Absorptive Capacity In Service Innovation: the Role of IT Capabilities

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Abstract. This working paper sets up the basis for investigating the role of IT capabilities in the context of large and distributed service organizations. The idea grounded in this article resides in the possibility that absorptive capacity has an impact on service innovation. Addressing some theories on absorptive capacity and on service innovation we provide a brief insight on the importance that IT skills and capabilities can have on service innovation in large organization which are widespread distributed in different geographical location.

1 Introduction

The growing intensity and dynamism of competition across product markets has had profound implications for the evolution of strategic management. Increasing turbulence of the external business environment has focused attention upon the importance of learning fast how to behave within the markets and react to reach good performances (Grant, 1996). *Knowledge* and the processes through which knowledge is obtained and understood have emerged as the most strategically-significant resources of the firm.

In order to clarify the relationship between knowledge and firm performance/innovation, the concept of absorptive capacity has been introduced by Cohen and Levinthal (1990). Despite this construct has been developed focusing on product innovation in the manufacturing industry, some of its assumptions seems to apply also to service and open innovation domains. In fact, it allows explaining organizational phenomena such as the need to evaluate and incorporate externally generated technical knowledge into the firm which are even more relevant in the emerging open networked environments.

Open innovation refers to the environments in which multiple actors (both public and private) collaborate in delivering innovative services, each contributing with its own resources and capabilities, and where the underlying business models are attractive to all of the participants involved (Chesbrough 2003). In such collaborative environments, value is created via service innovation and by mediating between customer's needs, organizational resources and capabilities, financial arrangements,

and technological possibilities (Bouman and Fielt 2008, Chesbrough and Rosenbloom 2002).

In this context, information technology (IT) has been widely recognized as one of the firm capabilities which have a potential impact on the development of new products, services and the associated business processes (Swanson 1994, Swanson and Ramiller 2004). Nevertheless, the process by which IT based innovation is undertaken in cooperative service environments still needs further investigation.

In this working paper we address this topic by providing the theoretical basis for a further analysis of innovation processes in cooperative service environments. It lies on the constructs of absorptive capacity. In particular, the following research questions have been addressed: 1) to which extent absorptive capacity constructs apply to the service and open innovation contexts? 2) how do they relate to IT capabilities?

The paper is organized as follows. A theoretical background section will introduce the underpinning theories and concepts applied to a traditional organization. Then, a discussion session will briefly present the proposed framework.

2 Theoretical Background

The capability to learn is very important for an organization. The process through which it is achieved has been widely investigated in the management literature. This process has been divided into four main steps (Huber, 1991): *knowledge acquisition* (process by which knowledge is obtained), *information distribution* (process by which information from different sources is shared and thereby leads to new information understanding), *information interpretation* (process by which distributed information is given one or more common understood interpretations), *organizational memory* (means by which knowledge is stored for future use). All these elements concur to the building of organizational learning.

Information interpretation has been defined as “the process of translating events and developing shared understandings and conceptual schemes” (Daft & Weick, 1984). A particular aspects that Huber (1991) underlines is information overload. Interpretation within or across organizational units is less effective if the information to be interpreted exceeds the units' capacity to process the information adequately.

These concepts move to the idea that, due to the amount and the scale of information, there is no organizational learning when organizations tackle too many information.

The research of Levitt and March on the problem of interpretation of past experiences states that it is a process based on a small number of observations in a complex, changing organization. The events that happen are not always obvious, and the causality of events is difficult to untangle, the difference between success and failure of a given action is not always clear (Levitt & March, 1988).

The main problem with the learning theories described above is linked with the limit faced by an organization for allowing knowledge to flow inside the organization itself. Absorptive capacity is a limit to the rate of information that a firm can absorb.

The seminal article on absorptive capacity highlights the idea that the capacity of an organization to absorb external knowledge (recognize, evaluate, assimilate and apply) is a function of the level of prior related knowledge (Cohen and Levinthal, 1990). This assumption is very important because it stresses the importance to get ground knowledge of a particular subject in order to have the possibility of increasing organizational innovation by exploiting external one. For organizations this implication means that investing in "related" knowledge can be fruitful for their possibility to increase organizational innovation.

Other researches point out the different perspective that absorptive capacity (AC) has on *potential* and *realized* absorptive capacity. They highlight that while the ability to value and acquire external knowledge is a *potential* AC, the organization cannot gain positive outcome if this potential AC is not supported by *realized* AC which is a function of leveraging absorbed knowledge (Zahra and George, 2002). Therefore, the development of both these elements of AC is crucial for an organization.

The use of these concepts has been useful for understanding the possibility to move the absorptive capacity from the R&D department (Cohen and Levinthal, 1990), to more decentralized units such as local managers of subsidiaries. These people can easily catch ideas from external environment and formalize them in a way to suggest the production of new products and services to the organization. This process is subject to both the ability of organization and the ability of local managers. The former consists in providing managers with tools for accurately interpret their environment. The second ability lies in the capability of scanning the environment and identifying which type of new service/product can be implemented by organization.

3 Discussion

Previous research on the sources of innovation has demonstrated that organizational innovation results from borrowing rather than invention. Indeed, the ability to exploit external knowledge is a critical component of innovative capabilities. Furthermore, information originating from other internal units in the firm, outside the formal innovating unit (i.e., the R&D lab), such as marketing and manufacturing, has also received attention in the product industry (Cohen and Levinthal, 1990).

In large service organizations (i.e. banks) which are widespread distributed within different geographical environments and where subsidiaries encounter different customer needs and a variety of possible partners, the role of local managers and of integration mechanisms become crucial. In fact, on the one hand local managers represent the gatekeepers which can support organizations in the definition of competitive strategies and in the development of new services. They have the possibility to acquire, assimilate, transform and exploit knowledge in order to achieve organizational innovation. Thus, local managers should possess a set of skills allowing them to recognize the potential value of a business idea and to communicate it to other organizational units. On the other hand, integration mechanisms (i.e. specialized actors, supporting tools) are needed in order to enable the transfer of

knowledge from local managers to the organizational units in charge of implementing new services.

Therefore, the effectiveness of the overall innovation process lies on both the quality of the interpretation that managers perform on the environmental needs and opportunities (*potential* absorptive capacity) and the effectiveness of the integration mechanisms which exploit the service innovation (*realized* absorptive capacity).

When services are heavily supported by IT, interoperability represents a prerequisite of open innovation environments and the above mentioned "*prior related knowledge*" must necessarily refer also to IT skills and capabilities.

As a result of this conceptual analysis on the applicability of absorptive capacity concepts to a cooperative service environment, the following research questions arise: 1) which type of IT skills and capabilities (*prior related knowledge*) positively affect the *potential* absorptive capacity of local managers? 2) which integration mechanisms can be implemented at organizational/inter-organizational level in order to positively affect the *realized* absorptive capacity and to increase the efficiency of assimilation and transformation?

These research questions should be further empirically investigated in order to gain insights on the role of IT skills and capabilities in the organizational innovation processes.

4 References

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