisition and Learning

8.4.2.1.Acquisition

➔ Customer Satisfaction Survey

In order to provide the best quality of services possible, ANA group acquires customer knowledge through periodic worldwide customer surveys. More than 120,000 customers evaluate their degree of satisfaction with our services every year from reservations to in-flight and arrival. For more improvement, we then evaluate points. The survey program includes gathering more than 20,000 consumer feedback and inquiries directly from consumers and more than 50,000 customer engagement surveys prepared annually by employees at airports, on planes, through call centers and during sales operations (ANA Group, 2020e).

➔ The ANA's Way Survey

The ANA's Way Survey is the employee awareness survey for the ANA Group to help them acquire employee knowledge. It is one tool they use to observe, analyze, and improve workplace attitudes and job satisfaction among our employees. A total of 39,286 individuals responded to the fiscal 2019 survey through the 46 ANA Group companies, showing a 96.1 percent response rate (ANA Group, 2020a).

8.4.2.2.Learning

The ANA Group is highly end-service-oriented, meaning that more than 80% of our employees operate on the front lines. Having a solid understanding of on-site operations is critical. They see

a must to have a system of education and preparation that cultivates leaders regardless of gender and attracts the most talented and skilled talents.

➔ ANA Blue Base

In April 2019, ANA Blue Base, an integrated training center for the ANA Group, was opened. This is one of the largest training facilities in Japan, integrating the training and educational functions located around Haneda Airport into one. This new training center would allow the Group to meet the expanded standards for training that follow the growth of the Group. It is considered as an innovation test field integrated with training facilities, aiming to promote open innovation and joint development, as well as to create innovation. This strategy strengthens ANA Blue Base's capacity to act as a hub for people who go out into the world to develop, to communicate the safety culture that is the core business of ANA Group, and to improve quality and services. “Work-Style Reform Communication Lounge” is used as a satellite office and a base for tele-working (ANA Group, 2020a).

➔ E-learning

E-learning are accessible for the employees of ANA Group. The participation rate of E-learning is as high as 85% (ANA Group, 2019. P.25). E-learning education are organized four times every year to raise the level of the universal services pursued by the Group. There are various contents offered in the E-learning platform. For example, in order to deepen the knowledge of their employees in the field of human rights, ANA Group offered e-learning courses on “Business and Human Rights,” which reached a participate rate of 94% from all the Group employees within three months (ANA Group, 2019). Similarly, with the goal to make workplaces free from harassment, e-learning harassment education are distributed to all Group executives and employees (ANA Group, 2020a). Moreover, e-learning course for anti-bribery laws around the world based on the ANA Group Anti-Bribery Rule are accessible to all employees as well (ANA Group, 2019).

➔ Professional trainings

○ ANA's Day training

ANA's Day training is one-day training for all Group employees to learn about the Group's DNA. It is taken place at ANA Discovery Center, a facility for employees to study and consider the principles of "Challenge and Endeavor" in the group's DNA. The purpose of this training is to familiarize employees with ANA Group's founding philosophy and the words of our founders. Throughout the training, no matter the new or old employees are passed on common and essential values and help them to practice ANA's Way (ANA Group, 2019, 2020a).

○ "ikuboss" training

The ANA Group has been conducting Ikuboss seminars every year since 2015. The Ikuboss program trains managers to help subordinates for a stronger work-life balance in their jobs and lives, as well as to boost team success, while also setting a personal example of balance in work and home life satisfaction (ANA Group, 2017).

○ Training for the top management

Training and individual coaching is carried out by the ANA Group, which are adapted to the knowledge and experience of internal directors. Trainings like outside seminars dealing with finance, accounting, compliance, and other fields are provided. Regular group training for top managers, as well as seminars and discussions lead by outside specialists are held to provide them with the information and expertise required for their duties. Members of the Internal Audit & Supervisory Board also have the ability to practice in audit methods, CSR, risk assessment, compliance and other subjects, based on the expertise and knowledge of the individual (ANA Group, 2019).

○ Security and safety training

In 2015, approximately 45% of all eligible personnel had received emergency evacuation training. They are not limited to flight cabin crews but to all Group employees so that all have a sense of the importance of safety (ANA Group, 2016). By the same taken, all employees are required to take universal service training for front-line personnel, especially the Barrie-free trainings. It intends to promote the awareness of diversity among all staff involved in product and service development (ANA Group, 2018).

- Legal compliance education

Based on the ANA Community Anti-Bribery Guidelines, the Group has developed an interactive handbook and e-learning course for anti-bribery regulations around the world. Our instruction is meant to reduce accidents that could degrade business value. In accordance with education on antitrust legislation, the staff at Legal & Insurance perform education in Japanese and English at our overseas offices, aiming to reduce legal risks worldwide (ANA Group, 2019).

- Seminars and workshops

Based on their knowledge and experience, internal directors and Audit & Supervisory Board members are assigned to attend external seminars and undergo training on an ongoing basis. In addition, ANA Group provides the necessary support for such self-study opportunities. In addition, group training for directors and members of the Audit & Supervisory Board, along with seminars and exchanges of knowledge with external experts, is routinely carried out to provide internal directors with the skills and knowledge they need to perform their duties (ANA Group, 2016). Similarly, a number of legal seminars were conducted at Group companies, depending on the legal circumstances affecting each organization, to encourage higher standards of enforcement knowledge among all ANA Group management and employees (ANA Group, 2017). At the same time, workshops are organized in 2018 for employees to raise awareness and study about wildlife trafficking, in cooperation with TRAFFIC, an NGO that surveys and monitors the wildlife trade at WWF Japan (ANA Group, 2018).

➔ “Lessons Learned”

ANA Group stresses an emphasis on learning for the past so that they have a facility for building a culture of safety and a Safety Education Center to Learn about past incidents and human error. ANA Group wants their employees to reserve the memory of past accident, and organizes field trips to Shizukuishi Memorial Forest, in which ANA aircraft and a Japan Self-Defense Force aircraft collided and crashed. Each year, several related parties, such as administrators of the ANA Group, employees and trade unions, engage along with local communities in cleaning activities. The majority of Group employees have no clear idea of the accidents. That is the reason to have this kind of activities, in which the employees pay gratitude to local governments, pray for the victims, and renew the Group’s recognition of the importance of safety (ANA Group, 2017).

➔ ANA Group D&I Forum

In April 2015, the ANA Group CEO announced the ANA Group Diversity & Inclusion Declaration (ANA Group, 2016). ANA Group D&I Forum for management members from all Group companies are held annually since then. The forum provided opportunities to consider specific actions leading to inclusion and innovation, such as external instructors' D&I lectures and workshops to study unconscious bias, providing participants with opportunities to learn more about the significance of mutual respect and how to promote diversity and inclusion in their own workplace (ANA Group, 2017, 2019).

8.4.3. Dissemination and Transfer

8.4.3.1. Dissemination

➔ ANA Book

ANA Book is a “compendium of the thoughts and feelings of group employees developed” booklet, which are distributed to all employees. It was responded to the establishment of the ANA’s Way guidelines in 2013. Workshops with ANA BOOK are held for all Group executives and employees. The purpose of these workshops is to help each individual determine what ANA's Way means to them and to put this into practice every day. Workshops also allow group staff to work to create a better future in line with who they are today (ANA Group, 2019).

➔ ANA TIMES

ANA TIMES is a “Group Newsletter Fostering Unity”. This monthly newsletter for all employees is published online. Through important management topics, the current state of the ANA Group, and employee-focused articles, the newsletter encourages action from the employees (ANA Group, 2020a). Besides ANA TIMES, there are monthly e-mail newsletter covering covering important legal topics, revisions to laws and regulations, labor or contract issues, and frequently asked questions to Legal & Insurance is sent to the employees and officers concerned. Newsletters presenting legal topics in an easy-to-understand approach are also published twice a year. The Group intranet has a dedicated compliance website that features manuals and guidelines related to various laws, regulations, and rules. We work to improve compliance by group employees and officers by promoting use of the various information tools.

➔ Internal Reporting System

ANA developed a point of touch (ANA Alert) for internal and external reporting (external law company, trusted overseas report receiving team) based on the ANA Group Rules for Managing Internal Reporting. The aim is to explain compliance-related details and solve problems. All Group managers, staff, and temporary workers engaged in activities have access to these monitoring mechanisms. These monitoring mechanisms can also be used by ANA Group retirees and by officers and staff of our business partners. This allows one to promptly receive internal risk-related knowledge and assists in self-correction. Compliance monitoring is advanced by our different programs and attempts to provide information on compliance with laws and legislation and adds to greater organizational benefit. In order to enhance this position, we also provide education and information dissemination to the Group by preparing best practice surveys and exchanging information on our activities with members of the Audit & Supervisory Board in order to strengthen this purpose (ANA Group, 2019, p.70).

8.4.3.2. Transfer

Yuji Hirako, CEO of ANA group back since 2017, has emphasized the importance of passing on and transferring knowledge. He said:

“it will be crucial for us to transform our accumulated insight and experience from internalized tacit knowledge into functional and shareable explicit knowledge. This knowledge should then be passed on to new generations of employees as we build upon our professional skills and techniques. Through this process, employees should grow more receptive and thus be able to make new discoveries and uncover new ideas in the course of their work and reflect these in their actions” (ANA Group, 2017, p.32).

➔ Communities of Practice (CoPs)

Group training for directors and members of the Audit & Supervisory Board, along with seminars and exchanges of knowledge with external experts, is routinely carried out to provide internal directors with the skills and knowledge they need to perform their duties (ANA Group, 2016). Another kind of exchange will be through direct dialogue between managers and employees, we are actively sharing management strategies and the intentions of managers and thereby deepening

mutual understanding. In 2018, Group Corporate Strategy tour event with top management are held 20 times with total participates of 1,268 employees (ANA Group, 2018).

➔ ANA's Way Roadshow and Ambassadors

The ANA's Way Roadshow has been conducted by the group since 2013 as an opportunity for dialogue between employees and to passing down corporate culture. It takes place at ANA Discovery Center, a facility for employees to study and consider the principles of “Challenge and Endeavor” in the group's DNA. The same program has been introduced by ANA's Way Ambassadors at all overseas branches since 2016. The ANA's Ambassadors pass on principles and transfer knowledge that are important to all workers in Japan and overseas (ANA Group, 2017).

➔ ANA's Way Awards

In order to share examples of implementation, or so-called best practices, ANA's Way Awards was set up to be a system for sharing the episodes which represent ANA's Way and show examples of real implementation at the workplace. ANA recruits, screens, and commends examples from within the Group via this award system. Not only did it create a culture of praise, but it also embraced the ANA Group Mission Statement and Management Vision (ANA Group, 2016, 2019).

➔ ANA Blue Base

In April 2019, ANA Blue Base, an integrated training center for the ANA Group, was opened. It is not only a training center, but for all employee from around the globe to get together to exchange knowledge. This is one of the largest training facilities in Japan, integrating the training and educational functions located around Haneda Airport into one. This new training center would allow the Group to meet the expanded standards for training that follow the growth of the Group. It is considered as an innovation test field integrated with training facilities, aiming to promote open innovation and joint development, as well as to create innovation This strategy strengthens ANA Blue Base's capacity to act as a hub for people who go out into the world to develop, to communicate the safety culture that is the core business of ANA Group, and to improve quality and services. Work-Style Reform Communication Lounge” is used as a satellite office and a base

for tele-working (ANA Group, 2020a). In Figure 8.10, a physical “Ba” for knowledge transfer is set up in ANA Blue Base.



Figure 8. 9 Japanese style washitsu “Ba” for knowledge transfer in ANA Blue Base

Source: ANA Group (2019, p.69)

8.4.4. Application and Exploitation

➤ “Lessons Learned”

Learning from the pass accident is an example of ANA Group’s knowledge application and exploitation. ANA Group stresses an emphasis on learning for the past so that they have a facility for building a culture of safety and a Safety Education Center to Learn about past incidents and human error. ANA Group wants their employees to reserve the memory of past accident, and organizes field trips to Shizukuishi Memorial Forest, in which ANA aircraft and a Japan Self-Defense Force aircraft collided and crashed. Each year, several related parties, such as administrators of the ANA Group, employees and trade unions, engage along with local communities in cleaning activities. The majority of Group employees have no clear idea of the accidents. That is the reason to have this kind of activities, in which the employees pay gratitude to local governments, pray for the victims, and renew the Group’s recognition of the importance of safety (ANA Group, 2017).

8.4.5. People Competency

Human resources policy is one of the most significant issues within the ANA Group Business Strategy. ANA Group aims to practice ANA’s way though the HR policy and eventually to build the employees’ comprehensive capabilities (ANA Group, 2018). Table 8.7 shows the employee engagement rates from 2016 to 2019.

Table 8. 7 ANA Group employee engagement

Employee engagement	FY2016	FY2017	FY2018	FY2019
% of actively engaged employees	79.0	80.2	81.6	77.6
% of total employees	92.9	93.5	93.5	93.5

Note: Adapted from ANA Group (2019, p.78)

➔ Human Resource Development and Retirement Extensions

In order to maintain the competency of their employees, ANA Group expresses the value of each person's job to improve human capital, instilling a sense and educating the social meaning of their daily work. Strategies that inspire individuals to work with our business and create an organisation worthy of this ambition are applied. Moreover, to improve individual skills, OJT is essential method applied within the Group (ANA Group, 2019).

8.4.6. Leadership and Support

This part looks into top management, business culture and strategic leadership

➔ Dialogues with top management

Another kind of exchange will be through direct dialogue between managers and employees, we are actively sharing management strategies and the intentions of managers and thereby deepening mutual understanding. In 2018, Group Corporate Strategy tour event with top management are held 20 times with total participates of 1,268 employees (ANA Group, 2018).

➔ Fostering a culture of recognition and praise to boost knowledge sharing

○ Good Job Program

ANA Group promotes the Good Job Program to share good practices from each workplace groupwide. This program not only fostering a culture of gratitude and respect but also boost employees to share their best practices and communicate mutual gratitude. Good Job Program can be done over the Group intranet or via Good Job Cards, an initiative that goes beyond company and department borders. More than 600,000 cards were issued in 2019 (ANA Group, 2020).

- The ANA's Way AWARDS

In order to share examples of implementation, or so-called best practices, ANA's Way Awards was set up to be a system for sharing the episodes which represent ANA's Way and show examples of real implementation at the workplace. The ANA's Way Awards is open to all group employees worldwide. The awards have become a mechanism to celebrate examples of best practices in local workplaces, initiating our culture of recognizing and praising each other. Not only did it create a culture of praise, but it also embraced the ANA Group Mission Statement and Management Vision (ANA Group, 2016, 2019).

- ➔ Kaizen activities

Kaizen (continuous improvement) activities is a style of working within the ANA Group. Almost 3,000 projects have been carried out in our activities to reduce waste, unevenness, and overburden (muda, mura, muri). To build a relaxed office atmosphere and an effective job structure, our workers are taking a bold, voluntary first step. In order to help recognise cross-functional problems for improved quality and job performance, a kaizen consultant role is appointed within the Group. At the same time, ANA Group cultivates a pool of workers inside our company who evangelize kaizen (ANA Group, 2018).

8.4.7. Storage and Maintenance

- ➔ Utilizing Mobile Devices

In 2012, the ANA Group distributed mobile devices to every flight attendant. Our mobile technology software has since been rolled out to pilots, maintenance crew and staff at the airport. This technology helps connectivity to be quicker and more accurate, providing travelers with timely information and improved in-flight service. In addition, the advantages of more effective teaching and paperless manuals have been offered (ANA Group, 2018). Mobile technology not only enables an instant access to updated maintenance manuals but also improves maintenance quality by sharing the aircraft condition promptly. In result, better cross-divisional cooperation is reached (ANA Group, 2018).

➔ Transcosmos

ANA Group has decided to outsource transcosmos for handling the large-scale operations and numerous projects that occur on their website “ANA SKY WEB”, according to Keita Ishikawa, Market Communication Manager of of ANA Group. ((transcosmos inc., 2020) ANA is promoting the use of digital marketing tools to accomplish full-scale implementation of marketing based on a PDCA cycle in order to achieve CXM. In particular, with the introduction of “Adobe Experience Cloud,” it has become possible to implement measures based on multifaceted analysis and verification of customer needs, since this now allows a more detailed approach tailored to customer behavior through owned media. In addition to “Adobe Analytics” which was previously introduced, “Adobe Target,” “Adobe Audience Manager,” “Adobe Social” and “Adobe Campaign” have been introduced, and transcosmos operation specialists are providing consistent back-up that ranges from assistance with installation to support after operation. (transcosmos inc., 2020)

➔ SDL WorldServer

In order to meet their increasing global audience, ANA Group had to expand their online presence and connectivity through the extension of their international flights. To develop localized digital content and offer a greater, more customized product to their new clients, ANA collaborated with SDL. To streamline the airline's activities and raise sales, ANA started using SDL WorldServer to centralize the localization processes for its websites and other digital content. ANA was able to ensure the quality and accuracy of local language content with the integrated terminology management function, and SDL WorldServer's workflow customization capability kept projects operating smoothly and efficiently (KMWorld, 2020).

➔ ANA X: Big Data as Customer Asset Business

ANA X, launched in 2016, acts as the client asset business of the ANA Group. To connect efficiently with each particular customer, ANA X uses Big Data collected across a number of touch points. This is an evolution of a one-to-one marketing platform that increases the standard and other facilities of the ANA mileage network. In order to effectively build innovative companies and services , we plan to optimize our use of group customer data, including the approximately 34.59 million members of the ANA Mileage Club (ANA Group, 2017, p.18).

➔ Internal Reporting System

ANA developed a point of touch (ANA Alert) for internal and external reporting (external law company, trusted overseas report receiving team) based on the ANA Group Rules for Managing Internal Reporting. The aim is to explain compliance-related details and solve problems. All Group managers, staff, and temporary workers engaged in activities have access to these monitoring mechanisms. These monitoring mechanisms can also be used by ANA Group retirees and by officers and staff of our business partners. This allows one to promptly receive internal risk-related knowledge and assists in self-correction. Compliance monitoring is advanced by our different programs and attempts to provide information on compliance with laws and legislation and adds to greater organizational benefit. In order to enhance this position, we also provide education and information dissemination to the Group by preparing best practice surveys and exchanging information on our activities with members of the Audit & Supervisory Board in order to strengthen this purpose (ANA Group, 2019, p.70)

8.4.8. Technology and Infrastructure

➔ Virtual Reality (VR) Technology

In 2019, ANA Group introduced VR in-flight training for ANA cabin attendants (ANA Group, 2019). Not only for the cabin attendants, VR technology also assist mechanics in recognizing and forecasting potential risks, as well as in improving safety in all areas of aircraft operation within the Group (Aviation Business News, 2019) In 2018, ANA first started using this specialized training system, and all 800 new flight attendants received VR training in the three distinct scenarios of the program: internal cabin fire, sudden depressurization and in-flight equipment check. To build real-world situations based on typical work-related accidents, ANA's new VR safety training method can use 3D models of work environments. In a series of narrated exercises, ANA staff engaging in the VR training program will voluntarily participate, observing directions and executing a variety of simple safety acts. If any errors are made, trainees will experience sensory signals and be motivated to evaluate their actions so that they will recognize the exact significance of their errors. This immersive learning process would help train workers to react in real-life environments (Aviation Business News, 2019).

➔ DXC Technology

ANA outsources IT company like DXC Technology to keep up with efficient IT services. ANA began the migration of its principal systems from mainframes to open systems since 2010. Currently, approximately 80 percent of its systems – from passenger, cargo, and maintenance services to its online reservations – are running in open environments like UNIX®, Linux, and Windows®. Consider various outsourcing providers with depth of open-systems technical knowledge as a prime differentiator (DXC Technology Company, 2020) In addition, ANA entered into a five-year infrastructure operations outsourcing contract with DXC. At the same time, it established a team of open systems operations specialists called the Open Systems Maintenance Center (OMC). This operating structure between the IT affiliate and the DXC workers was planned to run 24 hours a day, 365 days a year (DXC Technology Company, 2020).

➔ SDL WorldServer

In order to meet their increasing global audience, ANA Group had to expand their online presence and connectivity through the extension of their international flights. To develop localized digital content and offer a greater, more customized product to their new clients, ANA collaborated with SDL. To streamline the airline's activities and raise sales, ANA started using SDL WorldServer to centralize the localization processes for its websites and other digital content. ANA was able to ensure the quality and accuracy of local language content with the integrated terminology management function, and SDL WorldServer's workflow customization capability kept projects operating smoothly and efficiently (KMWorld, 2020a).

➔ AI

ANA Group has been aggressively embracing new digital innovations. Here, distinguishing the employment of people from the jobs of robots is the most important thing. We can automate those tasks that computers do best, thus encouraging humans to perform those tasks that only humans can perform. With the attention to detail and motivation that ANA has built from the collective

experience and understanding of any employee employed on the front lines of our industry, we must integrate digital technology. This will lead to fresh innovations that will become the platform for the next period of ANA services (ANA Group, 2018).

➔ Digital technologies

ANA Group focuses on development and utilization of human resources who are expert in the use of digital technologies. Examples are as follows: first of all, the ANA Innovation KAIZEN Office works to improve the productivity of current operations. Similarly, the Digital Design Lab takes the lead in promoting innovation in the organization. Besides, acknowledging the impact of Big Data to improve customer satisfaction, ANA Group utilized their human capital to analyze delay factors and perform other investigations into ANA operations (ANA Group, 2019).

➔ ANA Avatar

A new form of instantaneous transport that will allow humans to communicate without constraints. Real-world avatars can enable someone to teleport their presence, consciousness, knowledge, and skills to a distant location by combining several exponential technologies ranging from robotics to haptics (ANA Group, 2020a).

➔ Society 5.0

To resolve global problems and the ever-changing future, the ANA Group combines our tangible and intangible properties. To rapidly create new goods and services, the Group integrates these assets with ICT and free creativity, as well as encourage our human capital, contributing to Society 5.0 (the super-smart society). In the meantime, new business models are developing that combine IoT, robotics, Big Data, and other new innovations to make life and work friendlier for society. This view of the future motivates us to aim for better customer loyalty and higher productivity levels made possible by reforming the work-style of workers, bringing to bear the intellectual potential and power of action unique to an airline group.

➔ Customer Experience (CE) Platform

This is a data network that connects customer information to operational information in autumn 2018. This platform enables customer information and operational information processed

independently in each segment to be aggregated through the whole organization by virtually combining various processes. In this way it is possible to access information needed at each point in a timely manner. The services supplied by the CE (digital network and by individuals (human resources) complement each other, helping ANA to offer a more detailed service that preserves and enhances customer loyalty and the importance of the experience we deliver (ANA Group, 2019, p.70) ANA standardized details through the ANA CE's 13 scenes in July 2019 and set up an association to support MaaS, including scenes from before and after transport. From the outset of the trip to the destination, we plan to create a smooth travel experience. Our hope is that in collaboration, diverse transport operators can transcend sector boundaries, leveraging digital technologies to connect data and services (ANA Group, 2019).

8.4.9. Conclusion

To sum up, the implementation followed by the analytical framework in ANA Group are shown as in Table 8.8 as for a better and clear overview.

Table 8. 8 KM implementation in ANA Group

	Individual	Group	Organizational	Interorganizational
Knowledge Creation	→ ANA Blue Base	→ ANA Blue Base → Participation in panel discussion	→ ANA Blue Base → ANA X	→ Joint development projects → ANA X
Acquisition & Learning	→ ANA Blue Base → E-learning	→ ANA's Way survey → ANA's Day Training → <i>Ikuboss</i> Training	→ ANA Blue Base → D&I → Field trips to memorioial parks → ANA's Way Roadshow	→ Customer survey → Professional trainings for top management with external experts → D&I
Dissemination & Transfer	→ ANA BOOK → ANA TIMES → Email, intranet → Social networking application	→ Live chats, web casts → ANA's Way Ambassador Activities → ANA's Way Roadshow → CoPs	→ Internal Reporting System → ANA Blue Base → ANA's Way Award	→ CoPs
Application & Exploitation	→	→	→ Lessons Learned	→
People Competency	→	→	→ HR strategy	→
Leadership & Support	→	→	→ Dialogues with top management → Good Job Program → ANA's Way Awards → Kaizen activities	→
Storage & Maintenance	→ Mobile devices: all frontline employees are equipped with iPads	→	→ ANA X → Internal Reporting System	→ Transcosmos → SDL WorldServer
Technology & Infrastructure	→	→ VR-in flight training	→ VR Technology → AI → ANA Avatar → CE Platform	→ DXC Technology → SDL WorldServer

Table 8. 9 ANA Group's KM in four levels

KM Four Pillars	KM Dimensions	ANA Group			
		Individual	Group	Organization	Inter-organizational
Learning	Knowledge Creation	√	√√√	√√	√√√√
	Acquisition & Learning	√	√√√	√√√	√√
Organization	Dissemination & Transfer	√√	√√√	√√√	√
	Application & Exploitation			√	
Leadership	People Competency			√	
	Leadership & Support			√√	
Technology	Storage & Maintenance	√		√	√√
	Technology & Infrastructure		√	√√√	√√

Table 8.9 additionally analyzed KM implementation in ANA Group accordingly into individual, group, organizational, and interorganizational levels. We can observe a tendency that ANA Group is relatively active in group and organizational level. A note on the dimension of Knowledge Creation, intensive interorganizational cooperation is common in ANA Group.

8.5. Comparison of KM at Lufthansa and ANA Groups

To sum up the comparison, Table 8.10 again shows the implementation of KM in both Lufthansa Group and ANA Group. One can find a tendency for ANA Group to conduct approaches in group level whether it is in the dimension of Knowledge Creation, Acquisition & Learning or Dissemination & Transfer. Lufthansa Group, on the other hand, the approaches are seemingly equally in the four levels, but one can notice a strong focus in the individual level, and especially in the organizational level.

Table 8. 10 Comparison of KM at Lufthansa and ANA Groups in four levels

KM Four Pillars	KM Dimensions	Individual		Group		Organization		InterOrg.	
		LH	NH	LH	NH	LH	NH	LH	NH
Learning	Knowledge Creation	√√	√	√	√√√	√√	√√	√√√	√√√
	Acquisition & Learning	√√	√	√√	√√√	√√√√	√√√		√√
Organization	Dissemination & Transfer	√	√√	√	√√√	√√√√	√√√	√√√	√
	Application & Exploitation					√	√		
Leadership	People Competency	√		√		√√√	√		
	Leadership & Support	√		√		√√√√	√√		
Technology	Storage & Maintenance	√	√			√√	√		√√
	Technology and Infrastructure				√	√√√√	√√√	√√√	√√

9. Findings and Discussion

Based on Nonaka (1994), the key main difference between the Japanese and western approaches to organizational knowledge creation is in the interaction between tacit and explicit knowledge. The interaction between tacit and explicit knowledge in Japan is widely happened in the group level. Middle managers lead knowledge-creating project teams to share tacit knowledge interacted with explicit knowledge, such as a grand concept by top management and information from the business front line. On the other hand, it occurs usually in individual level on the western side: concepts tend to be created through the externalization efforts of top leaders or product champions. They combine each individual knowledge organizationally into archetypes of new products, services, or management system. From the data analysis from both Lufthansa Group and ANA Group, it responds to this theory. Lufthansa Group introduced “InventIT,” “Impluse” and “Impluse International” to allow all each of their employees, around the globe, can contribute any new ideas, concepts for the improving or developing either the products, services or processes as an INDIVIDUAL. This intranet platform to collect innovative ideas from their own employees has been employed since 2007 and the Group literally implemented some of the ideas, which saved the organization 8,5 million euros alone back in 2009 (Lufthansa Group, 2010). On the other hand, such activities in an individual level can be very difficult to be executed in the ANA Group. Instead, I see that with ANA Group, there were numerous cooperation or joint development with other companies, or even companies from other industries in order to provide new products or services to their customer. For example, the partnership with Toyota Industries using automate technology to achieve a more efficient airport groundwork and processes. This example shows the correlation with the theory provide by Hedlund and Nonaka (1993), which pointed out that in large Japanese corporations, tacitness and tacit transfer of knowledge seem to be crucial at every level. However, the group and interorganizational levels seem to be the most important for Japanese model, while the individual and organizational levels dominate the western model. In order to respond to this theory, another interesting finding is that the fact that Lufthansa Group holds 25 % of its business segments as “airline related business” which the ANA Group for only 12 %. It makes a huge difference especially when we look at “Storage and maintenance:” while Lufthansa Group has its own Group Company “Lufthansa Systems”—organizational level—whereas ANA Group relies on outsourcing their data storage and maintenance to companies like Transcomos and SDL WorldServer—interorganizational level.

Table 9. 1 Theories on differences between Eastern and Western KM approaches

Western	Eastern
Individual-based	Group-based
Individual decision-making	Group decision-making
Tacit to explicit: individual level	Tacit to explicit: group level
Explicit knowledge oriented	Tacit knowledge oriented
Externalization and combination	Socialization and internalization
Analysis	Experience
Top-down and bottom-up	Middle-up-down and bottom-up
Acquiring external knowledge	Acquiring internal knowledge
Relatively less knowledge redundancy	Relatively more knowledge redundancy
Organizational learning (individual level focus)	Organizational learning (group level focus)
Managing and measuring knowledge	Nurturing and loving knowledge
Knowledge re-use	Knowledge creation
“large step” innovation	Incrementalistic innovation

Note: Adapted from Hedlund and Nonaka (1993, p.125), Nonaka (1994, pp.29-31), Nonaka & Takeuchi (1995, pp.198-99), Cohen (1998, P.24)

On the other hand, if we look at the cultural dimensions of this two Groups and the national cultures they represent: Germany as a high individualist society whereas Japan as a collectivistic one. These two groups both conducted employee satisfaction survey regularly as a form of acquisition of the knowledge towards both groups' employees. However, Lufthansa Group's survey is voluntarily while ANA Group requires each of their employees to fill the survey in a given period, which they are proudly shown in their annual reports of the participate rate. The participate rate of any kind of surveys hugely affect the accuracy and reliability of the results. With ANA Group's compulsory employee's satisfaction survey, one can assume the result shows more accurate scores and expectations from the employees and that provides better foundation for the knowledge exchange between the managers and the employees. Since Japanese society is regarded as collective culture which they would think for others, it is more not uncommon, and it is more viable for them to have a compulsory survey in an organizational level.

Table 9. 2 Summary of cultural comparison between Germany and Japan

	Germany	Japan
Motivators	wealth, individual, personal competence, flat hierarchy	equity, group, rank and status, avoid conflict
Cultural Dimensions	low power distance and high individualist culture	high masculine and uncertainty avoidant culture, collectivism
Context Culture	low	high
Leadership Style	charismatic, participative, autonomous	self-protective
Organizational Characteristics	flexibility and adaptability	lifetime employment, mentor system, job rotation

Another interesting finding is the high participation of the top management of the Lufthansa Group. The Executive Board and representatives of the expanded top management of the Lufthansa Group participate frequently with the employees on updating the company's development and to listen to their expectations. There are frequent events, seminars, either virtual or psychical, taken place throughout the year. For example, "Breakfast with the Board" offers employees from multiple business sectors the ability to speak with a member of the Board and thus get details from their own viewpoint on the current position of the Lufthansa Group (Lufthansa Group, 2013b); "Board in Dialogue" in which the executive board specifically responds to all concerns asked by management and staff in a kind of road show (Lufthansa Group, 2014b). In 2013, more than 50 "Board in Dialogue" events are held at the Group's worldwide locations (Lufthansa Group, 2013b). Live talks and dialog events for various employee groups and executives called "Business conferences" has been established. In addition, three dialog events with executives and the CEO of the Lufthansa Group in the regions of Asia/Pacific, Middle East and North/South America (Lufthansa Group, 2016b). Last but not the least, regular Town Meetings (members of the Executive Board in dialogue with employees) are organized in different Lufthansa areas (Lufthansa Group, 2009, 2011b). In comparison, the top management of ANA Group plays a more "symbolic" role. In 2018, "Group Corporate Strategy tour event," the only official event to have a dialogue with top management, was held 20 times with total participants of 1,268 employees (ANA Group, 2018). It not only represents a different leadership style between these two groups, but again, points out the Japanese business model "Middle-up-down" which is suggested by Nonaka (1994). In particular, the role of the middle managers in this model. They are regarded as catalysts or "knowledge

engineers”, as they make explicit knowledge from the tacit knowledge synthesized from both frontline employees and top managers and apply them into new technologies and products. It may seem like Lufthansa Group’s leadership style is more encouraging for knowledge sharing and transfer as they are so actively participated in all kind of possibilities to engage with their employees and to exchange opinions. On the contrary, for the ANA Group, the top management serves as symbolic role to set visions for direction and deadline. To sum up the findings, Table 9.3 again shows the implementation of KM in both Lufthansa Group and ANA Group. One can find a tendency for ANA Group to conduct approaches in group level whether it is in the dimension of Knowledge Creation, Acquisition & Learning or Dissemination & Transfer. Lufthansa Group, on the other hand, the approaches are seemingly equally in the four levels, but one can notice a strong focus in the individual level, and especially in the organizational level.

Table 9. 3 Comparison of KM at Lufthansa and ANA Groups in four levels

KM Four Pillars	KM Dimensions	Individual		Group		Organization		InterOrg.	
		LH	NH	LH	NH	LH	NH	LH	NH
Learning	Knowledge Creation	√√	√	√	√√√	√√	√√	√√√	√√√
	Acquisition & Learning	√√	√	√√	√√√	√√√√	√√√		√√
Organization	Dissemination & Transfer	√	√√	√	√√√	√√√√	√√√	√√√	√
	Application & Exploitation					√	√		
Leadership	People Competency	√		√		√√√	√		
	Leadership & Support	√		√		√√√√	√√		
Technology	Storage & Maintenance	√	√			√√	√		√√
	Technology and Infrastructure				√	√√√√	√√√	√√√	√√

10. Conclusion

Dynamic market and competitive conditions, including growing exogenous uncertainties and changes in the value chain, remain characterized by the airline industry. This involves modern data-driven decision-making techniques that have a growing effect on the distribution of airlines, intensified investment in the repair sector of aircraft and engine suppliers, and an increasingly uncertain political and macro-economic environment. This dynamism makes success factors of mobility and flexible cost structures extremely significant. That is why the paper chose the airline industry to see how KM has been implemented as a strategically efficient and effective tool to achieve organization success. In addition, in this paper, the relationship between organizational culture and Knowledge Management implementation of Lufthansa Group and ANA Group has been studied and compared. An understanding of differing views is crucial for employing effective management in the international sphere, specifically for providing a means for better cross-cultural understanding and successful knowledge transfer (Jelavic and Ogilvie, 2010). The comparison of KM practices between two companies in the airline industry is given in order to understand similar and different approaches of KM. By comparing the KM implementation between these two groups, we can furthermore have a better understanding of employing KM in different segments even in other industries. The finding has responded to the theories of Hedlund and Nonaka (1993), which claimed the collective and interorganizational levels tend to be more important to the Japanese model, while in the Western one, individual and organizational levels take priority. The paper finds ANA Group undergoing numerous cooperation or joint development with other companies, or even companies from other industries in order to provide new products or services to their customer while Lufthansa Group has its own legal Group companies to do so, as that Lufthansa Group holds 25 % of its business segments as “airline related business” while the ANA Group has only 12%. This again, showing that Japanese organizations have the tendency to cooperate in an interorganizational level. Another interesting finding is the high participation of the top management of the Lufthansa Group. In comparison, the top management of ANA Group plays a more “symbolic” role. It may seem like Lufthansa Group’s leadership style is more encouraging for knowledge sharing and transfer as they are so actively participated in all kind of possibilities to engage with their employees and to exchange opinions. On the contrary, for the ANA Group, the top management serves as symbolic role to set visions for direction and deadline. On the other

hand, if we look at the cultural dimensions of this two Groups and the national cultures they represent: Germany as a high individualist society whereas Japan as a collectivistic one. It shows in the form of their employee satisfaction surveys, a way to acquire knowledge from their employees and to boost knowledge sharing and transfer, where Lufthansa Group's survey is voluntarily while ANA Group requires each one of their employees to fill the survey in a given period. The participate rate of any kind of surveys hugely affect the accuracy and reliability of the results. With ANA Group's compulsory employee's satisfaction survey, one can assume the result shows more accurate scores and expectations from the employees and that provides better foundation for the knowledge exchange between the managers and the employees. Since Japanese society is regarded as collective culture which they would think for others, it is more not uncommon, and it is more viable for them to have a compulsory survey in an organizational level. This can apply to other organizational implementation or policies as well. To conclude, these findings provide a better understanding of employing KM in different segments or other industries particularly when forming KM strategies for organizations in terms of their networking levels when organizational culture is taken into account.

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