



Organizational competence building and development: Contributions to operations management

Marlene Aparecida da Silva Gonçalves Zangiski ^{a,*}, Edson Pinheiro de Lima ^{a,b},
Sergio E. Gouvea da Costa ^{a,b}

^a Pontifical Catholic University of Paraná, Industrial and Systems Engineering Graduate Program, 80215-901 Curitiba, Brazil

^b Federal University of Technology, Parana, 80230-901 Curitiba, Brazil

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ABSTRACT

'Change' is the word that describes nowadays-socioeconomic environment. Change drivers are forcing a new organizational behavior, which is based on collective determinants of its performance. Based on these assumptions that change is the main context characteristic and performance is collectively defined, organizational learning plays a special role. The main objective of this paper is to comprehend organizational learning in a strategic context established by operations strategy, and focusing on organizational competences formation and development as elements that drive performance. A conceptual framework is developed and tested using information from experts' interviews and secondary data collected from an enterprise knowledge management process implementation research project.

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1. Introduction

Information revolution shrinks time and space dimensions, transforming real-time communication among geographically distant people and enterprises a present reality. As a result of this technological development, companies seek to improve their learning processes, enabling them to take advantage of these interactions for competence creation and development (Lee and Hong, 2002).

Structural changes caused by information technology development have made financial, commercial, and productive globalization possible, increasing the number of competitors that create a real global and international arena. This new context prompted a continuous flow of in-depth, and irreversible market changes, thus increasing complexity and uncertainty in internal and external organizational environments (Choi et al., 2006; Khalil and Wang, 2002).

Among these changes one can mention that product life cycle reduction and productive processes redesign are being demanded from companies new learning approaches, in which knowledge management plays a 'refreshing' oriented role toward products and processes (Camisón and Forés, 2011; Irani et al., 2009; Koners and Goffin, 2007; Fernandes et al., 2005; Govers, 2001).

* Correspondence to: Pontifical Catholic University of Paraná, Industrial and Systems Engineering Graduate Program, Rua Imaculada Conceição 1155, 80215-901 Curitiba, PR, Brazil. Tel.: +55 4132712579; fax: +55 4132711345.

E-mail addresses: marlene.zangiski@gmail.com (M.A.S.G. Zangiski), e.pinheiro@pucpr.br (E. Pinheiro de Lima), s.gouvea@pucpr.br (S.E. Gouvea da Costa).

Knowledge management (KM) is a critical success factor for organizations operating globally. These organizations are emphasizing their KM capabilities for growing, retaining and mobilizing their organizational knowledge base (Gupta and Sharma, 2004). In this sense, KM comprises two main processes: creation, in which knowledge share, storage, transfer, and application take place; and commercialization, in which an invention, as a result from the creation process, turns into an innovation that is able to bring out results for the organization (Desouza and Awazu, 2006).

The development of a competitive strategy based on KM implies companies' cultural patterns review, by focusing on continuous learning and performance results, and organizational internal environment that favors new ideas generation is one of the key related questions (Yang, 2010; Halawi et al., 2006; Dawson, 2000). In this way, organizational learning represents a knowledge-oriented process, since it develops organizational competences, or it creates new capabilities (Camisón and Forés, 2011; Lustri et al., 2007; Merali, 2000).

For creating these new capabilities organizations should identify competences to be developed, their proper structuring process, based on their internal structure, their external environment and the resulted dynamic interaction between them (Yang et al., 2006; Berghman et al., 2006; Wang and Lo, 2003; Boog, 1991).

Organizational learning comes out as the result of this interactive process, and comprehends people, their relations, information sharing, experimentation, and knowledge diffusion, among other elements that are inherent to the organizational interaction process, especially in the operations management (OM) context.

Value chain models could be used as a first approach in understanding operations systems dynamics and their interactions through the entire operations network. In this way, Johansen and Riis (2003) stated that manufacturing vision is an integrative construct that links organizational resources to enterprise's mission. Capabilities and/or competences are constructs that mediate this relationship, that is, linking operations strategy to productive resources mobilization, that contribute to operations strategic vision building (Brown and Blackmon, 2005; Perona and Miragliotta, 2004; Manthou et al., 2004).

KM is a core competence for developing the strategic process and improving the operations systems of electric energy industry companies. Particularly for this paper, the knowledge base represented by power systems technologies and its mobilization through their operating systems is of crucial importance for a better and improved performance. In this sense, KM practices applied to organizational and individual levels could result in a superior performance (Edwards, 2008).

In general energy companies are capital-intensive enterprises that exploit a complex productive system, characterized by a technological based operation. Their workforce is formed by specialized professionals that continuously are integrating their expertise and know-how in the entire operation.

The Brazilian electrical energy industry based on big hydroelectric plants plays an important role for national economic

development infrastructure. According to 2010 National Energy Matrix Balance report, published by Energy Research Enterprise, electric energy represented in 2009, 15.2% of Brazilian energy source. Also, in 2009, hydroelectric plants produced 76% of the offered electrical energy (EPE—Energy Research Enterprise, 2010).

The findings presented in this paper aim for understanding concerning formation and development of organizational competences by means of organizational learning processes and operations strategy realization.

This paper portrays the development of a theoretical-conceptual framework for analyzing and representing organizational learning processes and their role on organizational competence formation and development, using for that purpose an operations strategy context.

2. Conceptual framework development

For Barney (1991), understanding interconnection between company resources and competitive advantage sustainability is thought to be a leading factor for strategy realization. His approach also classifies organizational resources as physical, human, and organizational, knowledge being part of the human ones.

Although knowledge is firstly approached as a human resource attribute that comes from personnel education, training and

Table 1
Synthesis of organizational learning theories.

Author	Focus	Comments
Nadler et al. (1992)	Obstacles and facilitators to the organizational learning	Acquire knowledge from one's own and other's experience, and modify the way of work.
Garvin (1993)	Learning through know-how and new ideas	Learning as a knowledge acquisition process, through information processing mechanisms, where new ideas are essential and may arise both from inside and outside the organization, as a result of experience, experimentation, learnt lessons, best-practices, and fast and efficient knowledge spread in the organization.
Ayas (1997)	Infrastructure and diversity	Learning capability related to infrastructure creation to comprise learning processes, and to knowledge, value and insight diversity.
Nonaka and Takeuchi (1997)	Learning through know-how and metaphorical language usage	Knowledge creation purely based on flexible and qualitative elements. Learning systems more from day-by-day experience and metaphorical language usage than from formal training programs. <i>Know-how</i> —solves specific problems based on existent premises. Establishes new premises, aiming to revoke the existent ones.
Dixon (1999)	Interrelation between individual and organizational learning dimensions	Intentional use of the learning process at individual, peer, and systemic levels, in order to keep driving the organization toward a satisfactory growth for the stockholders.
Cecez-Kecmanovic (2004)	Learning based on communicative competence and debate fostering culture	Learning focused on technical skills development and expertise, business and organizational understanding, communicative personal skills, communicative competence of the individuals, and culture that fosters open debate and social interaction processes, with new ideas and innovation.
Fleury and Fleury (2004)	Understanding of the organization's internal and external environments	Learning focused on the formulation of new cognitive maps that enable the internal and external environment understanding, and the establishment of new conducts that evince learning effectiveness.
Chen (2005)	Organizational memory as a learning resource	Organizational learning refers to the process through which an organization adjusts and/or continuously changes itself, improving and making use of its organizational knowledge resources, and straining to conform to internal and external environment changes and keep sustainable competitive advantage. Emphasis is on three points: <ul style="list-style-type: none"> – the organizational learning goal enables the organization to conform to internal and external environment changes; – the most important resource to make organizational learning happen is the stored knowledge (organizational memory); – learning is a continuing and non-stopping process.
Marsh and Stock (2006)	Knowledge interpretation ability positively influences innovation	Knowledge interpretation brings direct effects on innovation. Organizational efforts to interpret existent knowledge under the strategic context, with experience articulation and codification, positively influence the ability to apply the knowledge from new projects and the development of new products.
Fliaster Spiess (2008)	Learning based on social networks	The benefits from interpersonal and informal collaboration play a role beyond mere information regarding technology trends. Social networks in the organization may help to identify or reformulate problems, validate ideas and the course of an action, make the creative perspective possible, evince opportunities, and enable problems to be better distributed through work sharing.
Senge (2009)	The five organizational learning subjects	The company as a living organism, at which learning is due to people and comes mainly from their experience. The five learning subjects are Personal Control, Mental Frameworks, Shared Views, Team Learning, and Systemic Thinking. People with a higher level of maturity are more able to learn.

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