

EXPLORING KNOWLEDGE COORDINATION IN A DISTRIBUTED AND  
HIGHLY INTERDEPENDENT KNOWLEDGE FIRM: A CASE STUDY OF THAI  
DESTINATION MANAGEMENT COMPANY



EXPLORING KNOWLEDGE COORDINATION IN A DISTRIBUTED AND HIGHLY  
INTERDEPENDENT KNOWLEDGE FIRM: A CASE STUDY OF THAI DESTINATION  
MANAGEMENT COMPANY

A Thesis Presented to  
The Institute of Knowledge and Innovation Southeast Asia (IKI-SEA)  
Graduate School of Bangkok University

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Business Innovation

By  
Oliver Ortiz-Paez

2021



© 2021

Oliver Ortiz-Paez

All Right Reserved

This thesis has been approved by  
the Graduate School  
Bangkok University

Title: Exploring knowledge coordination in a distributed and highly  
interdependent knowledge firm: A case study of Thai Destination  
Management Company

Author: Oliver Ortiz-Paez

Thesis Committee:

Thesis Advisor

(Asst. Prof. Dr. Dongcheol Heo.)

Graduate School Representative

(Dr. Xavier Parisot)

External Representative

(Asst. Prof. Dr. Haruthai Numprasertchai)

(Asst. Prof. Dr. Siriwan Rujibhong)

Dean, Graduate School

27 April 2021

Ortiz-Paez, O. M.A. (Business Innovation), April 2021, Graduate School, Bangkok University.

Exploring Knowledge Coordination in a Distributed and Highly Interdependent Knowledge Firm: A Case Study of Thai Destination Management Company (76 pp.)

Advisor of thesis: Asst. Prof. Dongcheol Heo, Ph.D.

#### ABSTRACT

The purpose of this study is to examine the importance and benefits of knowledge coordination within a geographically distributed but highly interdependent firm (GDHIF). The research explores different types of dependencies among distributed teams and the coordination mechanisms developed to manage task-resource allocation. Results from the investigation of this study highlight the nature of dependencies and provide the insight of how to manage knowledge coordination mechanisms to optimize tasks and resources of GDHIF.

*Keywords: Knowledge Coordination, Knowledge Management, Case Study, Geographically Distributed and Highly Interdependent Firm, Dependencies, Knowledge Coordination Mechanism.*

Approved:



Signature of Advisor

## ACKNOWLEDGEMENT

Foremost, I want to express my deep appreciation to my supervisor, Professor Dongcheol Heo, Ph.D., who has been more than supportive in this process. His patience and kindness largely allowed me to achieve this goal. On the other hand, I want to thank Dr. Xavier Parisot, Ph.D., professor and Program Director of the Master in Business Innovation. Every teacher and staff who made this master an awesome journey. I also learned to value the important role that academia plays in our society.

Last but not least, to my family, who, from a distance, support each step in this project. I am also grateful to my girlfriend, one of the most important pillars in this process. My classmate and now a friend for life, whom I thank for his support and company. They all kept me going, and this thesis would not have been possible without them.

Total thanks

Oliver Ortiz-Paez

## TABLE OF CONTENTS

	Page
ABSTRACT.....	iv
ACKNOWLEDGMENT.....	v
LIST OF TABLES.....	ix
LIST OF FIGURES.....	x
CHAPTER 1: INTRODUCTION.....	1
1.1 Motivation of the Study .....	1
1.2 Objective of the Study.....	2
1.3 Scope of the Study.....	3
1.4 Research Question.....	3
1.5 Significance of the Study.....	5
1.6 Organization of the Dissertation.....	5
CHAPTER 2: RESEARCH BACKGROUND.....	7
2.1 Knowledge.....	7
2.2 Knowledge Coordination (KC).....	8
2.3 Dependency and Coordination Mechanisms.....	9
2.4 Distributed Organizations.....	16
CHAPTER 3: RESEARCH METHOD.....	20
3.1 Research Design .....	20
3.2 Site Selection.....	21
3.3 Data Collection and Analysis.....	23

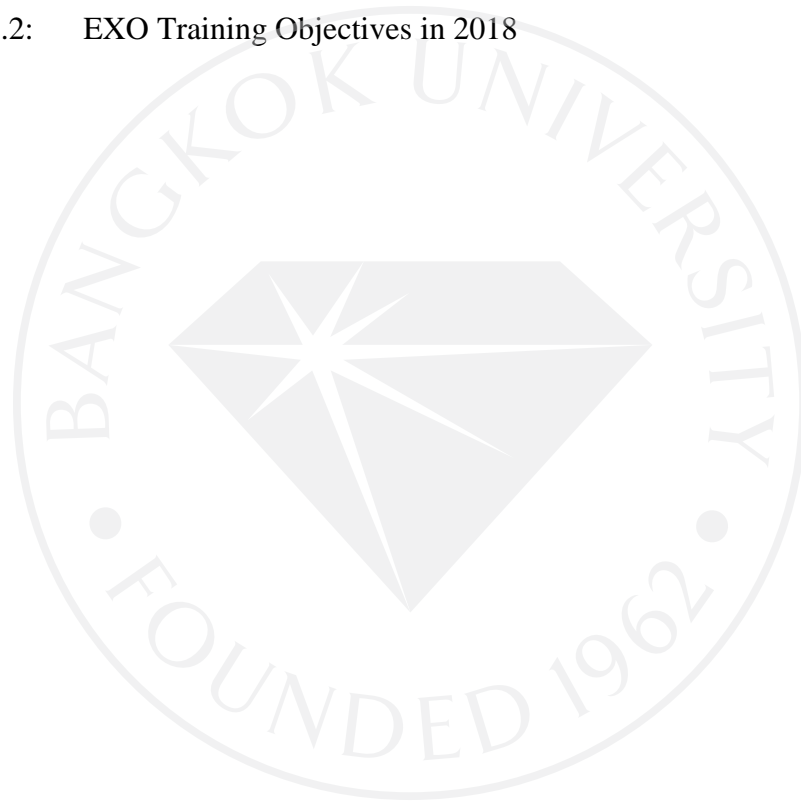
## TABLE OF CONTENTS (Continued)

	Page
CHAPTER 4: FINDINGS .....	27
4.1 How does EXO coordinate its knowledge?.....	27
4.2 Challenges in KC .....	36
4.3 EXO's Response.....	40
CHAPTER 5: DISCUSSIONS AND CONCLUSION .....	48
5.1 Summary of the Research .....	48
5.2 Theoretical Contribution.....	49
5.3 Managerial Implications .....	51
5.4 Limitations and Future Direction.....	53
BIBLIOGRAPHY.....	54
APPENDICES.....	62
Appendix A Coding Template for Interviews.....	63
Appendix B Face-to-Face Interview Questionnaire (Sample).....	74
Appendix C Abbreviation.....	75
BIODATA.....	76
LICENSE AGREEMENT OF THESIS PROJECT .....	77



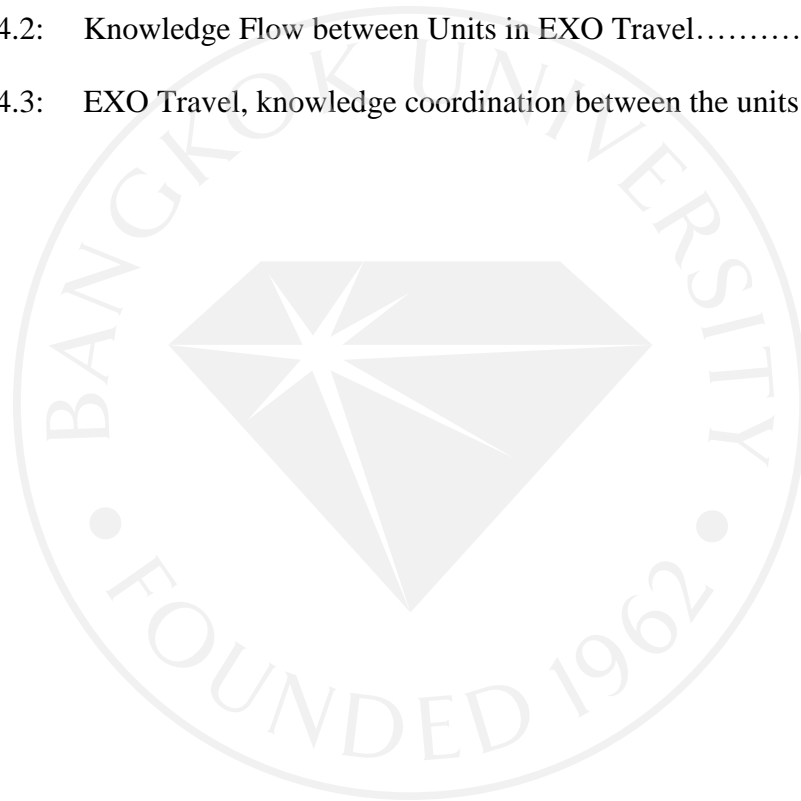
## LIST OF TABLES

	Page
Table 1.1: Coordination mechanisms: Collocated vs. Distributed team	18
Table 3.1: Description of Interviewees	24
Table 4.1: Coordination mechanisms and interdependency levels	34
Table 4.2: EXO Training Objectives in 2018	43



## LIST OF FIGURES

	Page
Figure 2.1: Knowledge coordination process and performance.....	14
Figure 2.2: Synchronicity and dispersion.....	15
Figure 4.1: EXO Travel, Source of Coordination.....	29
Figure 4.2: Knowledge Flow between Units in EXO Travel.....	30
Figure 4.3: EXO Travel, knowledge coordination between the units.....	33



# CHAPTER 1

## INTRODUCTION

This chapter constitutes an introduction to knowledge coordination in a geographically distributed, highly interdependent firm (GDHIF). It attempts to emphasize its importance from both academic and managerial perspectives.

Knowledge coordination is widely known as a critical element of Coordination Theory (Houtman, Kotlarsky & Hooff, 2014). This approach focuses on "knowledge" as an enabler of the coordinative resource of firms geographically distributed but interdependent in their work practices. Based on this understanding, the research purpose and questions below provide an overview of the study.

### 1.1 Motivation of the Study

Multinational corporations (hereafter MNC) have engaged in various global projects to develop new products, services, and solutions (Hambrick, Davison, Snell & Snow, 1998). As projects and teams expand, task and member dependencies more frequently occur and become more diverse and complex, highlighting the need for team coordination (Espinosa, Lerch & Kraut, 2004). Likewise, there is currently a good amount of literature on this topic. However, not many studies characterize how dependency is created; how proposed coordination mechanisms address those problems (Crowston, 1994). How different organizational mechanisms impact the knowledge flow from subsidiaries to headquarters of the MNC (Gupta & Govindarajam, 1991). What constitutes effective distributed organizing in global product development (Orlikowski, 2002). How to deal with organizational, cultural

barriers existing in these firms (Buckley & Carter, 1999) and improve virtual teams' efficiency that develop new products and services (Kanawattanachai & Yoo, 2007).

The competitive advantages of highly effective knowledge coordination (hereafter KC) are well known. Knowledge, coordinated as a strategic resource, can significantly reduce uncertainty or volatility a firm deals with in the market and environment and play an essential role in enhancing competitive advantage (Roper & Crone, 2003). However, as Williams and Lee (2011) point out, "The knowledge-based view of the MNC suggests such entrepreneurial knowledge coordination to be a complex and heterogeneous capability. It is not only complex because of its multidimensional content (financial information, innovative potential), it is also socially complex. Much of this knowledge is held in tacit form; incentives must be in place to motivate actors to facilitate knowledge flows between contexts"

## 1.2 Objective of the Study

The study aims to examine the delivery, application, and improvement of knowledge coordination mechanisms within GDHIF. To achieve the goal, this study attempts to clarify the relevance and impact of KC within a GDHIF by focusing on knowledge coordination mechanisms (both tacit and implicit) used by geographically distributed teams. An in-depth literature review of KC is developed first. An exemplar case study of corporate KC is conducted with one of the largest multinational Destination Management Companies (DMC) in Asia. As a result, this study is expected to identify effective mechanisms to improve KC for geographically distributed teams of GDHIF. The focus of the context that contributes to knowledge coordination studies and KM's practical guidelines for MNC's.

### 1.3 Scope of the Study

Examining the delivery, application, and improvement of the knowledge coordination mechanisms within the GDHIF, this case study has been conducted over one year at EXO Travel Company from the offices and business units in four countries of East and Southeast Asia (China, Japan, Myanmar, and Thailand). In terms of the theoretical scope of the study, this research is based on coordination theories in organizations (Malone & Crowston, 1994; Okhuysen & Bechky, 2009) and considers various organizational knowledge studies and the differences in context and characteristics of transnational models (Espinosa, Slaughter, Kraut, & Herbsleb, 2007; Orlikowski, 2002).

### 1.4 Research Question

There exists a significant number of studies examining the role of knowledge in the coordination process of a firm (Kanawattanachai & Yoo, 2007; Silva & Agustí-Cullel, 2003) and a more minor, but still a decent amount of study on the coordination issues and challenges of firms and organizations with complicated structure and work systems such as MNC (Björkman, Barner-Rasmussen & Li, 2004). However, the number of studies primarily focusing on the process and mechanism of knowledge coordination in distributed but interdependent firms is quite a few (Rasiah, 2002). This research is conducted based on this context, mainly focused on the firm located in Southeast Asia, with ten countries and more than ten sales offices in the West. With the European DNA of the company's founders but mostly Asian staff members, the company has developed a cultural mixture that gives attractive conditions and challenges to KC's creation and development in this MNC.

Distributed firms face additional challenges over co-located firms, such as physical distance, cultural diversity, language barriers, and technological infrastructure differences (Adenfelt, 2009). These circumstances trigger the research question: How does a distributed but highly interdependent company coordinate knowledge across the divisions and functions? Since it is crucial to start from the beginning, there are three subquestions:

SubQ1. How did KC begin between the HQs and subsidiaries, developing dependencies on knowledge between them, in the early phase?

Especially in the relationship between HQ and subsidiaries, the development and delivery of activities across heterogeneous cultures and markets are critical and ongoing challenges. The researcher's intention here is to identify and explain, once understood, how managers and distributed teams' members generate dependencies,

SubQ2. How has KC been developed and matured over time in response to various challenges in different coordination processes?

Furthermore, this study will observe the dependencies involved in various tasks within knowledge coordination processes. It will also analyze these dependencies' nature, that is, identify when these dependencies can be competitive or facilitative, as noted by Thomas (1957). Dealing effectively with such challenges requires more than just good ideas, strong leaders, and extensive resources (Orlikowski, 2002), which brings the third sub-question.

SubQ3. How can a company deal with the potential challenges and operate effectively across the temporal, geographic, and cultural boundaries?

This becomes especially important to understand when actors might engage in actions to reduce the degree of dependency (McCann & Ferry, 1979)

### 1.5 Significance of the Study

GDHIF's are known to have long suffered from poor, insufficient coordination of knowledge between headquarters and subsidiaries, and there exists abundant literature to support this (Buckley & Carter, 2004; Carlile, 2004; Faraj & Sproull, 2000). However, only a handful of studies have sought the examination of knowledge coordination in teams and firms under the international context, especially under the asynchronous context in which knowledge coordination does not occur in the same place at the same time (Espinosa et al., 2007). Firms stimulating and supporting coordination have better leverage from dispersed resources and capabilities to reap operational and economic benefits (Hansen & Nohria, 2004).

Besides, there is ample evidence on the importance of coordination mechanisms; nevertheless, few studies specifically address implicit means and strategies to solve a lack of team cognition in distributed firms. Finally, as globalization and technological advances at the service of managers strengthen organizations' designs, geographic dispersion effects and difficulties on the coordination of knowledge need continuous reassessment.

### 1.6 Organization of the Dissertation

This study develops as follows:

Chapter 2 overviews relevant literature (1) conceptualizing KM in general, including the theories of knowledge; (2) introducing the concept of coordination and knowledge coordination; (3) providing a brief explanation of dependencies and tacit and implicit coordination mechanisms identified in the literature; and, finally, (4)

discussing the effects of geographical dispersion on KC mechanisms; thus, the difficulties in reaching high coordination levels.

Chapter 3 describes how an empirical study is developed in this research project, explaining why a case study method is chosen for the study. Then, the introduction of EXO Company, a destination management company, as an appropriate case for this study due to the structural characteristics and the context in which it operates as a distributed and highly interdependent firm. Finally, this chapter describes the analysis and collection of data.

In Chapter 4, based on the data analysis, which consists of interviews, observation sessions, and corporate materials, the study identifies three main sections aiming to answer the questions established above. The first part recognizes HQ's nature and the subsidiaries' dependencies, identifying the KC process's initial steps. Due to the dependencies mentioned in the first part and the distributed context, this study identifies the emerging challenges in the knowledge coordination process. In the end, this chapter explains EXO's strategies to overcome the challenges mentioned before and prepare for new and coming difficulties.

In chapter 5, the study re-caps the problems and findings specifically focused on the primary question and subquestions. It also presents the practical and theoretical contributions and finalizes the study's limitations, conclusions, and future research direction.



## CHAPTER 2

### RESEARCH BACKGROUND

In this chapter, the researcher presents extant literature on knowledge, knowledge coordination, dependency and coordination mechanisms, and distributed organizations to develop the conceptual foundation for the study. The researcher then proposes a theoretical framework to reveal the components required to explore firm's knowledge coordination. The framework has two essential features. First, it presents the mechanisms and integrated conditions of the coordination model from Okhuysen and Bechky (2009). Second, it follows a system process model with three stages of input-process-output (IPO), which have been widely applied to the study of teams and organizations (Kraemer & Pinsonneault, 1990; McGrath, 1991).

#### 2.1 Knowledge

Knowledge has long been recognized as one of the critical reasons for sustaining competitive advantage, and thus many companies struggle to effectively manage their organizational knowledge (Drucker, 1999; Lee & Choi, 2003; Rao, 2005). In this context, two distinct but complementary approaches to the nature of knowledge are found in organization study literature. The first approach conceives knowledge as a possessed invisible resource or asset exclusively owned by individuals or collective entities such as teams and organizations (Rorty, 2009). In this view, knowledge can be abstracted, clarified verbally, and codified as documents and digital files; thus, based on this understanding, teams and organizations can be defined as the sum of individual skills and knowledge. The second view sees knowledge as

context-dependent, emerging from patterned interactions, and enacted as a repertoire of practices (Brown & Duguid, 1991; Larson & Christensen, 1993). The team interacts in a given context in which expertise can develop via the accumulation of continuously exchanged interactions (team process).

Technological innovations, especially social technologies, are increasingly common tools within distributed organizations to mitigate geographical distance and facilitate knowledge sharing (Leonardi, Huysman & Steinfield, 2013). In an organization, both knowledge-as-a-team input, and knowledge-as-a-team process need to be well-coordinated to accomplish group tasks. Organizations that do not coordinate well pay the price in wasted resources (Thompson, 1967).

## 2.2 Knowledge Coordination (KC)

To date, there have existed various approaches to both coordination and knowledge coordination in management. In particular, research on knowledge coordination has been focused on communication (Ballard & Seibold, 2003), cooperation (Pinto, M. B, Pinto, & Prescott, 1993), and knowledge sharing (Becky, 2003). It is significantly noticeable that KM aims to develop an awareness of theories existing outside an organization's boundary and share them internally (Jia & Xia, 2008). To develop a continuous flow of innovation processes, organizations need to establish knowledge management strategies (North & Kumta, 2014).

Dependencies and coordination have been studied on many occasions.

"Coordination can be seen as the process of managing dependencies among activities" (Malone & Crowston, 1994). If things could be done independently, then there would be no need for coordination. Thus, knowledge coordination is the smooth

management of knowledge and skills dependencies (Gabelica, Van den Bossche, Fiore, Segers & Gijssels, 2016). Aligned dependencies (i.e., agents or resources) can establish value-added to achieve a joint task and prevent unnecessary duplications of effort, time, or resources (Martinez & Jarillo, 1991). Conversely, knowledge can be integrated even if there is no dependency. Knowledge integration is a process that can create alliances between different organization members in order to share information and knowledge (Tiwana, 2008)

These definitions incorporate visible components: people (as a resource) work collectively due to its interdependency, and a goal, task, or job is pursued and accomplished. The more complicated the process, the greater the interdependence, which supposedly increases coordination costs (Williams & Lee, 2011). Similarly, the more complicated the system is, the higher the level of difficulty the agents will have to reach optimal coordination.

Faraj and Xiao (2006) emphasized that where knowledge-intensive work is concerned and the focus shifts to "knowledge" as the object of coordination, the what (content) and when (circumstances) of knowledge coordination become increasingly important (Houtman et al., 2014).

### 2.3 Dependency and Coordination Mechanisms

Rinaldi, Peerenboom and Kelly (2001) defined dependency as "linkage or connection between two infrastructures, by which the state of one infrastructure influences or is reliant upon the state of the other." This means that it is a one-way relationship, where the actions or performance results of individual/team A affect the actions or performance of individual/team B. On the other hand, interdependency is a

“bidirectional relationship between two infrastructures in which the state of each infrastructure influences or is reliant upon the state of the other.” This means a bidirectional relationship, where the actions or performance results of individual/team A affect the actions or performance of individual/team B. The operations of B then affect A's operations.

Interdependency management is present in many processes and systems of organizations. It exists when actions taken by one reference system affect the actions or outcomes of another referent system and, either between actions or resources, the result from dependencies can bring conflict when they are not well managed and perceived equally by the work units (McCann & Ferry, 1979). Litwak and Hylton. (1962) define interdependency as when two or more organizations must take each other into account if they are to accomplish their goals.

This study takes into account the two categories of dependencies identified by Crowston (1994): (1) resources needed to perform activities (including the actors themselves); and (2) tasks, either a goal to be achieved or an activity to be performed. For instance, knowledge could be the resource required, and new knowledge could result from completing the activity. However, due to the complexity of managing individuals as sources of knowledge, it is necessary to have the appropriate incentives (mechanisms) to use these resources, most optimally. That is why Thomas (1957) notes that dependencies can be competitive or facilitative. In general, the creation of dependencies, either as part of an organizational strategy or as a result of operational circumstances, can result in facilitators of high performance levels or generate high costs resulting from unwanted dependencies. Therefore, instead of promoting the

creation of dependencies, it is important to promote the creation and acquisition of coordination mechanisms that allow avoiding unwanted dependencies.

Organizations use various coordination mechanisms to promote integration and connection of different actors and activities (Popadiuk & De Souza Bido, 2015). Literature suggests that teams coordinate explicitly by using task organization mechanisms or by communicating. Tacit coordination mechanisms can be defined as those explicitly employed by a team to help manage task dependencies (Espinosa et al., 2004).

Literature in organization studies shows us that team members coordinate "mechanistically" via "task programming mechanisms" (Entin & Serfaty, 1999). The coordination model developed by Okhuysen and Bechky (2009) presents five types of mechanisms integrated from the previous research findings that integrate how emergent practices support coordination: plans and rules, objects and representations, roles, routines, and proximity.

Plans and rules aim to enhance coordination by defining team members' responsibilities for tasks and clarifying the allocation of resources to use. They can also be beneficial for coordination through the agreement that they cause between parties. Objects refer to tools and resources within reach of team members to enhance their coordination process by facilitating communication, sharing knowledge, aligning and acknowledging work, scaffolding, and other activities. Representations can support group members in developing a broadly shared view of the entire group's tasks.

Roles help people acquire a general sense for who does what in the work process, creating a shared understanding of a task responsibility, representing the

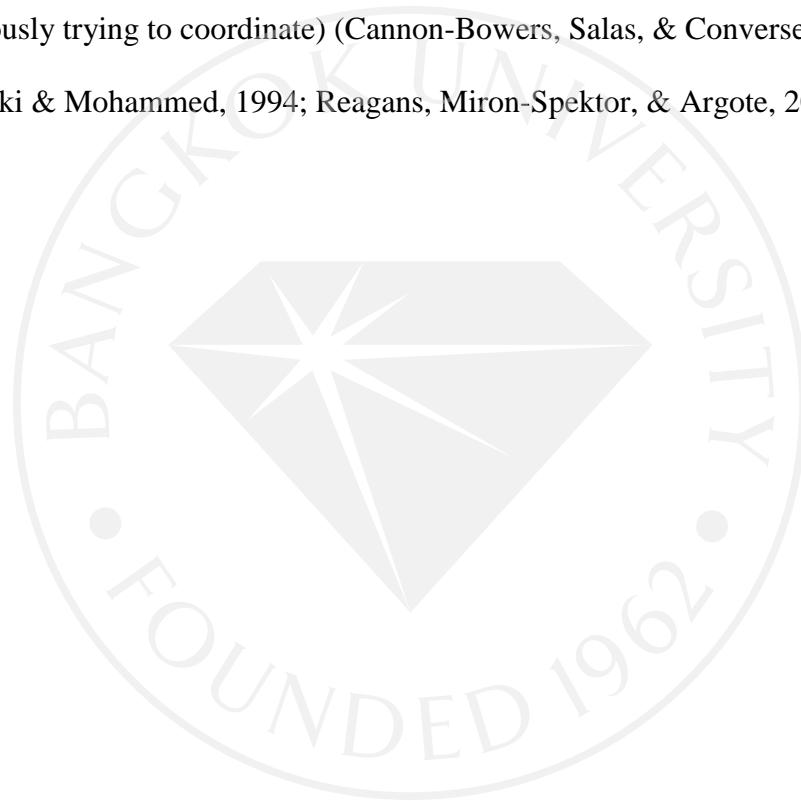
relationships between people, and structure individuals' interactions. Routines refer to the repeated patterns of behavior that are bound by rules and customs. Routines have been treated as stores of knowledge (Nelson & Winter, 1982) and as the outcome of habitual behavior. Routines coordinate by providing a template for task completion, bringing people together, and creating a shared perspective across groups.

Finally, Okhuysen and Bechky (2009) refer to people's physical proximity to the fifth coordination mechanism. Within organizations, proximity's impact on communication and liking is mediated by visibility and familiarity, affecting coordination. Distance influences the amount of interaction and communication between people in organizations; "geographic dispersion affects the nature of interaction within the team and provides fewer opportunities for spontaneous interaction and acquisition of team knowledge" (Allen, 1977).

In figure 1, the researcher tries to explain how two different sources create knowledge dependency. First, to develop routine activities and part of the strategy of an organization. On the other hand, a sporadic activity in response to a problem or needs that arise in day-to-day tasks. The use of the different mechanisms, explicit and implicit, enables the parties to achieve a certain level of coordination, influencing performance. It is important to highlight that the results of the complete activities allow the creation of learning processes. It is the responsibility of managers to encourage the absorption capacity and the willingness to acquire new knowledge due to feedback and successful externalization of the new knowledge.

A coordination mechanism is an organizational arrangement that allows individuals to realize collective performance. The challenge is getting resources in the right place at the right time to enable actors to get the job done. Explicit coordination

mechanisms are necessary, but also cognitive factors can determine how teams coordinate. As Espinosa et al. (2007, p 138) argues, "Team members' common ground, knowledge of each other and the task domain, familiarity with task programming mechanisms (e.g., software tools, specifications), and awareness of who is around and who has done what recently are a few examples of these factors." More recent research suggests that teams can also coordinate "implicitly" (i.e., without consciously trying to coordinate) (Cannon-Bowers, Salas, & Converse, 1993; Klimoski & Mohammed, 1994; Reagans, Miron-Spektor, & Argote, 2016).



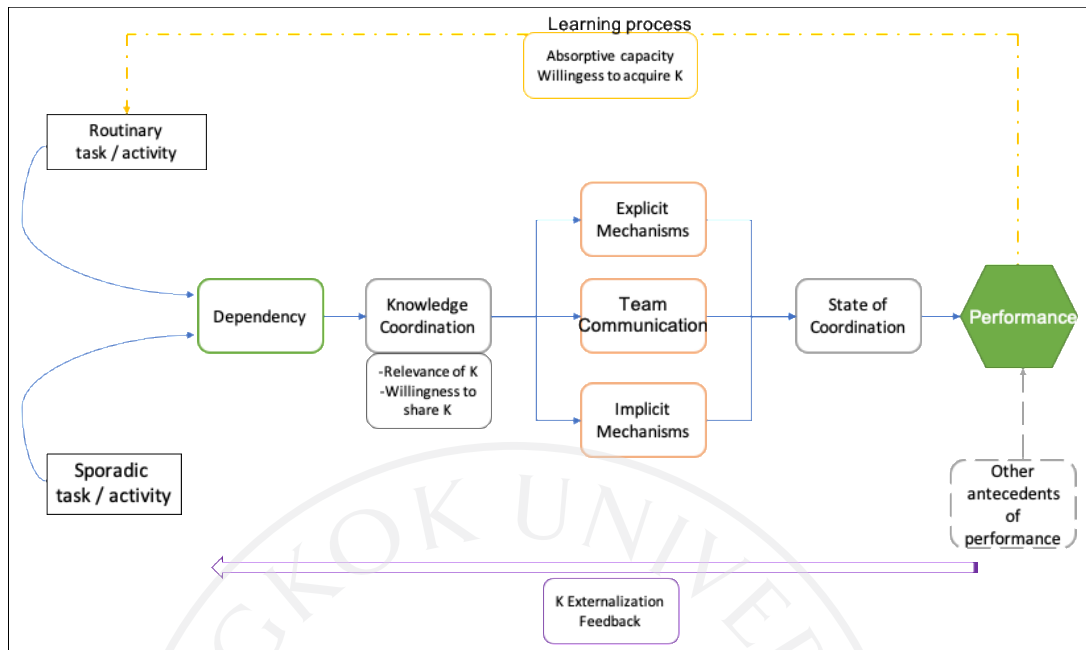


Figure 2.1: Knowledge coordination process and performance.

Source: Espinosa, J. A., Lerch, F. J., & Kraut, R. E. (2004). Explicit versus implicit coordination mechanisms and task dependencies: One size does not fit all. In E. Salas & S. M. Fiore (Eds.), *Team cognition: Understanding the factors that drive process and performance* (pp. 107–129). Washington, DC: American Psychological Association.

Implicit coordination has been explained as the "synchronization of member actions based on unspoken assumptions about what others in the group are likely to do" (Wittenbaum & Stasser, 1996). Implicit coordination mechanisms are available to team members from shared cognition, enabling them to understand and expect member actions and behavior, improving coordination levels. New teams can be more effective in coordinating through communication. However, as the task progresses



and team members interact over time, their team cognition will strengthen, helping them coordinate implicitly because they can anticipate what others are likely to do and interact more effectively. In addition to acquiring this type of team cognition or knowledge through experience, it can also be acquired through training, education, and spaces for informal interaction. It is expected that teams will gradually replace explicit mechanisms with implicit mechanisms.

The literature considered two contextual variables that affect the nature of dependencies present. Synchronicity and dispersion are essential in the study of teams mediated by information technologies because of “time separation (i.e., real-time vs. different time) or distance separation (co-located vs. dispersed), which have a substantial effect on how teams organize their work and interact” (Bullen & Bennett, 1990). This study will identify, in figure 2, the four different scenarios resulting from 2x2 variables and explain and focus on dispersed teams.

		LOCATION	
TIME	Real time/Co-located	Real time/Distributed	
	Different time/Co-located	Different time/Distributed	

Figure 2.2: Synchronicity and dispersion.

Source: Crowston, K. (1994). *A taxonomy of organizational dependencies and coordination mechanisms*. Ann Arbor, MI: MIT Center for Coordination Science.

## 2.4 Distributed Organizations

In many countries, small and medium-sized enterprises (SME) have been turned into bigger MNCs, and many others have increased the amount of distributed work. Some companies choose to have distributed development across geographically separated sites are acquisitions of local companies, alliances, and market demands. (Carmel, 1999). MNCs want to draw on specific locational knowledge and other resources to achieve global coordination advantages from operating in different local environments (Andersson, Dellerstrand & Pedersen, 2014). MNCs increase diversity and complexity to new levels and make new and unprecedented demands on top management concerning business strategy, structure, and behavior (Drucker, 1999).

Frequently companies use to reach international operations through international strategic alliances. Either as a joint venture system or consortia, companies join together to take advantage of a partner's knowledge of local markets, share technology and resources, or distribute new products and services through established distribution channels (Daft, 2010). MNCs focus on geographically distributed teams for the utility found in the parent (headquarter) relation and subsidiaries regarding KC.

What makes a distributed firm (DF) different from other businesses is that it faces internal and external diversity. It has to create unity within its managerial organization and yet does justice to the diversity of peoples, nationalities, and loyalties (Drucker, 1999). In addition to the challenges that a DF faces in financial management, the main challenges are knowledge boundaries (Carlile, 2004). Dealing effectively with such challenges requires deep competence in what Orlikowski (2002) labeled "distributed organizing," which is "the capability of operating effectively

across the temporal, geographic, political, and cultural boundaries routinely encountered in global operations” (Orlikowski, 2002, p. 249).

The main characteristic of the DF, which generates the most significant number of challenges for the coordination of knowledge, is the geographical distance. Table 1 contains how coordination mechanisms change for DF. This reality makes it difficult to have the necessary and indispensable information (Williams & Lee, 2011).

Distributed working teams, also referred to as virtual teams, represent an organizational unit whose members are not geographically collocated (Ryssen & Godar, 2000). “As organizations become more distributed in terms of expertise, geographical spread, and temporal activity, appropriate alignment and coordination among distributed team members becomes more critical for minimizing the occurrence of information flow failures, poor decision-making, and degraded team performance” (Caldwell, Palmer, & Cuevas., 2008).

In a highly centralized MNC, a subsidiary that identifies promising opportunities communicates its observation, including a recommended reaction within the context, to headquarters expecting feedback or decision on these issues. (Palmie et al., 2016). In contrast, Palmie et al. (2016) claim that if decision-making power is decentralized, they can devise responses to these opportunities independently, e.g., modifying existing products to meet local needs. Therefore, reporting, information processing, and decision-making are the fundamental parts of the coordination process between the parent firm and the subsidiaries. In general, companies face problems in receiving information in both ways; if there is no clarity from the recipient, this generates a need for clarification and, in turn, causes delays, loss of opportunities, and more inferior decision quality (Nelson & Winter, 1982).

Table 1.1: Coordination mechanisms: Collocated vs. Distributed team

Collocated	Distributed
<b>Explicit Mechanisms</b>	
Routines, plans, rules	On-line calendars, shared documents and manuals.
<b>Team Communication</b>	
Meetings, spontaneous encounters / interactions	Calls, videocalls, video conference, chat, emails
<b>Implicit Mechanisms</b>	
Team and task cognition through interactions, informal activities, and training.	This has not been effectively addressed in the literature.*

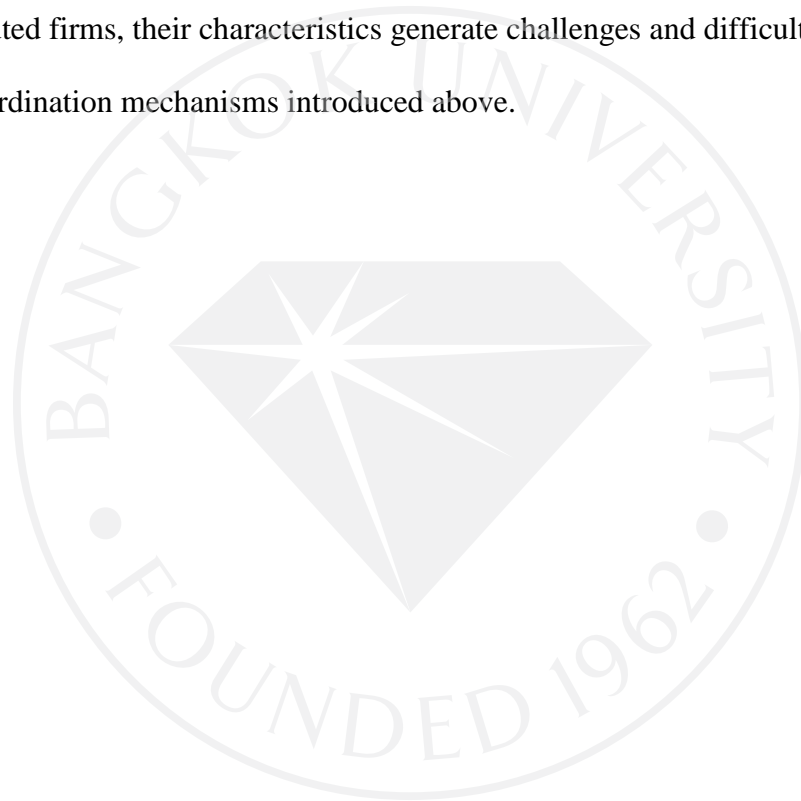
Sources: Espinosa, J. A., Slaughter, S. A., Kraut, R. E., & Herbsleb, J. D. (2007).

Team knowledge and coordination in geographically distributed software development. *Journal of Management Information Systems*, 24(1), 135-169.

In recent years, managers and organization theorists have studied the importance of technology in distributed business strategies, including impact and improvement within the knowledge coordination process. “Technologies that enable people to meet, coordinate, and collaborate online help facilitate communication and decision-making among distributed, autonomous groups of workers, such as in virtual teams” (Daft, 2010). However, regarding cognitive mechanisms for asynchronous and geographically distributed teams, the literature has not effectively addressed how

companies can replace the results of interactions, informal and spontaneous activities to avoid lack of familiarity with cross-site colleagues and working environments (Espinosa et al., 2007).

There is an increasing demand for coordination within DFs since they need to integrate activities that are dispersed across subsidiaries (Martinez & Jarillo, 1991). However, in addition to the evident and growing need for coordination in the distributed firms, their characteristics generate challenges and difficulties in applying the coordination mechanisms introduced above.



## CHAPTER 3

### RESEARCH METHOD

#### 3.1 Research Design

The research method chosen for this study is single-case research. "A case study refers to an empirical study that investigates a contemporary phenomenon in-depth and with its real-life context" (Yin, 1994). In this context, the researcher decided to carry out a single case study (CS) to theorize the process of knowledge coordination within an MNC. One of the essential characteristics of CS is that although it is focused on contemporary studies, it allows the use of different types of information sources such as documents, data history, interviews, observations, videos, among others.

On the other hand, CS can be developed on individual studies, groups of individuals, communities, social groups, organizations, and institutions, allowing considerable flexibility when analyzing a particular phenomenon within its varied context (Yin, 1994). CS concedes a vast number of fields on which research can focus.

The reasons why this study chose a single case study are diverse and include the fact that CS, being descriptive or exploratory, is focused on analyzing processes, how something was done or how it works, for this particular research, how does a distributed but highly interdependent company coordinate knowledge across the divisions and functions?

On the other hand, it allows researchers to see if any particular strategy is successful or not because it can expose outcomes. In this case, whether or not the

strategy used by EXO to tackle the various challenges derived from the organization's geographical distribution work efficiently. In general, it provides exciting results from rich and well-analyzed data. Finally, this study's objective when using CS is to contribute to existing theory, which will allow future research to use theoretical propositions to guide its data analysis.

### 3.2 Site Selection

EXO Travel was chosen for this study based on two reasons: (1) Its use of distributed teams for their product/service development and its support departments that interact with headquarters and subsidiaries. EXO in the Asian market operates in ten countries. This diversification of EXO knowledge sources allows the study to look for complete coordination of knowledge context (challenges, advantages, solutions, ideas, and gaps for innovation). (2) Sharing of knowledge is an integral part of its growth and success. The study spotlights this consideration as a potential source of validity due to an environment rich in ideas, questions, and success through coordination and knowledge sharing.

The EXO story begins from Vietnam in 1993 when three young entrepreneurs, Eric Merlin, Olivier Colomes, and Denis Colonna, met each other and realized that it was the perfect time and place to start a travel company. As they were eager to continue their pioneering role in travel innovation in Asia, EXO began to look outside Vietnam's borders to expand their business. Today, the company is operating in ten Asian countries: Vietnam, Myanmar, Cambodia, Laos, Thailand, Indonesia, Japan, China, Malaysia and Singapore (chronological order), with 24 offices in those destinations, and another seven international sales offices in Australia,

Brazil, France, Germany, Spain, UK/Ireland, and the USA. The headquarters is in Thailand, and, as a centralized company, it is in Thailand where the CEO and top managers make decisions.

EXO has been given several prestigious awards for its work in the region. The spotlight was recently placed on sustainable practices, being awarded Pacific Asia Travel Association's Gold Award in the CSR category and a nomination from Virtuoso for sustainable tourism leadership. EXO had grown substantially since 1993 when they arranged trips for about 1,200 guests; in 2017, EXO hosted more than 110,000 people on world-class travel experiences across Asia, reaching more than USD 125-million in total sales.

One of the essential keys to KC study is identifying and understanding the company's source of knowledge in which the research is conducted. The main challenges to achieving this are finding the sources of knowledge and reaching an agreement to share this information. Managers and other team members showed their willingness to share the EXO success story, creating a comfortable and friendly environment.

KC implies a high level of communication, trust, and clarity in the objectives. The measurements of the coordination are identified with experience, as well as their effects and low-level costs. KC is hard to quantify in a report or a company manual. For this reason, some other quantitative research methods were not considered for the study. These characteristics led me to choose the case study methodology since the objective was to go far and wide about the process.



### 3.3 Data Collection and Analysis

Data collection and analysis of the study depend on theoretical sampling (Yin, 1994) and thematic analysis (Saldaña, 2013). Data collection gathers data from three different sources: interviews, observation, corporate documents, and other materials. First, the study conducted interviews with members of EXO Travel for over one year. Each interview lasted for 25 to 35 minutes. A total of 12 interviews were conducted and audiotaped, following an interview guide not to lose the focal point. The questions (see Appendix 2) addressed were classified into three categories: (1) Basic questions about EXO operations and KM practices (to conduct the interviewees into the subject); (2) More focused questions on KC, such as identifying dependencies and coordination mechanisms provided or set by the company and describing general experiences on the use of the mechanisms; and (3) Questions about the KC challenges and issues related with geographical location, which were focused on 'how' and 'why.' The majority of the interviews were conducted face to face in the offices of EXO in Thailand.

During these visits, the researcher was allowed to stay to observe the social behavior and interactions of the employees and their daily practices. The observation field notes were included in the coding process since they both have detailed records and interpretations on work practices, system operations, and social interactions (Saldaña, 2013).

In addition to these two methods, various archival data such as corporate manuals and white papers provided by EXO and other electronic information from the corporate website and online articles from the Internet were also gathered for the analysis.

Interviewees were carefully chosen based on their locations, functions, and positions to incorporate a wide range of perspectives on KC. Table 2 illustrates the distribution of the interviewees.

Table 3.1: Description of Interviewees

Rank / Position	Location					Total
	HQ	TH	JP	CH	MY	
Manager	2	0	0	0	0	2
Staff	2	4	1	2	1	10
TOTAL	4	4	1	2	1	12

The interviewees were chosen as follows: four from 3 subsidiaries (Japan, Myanmar, and China), two from EXO Academy (trainers who develop activities within the ten destinations in Asia), three from Thai subsidiaries, and three from the Headquarters. Another consideration was the hierarchical level of the interviewees, from managers and employees. It was determined that this diversification and a broad scope would help achieve better and more reliable data collection.

Concerning EXO's experience, most interviewees were at least 1 or 2 years working with EXO. There was one exception of an employee who joined EXO a couple of months before the interview. The researcher also considered this case as it kept fresh his first impressions of his arrival and reception in EXO. Likewise, an interesting case of an interviewee who had previously been in a different subsidiary had also changed positions within the company. First, he was from the organizer of meetings, incentives, conferences, and exhibitions (MICE) to assistant training and

people development (TPD). Finally, it is important to highlight two North Americans, three South Americans, two Europeans, and five Asians from the interviewees.

Following Miles and Huberman (1984), data analysis was conducted simultaneously along with data collection to improve and narrow down upcoming questions since it increased the understanding of the phenomena and the organization's context for future interviews. For the data analysis, the interviews were codified and then classified according to the interviewee's location to find the similarities, differences, and patterns among the various groups and perspectives.

The interviews were transcribed verbatim, and essential pieces of information were extracted using open and axial coding methods (Corbin & Strauss, 2008). Open coding focuses on uncovering general recurrent themes. These themes are then classified, which involves finding relationships among these themes, to produce a theoretical framework with hierarchical codes.

Later on, axial coding extends the analysis of the first list of codes by classifying them with respective categories based on commonality. "To determine which [codes] in the research are the dominant ones and the less important ones ... [and to] reorganize the data set: synonyms are crossed out, redundant codes are removed, and the best representative codes are selected" (Boeije, 2010) (see Appendix 1). The relevant information aims to fill the gaps and provide empirical support for what the study has found during the research literature review (see Chapter 2).

In summary, this study was conducted in EXO travel company with 23 offices in 10 countries throughout Asia, with the headquarters based in Thailand and seven sales offices in Europe, America, and Australia. Previous research and informal talks helped the researcher understand EXO and its knowledge management practices

before entering into an extensive case study investigation, mainly by providing the answers to the questions about knowledge coordination within the transnational project context. Internet articles, EXO training books, and the EXO website were part of this previous investigation. The study continues with interactions and interviews of EXO members from all contexts and their range/level. High-quality theoretical research was focused on obtaining tools before interviews as a source to get the best out of each of them. The questions were asked to find the difference, similarities, and patterns within individual responses.

The study aims to answer the questions that help understand the phenomenon of research better and find exciting approaches and methods for innovation that allow future studies to further examine the coordination of knowledge within distributed organizations.

By following the entire knowledge process of EXO, this study was able to identify, analyze, and record the different coordination processes between individuals and departments and the impact of these processes on each activity's final result. EXO's observation and analysis include identifying the different types of knowledge, activities, technical expertise, productions, and equipment, either in the primary commercial operations or tasks and support tasks and identifying the frequency of those interactions and the timing of the KC processes.

## CHAPTER 4

### FINDINGS

This chapter contains three major parts that address the primary and sub research questions proposed in chapter 1: (a) A description of EXO's knowledge coordination within its new product and service development to identify how KC begins between the HQs and subsidiaries; (b) The challenges and issues of knowledge coordination identified from both the headquarters and subsidiaries over processes of KC; and, last but not least, (c) The development and implementation of EXO's strategies dealing with these challenges across its temporal, geographic, and cultural boundaries.

EXO's success can be attributed to its extensive presence in the tourism industry in Asia. More than 20 years of experience endorses EXO's success as one of the world's most recognized Destination Management Company. This research explores knowledge coordination in its daily practice of a company and examines how its corporate KM strategy has significant effects on EXO's success. By doing so, then, this study offers a contribution to the KM literature with a meaningful improvement in understanding of knowledge coordination in the context of distributed and interdependent firms.

#### 4.1 How does EXO coordinate its knowledge?

The content of EXO's documents and books consulted for this research has a detailed history since the beginning of EXO in 1993 in Vietnam. Over the years, the expansion decisions were made until reaching ten destinations in Asia.

From the beginning, EXO Travel was operated as an MNC, but over time the company grew even larger and more complex. Simultaneously, it was faced with more challenges, and standard routines and procedures did not work out well in front of new problems and situations. In response to this situation, in 2007, EXO Travel decided to start moving toward a transnational business model, a highly differentiated approach from a domestic structure with an international division, to address the global environment's increased complexity, yet offer high levels of coordination, learning, and transfer of organizational knowledge and innovations (Daft, 2010).

The corporate structure of EXO is presented in Figure 3. In this Figure, EXO is composed of a headquarters (EXO Group) located in Thailand. More than 20 subsidiaries of two kinds in around 15 countries: (1) destination offices located in 10 Asian countries and (2) sales offices located in the main target markets of EXO (USA, France, Great Britain, Germany, Italy, Mexico, Australia).

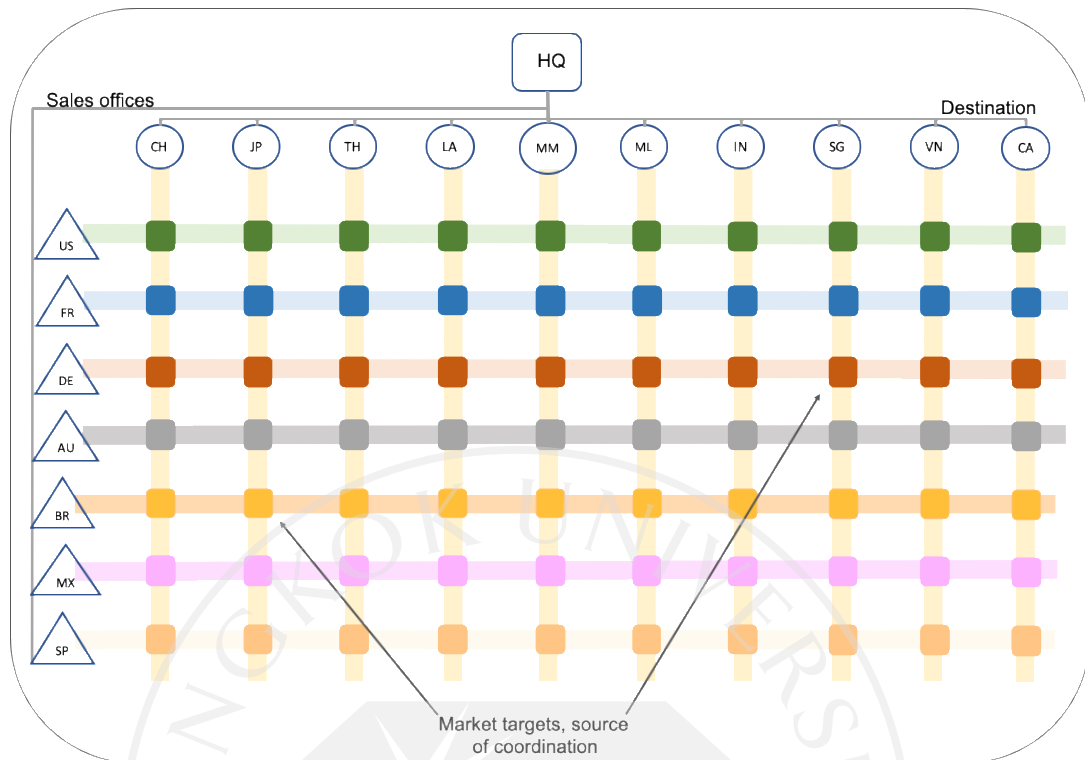


Figure 4.1: EXO Travel, Source of Coordination

The headquarters is the basis of all the top-level corporate c-suite titles, where the firm's decisions are made. However, due to globalization and the accelerated pace of changing trends and innovation in all industries, having a high-quality product or service is not enough to compete efficiently. That is why EXO must have strategies to achieve a comparative advantage through efficient mechanisms to share and coordinate knowledge from subsidiaries to headquarters and vice versa, as explained later in detail with interviewees' words.

Like most large distributed firms, EXO deals with constant change, and it requires flexible KM strategies that fit those contexts. The headquarters (HQ) is the source of most organizational knowledge based on the corporate members' collective

and cultural knowledge. EXO Group influences and teaches individuals and teams how to act and behave in certain situations based on a shared understanding delivered through EXO Culture. The product officer in EXO Groups noted that:

“EXO Group is the center of all the destinations, so everything that each destination has been sent by EXO Group, such as from marketing, gets things like templates for booking and tour guides.”

On the other side, to create the most appropriate tour packages, EXO Group uses the information collected from Destination offices and Sales offices. Figure 4.2 illustrates the interaction between the three various offices along the process of knowledge coordination to answer SubQ1.

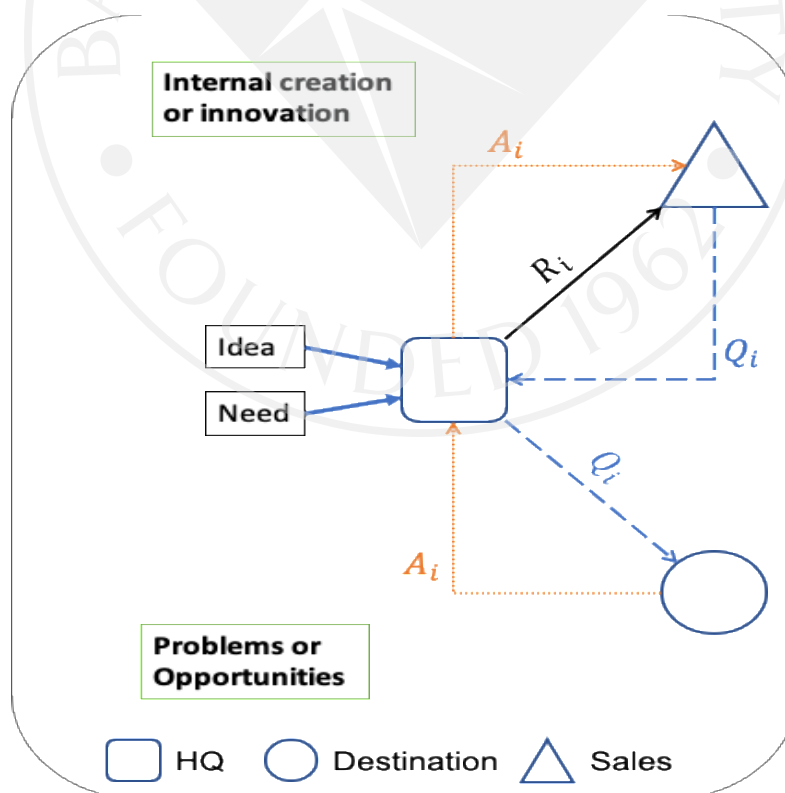


Figure 1.2: Knowledge Flow between Units in EXO Travel



EXO Group communicates the request (R<sub>i</sub>) to one of the sales offices in the first stage to create the new product. Those interactions are always open to receiving feedback and questions (Q<sub>i</sub>) to ensure that the instruction was appropriated and acknowledged. Often, issues may arise, and the Group has to find the proper answer (A<sub>i</sub>) on time, including finding a new resource or reconsidering the task requested. As explained by EXO Marketing Manager:

“Each destination has a Product Manager, so they manage all the products that have been created in each country. Under the product manager, they have individual team members and come with new experiences and ideas. They are going all around every day seeing what is new, what needs to be updated, how our clients are responding to existing experiences; they take the perspectives of travelers.”

When two or more actors (units), sources of knowledge, interact through coordination mechanisms to accomplish a task, the result could be considered an individual (organizational) learning process.

Subsequently, managers, who are often in these interactions, have to convey and stimulate teams to proceed to complete the tasks required (R<sub>i</sub>). As part of the coordination mechanism, teams need to have a clear idea of the availability and location of resources or input required to perform the tasks (see 2.3). At this stage, the actors should be aware of the conditions and reasons for working on it. However, if that is not the case, units have communication tools that allow them to search and contact any particular agent in either the Group, Destination, or Sales office. Often, the completion of the duty requires external input that must be searched, captured, stored, integrated (as long as it is congruent with the organizational culture), and ready to deliver to Group.

The Product Manager in Thailand explained that this process requires back and forth communications between the units to clarify, rectify, correct, and approve the project's details. With evident interdependence among parties, every knowledge coordination process tries to optimize the number of interactions to reduce coordination costs.

“A part of our task is to reduce that process. So, when I started, the process was very long. We constantly had to go back and forward. However, our goal is to refine that process, so we do not have very much back and forward, so we were setting standards of writing of what we expect from Product that was shared with Product, and they now have a reference, and they can go and see how to go forward. When we started, we had to re-write all of our content because it was a complete mismatch. Because we set the standard, now the process is super smooth, and we can update quickly, so the point for us was to streamline everything that we are doing, and we are doing a pretty good job with this.”

The process of KC's subsequent feedback from HQ either congratulates when the task is complete or follows the reasons for poor performance or inadequate stimulation from previous stages. Feedback is critical for further steps since, based on the knowledge received, Group has to renew its strategy and proceed with a new request ( $R_{i+1}$ ) to the following subsidiary (figure 4.3).

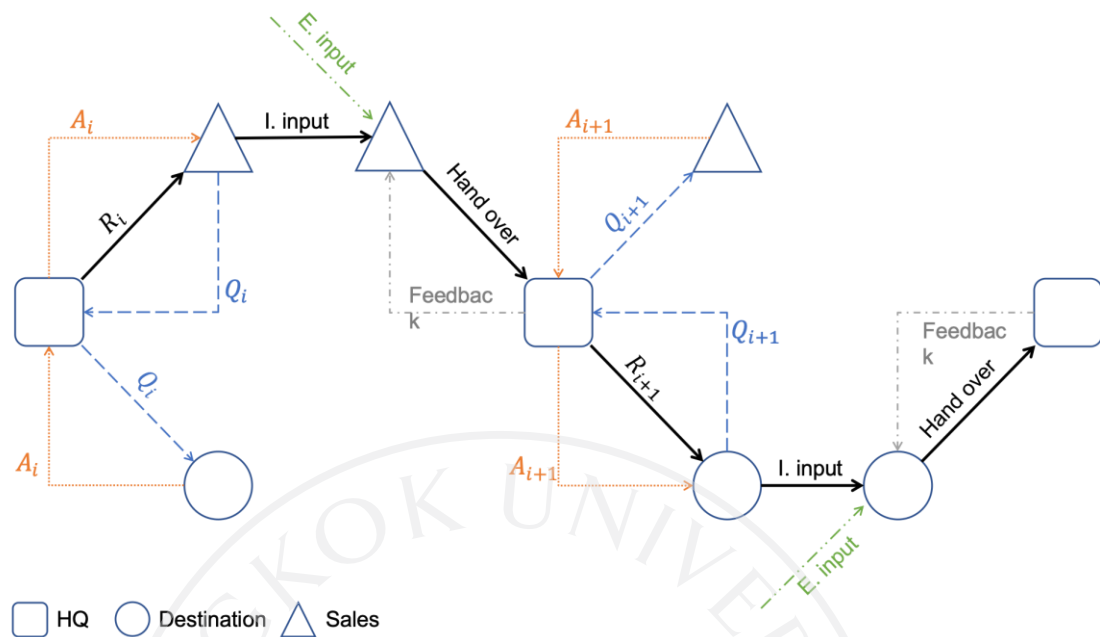


Figure 4.3: EXO Travel, knowledge coordination between the units

The researcher acknowledges that there is the possibility of direct contact between the sales offices and destinations. This contact is sometimes promoted by HQ to streamline processes, reduce costs, and create shared knowledge. For this reason, HQ must ensure the correct distribution of coordination mechanisms and encourage communication between the parties to guarantee high levels of performance.

It is essential to highlight that this process has as many variables as the number of Destinations and Sales offices. Each destination has to have a business strategy for each market. At the same time, each market has to count on tour packages for each destination to offer; it is essential to keep in mind that the headquarters also requires establishing a specific and tailored communication strategy for each subsidiary due to its heterogeneity. Table 3 summarizes the means identified through observation and interviews to coordinate activities with different levels of

interdependence. Most authors suggest that as dependency increases, increasingly powerful coordination mechanisms are used. Therefore, after observing the complexity of the coordination mechanisms used in the identified activities, the researcher was able to categorize the interdependence level.

Table 4.1: Coordination mechanisms and interdependency levels

Task - Activity	Interdependence level	Means to achieve coordination
Product translation	Low	Standardization Vertical communication Plans / rules
Sales brochure production	Medium	Planning Scheduled meetings
Product creation	High	Mutual adjustments Horizontal communication Cross-functional teams

In practice, EXO recognizes the importance of shared understanding throughout the process of knowledge coordination among its almost 1,000 employees. However, as knowledge coordination is a socially complex capacity, due to its emotional and motivational dimension (Williams & Lee, 2011), EXO's organizational indoctrination process begins from the moment of recruitment. As explained by the EXO Group Assistant Training Manager, answering the question 'what do you like

the most from working in EXO?’, ‘EXO values youth over experience. Do not get me wrong, we still want the best people here, but many other DMC's would put experience as the #1 recruitment priority. I appreciate this strategy. EXO gives autonomy to people and also values their ideas/suggestions.’”

EXO Academy delivers common understanding in assembly drawings, schedules, or other plans drawn up by the organization. Plans, rules, and routines create a shared knowledge for the whole interdependent task or work process. However, EXO Academy also implements a bottom-up approach, studying the response and feedback from the subsidiaries to nurture the headquarters with the common understanding necessary to facilitate the decision-making process based on the availability, location, and status of the resources.

Indeed, the headquarters must polish the products, and after the approval of the directives, they must be translated for the language of each target market. Not all products are suitable for all markets, so there must first be a filter of which products to send to which markets. As the Marketing Executive in Thailand explains while describing his duties:

“I work selling Asia to Spanish markets such as Latin America, Spain, Portugal, and Italy. We create a marketing strategy for all different segments. So, my duties are creating a marketing strategy for Spanish markets and making sure we implement them. My right hand is in Vietnam and is a Spanish girl, and then one of my bosses is in Mexico, and he is French, and the other is in Italy.”

Therefore, the parties involved in any coordination process must be clear of their role and the other team members' roles and status. In the context of distributed and asynchronous dependencies (see 2.4), members have a particular need to have a

shared knowledge of who the dispersed members of their teams are and the context in which they are involved. For example, when two various tasks require the same resources, an individual (unit) may be assigned to more than one activity, but it can work only one at a time. Another case is when a task becomes the resource for a different unit to perform a new action, which requires the correct order and the resource flow between the two units. In both cases, EXO promotes quality control tasks to ensure that an output of one task is the correct input for the next.

## 4.2 Challenges in KC

Once identified the process of creating and developing EXO products and having an idea of how did KC begin between the HQs and subsidiaries, developing dependencies on knowledge between them, the reader will find the main challenges and drawbacks encountered in these processes in this section (SubQ2). This section contains two main obstacles that describe problems and new challenges due to the development gap between subsidiaries and HQ and the geographical distribution.

### 4.2.1 Development Gap

One of the first challenges identified in this study for the coordination of knowledge in distributed and interdependent firms is the development gap between the dependencies. Furthermore, this development gap goes beyond the economic level; it is also a concern regarding employees' aptitude and attitude. As noted by the Training Manager assistant by explaining main differences between his previous job experiences and working in EXO:

“It's very different in EXO, where we have about 38 nationalities. Asians are very much oriented toward a collectivist mindset, whereas I come from a country

where individualism is strong. I think it's translated in the daily job: local colleagues will not care if you are not the best fit at your job, as long as you respect the Group and its leaders. This group effect is good, but needs to be balanced, as the extreme of it could be that you end up working in a great team spirit, but with non-skilled and non-motivated people.”

Also, in a context as diverse as it is in EXO, no matter how much the efforts are focused toward standardization, it is crucial to keep in mind that ten destinations are involved, and, from the headquarters’ perspective, this implies flexibility to adjust processes for each context (see 2.4). Flexibility translates into the need to have representations of their dependencies' context, a common understanding that avoids conflicts between the parties. From subsidiaries, members are aware of this issue. As a travel consultant in Thailand commented:

“I think the most significant challenges are we all have a different nature. Moreover, I think based on each nature, it makes us work differently. We need to understand each other because sometimes the different ways we work can cause conflict.”

Moreover, one of the consequences derived from the development gaps between the dependencies is that there may be processes and activities in which one of the parties questions their dependent position. If one of the parties has a better understanding of the activity, it may consider reaching a higher performance level independently. In this case, the IS Director explains this situation from the headquarters point of view:

“Sometimes, tensions arise because of unique challenges in a destination, which the Group (headquarter) and Local Management might have different views on

how to solve. The issue is that you cannot give too much 'freedom,' but at the same time, you need to adapt and customize to each destination. For example, using the Self-guided app in Japan is unique because of Japan's operational environment. EXO Group could not provide a clear and detailed SOP on operating with this as EXO Japan is closed to the ground. There might be the risk that the experience destination feels slowed down and elements in the teams lose motivation.”

This shows that there are occasions when the headquarters tries to keep the dependency levels high or sufficient to maintain control of the subsidiaries. On the other hand, the subsidiaries find fewer reasons to continue in the position of dependents as they grow. Hence, less developed subsidiaries face a position of greater dependence on headquarters than more developed subsidiaries.

Development gaps between the dependencies also imply an inconvenience in accessing the resources to reach high task performance levels. Resources include skilled labor, communication tools, and quality of life levels that also affect employee performance. These aspects become evident. As mentioned from the office in China:

“Another challenge we have every day is the internet issue. So many blocks; we always need a VPN, or we cannot work or communicate with Group (headquarters). Moreover, every day the internet has connection issues; then we always lose time waiting for the internet to work properly.”

#### 4.2.2 Geographical Distribution

Furthermore, in a context of distributed dependencies, knowledge coordination lacks one of the Okhuysen and Bechky (2009) model mechanisms, which allows reaching high-performance levels: "proximity." As explained by the Marketing Executive:



“It is way easier to explain yourself face to face. Even when we have great ways and tools to communicate, it is not the same as just walking to your colleague and talking face to face.”

Consequently, the dispersion translates into greater complexity for the dependencies to create a bond of familiarity that allows them to reach trust levels (see 2.2). Hence, the distributed team members must face the difficulty, through technological tools provided by the organization, to get an idea of their distributed peers' capabilities and, based on this representation, coordinate knowledge effectively. As indicated by the Product Officer at the headquarters, managing the coordination with ten different destinations implies the need to create a shared mental model for each of the destination's characteristics.

“Yes, it is different because many countries have their style; they are unique. So, I try to understand that many people have their own culture and try to understand and set the format. If you know, if you talk with them every day, you will understand what they want and their style and manage and coordinate with them well. So, try to understand, because I have to talk a lot to many people around Southeast Asia in our offices in my job. When I have a problem in Vietnam, I know I have to contact Susu and is China Jack. Cambodia is Chris, and so on. Yes, I have to understand their nature, how fast they answer my questions, and how I can finish the job with them. So, we have to understand each other very well.”

"The difference is more about the personal side. Here, we make jokes every day. We order afternoon tea, and we share moments, we make fun of the others, and so on."

Myanmar's travel consultant shows us the problems of lack of visibility caused by the equipment's geographical dispersion. According to Allen (1977), lack of visibility, such as formal meetings and even casual or informal encounters, prevents team members from seeing what others are working on or getting direct evidence of the task progress to adjust individual work accordingly. A member from headquarters commented on this issue:

"I think the problem that I face is the late response. Sometimes I am delayed, sometimes they (distributed colleagues) are delayed, and we do not inform each other when we can respond. So, it is like we keep waiting without any information, without knowing when to get back to the agent."

#### 4.3 EXO's Response

In the previous section, various issues were embedded in the two main challenges, 4.2.1 and 4.2.2. Similarly, the following section groups into two strategies the way EXO tries to face the main challenges in its knowledge coordination processes, answering SubQ3.

##### 4.3.1 Cultivating a Workplace Culture

Since the phenomenon of knowledge coordination in distributed firms is continuously changing and transforming, the strategies to face and tackle KC challenges require flexibility and adaptation. To deliver KC mechanisms to the dependencies is part of these strategies. Its success can be identified by the level of awareness of team members and the capability to make appropriate use of them on each task or context. For instance, the use of task organization mechanism for

"administrative coordination" (Faraj & Sproull, 2000), or on the contrary, coordination by communication when tasks have little or no routine aspect.

In 2016, EXO Group created the Training and People Development (TPD) Department, aiming to have a full-time team dedicated to creating and developing ideas and training programs for delivering training to all of the company's members, from top management teams to the new interns. Hence, for the design and distribution of coordination mechanisms and other content, EXO created EXO Academy, and its mission, explained by the TPD Manager from EXO Group, is:

"The actual mission is to inspire personal growth, personal-professional growth through sharing and learning sessions, and connections too, because we have over 870 [people], 26 offices in 10 countries, 38 nationalities. Finding a way to create a common connection and a common bond between all those people becomes a bigger challenge, and then a 2nd part is how do you maintain services standards between all these countries too."

It all starts with a strategy of recruiting profiles that best fit and adapt to this industry's constant changes. This strategy is part of the knowledge delivered by EXO Academy in the annual training to the Manager Directors of each destination. As TPD Manager describes:

"Another point in this year's training is about recruiting people with the right mindset instead of having the right skills from the start. We are in an industry that has seen tremendous changes over the last five years and more to come in the near future. In training, we communicate the vision of EXO Travel. To become the #1 Travel Company in Asia, we need to have people who are willing to grow, learn, adapt, take on new challenges. Also, people who are EXO culture fit."

The mentality that EXO seeks includes the ability to embrace the principles and values of the firm's organizational culture. This research had access to the EXO Culture book of 2018. Even though EXO Academy training is annual, every office has trained personnel to receive newcomers. In most cases, these employees have voluntarily prepared to share EXO's knowledge regarding processes and tasks and EXO culture. As one explained:

“EXO Culture book: the content we get from the green book given by EXO. The purpose is to let newcomers know our values, habits, the story of the company, our work style, and our tours' focus. Specific training for each position is to prepare every person for their responsibilities in the company. The content is TC (Travel consultant) manual, TP (Tour Plan) manual, the products, the suppliers' Data Base, EXO24, emails to clients.”

As mentioned by the Travel Consultant from China, this material is delivered annually to newcomers and all EXO members. They contain the company's history, values, calendar of activities, and content of that year's training is also a notebook. In this material, Olivier Colomes, CEO and Co-founder delivered his message to the people.

"Since my first day of work at EXO Travel, back in July 1993, welcoming new team members onboard has been my utmost pleasure. Growing the EXO family over the years, with members from so many different nationalities and backgrounds, has built up our culture and success. You will enjoy our fantastic, multinational, and open-minded environment, where people's happiness is our number one priority."

As explained by the IS executive in Japan, this initial contact provides tacit and implicit mechanisms necessary for knowledge coordination processes for co-

located and distributed activities. Therefore, as soon as members start in the company, they receive an introduction to the organization's common understanding to create team cognition. In asynchronous and distributed collaborative work, team cognition helps team members explain other members' actions, understand the task's status, and develop clear expectations about the future actions of the dependent and the states of the task. Thus, shared mental models help them to coordinate implicitly. As the people development director noted:

“We hope that by making better onboarding programs and better training throughout someone's EXO career that someone who is like 'oh, ok, I understand the company, the values, the culture, the goals, how I fit into this,' and then they end becoming better in the company and stay longer.”

Every year the People Development Department aims to deliver knowledge through interactive activities, with general objectives for all destinations but specific applications. Table 4.2 shows the objectives of EXO Academy 2018.

Table 1.2: EXO Training Objectives in 2018

Objectives 2018	<ol style="list-style-type: none"> <li>1. Consider and understand where we are headed</li> <li>2. Build connections between our teams</li> <li>3. Forge more reliable communication at all levels</li> <li>4. Improve the creation and sharing of ideas</li> <li>5. Share knowledge and best practices</li> </ol>
--------------------	---

As the Director of EXO Academy mentioned, one of the biggest challenges is identifying each destination's specific needs and shortcomings. However, EXO uses innovative programs and platforms to analyze the data of post-training results in each country.

Lastly, EXO understood that, like performance efficiency, dependency interactions are influenced by happiness and warmth among employees. As explained by the training manager:

“It is a simple concept called warm and wow, getting people thinking about how you create a warmer friendlier work environment in teams, how do you create trust, information sharing, and communication not only between a team in the office but between offices, between countries' offices and between countries. (...) because we should be about friendly, happy people. Happy people provide great service, communication turns to be wow, and we need to be wow in partners, agents, suppliers, and customers.”

This strategy raises the efficiency of the coordination processes, provided the awareness and use of this strategy from top to bottom levels of the company. A marketing executive noted:

“If you are happy, you can transmit that happiness to others. Furthermore, it is not only about me; you can feel a warm reply from a colleague and feel how they are also comfortable and happy.”

It is not an irrelevant factor. About 80% of the interviewees described their first impression upon arriving at EXO as a friendly environment and quickly got to feel comfortable. Thus, EXO recognizes the importance of providing an environment of happiness and comfort for its employees to achieve high-performance

levels and, primarily through good practices as an organizational culture strategy, from its interaction with its work teams. EXO academy provides managerial strategies such as the importance of feedback, problem-solving, communication skills, among others. As commented by the assistant TPD manager:

“Managerial tips, EXO Academy 2019: delivering feedback, delegation, taking responsibility. Greater coordination and cooperation between teams is based on better management from supervisors, team leaders, managers, and directors.”

#### 4.3.2 Enterprise social media (ESM)

Recently, organizations face the growing global phenomenon of the rise of the culture of sharing (see 2.1). This characteristic of human behavior joins the constant improvements in technology, making sharing increasingly faster, cheaper, and more accessible. Companies, as well as individuals, have easier access to the use of these technologies. Leonardi et al. (2013) have found that companies use ESM for two purposes. The first is to connect with the outside of the company, such as customers, suppliers, and other business ecosystem members.

Moreover, the companies have used ESM for internal communication and social interactions within the company. For example, ESM enables employees across the world to coordinate, collaborate, and increase performance levels. For instance, EXO has a platform called EXO24, a corporate social media record with every EXO member record, which includes a profile with a key performance indicator (KPI).

Among others, as the PHP developer in Thailand explained it:

“We can mainly separate EXO24 into three categories; the first is to share knowledge or information such as Facebook and check people's profiles. The second thing is for operational activities. Like scheduling, shared agendas, you can check and

request holidays, which means direct contact with human resources. Also, you can upload sales reports.”

This platform has multiple uses and tools. Besides registering each EXO member's profile as an organizational directory, it also has tacit mechanisms of interaction and communication for distributed teams, such as objects and representations, and creating a type of "visibility" within the organization (see 2.3). The marketing executive noted:

“We also have tools such as our EXO24 where we can share information with people from all destinations, like our internal FB, and that is super nice because you can "see" your colleges on other destinations. I use it a lot because I need to contact people from other destinations that I do not know; so, in EXO24, you can just type the name of the person, and you will get all relevant information about that person, including email, department, skype, how many years in the company and, recently, we are doing our KPIs there, which is super cool.”

EXO 24 is designed to enable interaction and improve the performance of dependencies distributed within the firm. The members of distributed teams acknowledge the value and use of EXO24 while recognizing the significant objective of the platform as mentioned below by the assistant training manager, the regional CRM specialist and the inbound supervisor in China, respectively, all of whom are members of distributed teams with high interaction:

“We also do things like sharing activities all together around the world on a specific day; for example, the last Friday of the month we do special days. The last time was Hat day, so all the offices around the world allowed people to wear any kind of hat, and then we post pictures, which makes people feel connected. Even though



we are separated, we are in the same company; we are sharing this activity. So that is what EXO is aiming to do, to reduce distances with other destinations.”

“I think the original idea was to, first of all, have a CRM feature for developing our sales. CRM is used by both Sales Managers and Travel Consultants better to identify our customers' and agents' needs. Then, the second part is about having an intranet that connects our people beyond offices and destinations. The third idea is to have a sort of HRIS for our HR people.”

since, for example, you know you need to contact the director of marketing, but you do not know who he or she is, you can log in and search with filters like country, position, department, and you get the details such as name, email, gender, everything of the person you were looking for (...) and also to share ideas and then use them to work as a team. That is why EXO24 is also very useful because, with the internal portal, you can easily communicate with anyone anywhere, and assign any task, ask any question, work together, collaborate.”

EXO24 is an innovative tool that combines two essential strategies to connect people: technology and organizational culture. It is also equipped with business-related data and personal and professional knowledge sourced from EXO Academy since connectivity efficiency to improve performance levels requires members to interact and communicate through this tool.

## CHAPTER 5

### DISCUSSIONS AND CONCLUSION

#### 5.1 Summary of the Research

The findings of this study are summarized as three main sections. First, the dependencies in the knowledge coordination processes between distributed parts were explored (SubQ1). Subsequently, the knowledge coordination process's description allowed identifying challenges directly related to the characteristic of geographical distribution (SubQ2). Communication problems, misinformation, and differences in dependency perception were part of the difficulties found. Finally, the strategies that face the main challenges were identified as coordination mechanisms (SubQ3). These strategies reduce, directly or indirectly, the effects and costs of low levels of coordination.

This study starts from the limitations of previous research on knowledge coordination, in which authors recognized the absence of abundant coordination mechanisms for distributed teams (see 2.3). This case study found the organization's strategies that, directly or indirectly, mitigate the effects and difficulties in knowledge coordination processes within distributed and interdependent companies (see 4.3). The objectives and resources destined to activate coordination capabilities with collocated and distributed peers, the use of social technology to reduce distances, and robust organizational culture that enable understanding capacity and create a sense of familiarity and trust, are part of the tacit and implicit mechanisms used by EXO travel to optimize its coordination processes (see 4.3.1).

After identifying the answers to these sub-questions, the researcher concludes that distributed companies must first analyze the need to create dependencies between their subsidiaries. For this, firms must specify the resources they have and the costs of generating dependencies around these resources. At the same time, it is important to consider the contexts in which resources interacted when dependencies are created around tasks. Thus, it is essential to provide distributed teams with the necessary technology to coordinate knowledge efficiently. This technology must also be part of the tools that generate trust and visibility among teams since distributed members require more resources to obtain a clear shared idea of their team members. Shared cognitive knowledge also allows us to identify the differences between contexts and raise performance levels by understanding the team's behavior and anticipating other members' actions.

Finally, distributed companies must create strategies that allow these resources to share a solid organizational culture that helps mitigate cultural and developmental differences in the countries where the subsidiaries are located. This study highlights that having coordination mechanisms is necessary but not sufficient to achieve high knowledge coordination levels. The distributed team members require training and incentives to use the mechanisms mentioned above properly, and a solid organizational culture optimizes knowledge coordination processes.

## 5.2 Theoretical Contribution

One of the contributions of this study to the organization and management theories is to explore different strategies and tools offered by the company to improve the members' cognitive mechanisms in terms of mutual knowledge of the tasks and

the team. These strategies were identified as useful and transcendent in EXO Travel's success through different coordination processes (see 4.3). Literature has concluded that knowing the team members and sharing the tasks' knowledge is necessary to ensure positive KC processes (Daft, 2010; Espinosa et al., 2007). However, the implicit mechanisms for asynchronous and geographically distributed companies are not abundant, especially when strengthening and improving cognitive skills.

The correct merge of the identified mechanism and with technological tools aims to avoid, or at least reduce, the impact of a lack of understanding of different contexts and decrease the time required for members to acknowledge, obtain an answer and feedback, or correct miscommunication. Part of the results observed when accessing EXO24 (EXO's ESM) is a large amount of content shared between the offices in different destinations (see 4.3.2). Activities that were carried out in all subsidiaries of the company allowed collocated colleagues to interact and share extra-work spaces, and at the same time, improved the connection between offices by sharing and comparing the results of activities through ESM.

The interviews in this study show the evidence of the team's knowledge between distributed teams, unlike similar studies that surfaced in the literature review such from Espinosa et al. (2007) and Kiesler and Cummings (2002). Despite interacting with members of the company in different countries, and sometimes asynchronous, EXO's members have tools that allow them to have clarity of details such as the appearance of the offices in other subsidiaries, local cultural celebrations, professional profiles of their colleagues in different countries, in addition to having the possibility of contacting them spontaneously, creating some levels of familiarity and trust. Team cognition is relevant since they need to manage knowledge

dependency, whereas technical groups are more concerned with technical dependencies.

This study highlights how the mechanisms mentioned above promote and improve team cognition, either deliberately or by integrating innovative tools and technology. Some studies agree "shared knowledge of the team is more important for members working across sites, whereas shared knowledge of the task is more important with members at a single site"(Espinosa et al., 2007).

### 5.3 Managerial Implications

Nowadays, companies have abundant sources to prepare their strategies and corresponding structures to coordinate internal knowledge, both collocated and distributed. These strategies correspond to the creation or acquisition of coordination mechanisms required by the actors participating in these processes. However, due to the complexity of designing incentives to ensure the correct use of tools and willingness to collaborate using and sharing knowledge, companies must also consider the social environment and its implicit mechanisms.

This paper provides managers and entrepreneurs with an in-depth understanding of managing their global business by striking a balance between operation and innovation. In particular, by paying more attention to their circulation of knowledge and work process, they will better understand issues, discover solutions for their constantly changing challenges, and deal with them by adjusting their organizational system. The study of knowledge coordination in a distributed and highly interdependent knowledge firm provides a theoretical contribution to knowledge coordination literature by complementing the existing theories and

providing empirical evidence on knowledge integration and management across organizational boundaries and global business.

Part of the complexity of knowledge coordination in distributed companies when managing dependencies is if actors performing an activity have their interests or visions of the ideal state. This challenge occurs when the individual actors' personal goals differ significantly or when actors are distributed units, giving them a different idea of the primary objective or understanding priorities due to the context and, consequently, the performance when they execute activities.

Achieving coordination in a transnational organization is a much more complicated process than in a domestic centralization or decentralization of decision making. It requires encouraging and adapting to a new culture and values to reach individual and team willingness in information sharing and learning. Hence, to achieve global coordination, it is not enough for headquarters to take an active role in planning, scheduling, and control; firms require managers to promote and effectively distribute organizational culture and values to keep the global organization's widely distributed pieces working together and moving in the same direction. Often, managers are in charge of determining essential variables in coordination processes such as participants, team size and available resources (including deadlines).

Knowledge coordination processes are complex, not only because of the means and availability of resources (individuals or units) but also because of their willingness to coordinate spontaneously. In conditions of distributed actors (units) in which they interact in different contexts, highlighting and strengthening the common characteristics is part of a coordination mechanism that facilitates familiarization between actors, mainly if it develops non-routine activities.

The researcher wants to acknowledge the extensive work and resources invested by EXO Travel to sustain this company for more than 20 years. Without a doubt, their values, philosophy, and organizational culture are a large part of the success of this company. It is important to continue in constant evaluation and review of the elements in charge of the relationship between headquarters and offices and encourage contact between destination and sales offices to avoid potential inefficient nodes in the knowledge coordination process. Finally, it is important to keep training programs up-to-date that adjust to the tourism industry's changes through innovative ideas that enable connecting different cultures and contexts of a highly interdependent and distributed organization.

#### 5.4 Limitations and Future Direction

Given this case study's unique context and characteristics, the complexity of replicating the research is recognized and the difficulty generalizing results found. However, this exploratory study is the beginning of creating new ideas and inspiration to analyze these phenomena using different methodologies, based on the detailed information presented in this study.

Future study is expected to include more data of various sources from subsidiaries, business partners, and even customers to identify a bigger picture of context that will provide new insights to the study of challenges in the coordination of knowledge of a distributed and interdependent firm. On the other hand, the study of a post-sale coordination process will also improve our understanding of this subject and provide a better solution to the management and business in general developments.

## BIBLIOGRAPHY

- Adenfelt, M. (2009). Exploring the performance of transnational projects: Shared knowledge, coordination and communication. *International Journal of Project Management*, 28(6), 529-538.
- Allen, T. J. (1977). *Managing the flow of technology: Technology transfer and the dissemination of technological information within the r&d organization*. Cambridge, MA: Massachusetts Institute of Technology.
- Andersson, U., Dellerstrand, H., & Pedersen, T. (2014). The contribution of local environments to competence creation in multinational enterprises. *Long Range Planning*, 47(1), 87-99
- Ballard, D. I., & Seibold, D. R. (2003). Communicating and organizing in time: A meso-level model of organizational temporality. *Management Communication Quarterly*, 16(3), 380-415.
- Bechky, B. (2003). Sharing meaning across occupational communities: The transformation of understanding on a production floor. *Organization Science*.
- Björkman, I., Barner-Rasmussen, W., & Li, L. (2004). Managing knowledge transfer in MNCs: the impact of headquarters control mechanisms. *Journal of International Business Studies*, 35(5), 443-455
- Boeije, H. (2010). *Analysis in qualitative research*. London: Sage.
- Brown, J. S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40-57.



- Buckley, P. J., & Carter, M. J. (1999). Managing cross-border complementary knowledge: Conceptual developments in the business process approach to knowledge management in multinational firms. *International Studies of Management & Organization*, 29(1), 80-104.
- Buckley, P. J., & Carter, M. J. (2004). A Formal Analysis of Knowledge Combination
- Bullen, C., & Bennett, J. (1990). *Groupware in practice: An interpretation of work experiences*. Cambridge, MA: Massachusetts Institute of Technology.
- Caldwell, B. S., Palmer, R. C., & Cuevas., H. M. (2008). Information alignment and task coordination in organizations: An 'information clutch' metaphor. *Information Systems Management*, 25(1), 33-44.
- Cannon-Bowers, J. A., Salas, E., & Converse, S. (1993). Shared mental models in expert team decision making. In N. J. Castellan, Jr. (Ed.), *Individual and group decision making: current issues* (pp. 221–246). Hillsdale: Lawrence Erlbaum Associates.
- Carlile, P. (2004). Transferring, translating, and transforming: An integrative framework for managing knowledge across boundaries. *Organization Science*, 15(5), 555-568.
- Carmel, E. (1999). *Global software teams: Collaborating across borders and time zones*. Upper Saddle River, NJ: Prentice Hall PTR.
- Corbin, J., & Strauss., A. (2008). Basics of qualitative research: *Techniques and procedures for developing grounded theory* (3<sup>rd</sup> ed.). Los Angeles, CA: Sage.
- Crowston, K. (1994). *A taxonomy of organizational dependencies and coordination mechanisms*. Ann Arbor, MI: MIT Center for Coordination Science.

- Daft, R. L. (2010). *Organization theory and design* (10<sup>th</sup> ed.). Mason, OH: South-Western Cengage Learning.
- Drucker, P. (1999). *Management challenges for the 21<sup>st</sup> century*: Australia: HarperCollins.
- Entin, E. E., & Serfaty, D. (1999). Adaptive team coordination. *Human Factors*, 41(2), 312–325.
- Espinosa, J. A., Lerch, F. J., & Kraut, R. E. (2004). Explicit versus implicit coordination mechanisms and task dependencies: One size does not fit all. In E. Salas & S. M. Fiore (Eds.), *Team cognition: Understanding the factors that drive process and performance* (pp. 107–129). Washington, DC: American Psychological Association.
- Espinosa, J. A., Slaughter, S. A., Kraut, R. E., & Herbsleb, J. D. (2007). Team knowledge and coordination in geographically distributed software development. *Journal of Management Information Systems*, 24(1), 135-169.
- Faraj, S., & Sproull, L. (2000). Coordinating expertise in software development teams. *Management Science*, 46(12), 1554-1568.
- Faraj, S., & Xiao, Y. (2006). Coordination in fast-response organizations. *Management Science*, 52(8), 1155–1169.
- Gabelica, C., Van den Bossche, P., Fiore, S. M., Segers, M., & Gijssels, W. H. (2016). Establishing team knowledge coordination from a learning perspective. *Human Performance*, 29(1), 33–53.
- Gupta, A., & Govindarajam, V. (1991). Knowledge flows and the structure of control within multinational corporations. *The Academy of Management Review*, 16(4), 768-792.

- Hambrick, D. C., Davison, S. C., Snell, S. A., & Snow, C. C. (1998). When groups consist of multiple nationalities: Towards a new understanding of the implications. *Organization Studies*, *19*(2), 181–205.
- Hansen, M. T., & Nohria, N. (2004). How to build collaborative advantage. *MIT Sloan Management Review*, *46*(1), 22-30.
- Houtman, L., Kotlarsky, J., & Hooff, B. (2014). Understanding knowledge coordination dynamics in traditional and fast-response IT organizations. In *35<sup>th</sup> International conference on information systems "Building a better world through information systems"* (p. 1312-1320). New Zealand: Association for information systems.
- Jia, P., & Xia, Q. (2008). Knowledge management, collaboration and innovation. In *2008 International Seminar on Future Information Technology and Management Engineering* ( pp. 228-232). Leicestershire, UK: IEEE.
- Larson, J. R., & Christensen, C. (1993). Groups as problem-solving units: Toward a new meaning of social cognition. *British Journal of Social Psychology*, *32*(1), 5–30.
- Kanawattanachai, P., & Yoo, Y. (2007). The Impact of knowledge coordination on virtual team performance over time. *MIS Quarterly*, *31*(4), 783-808.
- Kiesler, S., & Cummings, J. (2002). *What do we know about proximity in work groups? A legacy of research on physical distance*. Cambridge, MA: MIT.
- Klimoski, R., & Mohammed, S. (1994). Team mental model: Construct or metaphor? *Journal of Management*, *20*(2), 403-437.
- Kraemer, K., & Pinsonneault, A. (1990). Technology and groups: Assessment of the empirical research. In J. Galegher, R. E. Kraut, & C. Egido (Eds.).

- Intellectual teamwork: Social and technological foundations of cooperative work* (p. 375–405). New York: Psychology.
- Lee, H., & Choi, B. (2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of Management Information Systems*, 20(1), 179-228
- Leonardi, P. M., Huysman, M., & Steinfield, C. W. (2013). Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations. *Journal of Computer-Mediated Communication*, 19(1), 1-19.
- Litwak, E., & Hylton, L. F. (1962). Interorganizational analysis: A hypothesis on co-ordinating agencies. *Administrative Science Quarterly*, 6(4), 395-420.
- Malone, T., & Crowston, K. (1994). The interdisciplinary study of coordination. *ACM Computing Surveys*, 26(1), 87-119.
- Martinez, J. I., & Jarillo, J. C. (1991). Coordination demands of international strategies. *International Business Studies*, 22(3), 429-444.
- McCann, J. E., & Ferry, D. L. (1979). An approach for assessing and managing inter-unit interdependence. *Academy of Management Review*, 4(1), 113-119.
- McGrath, J. E. (1991). Time, interaction, and performance (TIP): A theory of groups. *Small Group Research*, 22(2), 147-174.
- Miles, M., & Huberman, M. A. (1984). *Qualitative Data Analysis: A Source Book of New Methods*. Sages Publications.
- Nelson, R. R., & Winter, S. G. (1982). *An evolutionary theory of economic change*. Cambridge: The Belknap.
- North, K., & Kumta, G. (2014). *Knowledge management: Value creation through organizational learning*. Cham: Springer

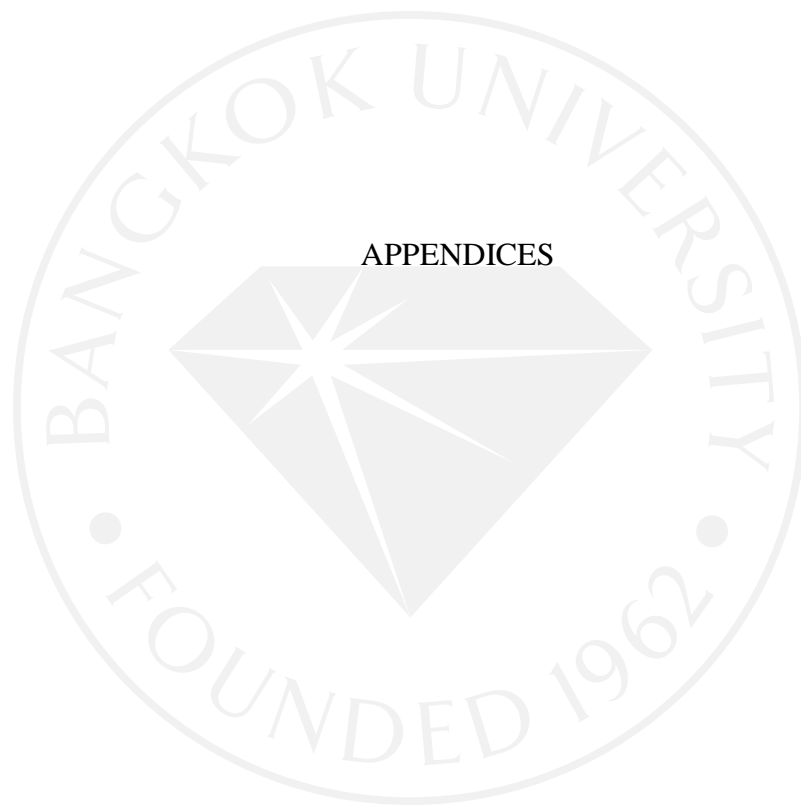
- Okhuysen, G., & Bechky, B. (2009). 10 coordination in organization: An integrative perspective. *The Academy of Management Annals*, 3(1), 463-502.
- Orlikowski, W. (2002). Knowing in Practice: enacting a collective capability in distributed organizing. *Organization Science*, 13(3), 249-273
- Palmie, M., Zeschky, M., Winterhalter, S., Sauter, P. W., Haefner, N., & Gassmann, O. (2016). *Coordination mechanisms for international innovation in SMEs: Effects on time-to-market and R&D task complexity as a moderator*. *Small Business Economics*, 46, 273–294.
- Pinto, M. B., Pinto, J. K., & Prescott, J. E. (1993). Antecedents and consequences of project team cross-functional cooperation. *Management Science*, 39(10), 1281-1297.
- Popadiuk, S., & De Souza Bido, D. (2015). Exploration, exploitation, and organizational coordination mechanisms. *RAC Revista de Administração Contemporânea*, 20(2), 238-260.
- Rao, M. (2005). *Knowledge management tools and techniques: Practitioners and experts evaluate KM solutions*. Amsterdam: Elsevier.
- Rasiah, R. (2002). *Systemic coordination and human capital development: Knowledge flows in Malaysia's MNC-driven electronics clusters*. Maastricht, Malaysia: UNU Institute for New Technologies.
- Reagans, R., Miron-Spektor, E., & Argote, L. (2016). Knowledge utilization, coordination, and team performance. *Organization Science*, 27(5), 1108-1124.

- Rinaldi, S. M., Peerenboom, J. P., & Kelly, T. K. (2001). Identifying, understanding, and analyzing critical infrastructure interdependencies. *IEEE control systems*, 21(6), 11-25.
- Roper, S., & Crone, M. (2003). Knowledge complementarity and coordination in the local supply chain. *British Journal of Management*, 14(4), 339 - 355.
- Rorty, R. (2009). *Philosophy and the mirror of nature*. Princeton, NJ: Princeton University.
- Ryssen, S. V., & Godar, S. H. (2000). Going international without going international: Multinational virtual teams. *Journal of International Management*, 6(1), 49-60.
- Saldaña, J. (2013). *The coding manual for qualitative researchers* (2<sup>nd</sup> ed.). London: Sage.
- Silva, F. S. C. d., & Agustí-Cullel, J. (2003). Issues on knowledge coordination. *Knowledge and Process Management*, 10(1), 37-59.
- Thomas, E. J. (1957). Effects of facilitative role interdependence on group functioning. *Human Relations*, 10(4), 347-366.
- Thompson, J. D. (1967). *Organizations in action: Social science bases of administrative theory*. New York: McGraw-Hill.
- Tiwana, A. (2008). Do bridging ties complement strong ties? An empirical examination of alliance ambidexterity. *Southern Medical Journal*, 29(3), 251-272.
- Williams, C., & Lee, S. H. (2011). Entrepreneurial contexts and knowledge coordination within the multinational corporation. *Journal of World Business*, 46(2), 253-264.

Wittenbaum, G. M., & Stasser, G. (1996). Management of information in small groups. In J. L. Nye & A. M. Brower (Eds.), *What's social about social cognition? Research on socially shared cognition in small groups* (pp. 3–28). Thousand Oaks, CA: Sage.

Yin, R. K. (1994). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.





APPENDICES



## Appendix A

## Coding Template for Interviews

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
Unique distributed context	Dependency recognition	“EXO Group is the center of all the destinations, so everything that each destination has been sent by EXO Group, such as from marketing, gets things like templates for booking and tour guides.”
EXO Culture coordination mechanism	First-hand experience	“Each destination has a Product Manager, so they manage all the products that have been created in each country. Under the product manager, they have individual team members and come with new experiences and ideas. They are going all around every day seeing what is new, what needs to be updated, how our clients are responding to existing experiences; they take the perspectives of travelers.”
Coordination mechanism	Process optimization	“A part of our task is to reduce that process. So, when I started, the process was very long. We constantly had to go back and forward, but our goal is to refine that process, so we do not have very much back and forward, so we were setting standards of writing of what we expect from Product that was shared with Product, and they now have a reference,

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
Coordination mechanism	Process optimization	and they can go and see how to go forward. When we started, we had to re-write all of our content because it was a complete mismatch. Because we set the standard, now the process is super smooth, and we can update quickly, so the point for us was to streamline everything that we are doing, and we are doing a pretty good job with this.”
EXO Culture coordination mechanism	Recruitment priorities	“EXO values youth over experience. Do not get me wrong, we still want the best people here, but many other DMC's would put experience as the #1 recruitment priority. I appreciate this strategy. EXO gives autonomy to people and also values their ideas/suggestions.”
Unique distributed context	Team members in three continents	“I work selling Asia to Spanish markets such as Latin America, Spain, Portugal, and Italy. We create a marketing strategy for all different segments. So, my duties are creating a marketing strategy for Spanish markets and making sure we implement them. My right hand is in Vietnam and is a Spanish girl, and then one of my bosses is in Mexico, and he is French, and the other is in Italy.”

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
EXO Culture coordination mechanism	Balanced collectivist mindset	<p>“It's very different in EXO, where we have about 38 nationalities. Asians are very much oriented toward a collectivist mindset, whereas I come from a country where individualism is strong. I think it's translated in the daily job: local colleagues will not care if you are not the best fit at your job, as long as you respect the Group and its leaders. This group effect is good, but needs to be balanced, as the extreme of it could be that you end up working in a great team spirit, but with non-skilled and non-motivated people.”</p>
Coordination mechanism	Tolerance sensitivity	<p>“I think the most significant challenges are we all have a different nature. Moreover, I think based on each nature, it makes us work differently. We need to understand each other because sometimes the different ways we work can cause conflict.”</p>
Unique distributed context	Out of context risk	<p>“Sometimes, tensions arise because of unique challenges in a destination, which the Group (headquarter) and Local Management might have different views on how to solve. The issue is that you cannot give too much 'freedom', but at the same time,</p>

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
Unique distributed context	Out of context risk	<p>you need to adapt and customize to each destination. For example, using the Self-guided app in Japan is unique because of Japan's operational environment. EXO Group could not provide a clear and detailed SOP on how to operate with this as EXO Japan is closed to the ground. There might be the risk that the experience destination feels slowed down and elements in the teams lose motivation.”</p>
Unique distributed context	Unique communication issues	<p>“Another challenge we have every day is the internet issue. So many blocks; we always need a VPN, or we cannot work or communicate with Group (headquarters). Moreover, every day the internet has connection issues; then we always lose time waiting for the internet to work properly.”</p>
Coordination mechanism	Collocated advantages	<p>“It is way easier to explain yourself face to face. Even when we have great ways and tools to communicate, it is not the same as just walking to your colleague and talking face to face.”</p>

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
Coordination mechanism	Understandi ng the context	<p>“Yes, it is different because many countries have their style; they are unique. So, I try to understand that many people have their own culture and try to understand and set the format. If you know, if you talk with them every day, you will understand what they want and their style and manage and coordinate with them well. So, try to understand, because I have to talk a lot to many people around Southeast Asia in our offices in my job. When I have a problem in Vietnam, I know I have to contact Susu and is China Jack. Cambodia is Chris, and so on. Yes, I have to understand their nature, how fast they answer my questions, and how I can finish the job with them. So, we have to understand each other very well.”</p>
Coordination mechanism	Sharing moments	<p>"The difference is more about the personal side. Here, we make jokes every day, we order afternoon tea, we share moments, we make fun of the others, and so on."</p>

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
Unique distributed context	Late response / communicat ion issues	"I think the problem that I face is the late response. Sometimes I am delayed, sometimes they (distributed colleagues) are delayed, and we do not inform each other when we can respond. So, it is like we keep waiting without any information, without knowing when to get back to the agent."
EXO Culture coordination mechanism	Creating common connections	"The actual mission is to inspire personal growth, personal-professional growth through sharing and learning sessions, and connections too, because we have over 870 [people], 26 offices in 10 countries, 38 nationalities. Finding a way to create a common connection and a common bond between all those people becomes a bigger challenge, and then a 2nd part is how do you maintain services standards between all these countries too."
EXO Culture coordination mechanism	Right mindset over right skill	"Another point in this year's training is about recruiting people with the right mindset instead of having the right skills from the start. We are in an industry that has seen tremendous changes over the last five years, and more to come in the near future."

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
EXO Culture coordination mechanism	Right mindset over right skill	In training, we communicate the vision of EXO Travel. To become the #1 Travel Company in Asia, we need to have people who are willing to grow, learn, adapt, take on new challenges. Also, people who are EXO culture fit.”
EXO Culture coordination mechanism	EXO culture	“EXO Culture book: the content we get from the green book given by EXO. The purpose is to let newcomers know our values, habits, the story of the company, the style of our work, and our tours' focus. Specific training for each position is to prepare every person for their responsibilities in the company. The content is TC (Travel consultant) manual, TP (Tour Plan) manual, the products, the suppliers' Data Base, EXO24, emails to clients.”
EXO Culture coordination mechanism	Sense of belonging	“We hope that by making better onboarding programs and better training throughout someone's EXO career that someone who is like 'oh, ok, I understand the company, the values, the culture, the goals, how I fit into this,' and then they end becoming better in the company and stay longer.”

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
Coordination mechanism	Corporate social media	<p>“We can mainly separate EXO24 into three categories; the first is to share knowledge or information such as Facebook and check people's profiles. The second thing is for operational activities. Like scheduling, shared agendas, you can check and request holidays, which means direct contact with human resources. Also, you can upload sales reports.”</p>
Coordination mechanism	Communica tion tools	<p>“We also have tools such as our EXO24 where we can share information with people from all destinations, like our internal FB, and that is super nice because you can "see" your colleges on other destinations. I use it a lot because I need to contact people from other destinations that I do not know; so, in EXO24, you can just type the name of the person, and you will get all relevant information about that person, including email, department, skype, how many years in the company and, recently, we are doing our KPIs there, which is super cool.”</p>



1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
Unique distributed context	Reducing distance	<p>“We also do things like sharing activities all together around the world on a specific day; for example, the last Friday of the month we do special days. The last time was Hat day, so all the offices around the world allowed people to wear any kind of hat, and then we post pictures, which makes people feel connected. Even though we are separated, we are in the same company; we are sharing this activity. So that is what EXO is aiming to do, to reduce distances with other destinations.”</p>
EXO Culture coordination mechanism	Connecting people	<p>“I think the original idea was to, first of all, have a CRM feature for developing our sales. CRM is used by both Sales Managers and Travel Consultants better to identify our customers' and agents' needs. Then, the second part is about having an intranet that connects our people beyond offices and destinations. The third idea is to have a sort of HRIS for our HR people.”</p>

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
EXO Culture coordination mechanism	Team awareness	<p>“...since, for example, you know you need to contact the director of marketing, but you do not know who he or she is, you can log in and search with filters like country, position, department, and you get the details such as name, email, gender, everything of the person you were looking for ( ) and also to share ideas and then use them to work as a team. That is why EXO24 is also very useful because, with the internal portal, you can easily communicate with anyone anywhere, and assign any task, ask any question, work together, collaborate.”</p>
EXO Culture coordination mechanism	Happy people provide great service	<p>“It is a simple concept called warms and wow, getting people thinking about how you create a warmer friendlier work environment in teams, how do you create trust, information sharing, and communication not only between a team in the office but between offices, between countries' offices and between countries. ( ) because we should be about friendly, happy people. Happy people provide great service, communication turns to be wow, and we need to be wow in partners, agents, suppliers, and customers.”</p>

1 <sup>st</sup> order concept	2 <sup>nd</sup> order concept	Quote from Interview Data
EXO Culture coordination mechanism	Friendly work environment	“If you are happy, you can transmit that happiness to others. Furthermore, it is not only about me; you can feel a warm reply from a colleague and feel how they are also comfortable and happy.”
EXO Culture coordination mechanism	Training objectives	“Managerial tips, EXO Academy 2019: delivering feedback, delegation, taking responsibility. Greater coordination and cooperation between teams is based on better management from supervisors, team leaders, managers, and directors.”

## Appendix B

### Face-to-Face Interview Questionnaire (Sample)

#### Background

1. What are your main areas of expertise?
2. How many years of experience do you have in these areas?
3. Can you describe the first impression you got when you started working at EXO?
4. Can you tell me about your previous job experience?
5. Can you briefly describe your daily job activities?

#### Related to KC

1. Who is part of your team (a) locally and (b) distributed?
2. What information/knowledge do you need to exchange with them (a) locally and (b) distributed?
3. What problems do you encounter when trying to communicate, coordinate, or exchange information with them (a) locally and (b) distributed?
4. What differences do you find working with your team locally and distributed?
5. How is EXO supporting/improving your interaction with the team (a) locally and (b) distributed?

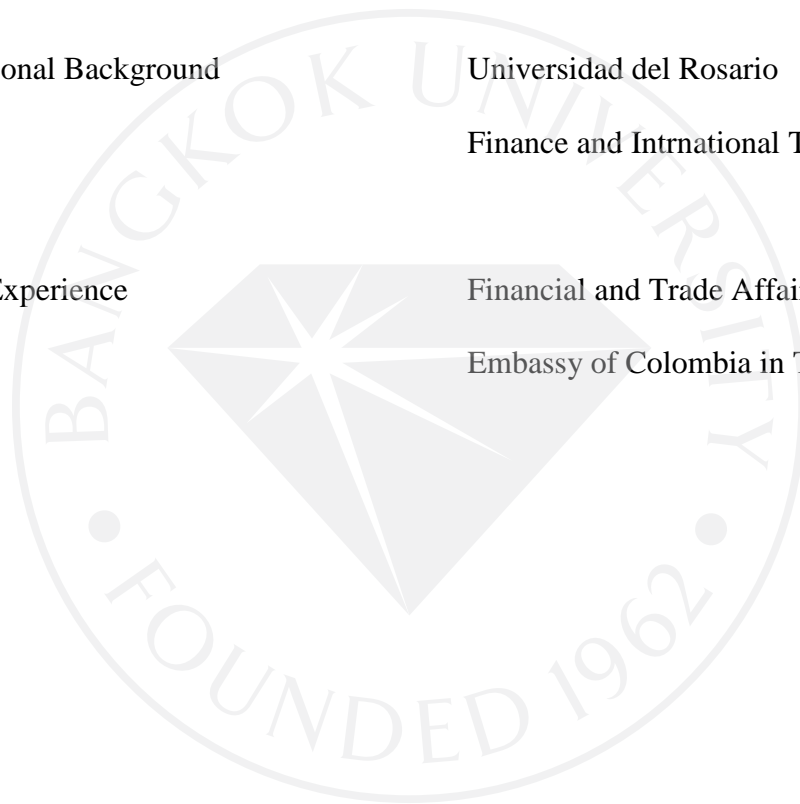
## Appendix C

## Abbreviation

Abbreviation	
(GDHIF)	Geographically Distributed but Highly Inter-dependent Firm
(MNC)	Multinational Corporations
(KC)	Knowledge Coordination
(DMC)	Destination Management Companies
(KM)	Knowledge Management
(HQ)	Headquarters
(SME)	Small and Medium-sized Enterprises
(DF)	Distributed Firm
(CS)	Case Study
(TPD)	Training and People Development
(ESM)	Enterprise social media
(KPI)	Key Performance Indicator

## BIODATA

Name-Last Name	Oliver Ortiz-Paez
Email	ortizp.oliver@gmail.com
Educational Background	Universidad del Rosario Finance and Intrnational Trading
Work Experience	Financial and Trade Affairs Embassy of Colombia in Thailand



Bangkok University

License Agreement of Dissertation/Thesis/ Report of Senior Project

Day 9 Month July Year 2021

Mr./ Mrs./ Ms Oliver Ortiz Paez now living at \_\_\_\_\_  
Soi Nai Loet Street 23/1  
Sub-district Lumpini District Pathum Wan  
Province Bangkok Postal Code 10330 being a Bangkok  
University student, student ID 7590203019

Degree level  Bachelor  Master  Doctorate

Program MBI Department IKI-SEA School Graduate School

hereafter referred to as "the licensor"

Bangkok University 119 Rama 4 Road, Klong-Toey, Bangkok 10110 hereafter referred to as "the licensee"

Both parties have agreed on the following terms and conditions:

1. The licensor certifies that he/she is the author and possesses the exclusive rights of dissertation/thesis/report of senior project entitled

Exporing knowledge coórdination in a distributed and highly interdependent knowledge firm: A case study of Thai Destination Management Company


submitted in partial fulfillment of the requirement for the degree of Master Management (Business Innovation) of Bangkok University (hereafter referred to as "dissertation/thesis/ report of senior project").

2. The licensor grants to the licensee an indefinite and royalty free license of his/her dissertation/thesis/report of senior project to reproduce, adapt, distribute, rent out the original or copy of the manuscript.

3. In case of any dispute in the copyright of the dissertation/thesis/report of senior project between the licensor and others, or between the licensee and others, or any other inconveniences in regard to the copyright that prevent the licensee from reproducing, adapting or distributing the manuscript, the licensor agrees to indemnify the licensee against any damage incurred.

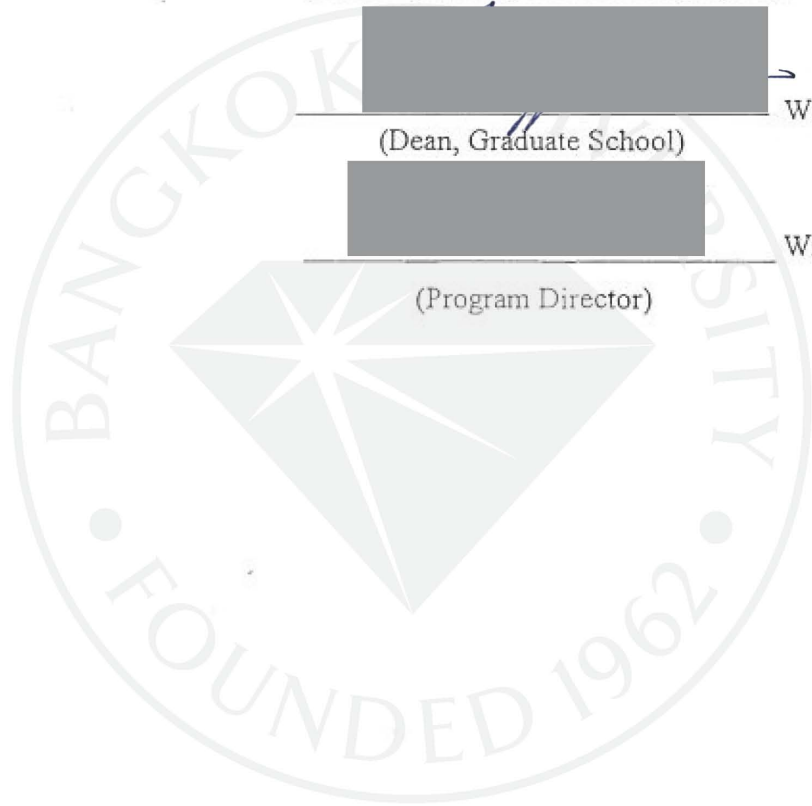
This agreement is prepared in duplicate identical wording for two copies. Both parties have read and fully understand its contents and agree to comply with the above terms and conditions. Each party shall retain one signed copy of the agreement.

  
Licensor  
( Mr. Oliver Ortiz Paez )

  
Licensee  
(Director, Library and Learning Space)

  
Witness  
(Dean, Graduate School)

  
Witness  
(Program Director)



I hereby agree and consent that Bangkok University may collect, use, process and disclose my personal data (as provided in this document) for the purpose of MBI or other purposes to Bangkok University's operations. I also acknowledge, agree and consent that Bangkok University has the right to collect, use, process and disclose my personal data in accordance with the Privacy Policy as currently prescribed by Bangkok University on its website and/or the amendment thereof.