Today Need of e-Commerce Management to e-Skill Trainings

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Abstract—**Daily growing of Internet technologies presents complicated opportunities and challenges to organizations and guiding them to develop new managerial roles and practices. Academic researchers and business associations worldwide, conducted several studies, which emphasized on clarifying managers' skills and competences, but there isn't an overall outlook on today's requirements for e-commerce management. Different companies have different points of view on what the e-commerce manager's roles and functions are. Some businesses believe that e-commerce management includes marketing functions; others dedicate it to IT functions or web design and web development. In fact, e-commerce managers are in charge of all related aspects of their business, from financial perspective to website maintenance. Moreover, managerial decisions play a substantial role in organization's performance efficiency and competitiveness in the irregular electronic era. So it is crucial for business owners to be aware of latest e-skills to get their business started successfully or either to help it develop. This paper studies why and how e-commerce managers are trained to deploy IT infrastructures for their business achievements. Particularly, as e-commerce introduces new ways to international business in which even small firms can operate as global rivals, this article aimed to have a brief overview about e-commerce management and e-skill training in current business.**

Index Terms—**Business needs, business schools, electronic commerce, managerial e-skills.**

I. INTRODUCTION

Nowadays e-business is considered as a standard in industry [1]. Enormous extension of dot-com businesses makes e-commerce as a vital component and heart of global economy in the twenty-first century, which its impact is undeniable in almost all organizations and segments [2]-[4].

However, national wealth and different technological capabilities like information infrastructure and Internet access expenses differ countries in the degree of Internet usage and e-commerce adoption, more people around the world increasingly tend to buy, sell, transfer or exchange products, services, and/or information through the computer mediated network and Interne [5], [6]. It was reported that the money transactions which shoppers spend online is almost doubled each year [7]. The presence of e-commerce is also leading to important changes in the way business is operated

[7]-[10]. As a result, e-commerce firms could save 5%–10% or more in their business costs [9]. Such changes are developing the way companies gain wealth and create shareholder's value. Furthermore, e-commerce allows companies to simply make their businesses effective, increase customer service and provide digital services and products [7]. So that, organizations consider e-commerce ups and downs as giving strategic opportunities to boost their ordinary situations [7], [11] and acquiring competitive advantages to reach their organizational goals more effectively and efficiently rather than other rivals [8], [10], [12], [13]. But the point is that investing in e-commerce alone cannot bring sufficient improvements to business performance, especially if there is no coherence with the firm's environment and strategic objectives. As a reason, enterprises have to improve their technology, change and knowledge management capabilities, and that's why they need to receive added support from academia like universities, researchers or knowledge transfer agents [1]. So that, this study tends to show that e-business impacts on firms' performance is influential just when accompanied with strong managerial supervision [14]. As one of the top chiefs within an organization, a manager is the architect and central power of the firm's ability for competitive improvements. She/he has to blend different sets of competences to navigate the organization in the right direction [3]. Therefore, e-commerce management as a controversial issue has attracted a lot of attention in all countries worldwide [15] and brings universities the huge responsibility of satisfying the demand of labor market and industry to cultivate those who entering the workforce and those from the existing workforce with the needed e-skills [15]. As a matter of fact, an e-commerce manager is not just a programmer, a marketer, or a web developer, but she/ he is the one who has sufficient knowledge about each of those functions as well as managing the employees who those careers belong to them. The e-commerce manager have to well understand the IT tasks and responsibilities, web site creation, and marketing sectors, interacting between different departments to facilitate web site creation and promote successful e-commerce dimension of their business [16].

This article has been written in seven sections. The first part outlines the managerial e-competences and skills, which are highly demanded by e-commerce workplaces today. In the next section, the most influential managerial characteristics that make differentiation between traditional management programs and e-commerce needs will be debated. In the third part, previous and recent academic approaches toward the fulfillment of e-commerce needs and career space is going to discuss. Forth section includes some

practical evidences of implementing e-commerce in business schools' curriculum, that the cases' strong points will be remarked. The last two parts are dedicated to discussion and conclusion.

II. E-Commerce Needs of Management Skills

E-Commerce growth experiences dramatic rates these days, which has resulted in equally growing demands for knowledgeable employees in the same area [17]. There are also some difficulties and barriers to e-commerce that need managerial skills to be properly overcome. Providing e-training for managers and key personnel can significantly help organizations to overcome their most likely barriers such as the safety and privacy, legal and the technological obstacles [18]. As it was reported, industry has "hundreds and hundreds of jobs that cannot be filled because of the skills shortage". The most desirable positions are related to Internet and e-commerce [19]. Recent statistics show that Europe's growing shortage of competent and skilled e-commerce experts is influencing the effectiveness and competitiveness of most businesses. The UK industry labor market alone demanding 110,000 new professionals who is greater than the present supply [20]. As a matter of fact, today as well as even the economic crisis time, many companies around the world are increasingly competing to employ experts who are qualified in information technology and business management, professionals with comprehensive understandings of both technical and business capabilities [15]. In this between, technical trainings seem more important in building e-commerce applications, e-commerce website security, e-transactions and e-commerce system administration, whereas managerial/ business trainings play noticeable roles in financial investments and planning, change management and human resource management [18]. Interestingly, the analysis of new researches indicate that out of nearly one thousand available job positions, 60% were technical and 40% were managerial offers. These positions are mostly demanded by functional sectors like healthcare, telecommunication and finance, which requested for specialized experts with the acceptable knowledge of e-business and e-commerce [11]. According to what has been already mentioned, an e-commerce manager of the 21st century has to be able to face the workplace's needs in an inter-, multi- and trans-disciplinary way. Business and IT intersection expecting experts with various experiences, multidisciplinary understanding and technological knowledge- "hybrid professionals", who can manage resources and utilize the ultimate potential of the available technology [20], as well as showing company's ability to align technology-strategy, organizational changes, and redesigning the process of using IT in improving firm performance. In this way, companies can attain more value from e-business opportunities and managerial e-skills would be the significant competitive factors especially when competition becomes more intensive and companies have to modify their working processes and competitive strategies [21].

III. Why Traditional Management Programs Should be Revised based on e-Commerce Criteria?

Regarding what has been mentioned so far, e-commerce development has caused tremendous changes to the way companies are conducted, which requires managers to have sufficient e-competences to be able to respond to all technological and businesslike issues. Managerial e-commerce skills surrounds the IT manager's competencies to meet the demands of a company, shareholders, staffs, suppliers and customers, the capability of defining e-commerce strategies based on the organization's business plan, value-chain and its transaction networks. Managerial e-preparation presents working capability and readiness in network environment to attain a common and profitable outcome with the aim of reducing costs, enhancing speed, productivity and increasing income. It was remarked by researchers that managerial skills provides significant sources of competitive advantage [5]. Therefore, the most essential managerial skills for e-business and lack of them in traditional management programs will be briefly debated in this part.

a. E-Commerce managers should react to the accelerated challenges and constant changes of dynamic Internet economy timely and effectively [7].

b. In addition, they should be capable to recognize assets, resources, employees' qualifications and those appropriate mechanisms that will bring a competitive advantage rather than other competitors and cause the best performance [2], [7].

c. E-Commerce managers should carefully define the outside forces, internal resources and their main competencies that result in a close connection of organization strategy and e-commerce [7].

d. Furthermore, durable e-business abilities are usually includes time taking development process between employees and technology based on the firm's culture and history. The firm development process involves many regularities, routines and managerial decisions between staffs, suppliers, business partners and rivals. Thus, the specific managerial e-commerce knowledge and skills is required to integrate existing resources into competitive capabilities [5].

e. Management commitment and support is another essential factor that differs successful from unsuccessful e-commerce investment. Absence of awareness and understanding of the potential advantages and values which e-business investments are designed to achieve, can be a major difficulty in implementing a successful strategic e-business [8]. As a matter of fact, many European CEOs are aware of the power of electronic trades, but they were unsuccessful to completely exploit it. They assume e-commerce more as a strategy or tool for developing current business models, rather than a revolutionary opportunity demanding a totally different attitude and knowledge [22].

f. Negative attitude of negative-orientation managers toward e-business can unfavorably influence organization's commitment to strategic IT implementations, and respectively, resource availability and deployment [8].

g. Changing the characteristics and rules of business competition by e-commerce through electronic transactions of information and money is another issue in this comparison.

Cultivated managers will search and accept these opportunities, use practical strategies and unique resources, as well as their technological and managerial e-skills, to improve their business ranking in the Internet-oriented world [10].

h. The next critical concern in e-commerce businesses is management style, attitudes and skills. Managers have to invent and communicate a certain vision and an appropriate mission. They should have enough knowledge of the impacts of e-business on traditional business operations, ROI, effective management, customer matters, and technology issues. They are supposed to combine technology and management functions together [3].

i. Managers should also adapt to a more collaborative, corporate-competition model that brings different challenges to the company rather than traditional business ethics. In traditional business ethics model, companies were considered separately, competing with other companies in an almost antagonistic business environment. But nowadays, firms have B2B e-business with foreign partners around the world, which allow them for different types of examinations for gaining sensitive information that could be coincidently passed to the competitors. In fact, what information to share and what to withhold is a strategic issue, which modern managers are faced [22].

j. One of the other managerial challenges that Internet has created is in the areas of security, customer privacy issues, and intellectual property rights. E-commerce managers should critically be aware of these issues and be able to react and deal with these upcoming challenges [16].

k. And the last but not least is that e-commerce business managers should be able to define, expand, and employ the e-commerce infrastructure to make their business enough powerful to gain more from the new business opportunities. Development of actual strategies for reaching competitive advantages through e-commerce is a must for being successful in the 21st century [23].

IV. E-CEMMERCE ACADEMIC APPROACHES

Whereas, e-commerce big-bang found most academic institutions not able to answer the needed programs and courses, Internet economy driving the tremendous raise in the whole world and make business schools accept the responsibility to prepare business professionals for this recent situation [11]. Coming up with this demand, universities have seen an apparent ascension in e-business programs to defeat this dullness. US top business schools are good instances to support this idea [11]. China also focused on e-commerce management by deploying the information technology to meliorate the traditional way of work and management [24], [25]. But, during the past years and according to the high and growing demand for e-commerce education, which is gradually turning from technical to managerial skills, the controversial question is that what are universities doing to meet this demand? How are these future e-commerce employees being prepared? Should e-commerce be a detached academic subject, program, major, or it should be joined to other business courses? Where e-business programs are on target and are they appropriately fill the needed gaps [9], [11], [17]?

On the one hand, according to the empirical researches of this paper, there have been courses in e-commerce offered in many schools and departments, ranging from crash courses, regular courses, concentrations, full degree programs (undergraduate, graduate or certificate programs), or even founding new Schools within the University [11], [17]. Based on recent analysis, among total of 391 different e-commerce courses 52 (13.3%) undergraduate and 339 (86.7%) graduate courses were identified, which were arranged into 24 categories. More detailed study on the courses provided by business schools shows that there are two common specializations in e-commerce curricula. One is e-business career with concentration on the business aspects, whereas the other is a career focusing on IT and Web-based systems technology [11], [26]. In addition, some universities are introducing "Techno MBA" programs merging business training with IT management and Information systems training. These programs usually contain one module on e-commerce that can be a preliminary course, and various other modules related to the field of e-commerce [26].

On the other hand, high importance of e-commerce and e-business education encourages industries to make effective collaborations with academic sector. As a matter of fact, U.S. businesses have been willing to back up initiatives at all levels. Not just US but many other developed countries around the world like Korea, England, and most of European countries support this model and idea. The only point is that, selection of a model by willing businesses depends on that School, related faculties and administrator's viewpoint and their orientation towards e-commerce and e-business [17], [27]. Supporting this fact, an European research indicates that between 1998 and 2002, the Career Space initiative consisted top universities, ICT firms and various shareholders such as British Telecom, Cisco Systems, IBM Europe, Intel, Microsoft Europe, Nokia, Nortel Networks, Philips Semiconductors, Siemens AG, Telefonica S.A. and Thalès, In addition, the European Information and Communications Technology Industry Association (EICTA), the Convention of National Societies of Electrical Engineers of Europe (EUREL), the E-skills National Training Organization (NTO UK), and many other associations to take part in this leading activity [15].

V. PRACTICAL E-COMMERCE PROGRAMS AT BUSINESS SCHOOLS

In this part, noticeable results and practical evidences of implementing e-commerce in business school management programs will be reviewed and the cases' strength and success keys is going to be remarked.

A. General E-Commerce Programs

a. At the University of New Brunswick, Saint John, Canada, the purpose of designing e-commerce program is to train students to face the world of online business; to become competent in deploying Internet and intranets for their business goals and being more competitive by using all facets of their e-commerce knowledge. In this program students are being taught how to create and market e-products and

e-services for the Internet trades. They also learn how to design and conduct company-wide management information systems [26].

b. Business Information Systems Department of Utah State University, US, integrated the e-commerce skills into their main business curriculum by offering series of e-commerce modules. As at least two-thirds of the IS curriculum have the same importance for e-commerce students as well, they introduce their program starting with common subjects and then narrow the specialization by adding e-commerce business, web design and database knowledge. Finally the program is finished by at least 300 hours of internship. Surprisingly, most companies welcomed internship programs and asked for cooperating with these competent interns to assist them in initiating their e-commerce sites. As a result, by completing this program, graduates will be expert in technical, business, and managerial skills. This program strong point is professional graduates who are highly technically productive from the first working day. They also will have a progressive career by good understanding of business implications of e-commerce decisions. Moreover, they have managerial skills to timely and cost-effectively supervise e-commerce projects [9].

c. The School of Business and Electronic Commerce in the Faculty of Business and Economics, Monash University, Australia, presents a general curriculum in Electronic Commerce for all three levels of undergraduates, Masters, and doctoral. This university also offers a two-semester Graduate Certificate, a four-semester Graduate Diploma, and an Executive Certificate in E- Commerce. All these general education models and programs are planned to cover the various needs of e-commerce and a diverse set of electronic business situations whereas relating them to the whole requirements of business disciplines [26].

d. This case representing the attempt made at the Auckland University of Technology, New Zealand, which offered a comprehensive program in e-commerce studies by introducing a new field of study and a different technological environment to deliver it. This university works tightly with its shareholder associations specifically in clarifying this new program's needs to be certain of keeping balance between technical skills and business concentrations [19].

e. One another example is how e-commerce and e-business inquiry were being handled at Merrick School of Business, University of Baltimore, US. The Merrick graduate school founded a faculty committee named The Electronic Commerce Committee, which its responsibility is to recognize e-business needs and offer students the required knowledge and skills, which ensure their functionality and success in e-commerce and e-business world. The committee offered series of four, three-credit-hour classes that would guarantee graduates' expectations of finding out proper job positions network organizations [17].

f. The School of Management Information System, Deakin University, Australia, is designing and delivering business education in e-commerce within its Management Information Systems specialization. In fact, Deakin University e-commerce program is designed to fulfill the MIS curriculum. So that students can complete a double major in e-commerce and MIS and become eligible for admission at the professional level in Australian Computer Society. More over, Deakin University has launched Lighthouse project, a new advanced teaching method, which provides students a simulated e-commerce environment. The Lighthouse Project is an experimental simulated environment including selection sites from industry, government, and academia that are chosen to remark primary issues mostly occur in approaches and different styles deployed by e-commerce sites, the notions and ideas promoted by each implementation, and the processes used by each site such as Java, ActiveX, VRML, etc. These sites brought together in Deakin Electronic Trading Community concentrating on textile, clothing and footwear, banking and finance, education, and regulatory areas [26].

g. Our Lady of the Lake University, San Antonio, Texas, became involved in e-commerce offering Bachelor of Science and Bachelor of Business Administration degrees. OLLU's work began with the CALS (continuous acquisition and life cycle support) Shared Resource Center, which is an organization basically aimed to assist governmental sectors from paper-based to totally automated and integrated ways of operation. By receiving a grant from the U.S. Department of Education, OLLU has launched a degree in e-commerce and develop an e-commerce laboratory and an e-commerce technical center [26].

B. Specialized E-Commerce Programs

Apart from general e-commerce programs, there are some other academic attempts which originally focus on one or another e-commerce facet to create a specialization within the wider borders of this area. In the next paragraphs cases with the specialization in marketing, Techno MBA and global e-commerce will be shortly identified.

a. The Daniels College of Business, University of Denver, US, offers an MBA degree in electronic commerce with specialization in marketing management. This program is supervised by the new Department of Information Technology and Electronic Commerce (ITEC), which is formerly called the Management Information Systems Department. The MIS program made graduates ready for pursuing IT consulting careers but the e-commerce growing practices promoted the migration from MIS to e-commerce at the University of Denver. So that the MBA in electronic commerce was dedicatedly designed to prepare individuals for careers in strategic marketing in an e-commerce era [26].

b. At Owen School of Business, Vanderbilt University, US, MBA education in e-commerce is also offered with the concentration on marketing. This program emphasis is strongly oriented toward marketing in computer-mediated areas. This program was originally established in response to management students request for a kind of e-commerce formal training. The second e-commerce specialization at Owen School of Business is Telecommunications, which was launched to supply graduates with better access to IT and MIS skills and trainings [26].

c. Techno MBA is an e-commerce education model that support business graduates with technical knowledge of information systems or information technology Management. Graduates from a Techno MBA program are being able to bridge the gap existing in industry between management area and IT responsibilities. MIT, University of Texas, University of Maryland, Carnegie Mellon, Minnesota, etc, offer the strongest curriculum in this area. Originally Techno MBA is designed to response to the industry demands for business managers with IT competencies and technical expertise [26].

d. As e-commerce offers even small firms an opportunity

to contest globally, domestic businesses intensively affected by global competition, however, for many organizations global e-commerce is becoming more challenging. Thus, few universities have intended to provide training programs in global e-commerce and web localization issues. Following examples design programs in web localization such as the localization certification program (California State University Chico), software-localization and programming (University of Limerick, Ireland), translation technology and business at the graduate level (Monterey Institute of International Studies, and Kent State University, U.S.), executive online certificate in web globalization management (Saint Louis University) and courses in localization (Austin Community College, U.S.). The aim of these programs of developing cutting edge courses is offering useful trainings to gain the best advantages and smoother adaptation to the constant changes of global e-commerce. Moreover, too many efforts have been done to stimulating scholarships and supports in less-known areas such as web globalization strategies, global online marketing issues, web site localization and global diffusion of e-commerce since their integrations and attendance are essential in the future and development of global e-commerce [28].

In general, reviewing mentioned experiences showed that prospective e-commerce manager's areas of concentration mostly include e-commerce strategies, technology and capital requirements and online media tactics. Social and legal regulations have a high level of importance as well [16]. Additionally, all figured programs commonly concluded that e-commerce is a kind of ever-changing field that crossed all traditional academic disciplines; so that, the purpose of these programs is to keep the module outline open and free to change. Therefore, if other faculties or departments invented new modules with the content of e-commerce, they are expected to add them to the previous e-commerce curriculum. In addition, as technological and managerial learning materials may overlap other courses, some existing credits may change, and some can be eliminated. This is what a dynamic program means [15], [17].

VI. DISCUSSION

E-commerce is the heart of the contemporary economy worldwide. It is a standard that completely changes businesses from their working rules and regulations, business partners or even organizational culture to their market share, variety of their products and services or the way they have chosen to deliver them. In other words, e-commerce brings a new generation of business functions and communications to organizations. Considering its undeniable advantages like more customer, wider target market, easier communications and effective marketing, electronic business has some serious disadvantages like information, money security or legal problems, which have made serious obstacles to network organization's success and consequently raising the demand of e-commerce organizations to qualified managers who can strategically use their in hand resources in order to survive in this never-ending competition. Thus, these controversial e-business issues open a new door in business education with the aim of cultivating managers to overcome these e-challenges and use them as competitive advantages in

return. It made universities and academia to carefully revise their offering programs based on e-commerce intensified global competition and industry needs to meet the crucial demand of professional and e-competent managers. The managers are trained to overcome both internal and external barriers from the technical as well as managerial point of view. Individuals with the high capability of creation and modification of their business major infrastructure, their company website- the most vital means of communication in e-business environment- and its components including e-commerce hardware & software. The persons who have a good understanding of their business transactions, organizational structure, present and future plans, etc. All mentioned essential aspects of managing an e-commerce firm increasingly drive the industry demand to hire competent professionals to help organizations facilitate their way of transforming or starting an electronic business. And in fact academic education is the most popular solution, which can appropriately meet the organizations' need and in the best way respond the increasing demand of interested applicant of this field. Therefore, business schools create and offer various e-commerce programs, trainings and consultancies. It should be considered that, because e-commerce has a dynamic nature, business schools have a more critical role in this economy evolution, since they should constantly supervise the workplace changes and revised, improve and implement their programs respectively.

VII. CONCLUSION

In the digital economy generation, e-commerce is a necessary and integral part of businesses today. It may seem complicated, confusing and intimidating to implement but it is closely tied to the success of organizations in today's marketplace. As a matter of fact, ubiquitous implementations of e-commerce introduce complicated changes to the way businesses were conducted. In comparison with traditional commerce, managers confront with such problems like extra costs resulted by changing IT belongings' version, staffs' resistance to comply with this new environment, e-commerce economy rules and regulations, etc. Therefore, the importance of revising traditional management programs based on e-commerce criteria should be discussed and see how much value e-commerce can add to the whole organization if it is given the appropriate focus, budget and consideration. Additionally, e-commerce growth make a tremendous claim of skilled professionals in small and large organizations which all demand competent managers from technical, managerial and financial point of view, who are able to overcome upcoming problems and mutually deploy them as competitive advantages. In this era of transforming to electronic and network businesses, successful managers are ones who recognize the things must change, and provide themselves by learning new ideas and skills to exploit these changes whereas competitors may see change as only a threat. Therefore, this is the place that business education system represents its key role in fulfilling the industry and labor market's needs. In this regard, business school's faculties and administrators did so many researches to identify industry demands and develop them in their new curricula. In this

huge opportunity face all size companies, business schools around the world design and offer various programs to prepare managers' mindset to recognize the opportunities in the available global marketplace. These programs primarily focus on training students with skills and knowledge are required in order to do well in electronic environment.

Summing up with all mentioned opinions, discussions and argumentations, it is recommended that in order to provide a sufficient academic program which effectively meets both overall and fundamental industries needs, the interaction between academia and business should be maximized. For instance, universities can entertain industry events, and firms may offer elective programs and informative seminars to increase students' knowledge about related job opportunities and professional positions. Companies also have a significant role in improving the programs' value and learning process by permitting their professions to be a part of teaching activities. They should have provided universities with eager professions who have a fruitful e-commerce experience, desired to share their knowledge with students, and learn along with students. Finally, we suggest graduates and managers to learn at every opportunity. E-commerce has a dynamic nature so they should be aware of latest changes, their shortcomings and plan to fill the gap.

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