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# EXPLORING CALL CENTER ENABLED MECHANISMS FOR FIRM'S COMBINATIVE CAPABILITIES

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# EXPLORING CALL CENTER ENABLED MECHANISMS FOR FIRM'S COMBINATIVE CAPABILITIES

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## Abstract

*The knowledge mechanisms of call centers have been emphasized by many previous studies. Yet there is little empirical research that examines the call centers' influence on firms' combinative capabilities. To address this gap, this study examines call center enabled organizational mechanisms that contribute to the firms' combinative capabilities. The study identifies differential effects from three types of combinative capabilities including system capabilities, coordination capabilities, and socialization capabilities. Through in-depth case studies of four Taiwanese call centers, this study finds seven organizational mechanisms including centralized information deployment and knowledge encapsulation, institution changing and foolproof, information hub and relationship management, decision making ladder, training center, network configuration, and job embeddedness. The findings provide practical implications to industry managers engaged in call center implementations from a combinative capabilities perspective. Future research directions are also discussed.*

*Keywords: Call Center, Combinative Capabilities, Contingency Theory, Organizational Mechanisms, Case Study.*

# 1 INTRODUCTION

With the rapid advancement of the information technology, literature on managing call centers (Adria and Chowdhury, 2004; Alferoff & Knights, 2008), has grown exponentially in recent years. Meanwhile, in today's volatile business environment, the role of call centers has changed from that of a cost center to a strategic revenue producer (Jack et al., 2006). Previous studies suggest that the successful implementation of call centers enables companies' customer relationship management (Alferoff and Knights, 2008), improves the service-delivery operations (Adria and Chowdhury, 2004), helps to gain the customer knowledge and integrate the knowledge across organizations (Andreu and Sieber, 2005). Consequently, the effective management of call centers has become a strategic imperative for companies, and call centers are now taking on more responsibilities.

Since research on knowledge transfer is critical in the current era of knowledge economy (Wu et al., 2007), the knowledge mechanisms of a call center have been emphasized by many previous studies (e.g., Andreu and Sieber, 2005). In particular, a call center is mainly concerned with the distribution of authority, since it moves the development of corporate knowledge base from multiple locations in organization towards a single location within the organization (Adria and Chowdhury, 2004). From this perspective, call centers can be treated as knowledge-intensive operations that are characterized by extensive knowledge required from different knowledge groups (Bordoloi, 2004). Moreover, the knowledge leveraging of a call center involves the sharing and integrating of cross-functional expertise (Venkatraman, 1994), which in turn enhances the organization's responsiveness to its customers (Adria and Chowdhury, 2004), and this is essential to the success of implementing a call center. Knowledge sharing and integration of cross-functional expertise therefore, play a key role in call center management.

The argument here is that: it is important to view the firm's knowledge management (KM) through a lens of combinative capability. As suggested by Kogut and Zander (1992), a firm's combinative capabilities (also referred to knowledge integration) involves the synthesis and application of current and acquired knowledge, and these capabilities determine the level of a firm's knowledge absorptive capacity (Van den Bosch et al., 1999). Yet there is little research conducted so far to examine how call center enabled organizational mechanisms contributes to the firms' combinative capabilities. The research question that this study proposed to address is, "How can firms' combinative capabilities be better facilitated through their call centers?" Specifically, the emphasis is on how designed actions (structural arrangements) in the form of organizational mechanisms enable call centers to enhance the firms' combinative capabilities.

We use combinative capability to focus on the explicit knowledge integration and avoid "the knowledge-leveraging paradox", which focuses more on tacit knowledge (Coff et al., 2006). The primary contribution of the paper is in providing an understanding of call center related KM. The implications of the call center enabled organizational mechanisms, combinative capabilities, and an agenda for further research into the call center implementation projects are also discussed. The next section presents the background of call centers and the theory of knowledge integration and combinative capabilities. This discussion provides a guideline for authors to analyze the case data. This is followed by a detailed description of the cases. Subsequently, the analysis and findings of the study are discussed. The paper concludes by discussing future research directions.

# 2 THEORETICAL BACKGROUND

Many researchers have focussed on the agents and the firms' perspective of call centers. For example, Witt et al. (2004) suggested that emotional exhaustion and conscientiousness interact in the predication of call

volume performance and customer service quality. Brown and Maxwell (2002) indicated customers' wants includes the feature of agent friendliness and efficiency in service exchange. Adria and Chowdhury (2004) noted that centralization (distribution of authority) moderates and influences the organization's efforts to improve customer service, through the implementation of a call center. By employing resource-based view, Pan et al. (2006) showed that the capability development experience of a call center may influence the overall process of strategy formation and implementation in a dynamic and volatile environment.

As mentioned, KM is also a critical direction for call center research. KM involves the setting of an environment that allows workers in an organization to create, capture, share, and leverage knowledge to improve performance (Kwan and Balasubramanian, 2003). From this perspective, organizations' KM strategies and initiations are strategic in the sense that they significantly help to shape the firms' long-term competitive advantage. Call centers have often been portrayed as knowledge intensive working environment, employing skilled, semi-professional workers, recruited for their strong interpersonal skills (Frenkel and Tam, 1998). A call center should also be considered as a formal communications system of a firm and acts as a gatekeeper (interface function) that monitors the environment and translates the customers' information and knowledge into a form, which is understandable to the firms' cross-functional expertise.

Kogut and Zander (1992) defined a combinative capability as the intersection of the capability of the firm to exploit its knowledge and the unexplored potential of the technology. According to them, a firm's new learning such as innovations, is the product of a firm's combinative capabilities to generate new application from existing knowledge. Based on Van den Bosch et al. (1999), a firm disposes three types of combinative capabilities including system capabilities, coordination capabilities, and socialization capabilities. Systems capabilities program behaviours in advance of their execution and provide a memory for handling routine situations (Jansen et al., 2005). Systems capabilities consist of the various aspects tending to formalize internal work, and reflect the degree to which rules, procedures, instructions, and communications are laid down in written documents or formal systems (Van den Bosch et al., 1999). Two functions related to systems capabilities are "formalization" and "routinization", which establish patterns of organization action.

Coordination capabilities enhance absorption by facilitating relations within group, among teams and between organizational units (Joglar and Chaparro, 2007). The firm's "cross function interface", "decision making participation" and "job rotation" may be considered as three distinct features related to coordination capabilities. Socialization capabilities comprise much of the internal efforts made by firm to improve knowledge diffusion via common understanding development (Joglar and Chaparro, 2007). Socialization capabilities are relevant for building firm identity and value irrespective of the primary integration requirement (Kenny and Gudergan, 2006). "Connectedness" and "socialization tactics" are two functions related to socialization capabilities.

In studying organizational mechanisms for enhancing user innovation in IT, Nambisan et al. (1999) refer to mechanisms as "design actions" or "structural arrangements" such as an IT steering committee or a relationship manager in IT domains. Following this, in this paper, we refer to mechanisms as "design actions" or "structural arrangements" in KM domain, that contribute to combinative capabilities (including system capabilities, coordination capabilities, and socialization capabilities) by call centers. For example, the development of analytical CRM can make customer knowledge more explicit for sharing and contribute to the formalization (part of system capabilities) of the firm. The development of General Customer Service Department enables the call center to adhere to rules and regulations and exhibit its knowledge of company procedures (Koh et al., 2005) and contributes to the routine (also part of system capabilities) of the firm.

Table 1 summarizes the major issues, their definitions and some observations of combinative capabilities and their potential impacts on knowledge absorption. These elements of combinative capability will be described in detail for each case in the discussion section. In Table 1, the note, "+/-", refers the positive or negative

association between the mechanisms and absorptive capacity; the note, “P/R” refers to potential (acquisition and assimilation) and realized (transformation and exploitation) absorptive capacity.

Types	Functions	Description & potential impacts on knowledge absorption
System capabilities	Formalization (-P, +R)	The degree to which rules, procedures, instructions and communications are formalized or written down. Formalization limits the intensity and scope of efforts expended in knowledge acquisition, but supports the retrieval of knowledge that has already been internalized.
	Routinization (-P, +R)	The degree to which a sequence of tasks that require relatively little attention and to ensure that inputs are transformed into outputs. Routinization limits the search for new external knowledge and leads to a narrow scope of information processing, but provides efficient structure to efficiently transform new external knowledge into existing sets of tasks.
Coordination capabilities	Cross functional interface (+P, +R)	Lateral forms of communication through liaison personnel, task forces, and team across functional boundaries and lines of authority can facilitate knowledge exchange. Cross functional interface is positively related to potential (acquisition and assimilation) and realized (transformation and exploitation) of absorptive capacity.
	Decision making participation (+P, -R)	The extent to which subordinate take part in higher-level decision making process serve as both filter and facilitator of new external knowledge acquisition. This mechanism is positively related to potential and realized absorptive capacity.
	Job rotation (+P, +R)	The lateral transfer of employees between jobs can enhance varied knowledge and develop organizational contacts. Job rotation facilitates both potential and realized absorptive capacity.
Socialization capabilities	Connectedness (-P, +R)	Connectedness, the density of linkages, server as a governance mechanism and enabling to develop trust and cooperation. Dense networks inhibit the openness to the acquisition and assimilation of new external knowledge, but facilitate the transformation and exploitation newly acquired knowledge.
	Socialization tactics (-P, +R)	Socialization tactics offer newcomers specific information and encourage them to interpret and respond to situation in a predict way. Socialization tactics impede a unit’s ability to acquire and assimilate new external knowledge, but enhance the transformation and exploitation newly acquired knowledge.

Table1: Major Issues of Combinative Capability (adapted from Van den Bosch et al., 1999; Jansen et al., 2005)

### 3 RESEARCH METHODOLOGY

This study explored the call center enabled mechanisms that related to firm’s combinative capabilities rather than the variance theory. Thus the case study method, which involves tracing call center’s development processes and design actions in their natural context, appeared most appropriate (Yin, 2003). The case study method is well established in information systems research, where the aim is to enhance the understanding, in circumstances where research and theory are at a formative stage and a phenomenon is not well understood (Benbasat et al., 1987). Also, a multiple case study strategy was adopted and allowed us to obtain rich, deep and real information through examination of patterns and consistencies, so as to arrive at credible and confirmable results (Weaven and Herington, 2007). The phenomenon under investigation is combinative capabilities in the following four call centers (Table 2) - global banking institution, telecom service provide, regional securities company and governmental agency. Each call center context is described briefly in turn.

Case 1: GloBankCo – a leading US-based global financial institution

Global financial institution (a pseudonym, hereafter called GloBankCo) is one of the US-based global financial institutions and operates full-service call center operations in Taipei since 1990. GloBankCo Taiwan has approximately 250-300 full time employees including those in their call center department. Although, the government opened the banking sector to additional foreign bank branches or representative offices, many foreign banks in Taiwan are still enthusiastic in developing call centers because of branching constraints. In this situation, besides the M&A strategy, GloBankCo’s call centers provided a means to serve customers despite the shortage of branches. Therefore, the development of call center in GloBankCo is strategic in its nature.

Case 2: TelSevCo – a leading Telecom Service Company

Telecom Service Company (a pseudonym, hereafter called TelSevCo) is one of the leading telecom companies in Taiwan and provides fixed line, mobile and Internet and data services to residential and business customers. Established in 1996, TelSevCo's agents have under their charge, different business call centers, such as fix network and internet portal, providing multi-sites, multi-channels, and multi-functions call center. The customer service division of TelSevCo has created a new era of telecoms customer service with over 3200 agents, and contributed to developing three kinds of call center services (call center on demand, call center outsourcing service & call center system establishment). Apparently, TelSevCo applied for a value-added telecom and the role of its call center has changed from being service oriented to business oriented.

### Case 3: RegSecCo

Regional Securities Company (a pseudonym, hereafter called RegSecCo) was formed in 1988 and is a member of one of the largest securities brokerages in Taiwan. Following the introduction of EC and Internet trading worldwide, RegSecCo realized that online trading is of critical importance to all brokerage firms. Consequently, in 2001 RegSecCo officially launched their call center, which was constructed by a bank in the same business group, and the call center is the first securities brokerage employed CTI in Taiwan. The call center is posited under the EC department of RegSecCo and mainly in charge of online securities trading.

### Case 4: PubArcCo – a governmental agency

Governmental agency (a pseudonym, hereafter called PubArcCo) is established in November 23, 2001 and is a governmental organization similar to U.S. National Archives and Records Administration. The main activity and mission of the division of PubArcCo is the safekeeping of records selected for permanent preservation as well as to control, provide and ensure easy and efficient access of the same to all the users. In 2003, PubArcCo initiated a National Archives Administration Information System (NAAIS) Project, which is part of Taiwanese e-Government project. At the same time, PubArcCo's call center was established in order to solve the software usage problems in the NAAIS project. It was outsourced to a major software vendor of the NANIS project. Essentially, PubArcCo's call center was for project support.

Context	Organization	Key respondents	Key Characteristics
Global Banking Institution	GloBankCo	Call center manager (Consumer banking)	Strategic oriented and aim to overcome the branching constraint of regulations.
Major telecom service provider	TelSevCo	Call center manager, MIS manager, operation and planning manager, call center researcher	Large in its scale and transforming from service oriented to business oriented in becoming a new business.
Regional Securities Company	RegSecCo	EC & call center director, IT manager	EC oriented and aim to complement with the development of online trading.
Governmental agency	PubArcCo	Division directors (2), call center outsourcer manager, Project manager of outsourcer, call center agent	Supportive purpose and mainly use to solve the software using problems of the National Archives Administration Information System (NAAIS) Project.

Table 2. The Characteristics of Cases

### Data Collection and Analysis:

The study is based on four case studies, all of which are call center implementations. Data was collected primarily through 12 interviews from the four call centers and was supported by secondary information. All interviews were conducted with call center professionals in charge of the call center management. The multiple sources provided for triangulation (Stake 1994) of evidence, ensured that facts stated by one organization could be verified by the other and also provided multiple perspectives on issues. All informants were scrutinized carefully and then selected to ensure quality of the data. The face-to-face interviews were unstructured; the standard set of questions used was designed only to help initiate and guide the interview

process. Additional observations were noted immediately after each interview was completed. The open coding technique of grounded theory (Strauss and Corbin, 1990) was also employed in data analysis. Open coding is the part of the analysis concerned with identifying, naming, categorizing and describing phenomena found in the text. The design actions can be identified and categorized and their influence on system capabilities, coordination capabilities, and socialization capabilities can therefore be explored. Also, to reduce research bias and to validate that no important information had been missed in the case analysis, the interview transcripts were shown to another researcher who played the role of an independent reviewer. The involvement of this independent reviewer was to bring a different and possibly more objective eye to the evidence (Eisenhardt, 1989). The data collection and analysis helped elicit organizational mechanisms and their influence on the call centers to address our research objective.

## **4 RESULTS AND DISCUSSION**

In this section, the results of a comparative analysis across all four research sites are presented in terms of three types of combinative capabilities. Table 3 shows the call center enabled design actions and their categorized organizational mechanisms. The analysis revealed two call center enabled mechanisms for system capabilities; the centralized information deployment and knowledge encapsulation mechanism, and institution changing and fool-proof mechanism. The distinct organizational mechanisms may be concerned as the coordination capabilities for call centers including the information hub mechanism, the decision making ladder mechanism, and the training center mechanism. In addition, two mechanisms are identified that fuel effective socialization capabilities in the call centers. The mechanisms are network configuration for connectedness of combinative capability and job embeddedness mechanism for socialization tactics of combinative capability. Each of these is discussed and illustrated in turn.

### **4.1 Centralized Information Deployment and Knowledge Encapsulation Mechanism**

A call center is a collection of resources capable of handling customer contacts by telephone. The term “collection” represents the gathering of firm’s information resources. From an information resources deployment view, call center is the practice of centralized information deployment, both internal and external. From an internal perspective, the written instructions, Standard Operating Procedures (SOP), that document a routine or repetitive activity followed by an organization are collected. SOP is the prevailing wisdom of how things should be done and how things are done for that industry. Call center also develops their own SOP, and collect SOPs from the other departments and share cross-functionally. From an external perspective, call center collects customer information and employs the case study of customer problems to explicit the real situation they faced and ensure the process of communication. Therefore, these different forms of formalization have been developed in order to accomplish the operation of call centers.

However, the agents in call centers are semi-professional workers (Frenkel et al., 1998) and they may not be able to absorb all the information and knowledge from SOPs. To address this drawback, call centers have to develop their own handbooks and training materials from various knowledge domains and sources, to ensure a minimal service level. As indicated by an informant from TelSevCo:

*“...Sometimes, it’s very difficult to write down the context and situation of a ‘customers’ problem. To add to that, the technical departments always use transcendental terms that are very difficult to understand. We can use the ‘customers’ tone and fit it with the real problem situation. So in our company, the agents in the call center develop their own handbooks by catching the meaning of the knowledge and share it cross-functionally.”*

Borrowing the term “knowledge encapsulation” from the object-oriented concepts of encapsulation and information hiding, call center can be said to encapsulate firms’ knowledge to reduce knowledge gaps between professionals. The call center agents encapsulate and translate experiences from other departments into their own vocabularies for problem solving and distribution. The centralized information deployment and knowledge encapsulation mechanism is therefore critical to the firm’s realized combinative capability and facilitates knowledge integration, since knowledge integration occurs when complementary knowledge separately held by members is combined to form new knowledge (Grant, 1996). Also we observe that the

centralized information deployment and knowledge encapsulation of call center can facilitates (acquisition and assimilation) absorptive capacity through customer compliance analysis, the recording tracking by CTI, and call volume analysis, all of which enable the firm to formalize customer knowledge. The centralized information deployment and knowledge encapsulation mechanism help acquire customers' problems related to a product, business process and communication to explicit demonstrate the acquired knowledge.

	GloBankCo	TelSevCo	RegSecCo	PubArcCo	<i>Categorized Call Centers Enabled Organizational Mechanisms</i>
Formalization	<ul style="list-style-type: none"> <li>✓ SOP</li> <li>✓ Customer compliance</li> <li>✓ CTI Recording</li> <li>✓ Training materials</li> <li>✓ case development</li> </ul>	<ul style="list-style-type: none"> <li>✓ SOP</li> <li>✓ handbook from KM team</li> <li>✓ Case for questions</li> <li>✓ Customer behavior analysis</li> <li>✓ Q&amp;A for custom service value chain</li> </ul>	<ul style="list-style-type: none"> <li>✓ SOP</li> <li>✓ Customer behavior analysis</li> <li>✓ The assortment of customers</li> <li>✓ Metaphor development</li> </ul>	<ul style="list-style-type: none"> <li>✓ SOP</li> <li>✓ Self-developed documents</li> <li>✓ Customer-problem MIS</li> <li>✓ Training Material</li> <li>✓ Case study development</li> </ul>	<i>Centralized information deployment and knowledge encapsulation mechanism</i>
Routine	<ul style="list-style-type: none"> <li>✓ KM system</li> <li>✓ Worksheets creation</li> <li>✓ Full functions team development</li> <li>✓ Reward systems</li> <li>✓ Call Volume Analysis</li> <li>✓ Monitoring call and customer survey</li> <li>✓ Performance evaluation by balanced scorecard</li> </ul>	<ul style="list-style-type: none"> <li>✓ KM system</li> <li>✓ Business consulting station</li> <li>✓ ACD System</li> <li>✓ Job tracking and monitoring</li> <li>✓ Reward competition</li> <li>✓ Supportive data</li> <li>✓ Platform development</li> <li>✓ Performance measurement</li> </ul>	<ul style="list-style-type: none"> <li>✓ IVR and voice to text system</li> <li>✓ Risk management model</li> <li>✓ Call center driven tasks</li> <li>✓ AD procedure auditing</li> <li>✓ Cross selling and portal design</li> <li>✓ Call Volume Analysis and monitoring</li> <li>✓ Performance measurement</li> <li>✓ Cross function rehearsal</li> </ul>	<ul style="list-style-type: none"> <li>✓ Initial question ranking</li> <li>✓ Weekly On-job training</li> <li>✓ Questionnaire Survey</li> <li>✓ Weekly Meeting!</li> <li>✓ Call Volume Analysis</li> <li>✓ Multiple channels integration!</li> <li>✓ Cross org. knowledge integration</li> <li>✓ Weekly report!</li> </ul>	<i>Institution changing and foolproof mechanism</i>
Cross functional interface	<ul style="list-style-type: none"> <li>✓ Assign coordinator for each department</li> </ul>	<ul style="list-style-type: none"> <li>✓ Self developed KM team</li> </ul>	<ul style="list-style-type: none"> <li>✓ Public relationship</li> <li>✓ E-trader</li> <li>✓ Cross-functional meeting</li> <li>✓ Managers club</li> </ul>	<ul style="list-style-type: none"> <li>✓ Virtual team</li> <li>✓ Project Manager</li> <li>✓</li> </ul>	<i>Information hub and relationship management mechanism</i>
Decision making participation	<ul style="list-style-type: none"> <li>✓ Localization development</li> <li>✓ Joining Meeting</li> </ul>	<ul style="list-style-type: none"> <li>✓ Joining Meeting</li> </ul>	<ul style="list-style-type: none"> <li>✓ Joining Meeting</li> </ul>	<ul style="list-style-type: none"> <li>✓ Joining Meeting</li> <li>✓ On site support</li> </ul>	<i>Decision making ladder mechanism</i>
Job rotation	<ul style="list-style-type: none"> <li>✓ Human resource development</li> <li>✓ Staff join call center first then send to other department</li> </ul>	<ul style="list-style-type: none"> <li>✓ Career development strategy</li> <li>✓ Outsourcing</li> <li>✓ Average revenue per use)</li> <li>✓ Training center</li> </ul>	<ul style="list-style-type: none"> <li>✓ Learning by doing</li> <li>✓ Training</li> </ul>	<ul style="list-style-type: none"> <li>✓ Outsourcing</li> </ul>	<i>Training center mechanism</i>
Connectedness	<ul style="list-style-type: none"> <li>✓ CIT system</li> <li>✓ Document governance</li> <li>✓ Contact list design</li> <li>✓ Continuity Planning</li> <li>✓ IT governance and authority</li> </ul>	<ul style="list-style-type: none"> <li>✓ High level support</li> <li>✓ Governance structure</li> <li>✓ The value of contact</li> <li>✓ Business orientation!</li> <li>✓ Value perception of CC</li> </ul>	<ul style="list-style-type: none"> <li>✓ Human involvement required</li> <li>✓ Etiquette and communication training</li> <li>✓ Governance structure</li> <li>✓ Enhancing organization memory</li> </ul>	<ul style="list-style-type: none"> <li>✓ Etiquette and communication training</li> <li>✓ Call out to confirm the problem solving</li> </ul>	<i>Network configuration mechanism</i>
Socialization tactics	<ul style="list-style-type: none"> <li>✓ Full function training</li> <li>✓ Mentor Program</li> <li>✓ Established Training Team</li> </ul>	<ul style="list-style-type: none"> <li>✓ Full function training</li> <li>✓ On job training</li> <li>✓ Internal expert leading</li> </ul>	<ul style="list-style-type: none"> <li>✓ Mentor Program</li> <li>✓ On job training</li> </ul>	<ul style="list-style-type: none"> <li>✓ On job training</li> <li>✓ Help, coordination, resource allocation activities</li> </ul>	<i>Job embeddedness mechanism</i>

Table 3. Design Actions and Categorized Organizational Mechanisms for Call Centers



## 4.2 Institution changing and foolproof mechanism

Institutions consist of cognitive, normative, regulative structures and activities that provide stability and meaning to social behaviour, and institutions are transported by various carriers such as cultures and routines (Sementelli, 2005). Apparently, call centers' design actions such as the job tracking, monitoring, and recording tracking by CTI increases the legibility of cross-function responsibility and authority, which become an important force to change the institution context of knowledge management, and enhances routinization. Call centers' regulation, such as worksheets creation task for all new services and products in GlobankCo, enables the institutionization of the knowledge processing. As mentioned by an informant from GloBankCo:

*“We analyze customer complaints and call volume and consider the possible problems of our process or products. Then, we create a worksheet in Lotus Notes groupware to communicate these problems to the other departments. The standard respond time is set and we keep our eye on the worksheet to ensure all the required task has down properly.”*

We call it an “institution changing and foolproof mechanism” of call center in strengthening the firm institutions of knowledge integration. In fact, firm's institutions and social practices are regarded as structures and structures have been viewed as having persistence over time, which indicates that the social system is highly complex in which structures have been considered as “both means to and a result of actors' actions” (Kaspersen, 2000). That is, routinization requires that backbone of a strong supportive organizational structure and a call center plays the roll of the backbone. Also, call centers can facilitate the effective reward system, based on which employees can share knowledge without extra effort. Call center makes the responsibility of knowledge sharing more identifiable and observable. Kollock (1998) suggests that if individuals do not interact in the future, if identity is unknown or unstable, and if there is no recollection or record of past interactions, individuals will be motivated to behave selfishly because they will not be held accountable for their actions. Call center enables the identifiability of knowledge sharing. Therefore, the foolproof mechanism of call centers ensures that routine knowledge sharing and integration is monitored and audited appropriately.

## 4.3 Information hub and relationship management mechanism

The term, information hub mechanism, is used to describe the cross functional interface, that can serve as a coordinator, a project manager or public relationship, a term for KM, and even a virtual team or a club for manager. General speaking, a hub is used in a wired network to connect cables from a number of devices together. Call center is just like a hub since it allows each device (i.e., departments) to talk to the others and the information hub mechanism enables lateral communication. Lateral communications allow employees in different department to collect information, to make commitments and promises explicit, and offers moral suasion (Kollock, 1998). As mentioned by an informant from RegSecCo:

*“Our customers use 0800 free calls to contact us when we have a new operating process or marketing project. Before, the department that proposed the new project will pass this message to us and we would rehearsal together to ensure we understand the details. In turn, we ask some questions in terms of customers' viewpoint on the new operating process or marketing project. The rehearsal sometimes helps them reconfigure their ideas and get closer to our customers.”*

The information hub also can help develop inter-organizational relationship management. A well- developed social network can facilitate access to information, resources, and opportunities, to coordinate critical task interdependencies, and overcome the dilemmas of cooperation and collective action (Gargiulo and Benassi, 2000). Call center enables the interface dimension of knowledge sharing. Accordingly, the information hub and relationship management mechanism contribute to the cross functional interface of a firm's combinative capabilities and brings together different sources of expertise.

#### **4.4 Decision making ladder mechanism**

Top management are at the top of the decision-making ladder. However, call center provide the opportunities for technocracy in both customer domain and technical domain to ascend the firm's decision making ladder and assist in the top management's decision making process. For example, also suggested by the RegSecCo informant:

*“If our call center receives a message which may provide a business opportunity to our firm, we evaluate the potential benefits of the message. If we consider it is a value message, we call a meeting with other departments to evaluate technical feasibility and cost-benefit analysis. Then we send the evaluation to our top management and start the documentation.”*

The meeting enhances communications between expertises. The direct effects of communication can be attributed to two forms of social influence: informational influence, through which communication can be used to convey information and formulate strategies, and normative influence, through which communication can be used to convey information about group norms and values (Aquino and Reed, 1998). Therefore, call center's not only help low level employees to ascend the firm's decision making ladder, but also help the management to create a normative environment that promote cooperation, since participation tends to encourage others' participation by creating a collective action to succeed (Kim and Bearman, 1997). Overall, call centers can encourage all employees' involvement positively, and can seriously impact on knowledge sharing in the firm.

#### **4.5 Training center mechanism**

Beside the PubArcCo's outsourcing strategy, the other call centers are now taking on more educational responsibilities. Apparently, call center careers become a pre-required experience for all departments' job rotations and therefore, we refer to call center as a training center and all those designed actions will help bring together different sources of expertise and increase internal interactions. As mentioned by an informant from TelSevCo:

*“For the regular staff, we have a full function training program and mentor program as well. We also provide the detail training material for our products...The training is also supported by internal expertises from other departments and outside the company. So, when the staffs have more professional training, they will have the opportunities to get promotions.”*

Because of the establishment of call center, employees are given the opportunities to stretch themselves. In addition, call center can act as a training center for organisations to deal with career plateaus, the condition whereby many employees find that opportunities for promotions are limited or non-existent (Joseph and Lan, 2005). Through call center, the employees become acquainted with different areas as well as different departments in the firm. Therefore, training center mechanism of call center enhances the firm's job rotation function and helps in sharing different professional knowledge.

#### **4.6 Network configuration mechanism**

The call center trains their agents to provide outstanding service to their customers regardless of whether they are internal or external customers. We consider those call center activities as parameters to tune up the relational network, forming a dense network and enable the development of trust and cooperation. In terms of computer hardware, to communicate with other computers in a network, computers need a network connection. This is accomplished by having the operating system that can recognize an interface card and by configuring the interface to connect to the network. As mentioned by an informant from PubArcCo:

*“In the beginning, our call center was to solve the software problems of NAAIS project. However, many public servants call us for helping them to solve many computer problems. The call center's cordiality and amicability win the trust and friendship. ...Sometimes, they give us their cell phone numbers for personal contact. ”*

Network configuration mechanism alone with the presence of network ties and appropriable organization represents the structure dimension of social capital (Nahapiet and Ghoshal, 1998), which is considered to provide the conditions necessary for knowledge exchange to occur. Overall configuration of relational ties constitutes the network in a call center and provides a favourable dense network by bridging the governance structure, IT and human system. This increases the social relation by increasing activities such as high level support, enhancing etiquette, and communication training.

#### **4.7 Job embeddedness mechanism**

Any individual who is faced with unfamiliar situations is likely to experience “transition shock” (Selmer, 2000; 2001), and is similar to a newcomer making sense of a large, new environment. There is also, a clear connection between the presence of satisfactory social relationships and one’s willingness to share knowledge. Satisfactory relationships facilitate access to the information that is needed to flourish in the new environment. We refer to the mechanism related to socialization tactics as the “job embeddedness mechanism” of call center. As mentioned by an informant from TelSevCo:

*“The other departments’ new employees will have their probation in call center for one month. This is part of experiential training and newcomers will learn the thoughts of their customers. After returning to their department, newcomers then have a better understanding of how to deliver their services to customers.”*

That is, design actions such as mentor programs can help newcomers feel a sense of community in their workplace and establish the individuals’ links to other people, team and groups. Zander and Kogut (1995) have proposed that firms are social communities, that use their relational structure and shared coding schemes to enhance the transfer and communication of new skills and capabilities. After newcomers enter organizations, the senior employees with more work experience may help them learn more about where and how to get information on the firm’s core values. Since, motivational factors facilitate successful knowledge sharing (Lin, 2007), the newcomers may therefore be willing to adapt, by learning and acculturating, to the values of their new organization, thus leading to knowledge sharing and integration.

## **5 CONCLUSIONS**

The main purpose of this research has been to seek an understanding of call center enabled organizational mechanisms associated with combinative capabilities influence on the firms’ knowledge absorption. Issues in the system capabilities, coordination capabilities, and socialization capabilities dimensions have been examined. As summarized in Table 4, this study explores seven organizational mechanisms and their contributions to firms’ combinative capabilities. We suggest that these mechanisms be taken into account for call center design and implementation in order to facilitate the firm’s combinative capabilities, and influence firms’ knowledge sharing and absorption. We acknowledge the limitations of the case study method in this paper. However, this exploratory study also initiates several other avenues for further research. This analysis could provide a vocabulary that researchers and practitioners could employ in the following similar context, so that future call center design and implementations can be compared and benchmarked. For future studies on the subject, since organization culture is commonly cited as a major obstacle of knowledge sharing, efforts should be made to explore the contingency factors that influence the design of a firm’s call centers enabled organizational mechanisms. The cross case comparisons should help us understand the contextual diversity of cases and thus the contingency variables can be derived. Also, the observations need to be further researched through questionnaires. This study has largely focused on issues at the firm’s perspective, and customer viewpoints can be incorporated in further studies.

<i>Call Centers Enabled Organizational Mechanisms</i>	<i>Description</i>	<i>Contribute to firm's combinative capabilities</i>
<i>Centralized information deployment and knowledge encapsulation mechanism</i>	<i>Call centers collect SOP from cross functions and compiles handbooks for both train and service purposes.</i>	<i>With those experiences from other departments, call centers agents enhancing the formalization by encapsulate and translate into their own vocabularies for problem solving and distribution.</i>
<i>Institution changing and foolproof mechanism</i>	<i>Call centers increases the legibility of cross-function responsibility and authority, which become an important force to change the institution context of knowledge management.</i>	<i>Call centers activate firms' routine and increase the identification of jobs, for ensuring all required tasks has down!</i>
<i>Information hub and relationship management mechanism</i>	<i>Call center just likes a hub allows each device (i.e., departments) to talk to the others and the information hub mechanism enables the lateral forms of communication.</i>	<i>Call center is a point at which independent systems or diverse groups interact, in which enables an administrator to monitor the cross-functional integration and help to develop an inter-organizational relationship management as well.</i>
<i>Decision making ladder mechanism</i>	<i>Call centers' provides the opportunities for employees to ascent the decision making ladder and join the top management's decision making process</i>	<i>Call center can contribute both to information and normative influence of communication, and will encourage employees' involvement positively, which impacts on knowledge sharing.</i>
<i>Training center mechanism</i>	<i>Call centers are responsible for the administration and quality assurance of firms' employees.</i>	<i>Call center can act as a training center for organisations to deal with career plateau, and enhances the firm's job rotation function and helps to share different professional knowledge.</i>
<i>Network configuration mechanism</i>	<i>Call center activities ares parameters to tune up the relational network forming a dense network and enable the development of trust and cooperation.</i>	<i>Call centers bridge the governance structure, IT and human system, in which increase the density of firms' linkage.</i>
<i>Job embeddedness mechanism</i>	<i>Call centers enable to establish the individuals' links for newcomers to other people, team and groups.</i>	<i>Call centers help newcomers to be more adept at learning and acculturating to the values of their new organization and lead to the will of knowledge sharing and integration.</i>

*Table 4. Summary of Major Findings of Organization Mechanisms and their Descriptions*

## References

- Adria, M. and Chowdhury, S.D. (2004), "Centralization as a design consideration for the management of call centers", *Information and Management*, 41, pp. 497-507.
- Alferoff, C. and Knights, D. (2008), "Customer relationship management in call centers, the uneasy process of re(form)ing the subject through the people-by-numbers' approach", *Information and Organization*, 18, pp. 29-50.
- Andreu, R. and Sieber, S. (2005), "Knowledge integration across organizations: how different types of knowledge suggest different integration trajectories", *Knowledge and Process Management*, 12(3), pp. 153-160.
- Aquino, K. and Reed, A. (1998), "A social dilemma perspective on cooperative behavior in organizations: the effects of scarcity, communication, and unequal access on the use of a shared resource", *Group and Organization Management*, 23(4), pp. 390-413.
- Benbasat, I., Goldstein, D.K. and Mead, M. (1987), "The case study research strategy in studies of information systems", *MIS Quarterly*, 11(3), pp. 369-386.
- Bordoloi, S. (2004), "Agent recruitment planning in knowledge intensive call centers", *Journal of Service Research*, 6(4), pp. 309-323.
- Brown, G. and Maxwell, G. (2002), "Customers service in UK call centers: organizational perspectives and employees perceptions", *Journal of Retailing and Consumer Service*, 9, pp. 309-316.
- Coff, R.W., Coff, D.C. and Eastvold, R. (2006), "The knowledge-leveraging paradox: How to achieve scale without making knowledge imitable", *Academy of Management Review*, 31(2), pp. 452-465.
- Eisenhardt, K. (1989), "Building theories from case study research", *Academy of Management Review*, 14(4), pp. 532-550.
- Frenkel, S. and Tam, M. (1998), "Beyond bureaucracy: Work organization in call center", *International Journal of Human Resource Management*, 9(6), pp. 957-959.

- Gargiulo, M. and Bennassi, M. (2000), "Trapped in your own net? Network cohesion, structural holes, and the adaptation of social capital," *Organization Science*, 11(2), pp. 183-196.
- Grant, R. (1996), "Toward a knowledge-based theory of the firm", *Strategic Management Journal*, 17 (Winter), pp. 109-122.
- Jack, E.P., Bedic, T.A. and McCary, C.E. (2005), "Operational challenges in the call center industry: a case study and resource-based framework", *Managing Service Quality*, 16(5), pp. 477-500.
- Jansen, J.J.P., Van den Bosch, J.A.J. and Volberda, H.W. (2005), "Managing potential and realized absorptive capacity: How do organizational antecedents matter", *Academy of Management Journal*, 48(6), pp. 999-1015.
- Joglar, H. and Chaparro, J. (2007), "Valuing IS/IT resources as an antecedent of absorptive capacity: An RBV perspective", *Issues in Information Science and Information Technology*, 4, pp. 445-459.
- Joseph, J. and Lan, P. (2005), "Learning solutions for career plateaus", *International Journal of Learning and Intellectual Capital*, 2(4), pp. 394-407.
- Kaspersen, L. B. (2000), Anthony Giddens *An Introduction to A Social Theorist*. Oxford: Blackwell.
- Kenny, J.L. and Gudergan, S.P. (2006), "Knowledge integration in organizations: an empirical assessment", *Journal of Knowledge Management*, 10(4), pp. 43-58.
- Kim, H. and Bearman, P.S. (1997), "The structure of dynamics of movement participation", *American Sociological Review*, 62(1), pp. 70-93.
- Kogut, B. and Zander, U. (1992), "Knowledge of the firm, combinative capabilities, and the replication of technology", *Organization Science*, 3, pp. 383-397.
- Koh, S.C.L., Gunasekaran, A. and Arunachalam, S. (2005), "The application of knowledge management in call centers", *Journal of Knowledge management*, 9(4), pp. 56-69.
- Kollock, P. (1998), "Social dilemmas: the anatomy of cooperation", *Annual Review of Sociology*, 24, pp. 183-214.
- Kwan M.M. and Balasubramanian, P. (2003), "Process-oriented knowledge management: a case study", *Journal of the Operational Research Society*, 54, pp. 204-211.
- Lin, H. (2007), "Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions", *Journal of Information Science*, 33(2), pp. 135-149.
- Nambisan, S., Agarwal, R. and Tanniru, M. (1999), "Organizational mechanisms for enhancing user innovation in information technology", *MIS Quarterly*, 23(3), pp. 365-395.
- Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review*, 23(2), pp. 242-266.
- Pan, S., Pan G. and Hsieh, M. (2006), "A dual-level analysis of the capability development process: A case study of TT&T", *Journal of the American Society for Information Science and Technology*, 57(13), pp. 1814-1829.
- Sementelli, A. J. (2005), "Critical theory, institutions, and hegemony: role obligation and the reconciliation of seemingly incompatible goals", *International Journal of Organization Theory and Behaviour*, 8(4), pp. 559-576.
- Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory, Procedures and Techniques*. Newbury Park, Ca: Sage Publications.
- Stake, R.E. (1994). Case studies. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* Thousand Oaks, CA.: Sage, pp. 236-247.
- Van den Bosch, F.A.J., Volberda, H.W. and de Boer, M. (1999), "Coevolution of firm absorptive capacity and knowledge environment: organizational forms and combinative capabilities", *Organization Science*, 10(5), pp. 551-568.
- Venkatraman, N. (1994), "IT-enabled business transformation: from automation to business scope redefinition", *Sloan Management Review*, 35 (winter), pp. 73-78.
- Witt, L.A., Andrews, M.C. and Carlson, D.S. (2004), "When conscientiousness isn't enough: emotional exhaustion and performance among call center customer service representatives", *Journal of Management*, 30(1), pp. 149-160.
- Wu, W., Hsu, B. and Yeh, R. (2007), "Fostering the determinants of knowledge transfer: a team-level analysis", *Journal of Information Science*, 33(3), pp. 326-339.
- Yin, R. (2003), *Case Study Research*, 3rd ed., Thousand Oaks, CA: Sage Publications.
- Zander, U. and Kogut, B. (1995), "Knowledge and the speed of the transfer and imitation of organizational capabilities: An empirical test. *Organization Science*, 6(1), pp. 76-92.