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Review

REVIEW STUDY OF E-MANAGEMENT BARRIERS, CHALLENGES AND SECURITY

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Abstract

This study aims to review papers focusing on e-management barriers, challenges, and security. Most of the results present in the literature showed the importance of e-management but also found out that it faces many barriers and challenges such as Security, Trust, Privacy and Awareness. Many studies should be made in order to overcome the barriers facing e-management to gain its great benefits.

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Introduction

In this era, information is considered as a strategic critical resource for generating value-added products and services. The shift of societies towards the information society has had deep effects on numerous aspects of human life such as economic, social and cultural aspects [1]. The impact of information technology on human societies is not less than that of industrial revolution, therefore the information technology developments and its application is regarded as the fourth digital revolution [2].

As information technology grows, e-business applications are found all over the world. More and more companies recognized the benefit of e-business and moved from traditional business to e-business [3]. E-management is the new way to manage all e-business applications [2].

The author has reviewed much e-management literature but it seems that there is not sufficient number of research works done in this field. E-management can play a role in e-business and e-commerce [4]. We use the term “e-management” to broadly describe the publishing of information and the performing of various transactions over the internet, extranets, or intranets. It seems that the Internet and e-business have changed the way firms conduct business globally using e-management [5]. In this review study, e-management will be discussed as the new management method in the organizations implementing e-business to its functions.

Study Methodology

The methodology which was used in this study was based on reviewing papers written about the barriers, challenges, success factors, and security impact on e-management implementation.

Conception of e-management

E-business or electronic Business, is the administration of conducting business via the internet. This would include the buying and selling of goods and services, along with providing technical or customer support through the internet [4]. E-business is also a term often used in conjunction with e-commerce, but includes services in addition to the sale of goods. Furthermore, E-business is the application of information and communication technologies (ICT) in support of all the activities of business [6]. Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business. In the other hand, e-management means the electronic management of all business issues [7]. E-management will be critical for ensuring that e-business applications are available for customers [8]. The implementation of e-management is related to all the employees of the company. That is why we have to consider the human factor as the most important factor impacting e-management [6]. E-

management has many benefits such as the elimination of distances through providing linkage among separate computers in the world-wide web, and the computerization of systems and telecommunication which result in new capacities to transfer sounds and images [7].

E-management ensures the best utilization of resources, increases efficiency, and provides support to high management in planning, and managing human and financial resources [9].

E-management can play a role in e-business & e-commerce management, and gain some benefits such as [4]:- reducing costs, improving product or service quality, reaching new customers or suppliers, creating new ways of selling or providing existing products and services.

Barriers of e-management

Seresht et al. has studied the barriers and challenges in Iran [7]. They indicated that the e-management is an umbrella name for several e-business modules. Their methodology was based on interviews and questionnaire. The research population was the public organization and the sample was 200 experts, scholars and managers in 45 public organizations. The research hypotheses were:

- Managerial factors hinder the utilization of e-management in Iran
- Humanistic factors hinder the utilization of e-management in Iran
- Socio-cultural factors hinder the utilization of e-management in Iran

- Organizational-structural factors hinder the utilization of e-management in Iran
- Technical-technological factors hinder the utilization of e-management in Iran.
- Environmental factors hinder the application of e-management in Iran.

They have addressed the following barriers which have impact on e-management implementation in Iran:-

Managerial Factors including:

Lack of technological awareness among managers, lack of computer-relevant knowledge and experiences of managers, lack of awareness among managers about the advantages of IT, lack of motivation and support for managers, insufficient commitment of top managers in IT implementation and short life-cycle of management.

Humanistic Factors including:

Lack of IT specialists in organizations, employees` lack of interest and motivation to apply new techniques, lack of relevant training for employees and employees` resistance to change.

Cultural-Social Factors including:

The non-developed culture for proper application of IT, unfamiliarity of users with IT and unfamiliarity of citizens and authorities with IT performance.

Organizational-Structural Factors including

Weakness of communication channels in organizations, lack of financial resources to equip software and hardware and insufficient financial capability of units to apply IT.

Technical-Technological Factors including

Lack of sufficient software facilities, incongruity between systems and users, lack of sufficient band-width for internet, existence of network and telecommunication problems and difficulties in IT application.

Environmental Factors including

Absence of an integrated network in country, lack of necessary rules and regulations in the country, lack of clarity in policy-making in IT and lack of coordination and cooperation between different units and divisions in industries and organizations.

Challenges of e- management

Chaffey et al. [4] addressed some of e-management challenges which work on e-management such as:

- Expanded competition.
- Increasing Customer power.
- Network security.
- Reliability of website technologies and network uptime and speed.
- Back office integration.
- Expense of infrastructure and uncertainties over return on investment (ROI).

- Lack of in-house expertise (outsourcing is common, but managers may lack expertise to make good decisions).
- Rapid change makes it hard to know when to “leap in” and invest.
- Difficulty in establishing customer trust in a virtual world.
- Cross border transactions/sales territory agreements.

Li et al. [10] concluded that small and medium sized businesses use the internet and networked application to reach new customers and serve their existing ones more effectively. It depicted that the security is the biggest challenge facing small and medium sized businesses. According to Bichler [11] the top 5 security issues are worms and viruses, information theft, business availability, the unknown and security of legislation

Jingting et al. [3] studied the factors affecting e-business success with impact on e-management as well. How other companies can learn from the successful ones?

They made an exploratory study on the factors influencing e-business success. Firstly, 52 factors are suggested. Secondly, two rounds of survey with Delphi method are conducted. Qualitative and quantitative analysis were used to identify 57 factors.

These factors were into categories: - Leaders, management, organization, technology, customer and Supplier.

They discussed that leaders should participate in the project and establish a clear target, be-

cause only with their support can the project be successful [3]. Leadership also indicates establishing an e-business strategy.

Also they discussed the role of management in the organization. Management plays a key role in implementing e-business. Only an effective management can represent the advantage of e-business system. The third factor is the Organization and its capabilities. It is interrelated with leadership, management and technology. Implementing e-business will bring many changes to a company because the existing organizational structure and processes found in most companies are not compatible with the system [12]. The current organizational structure must provide an environment that is well suited for e-business. Company should reengineer business processes to link to life events at the front end and link to existing legacy processes and system at the back end. The fourth factor is technology. E-business combines business and technology. Without good IT infrastructure, companies cannot fit the evolution of e-business.

Last factor was Customer and Supplier. They have to ensure that e-business is related to suppliers, customers and other companies that involved in the business process. Having a good relationship with the partners is important for success.

Al-Malik [9] studied the impact of e-management in Saudi Banks, he came with the result that e-management assists in providing all required information on banks, bank ser-

vices, and high management support in information technology.

E-Management Security

One of the most important factors in technology is security and privacy. Many potential customers still cite concerns about security as the most important issue stopping them from engaging in more electronic business [13]. Security is not optional; companies must consider it as they move to deploy e-business [6]. The widespread adoption of e-business and e-management has brought with it serious new organizational security concerns [13]. To e-business security plans are unique and must be developed through a series of steps [8]. E-management depends on providing customers, partners, and employees with access to information, in a way that is controlled and secure. Managing e-business security is a multifaceted challenge and requires the coordination of business policy and practice with appropriate technology [6].

Lichtenstein [14] has identified e-business security management practices which will reduce such policies and procedures more effectively. In particular, his study focused on the importance of the human issues in determining such policies and procedures, and the use of a universal e-business security policy to manage the risks and other issues.

In all companies studied (four Australian and one American), he discovered evidence of Internet risks of various types [14]. These risks

were affecting the companies to different degrees, indicating the existence of a serious e-business security problem in Australian companies [14]. A major finding in Lichtenstein study was the importance of human issues (for employees) in e-business security. The two main human issues were: freedom of Internet use, with employers needing to limit Internet usage to manage the non-business usage risk; and privacy, with employees believing in the right to privacy of Internet use, hence opposing the monitoring of web accesses and email.

They found [14] other human issues to be of concern, in particular:

- Censorship: filtering of sites from employee access via firewalls and other mechanisms, was not popular with employees at the companies studied;
- The right to be kept informed: employees were suffering from a lack of awareness of security risks, needs and policy;
- Accountability: employees were not being held accountable enough for their Internet actions, due to a lack of policy, policy implementation technology, and monitoring resources.
- Trust: employees were concerned about the lack of trust shown in them by their employers through various policy decisions.

Security is the counter to the necessity of opening the enterprise to the great wide world of the Internet which is associated, anyway, with e-business and e-management [14].

Narendra et al. [8]: came up with the 10 Stages Security Management:

1. Identify security plan.
2. Evaluate risk.
3. Evaluate expenses.
4. Find attacker.
5. Decide security vulnerabilities.
6. Evaluate technologies.
7. Consider attacks detection.
8. Decide action on attacks.
9. Educate employees.
10. Appraise insurance.

Discussion

From these papers which have their main ideas and results summarized, the most important barriers of e-management can be listed as:

The managers play a vital role in the organization. In the same time, they are considered as one of the barriers of implementing e-management. Lack of technological awareness among them as well as lack of computer knowledge and experience, and little or no awareness of the advantages of IT make them less motivated to support e-management.

As have been mentioned before the human is the most important factor of success when applying e-management. On the other hand there are many barriers related to humanistic factors. Such as lack of IT specialist among them, lack of interest in IT and lack of relevant training. These factors create resistance to change in the organization.

Many countries, especially developing countries have many socio-cultural factors that are considered as barriers to the e-management's implementation; Such as the unfamiliarity of citizens with IT, while they have to be part of the new environment and share in dealing with e-business. Also the weakness of the network this is the most important technical issue for applying e-management.

E-business opens new areas of investment and spreads products and services all over the world. This creates the most important challenges, such as, expanded competition, increasing of customer power, rapid change which makes it hard to know when to "leap in" and invest, difficulty in establishing customer trust in a virtual world and cross border transactions/sales and territory agreements.

E-management security is the most serious challenge facing the organization. From many papers studied on the e-management security issue, there are many risks impacting the safety of the organizational environment in the daily work. These risks were affecting the companies in differing degrees, indicating the existence of a serious e-business security problem [15].

Conclusion

E-management success faces a lot of barriers and it has many challenges which need to be considered in order to succeed. The human factor plays a big role in e-management success and security. Although there are many benefits

from applying e-management in an organization, there is still a lot of work that has to be done in order to establish a safe environment and protect the work going through the internet. Many studies should be done to understand the problems facing e-management in globally and in particular countries.

Furthermore, socio-cultural factors are among the most preventive obstacles in the application of e-management whereas technical and humanistic factors are amongst the least important ones [8]. It is obvious that cultural and organizational factors should be emphasized in order to resolve the obstacles. Development of cultural awareness to apply IT, enhancement of people's and authorities' awareness of the structure, performance and advantages of IT adoption and application, development of sufficient network and communication infrastructures, development of the application of e-services such as E-banking and e-insurance, motivating and training employees and managers for effective application of e-management are among the most important factors that should be noticed in order to improve the current situation of e-management.

References

- [1] Dibrell, C. C., Miller, T. R. (2002.) Organization design: The continuing influence of information technology.
- [2] Granville, B., Leonard, c., & Manning, J. (2001), Information technology and developing countries: potential and obstacles.
- [3] Li, J., & Huang, J. (2004). An exploratory study of e-business success factors. *Journal of electronic science and technology of China*, 2(3), 167-172.
- [4] Chaffey, D. (2011). *E-Business& e-Commerce Management*. Prentice Hall.
- [5] Patrick C., Peter Raven, "Barriers to Effective E-Business in Developing Countries", *International Business & Economics Research Journal*, 1(4) 39.
- [6] Peter Lord (2002), *Managing E-Business Security, Challenges*, oracle white paper
- [7] Seresht, H. R., Fayyazi, M., & Asl, N. S. (2008). E-management: Barriers and challenges in Iran. *E-OwerKraKlead*, Iran
- [8] Narendra Kumar Tyagi, Srinivasan,S., (2001). Ten-Stage Security Management Strategy Model for the Impacts of 'Security Threats on E – Business', *International Journal of Computer Applications*, 21(5)
- [9] Al-Malik, Bin Mohammed Bader, (2007) "Administrative and Security Dimensions of e-management in Saudi Banks."
- [10] Jajodia, S. Noel, B. O'Berry, (2003), "Topological analysis of network attack vulnerability", in *Managing Cyber Threats: Issues, Approaches and Challenges*, V. Kumar, J.Srivastava, and A. Lazarevic (eds.), Springer, Germany.
- [11] Bichler, M. (2001). *The future of e-markets: multidimensional market mechanisms*. Cambridge University Press.
- [12] Umble Haft, (2003), *Enterprise resource planning: implementation procedures and critical success factors*, *European Journal of Operational Research*.
- [13] Huff L; Wade M. (2000), *Cases in Electronic Commerce*, Boston: Irwin/McGraw-Hill.
- [14] Lichtenstein, Sharman (2001), *Effective Management and Policy in e-Business Security*, 14th Bled Electronic Commerce Conference, Bled, Slovenia.
- [15] IBM. *Ten Success Factors for E-Business*, (2002) <http://www-4.ibm.com/software/info/soul/st/guide.html>.