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BIG DATA IS A BIG DEAL

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ABSTRACT

The relentless collection of data from all sources, especially from machine sensors and websites have introduced both a high level of complexity, as well as a great opportunity for businesses. Most of the world's big organizations such as Apple, GE, Walmart, Exxon and Samsung have global operations (factories, warehouses, transporters, and customers) and serve several customers with a wide variety of products and services. The complexity of such vast and highly connected networks is hard to unravel and makes it very difficult for the human brain to find where and why problems occur [16]. The ever increasing collection of data, also known as Big Data, will only be useful if it can be analyzed to give useful insights into business problems, and perhaps even make suggestions as to when and where future problems will occur (predictive analytics) so that the problems can be avoided or at least mitigated.

For example, entire supply chains are driven by collecting data points all along the supply chain, and then analyzed by data analytics software to have enhance the efficiency and effectiveness of supply chain management – ultimately giving the organizations in the supply chain a huge competitive advantage. Efficient supply chain management offers company's competitive advantage in terms of improvement in service and quality, lowering costs, and the ability to compete successfully in global marketplace. Another example is that of the industrial giant GE, which is rapidly getting into the Industrial Internet and Internet of Things (IoT) space. On any given day, 24,000 locomotive engines are travelling about 140,000 miles, and GE estimates that if its new Big Data tools (Industrial Internet Software Suite) could even improve efficiency of its engines by 1%, that would translate into a savings of $2.8 billion annually for its customers! GE's Trip Optimizer, for instance, is a type of cruise control that combs through piles of data and synthesizes them for the driver in a way that allows him to steer the locomotive to maintain the most efficient speed at all times and reduce fuel burn.

The purpose of this article is to examine the budding field of Big Data and its related analytics. The trend of connecting not just people, but also machines to the Internet, and then collecting data from these machines via sensors would soon result in an unimaginable repository of data that then has to be analyzed for useful information. Specifically, we illustrate the many ways in which data is collected and analyzed for solving business problems.

This paper will be prove very beneficial to business managers as it will show them how new Big Data tools can be deployed to solve complex business problems, and allow them compete successfully in an increasing complex, global, inter-connected, data-driven world. IT academic researchers will gain a solid understanding of the potential of Big Data, and be prepared to conduct research in this new field. IT educators will be able to prepare their students to go out and use Big Data to enhance not only their employers' bottom line, but also increase their own marketability.

ARE MY WEB PAGE AND I ON THE SAME PAGE?

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ABSTRACT

The importance of web presence to both virtual and bricks-and-mortar organizations is unquestioned and continues to increase. However, how to maximize the impact of this important tool has been the subject of only limited academic research. This research was designed to develop a measurement instrument that could be used - by organizations to produce an internally consistent, robust measure of their website design. The resulting instrument is based on over 600 surveys of the web presence of ***Inc. Magazine****'s Top 500 list (2012) of fastest growing companies in the United States and incorporates shared elements (best practices) common to the websites surveyed.*

Through the use of the Analytic Hierarchy Process (AHP) multi-attribute decision modelling technique, we developed an internally consistent, robust model against which companies can measure their web presence in comparison to these industry leaders.

DISCOVERING THE REASON FOR IT PROJECT FAILURE

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ABSTRACT

Information Technology (IT) project management provides a framework and structure for managing the scope, cost, and schedule to meet the project goals. As IT resources are precious, organizations are prudent in their resource spending to achieve a better return on investment. As a result, today's modern enterprise has utilized project management methodologies to manage IT projects. Project management practice also acts as a source of competitive advantage. However, despite technological advances and evolving project management practices IT project continue to exhibit high failure rates. As project management has gained universal significance the person centrally responsible for managing the project, the project manager becomes equally important. The international research community has exhibited considerable interest in the area of IT project management as multiple industries have intricate ties to technology to enable organizational success. To overcome IT project failure, new approaches and new knowledge is required to overcome challenges unique to the field of IT project management. This qualitative phenomenological research study is uncovering the underlying reasons for IT project failure. The research question focused on the skills that are required for project managers while managing IT projects. The IT projects range from critical to noncritical projects. The theoretical foundation of the study utilized Actor Network Theory (ANT). The data was collected by interviewing 10 Project Management Institute (PMI) Project Management Professional (PMP) certified IT project managers based in U.S., Canada, and India. Knowledge gained from the lived experiences of IT project managers conclude that project managers need strong IT project management and stakeholder management skills in order to manage IT project effectively. The results of this study can help IT project management practitioners and can contribute to increasing the success rates for IT projects.

INTEGRATING AN ERP INTO THE CURRICULUM AT A BUSINESS SCHOOL: THE STUDENTS' PERCEPTIONS OF SAP

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ABSTRACT

Enterprise Resource Planning (ERP) software has been offering an integrated enterprise-wide database driven management solution for organizations for many years. As the deployed base of ERP systems grew and spread to a much more diverse type of organization, it became more important that we integrate the use of this technology into our curriculum. In May 2013 our school joined the SAP University Alliance program. Once we integrated SAP into the curriculum, we sought to determine if the current approach is successful in improving the student's attitude toward an ERP system such as SAP, while also increasing their confidence in working with that technology. In order to evaluate the effectiveness of this endeavor, we chose to evaluate the students' perspective regarding the usefulness, ease of use, and the benefits derived from the SAP exercises. We conducted two surveys (pre- and post-treatment) to compare our students' perception on the value of the SAP ERP software before and after they received training and used the system. The study was conducted in the fall semester of 2013 and again in the spring and summer semesters in 2014 in several upper division undergraduate Management Information Systems classes. The data was collected from eight sections of the course that was taught by three different faculty members. This resulted in obtaining 230 valid paired cases for analysis. Findings indicate that participants have positive perceptions on the usefulness, ease of use, and intention to use the ERP system. Also, the findings indicate that overall the training material and exercises they used helped them appreciate the functionality of the system, its usefulness, and its ease of use. This represents an important finding given the widespread use of ERP systems in the business world and the need of employers to recruit newly graduates with the necessary skills to fulfil current and future needs. We found this first experience integrating SAP ERP into our core curriculum to be a positive experience.

Keywords: Technology Acceptance Model (TAM); SAP ERP; Business Administration Curriculum; Assessment of Learning

TEACHING LEADERSHIP THROUGH A TRANSFORMATIONAL LEARNING APPROACH: THE INTEGRATION OF MINDFULNESS IN AN MBA CURRICULUM

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Business schools have been criticized for not teaching the right content and not providing students with the knowledge and skills necessary for the effective management of today's organizations (AACSB, 2002; Bazerman and Moore, 2009; Benjamin and O'Reilly, 2011; Datar, Garvin, and Cullen, 2010; Goshall, 2005; Mintzberg and Gosling, 2002; Pfeffer and Fong, 2002). Proposed remedies for the shortcomings in management education include a stronger emphasis on accountability, ethics, and responsibility issues in the MBA curriculum as well as the need for MBA students to better recognize organizational realities, act creatively, think critically, and communicate clearly (Datar et al., 2010; Mintzberg, 2004; Pfeffer and Fong, 2004). In addition, these same authors demand that management education addresses enhanced reflection, greater self- and other awareness so that managers can understand their own and others' goals and motivations (Navarro, 2008). Similarly, Senge, Scharmer, Jaworski and Flowers (2004: 13) stress the need to cultivate a capacity for presence or "being fully conscious and aware in the present moment ..... being open beyond one's preconceptions and historical ways of sense-making."

Mindfulness, by definition, includes a focus on the self-awareness, self-management and novel modes of perception that are foundational to transformational learning. Transformational learning is a learning experience that results in more far-reaching change in the learner than traditional content-based education and induces learning experiences that reshape the learner, provide a paradigm shift and affect the learner's subsequent experiences (Clark, 1993). Brock (2007) suggests that transformational learning takes place "when a learner is struck by a new concept or way of thinking and then follows through to make a life change; it supplements more common types of learning such as acquiring facts or learning new skills."

A growing trend in organizational and human resource development is the introduction of secular mindfulness programs; however, mindfulness based programs continue to be scarce in academic business education. In this paper, we describe a mindfulness-based leadership course as the vehicle for introducing mindfulness into an otherwise traditional part-time MBA program. We derive the theoretical basis for the course from the transformational education literature and report on the results of the first administration of this course as an MBA elective. Quantitative analysis of KIMS (Kentucky Inventory of Mindfulness Skills) survey data collected during and after the course indicates that levels of mindfulness have been significantly raised by the program. Qualitative analysis of student journals and post-course surveys indicate that transformational learning did in fact take place during the course resulting in a significant perceived benefit for the students.

FINDINGS FROM SURVEY ON MOBILE MULTIMEDIA TRAINING

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INTRODUCTION

What is mobile multimedia learning? The rapid development and growth of Internet broadband Wi-Fi access and the fast increase of smart mobile device usage make various types of multimedia training materials ubiquitously available through various types of multimedia training systems. Trainees holding smart mobile devices have access to the sophisticated multimedia learning materials anytime wherever they go. The recent advancement and great proliferation of smart mobile devices in the world have paved the way of sharing and accessing multimedia training contents taught in a physical place in different time and place from the time and place of learning offered. The mobile devices are grown up to 'smart' instruments having high performance in terms of memory size, processing speed, and communication capability. Thanks to the advancement, various types of multimedia contents including audio and video could be accessed by or delivered to mobile devices, such as smart phones, tablets, and personal digital assistants (PDAs). The learning contents could be accessed by individual learners' mobile devices through wireless communication network.

The recent development of information and communication technology in general and the consolidation of these technologies and multimedia technology in particular have brought enormous changes in education methods in many organizations. Numerous studies about teaching trainees by multimedia technology in the education field have been published and those studies reported that the multimedia technology would enhance learning performance more than that of traditional teaching methodology. However, few studies about direct investigation on the effectiveness of multimedia technology on learning are found in the corporate training sector. There are not many studies around the effectiveness of multimedia technology in corporate training (Orrr, Golas, and Yao, 1993; Bielenberg, Carpenter-Smith, 1997; McDonald, 2004). A few studies on mobile learning found in the world (Motiwalla, 2007; Vavoula and Sharples, 2009; Frohberg, Goth, and Schwabe, 2009; Demirbilek, 2010). Only a few studies on multimedia education in a mobile learning environment found (Giza, 2014; Moldovan, Ghergulescu, and Muntean, 2014).

In this regard, the major objective of the study is to investigate which factors affect the trainees' learning performance in business organizations when the training is delivered by the mobile multimedia technology. Then the paper would like to provide companies ways to enhance their training outcomes by designing better training materials with multimedia and mobile technology. Based on the constructivism theory and motivation theory of the education engineering field, a theoretical research model and research hypotheses were developed. Then the

study examined a variety of factors in mobile multimedia training, which affect trainees' learning performance.

RESEARCH METHOD

The paper analyzed a set of surveyed data from companies that provided specialized multimedia training in sites and allowed learners to access the contents and instructors via mobile devices. The target organization was the human resources department of large corporations. In the organizations, the multimedia training materials included text, audio, graphic, video, and animation. Among them, for the communication speed to the mobile devices, large video files were suggested to utilize limitedly. Instead, small video clips were recommended to use in the multimedia learning contents. The organizations had multimedia training rooms that is connected by LAN to share the contents through wired networks and is connected by 3G and 4G wireless connections to allow employees to have access the training contents through mobile devices. This paper focused on the trainees'' perception on their training experience through multimedia and mobile technology. Eight hundred and thirty (830) questionnaires are distributed to the directors of the human resources departments of the large business organizations in S. Korea and the questionnaires were distributed to the employees who participated in various types of trainings that were offered through their multimedia training rooms and allowed trainees to access the contents they learned and instructors through mobile devices for their further studies. The completed questionnaires were faxed, mailed, and emailed to us to retrieve data in the surveys. Out of the eight hundred and thirty questionnaires distributed, five hundred and forty three responses were collected. Five hundred and seventeen (517) questionnaires were finally included in the analysis after twenty six questionnaires were excluded as they contain inappropriate responses for our analysis. The response rate was 65% and is high enough for this empirical study. The response on the questionnaires were encouraged by the instructors who conducted the trainings. The respondents held a variety of positions and careers, but most of them were assistant managers and managers (85%) of the companies, although the largest population in the survey was assistant managers (40.6%). The largest portion of participants held bachelor degrees (47.9%), and the highest percentage of them had their work experience for six to ten years (42.7%).

RESULT

The result of the four regression analyses and other tests indicated that the hypothesis H3-1 (feedback of learning), H4-1 (information sharing), and H4-3 (Quality of information presentation) were fully accepted. This indicates that the multimedia learning was the most efficient in feedback of learning when it was delivered through mobile devices. In other words, the trainees saw that the extent of feedback in response to the multimedia learning activities to provide appropriate training information was the most prominent benefit of mobile multimedia training. Information sharing for their learning could happen more easily through mobile devices that could be carried by the trainees anytime wherever they go. This information sharing promoted learners' ease of learning in their training, overall learning improvement, ease of use of the

multimedia materials, and the reduction of learning time and overall learning cost. The quality of information presentation also affected the learners' understanding of multimedia contents delivered via mobile devices. Especially, the visual pictures, clearness of the pictures and letters, and clearness of the multimedia data enhanced trainees' learning a lot. In addition to those, mobile delivery of multimedia contents increased learners' memory of contents, extended learners' interest, and also improved instructor's instant responses to the learners. The mobile delivery also reduced training time and cost, especially the cost of learning outside of physical learning place.
All the other hypotheses after three fully accepted hypotheses are partially accepted except three rejected hypotheses, appropriateness of goals, ethics of contents, and support of software. This indicates that all the other variables except the three fully accepted and three rejected ones affect the learning effectiveness partially in terms of ease of learning, improvement of education, ease of use, and reduction of time and cost.

CONCLUSION

By recent development of information and communication technology (ICT), multimedia training in any corporation can be enhanced by utilizing mobile computing and delivering the multimedia contents via advanced mobile devices. The result of the study indicated that the trainees' learning could be improved by providing direct feedback and encouraging various feedbacks from learners to the instructors and to the other learners via mobile devices. Another benefit of utilizing mobile devices for delivery of and access to multimedia contents was that the delivered contents could be more easily corrected by providing the way of easy communication and feedback through smart mobile devices. By the mobile delivery, learners could also share information more easily, trainees could have repetitive learning although they were not in the training site physically. Information sharing about the contents that trainees' learned could happen more easily through mobile devices that could be carried by the trainees anytime and anywhere. This information sharing happened via mobile devices helped learners study the multimedia contents that were taught by instructors once at a site in different time and place. The quality of information presentation affected the learners' understanding of multimedia contents a lot when they were allowed to access by the learners via mobile devices. In addition to improving learners' understanding, access to multimedia contents via mobile devices enhanced learners' memory of contents, extended learners' interest, and also improved instructor's instant response to the learners. The mobile access to the multimedia contents also reduced training time and overall training cost, especially the cost of learning outside of physical learning site.

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MOBILE BANKING ADOPTION: A CONCEPTUAL MODEL

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ABSTRACT

Despite the steady growth of Internet banking and mobile banking, only half of adults in the U.S. use online banking, with the other half still visiting physical branches for their banking (PewInternet, 2014). For years, studies are being conducted in the IS field using the Technology Acceptance Model (TAM) in order to determine the key factors explaining the adoption of online banking. But, due to the privacy concerns and the psychological barriers often associated with conducting transactions in a virtual world, the TAM has proven to be a limited tool. In this study, we revisited the IS literature on mobile banking adoption along with relevant theories from the areas of marketing and psychology in order to develop a conceptual model that would have a potentially greater explanation power. The proposed model emphasizes the role of subjective norms, technological readiness, trust, and perceived critical mass of users. The model is discussed along with the ten research propositions it implies. The theoretical and practical implications of the study are also discussed.

Keywords: Mobile banking, TAM, technology readiness, perceived critical mass, subjective norms.

PETER SENGE'S LEARNING ORGANIZATION: A CRITICAL VIEW AND THE ADDITION OF SOME NEW CONCEPTS TO ACTUALIZE THEORY AND PRACTICE

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ABSTRACT

Since few decades we are living in a world characterized by a more and more accelerated shift of change. Indeed, "our environments are more and more complex, more and more interdependent, more and more fleeting, more and more unstable, and more and more unforeseeable. In addition, this shift of change of growing complexity is continually accelerating. Thus, this new context continually requires greater capabilities of adaptation, relegating to us the responsibility of our learning, and it is asking for the creation of a culture of continuous change and learning." (Lapointe, 1998, p. 2] Trying to reach this objective, in 1987, Peter Senge and a team of researchers at the Sloan School of Management of the Massachusetts Institute of Technology (MIT) suggested a new organizational culture of continuous change and learning or, in other words, to build learning organizations, organizations which are capable to generate and share knowledge. Senge's view of building learning organizations is articulated around five fundamental disciplines: systems thinking, personal mastery, mental models, shared vision, and team learning. In this paper, we discuss about the learning organization and the organizational learning, we bring a critical view of the learning organization, such as proposed by Senge, and we suggest the addition of two new concepts (e.g., knowledge generation and sharing, and organizational behavior) to those integrated into the Senge's five core disciplines in order to help actualize the learning organization theory and practice, and to perform a better management of the individual and organizational knowledge and the organizational behavior of people within the enterprises.

INTRODUCTION

Since few decades we are living in a world characterized by a more and more accelerated shift of change. Indeed, "our environments are more and more complex, more and more interdependent, more and more fleeting, more and more unstable, and more and more unforeseeable. In addition, this shift of change of growing complexity is continually accelerating. Thus, this new context continually requires greater capabilities of adaptation, relegating to us the responsibility of our learning, and it is asking for the creation of a culture of continuous change and learning." (Lapointe, 1998, p. 2] In this changing mind of organizational learning culture, at the end of the 1980s, business management academics and senior managers began to discuss about the notion of "learning organization". Ray Stata, Chief Executive Officer (CEO) at Analog Devices Inc., suddenly launched the following idea: "The pace at which people and organizations learn may become the only source of sustainable competitive advantage." (Stata, 1989; quoted in Senge, 1990a, p. 7) And, in the middle of 1990, in a conference organized at Massachusetts Institute of Technology (MIT) titled "Transforming Organizations" two questions were

continually remaining: How can we build organizations in which continuous learning could be ubiquitous? What type of people is the most likely to become a leader in a learning organization? (Senge, 1990a)

In fact, since about twenty-five years, a team of researchers (Society for Organizational Learning, Sloan School of Management, MIT), leaded by Peter Senge, are actively thinking about the conception and development of a learning culture favouring the adaptation of our organizations and communities to a more and more changing environment. They propose a new organizational culture of continuous learning or, in other words, to build learning organizations (Lapointe, 1998), organizations which are capable to generate and share knowledge.

In a beautiful morning of fall 1987, Senge had a vision. During his morning meditation, he is suddenly becoming conscious that learning organization would become a new management "buzzword". So, all the developments which took place in the next four years (1987-1990) have pursued Senge's initial intuition to finally conduct him to write the book *The Fifth Discipline: The Art & Practice of the Learning Organization*. Following the publication of this book in 1990, the learning organization, as imagined by Senge, became one of the more prominent management "buzzword" of the first half of 1990s. According to Senge, the major challenge in building a learning organization is related to the need of a sustained effort. It is relatively easy to attract people with new ideas, but it is harder to make such that people practice these new ideas in their daily life, says Senge. To that end, in 1991, Senge founded the Centre for Organizational Learning of the Sloan School of Management at MIT. This Centre is, in fact, a consortium of medium-large sized enterprises, including Ford, Harley-Davidson, Federal Express, EDS, Intel, Herman Miller, AT&T, Philips Display Components (a North American division of Philips Electronics), Merck Frosst, Shell Oil, US West, and GS Technologies (Senge, 1990b). It serves as the fundamentals to practice the five disciplines which are the essence of the learning organization.

Many consultants and organizations have recognized the commercial significance of organizational learning -- and the notion of the learning organization has been a central orienting point in this (Smith, 2001a). Writers have sought to identify templates, or ideal forms, "which real organizations could attempt to emulate" (Esterby-Smith & Araujo, 1999, p. 2). In this sense the learning organization is an ideal "towards which organizations have to evolve in order to be able to respond to the various pressures" [they face] (Finger & Brand, 1999, p. 136). It is characterized by the recognition that "individual and collective learning are the key" (Finger & Brand, 1999, p. 136). Two important things are resulting from this: (1) while there has been a lot of talk about learning organizations it is very difficult to identify real-life examples. This might be because the vision of "too ideal" or because it is not relevant to the requirements and dynamics of organizations; and (2) the focus on creating a template and upon the need to present it in a form that is commercially attractive to the consultants and writers has led to a significant under-powering of the theoretical framework for the learning organization (Smith, 2001a). There is a distinct contrast with the study of organizational learning.

> "Although theorists of learning organizations have often drawn on ideas from organizational learning, there has been little traffic in the reverse direction. Moreover, since the central concerns have been somewhat different, the two literatures have developed along divergent tracks. The literature on *organizational learning* has concentrated on the detached collection and analysis of the processes involved in individual and collective learning inside organizations; whereas the *learning organizations* literature has an action orientation, and is geared towards using specific diagnostic and evaluative methodological tools which can help to identify, promote, and evaluate the quality of learning processes inside organizations." (Esterby-Smith & Araujo, 1999, p. 2; see also Tsang, 1997)

So we could argue that organizational learning is the "*activity* and the *process* by which organizations eventually reach the ideal of a learning organization" (Finger & Brand, 1999, p. 136). Our aim in this paper is to discuss about the learning organization and the organizational learning, to bring a critical view of the learning organization, as suggested by Peter Senge, and to propose the addition of two new concepts (e.g., knowledge generation and sharing, as well as organizational behavior) to the five core disciplines of a learning organization in order to help actualize the learning organization theory and practice, and to perform a better management of the individual and organizational knowledge and the organizational behavior of people. The paper is structured as follows: first, we present the learning organization rationale; second, we discuss about the organizational learning as an integral part of the learning organization; third, we bring a critical view of the learning organization; and finally, we propose the addition of two new concepts to the five fundamental disciplines which are the essence of a learning organization.

LEARNING ORGANIZATION RATIONALE

The first section of the paper is devoted to present the basic rationale of the learning organization such as imagined by Peter Senge. The rationale is articulated around the following elements: the interest in learning organization, the definition of a learning organization, the five core disciplines of a learning organization (systems thinking, personal mastery, mental models, shared vision, and team learning) and their concepts, as well as the notion of "leadership" which is essential to a learning organization.

Why to Be Interested in Learning Organizations?

Basically, it is the search for the (unattainable) Holy Grail. Companies are seeking to improve existing products and services (continuous improvement), and innovation (breakthrough strategies). This has resulted in a plethora of initiatives such as Total Quality Management (TQM) and Business Process Reengineering (BPR). But companies are finding that such programs succeed or fail depending on human factors such as skills, attitudes, and organizational culture. It also appears that many implementations are geared to highly specified processes, defined for anticipated situations. The current interest in the learning organization stems from the recognition that these initiatives, by themselves, often do not work. Something more is needed to: (i) cope with rapid and unexpected changes where existing "programmed" responses are inadequate; (ii) provide flexibility to cope with dynamically changing situations; (iii) allow front-line staff to respond with initiative based on customer needs vs. being constrained by business processes established for different circumstances. (Farago & Skyrme, 1995) With the pace of change ever quickening, the need to develop mechanisms for continuous learning and innovation is greater than ever, argue these authors.

The emergence of the idea of the learning organization is wrapped up with notions such as "learning society" and "knowledge economy". Perhaps the greater defining contribution here was made by Donald Schön. He provided a theoretical framework linking the experience of living in a situation of an increasing change with the need for learning. (Smith, 2001a)

> "The loss of the stable state means that our society and all of its institutions are in *continuous* processes of transformation. We cannot expect new stable states that will endure for our own lifetimes.
>
> We must learn to understand, guide, influence, and manage these transformations. We must make the capacity for undertaking them integral to ourselves and to our institutions.

> We must, in other words, become adept at learning. We must become able not only to transform our institutions, in response to changing situations and requirements; we must invent and develop institutions which are 'learning systems', that is, systems able of bringing about their own continuing transformation." (Schön, 1973, p. 28]

One of Schön's great innovations was to explore the extent to which enterprises, social movements, and governments were learning systems -- and how those systems could be enhanced (Smith, 2001a). He suggests that the movement towards learning systems is, of necessity, "a groping and inductive process for which there is no adequate theoretical basis" (Schön, 1973, p. 57]. In addition, Donald Schön went on with Chris Argyris to develop a number of important concepts regarding organizational learning; of particular importance for later developments was their interest in feedback and single- and double-loop learning (Smith, 2001a) (we will discuss about these concepts in the next section of the paper).

Subsequently, we have seen very significant changes in the nature and organization of production and services. Companies, organizations, and governments have to operate in a global environment that has altered its character in significant ways (Smith, 2001a). As Leadbeater (2000) says, companies need to invest not just in machinery to make production more efficient, but in the flow of know-how that will sustain their business. Organizations need to be good at knowledge generation, appropriation, and exploitation. It was in this context that Peter Senge began to explore "the art and practice of the learning organization". And, several years later, Mitra and Gupta (2008) argue that in today's fast paced global environment, one must possess intimate knowledge of the rapidly evolving global marketplace and its impact on the current and planned set of products and services. It is then extremely important to pursue Senge's work and to continue the exploration of "the art and practice of the learning organization".

Defining a Learning Organization

According to Senge, learning organizations are:

> "…organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together." (Senge, 1990b, p. 3)

The basic rationale for such organizations is that in situations of rapid change only those that are flexible, adaptive, and productive will excel. For this to happen, it is argued, organizations need to "discover how to tap people's commitment and capacity to learn at *all* levels" (Senge, 1990b, p. 4).

In his book published in 1995, Brilman adds two new dimensions to the Senge's definition of a learning organization which seem to us extremely important to take into account, that is, the use of auto-evaluation referents and the benchmarking process. So, according to Brilman,

> "… it is an organization which put much emphasis on its personal formation and development, but it is much more than this: it is a 'smart' organization in the sense that it develops, on the one hand, its vigilance and speed of perception of changes in the environment and, on the other hand, it improves the understanding of its functioning as a system. It is continually in an auto-evaluation process in comparing itself to the world bests, and it is searching to know and benchmark those which make better. Thus, it stays awake, flexible, and proactive. In such a way, it stays an *always young* organization." (Brilman, 1995, p. 213]

For Senge, real learning gets to the heart of what it is to be human. We become able to re-create ourselves, argues Senge. And this applies to both individuals and organizations. Thus, for a learning organization it is not enough merely to survive. "'Survival learning' or what is more often termed 'adaptive learning' [learning allowing the adaptation to the situation] is important -- indeed it is necessary. But for a learning organization, 'adaptive learning' must be joined by 'generative learning', learning that enhances our capacity to create." (Senge, 1990b, p. 14)

The Five Fundamental Disciplines of a Learning Organization

Peter Senge proposed five fundamental disciplines to put into practice for becoming a learning organization: systems thinking, personal mastery, mental models, shared vision, and team learning. A discipline is viewed by Senge as a series of principles and practices that we study, master, and integrate into our lives. Each of the five learning disciplines can be thought of on three distinct levels: (1) Practices (what you do); (2) Principles (guiding ideas and insights); and (3) Essences (the state of being those with high levels of mastery in the discipline) (Senge, 1990b, p. 373). Each of the five disciplines provides a vital dimension to the learning organization. Each is necessary to the others if organizations are to "learn". We will now take a closer look at these five disciplines.

It is to note that the five disciplines of a learning organization and all the other points mentioned into the introduction are discussed in the full paper.

CONCLUSION

In this paper, first, we discussed about the learning organization and the organizational learning, second, we brought a critical view of the learning organization, such as proposed by Senge, and third, we proposed the addition of two new concepts (e.g., knowledge generation and sharing, as well as organizational behavior) to those integrated into the Peter Senge's five fundamental disciplines of the learning organization (systems thinking, personal mastery, mental models, shared vision, and team learning) in order to help actualize the learning organization theory and practice, and to perform a better management of the individual and organizational knowledge and the organizational behavior of people within the enterprises. Does our goal to enhance the learning organization theory and practice, the knowledge management, and the organizational behavior of people within the enterprises reached? We hope so! On the other hand, as we have seen in the examples we provided previously in this paper of organizations trying to integrate some of the five core disciplines of the learning organization suggested by Senge into their daily activities, it is not very easy to do that. But we sincerely think that this approach, if well-understood and well-integrated, is unique and extremely interesting to implement within contemporary and future organizations, and which can assuredly provide them with significant positive results, as much at the personal level (for example, a better quality of the relations, of the life in general, and of the work) as at the productivity level (for example, more effective working methods without necessarily providing more efforts on the part of the personal). And this is still a lot more true given we have now global organizations managed quite differently, that is, integrating global collaboration between people and enterprises and the use of social media (Facebook, Twitter, LinkedIn…), among others. Consequently, we end the paper by strongly encourage organizations to persevere in that sense, but by putting a greater emphasis on the understanding of the five core disciplines underlying the learning organization and on the ways to put into practice these five disciplines as a whole in everyday life. In addition, we also encourage enterprises to add the two new concepts we suggest in this paper to these five fundamental disciplines. In this way, we sincerely think that organizations will get incommensurable benefits in the long run!

References are available upon request.