

# A CYBER ORGANIZATION IN THE CYBER WORLD

## *ICT and e.Total Relationship Management (e.TRM)*

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**Abstract** This paper offers suggestions to integrate computer-based technology (CBT) including information and communication technology (ICT) and inter and intra- organizational functions and relationships from a holistic e.TRM paradigm embedding the physical and cyber worlds. It is a conceptual study based on the recent developments of ICT, inter-firm relations: economic (transaction costs economics), socio-psychological (social exchange; inter-organization; and industrial network) as well as relationship management and marketing theories and concepts with application in practice. A new concept and model of Cybernization has been developed and discussed. Some general propositions are presented and some synergy effects of utilizing the e.TRM are highlighted. The paper suggests how these approaches can add impetus to successful management issues, as a powerful competitive weapon in connecting the physical world with the cyber space. This paper provides a model for Cybernity that accommodates the major manifestations of cybernization of an organization and could potentially provide the means to link diverse literature that is available in this area.

## 1 INTRODUCTION

A company that does not learn and adapt to changing technology can face painful competition and may fall victim to competitors that switched their strategies to the more technologically-based relationships. Douglas C. North (1993), one of the Nobel Prize winners in the economic sciences, argues that learning from each other, from past experience, and from new innovations, enables organizations to find a common, probably unexpected, pattern or network of relationships that works for them. Such learning leads to emergent strategies.

Although the benefits and impacts of the internet fostered “e-transformation”, “dis-intermediation” “reintermediation”, and e. commerce have been widely discussed within the generic literature, a total integration and combination of the technology and

Total relationship management has received little attention. To that end, this paper provides a holistic perspective of technologization or cybernization of different organizational relationships.

This paper is part of a long-term research effort, the ultimate objective of which is to offer suggestions to integrate computer-based technology (CBT) including information and communication technology (ICT) and inter and intra- organizational functions and relationships from a holistic e.TRM paradigm embedding the physical and cyber worlds. It is a conceptual study based on the recent developments of ICT, inter-firm relations: economic (transaction costs economics), socio-psychological (social exchange; inter-organization; and industrial network) as well as relationship management and marketing theories and concepts with application in practice. It emphasizes the inherent a multidimensionalities of cybernization of the organization and its various internal and external

activities and relationships.

A new concept and a model of Cybernization have also developed and discussed. Some general propositions are presented and some synergy effects of utilizing the e.TRM are highlighted. The paper suggests how these approaches can add impetus to successful management issues.

## 2 @ OR E.TOTAL RELATIONSHIP MANAGEMENT (E.TRM)

A Total Relationship Management (TRM) approach and philosophy was created and developed by Zineldin (1998, 2000). TRM is viewed as a strategy and a philosophy. It is 'total', because it considers and coordinates 'all' activities- including internal and external relationships, networks, interactions and co-operation as well as all activities involved in getting, keeping, enhancing and satisfying customers throughout quality. It is a strategy because it emphasizes maintaining high products/services, internal and external relationships quality, and trying to keep customers in the long run.

Holm (2006) verified that TRM is a Philosophy by quoting the following:

*Zineldin (2000) argues that total relationship management, is a philosophy that emphasizes the communication of the organization's overall thinking, as well as specific messages about its products, services or corporate identity.*

It is very obvious that nowadays organizations and people will find it difficult to separate a relationship from information technology and other technological advances. Therefore, Zineldin (2000) has invented the terminology and management paradigm shift approach, called "Technologicalship relationship", emphasizes the inseparability of modern technologies and all kinds of behaviour, attitudes and relationships.

*A technologicalship partnership is a type of relationship which offers a natural linkage between the internal environment and the interaction process because it emphasizes how ICT, people and organizations are a function of win-win interaction (Zineldin 2000).*

@total relationship management (@TRM) highlights the interrelationship between the efficiency and effectiveness, the productivity as well as the profitability of the organization's operations and activities. @TRM philosophy, if it results in

greater people satisfaction (partners, employees, customers, investors and other stakeholders), is seen as a way of improving the profitability of the organization's operations.

## 3 ICT, INTERNET AND E.TRM

*A key way to build a strong competitive position is through @ TRM management (we refer to @ TRM as total relationship management which is based on IT and the Internet), IT and "product/service quality and differentiation" which creates a clear image of the an organization and its products/services in the eyes and minds of people and can lead to distinctive positioning in the global environment. Building barriers to competitive action can develop strong competitive positions by various means (Zineldin 2002).*

Yet information technology (IT) and without information partnership and information sharing (relationship based on information), Tom Peters emphasizes, "... all other aspects of partnership remain stuck at the stage of lip service or less" (Konsynski and McFarlan, 1990). Venktraman (1997) states the following:

*"How to best extract value from information technology (IT) resources is a major challenge facing both business and IT managers, particularly as they turn their focus from searching for the competitive benefits of strategic information systems and striving for benefits beyond process reengineering."*

Computer-based technology (CBT) including ICT is fundamentally concerned with digital approaches to representing and processing knowledge of various types and in various gradations. For descriptive knowledge the gradations – raw data to structured information to problem solutions for decisions – mirror the evolution of CBT from data processing systems to management information systems to decision support systems. All of these systems have dramatically changed the way knowledge work is done in organizations, releasing tremendous human resources, enabling organizational growth (and necessitating organizational restructuring), and facilitating improved performance (Holsapple,2005)

The Intranet serves as an easily accessible repository for corporate information; anything from strategic targets to health plans (Frost and Strauss,

1997). One of the most significant changes in ICT in recent years has been the emergence of Electronic Data Interchange (EDI). Quick-response (QR) logistics and inventory systems use EDI applications to automatically replenish stock as it is sold. By operating on the real-time transmissions of sales and other logistics data between the channel parties operating at different levels in distribution systems, JIT eliminates the need for excess inventory.

e.TRM is about a systematic and efficient coordination and communication between for example an individual human's ability to process his own considerable tacit knowledge and a computer system's ability to process collectively constructed explicit knowledge. Organizations can use e. TRM to capture and reproduce tacit knowledge of their workers, to be reused at different times, in different locations, through different media, to create business solutions more efficiently. This allows more time for individuals to use their intuitive strengths, defining and solving problems more creatively.

#### 4 CYBER ORGANIZATIONS (CO) AND THE INSEPARABLE NATURE OF THE CYBER AND PHYSICAL SPACE

1940, A. Azimov, started in his story "Robbie" about Robots to explore the ideas of how the synthetic mind "or machines" (ICT today) created to serve human beings, evolved and take over the world of men. His vision of 1940 is now true and not imagination any longer. Computers and technology already took over the mind of human being.

Technology is constantly changing. The advent of the CBT and ICT, of course, has revolutionized just about every facet of business and non-business life, whilst the merging of telecommunications and computer technology is causing a fundamental reappraisal of a whole host of industries, with new ones springing up to replace those that do not keep abreast of changing technology. However, it can fairly be said that management today faces a greater number of challenges of a more complex nature and from a wider number of sources. As Shown in figure 1, the cyber world requires new theory and moving from relationship management to e.total relationship management, e.TRM.

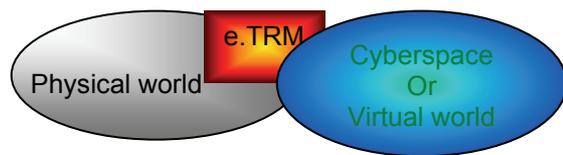


Figure 1: Inseparable nature of Cyber and physical space e.TRM connecting Physical and Cyber world.

The impact of technology business and non-business relationships is one of the most serious challenges.

Cyber organization (CO) is not a virtual organization (VO). Virtual organization has been as "a temporary network of independent companies", or as opportunistic alliance of core competencies" and as an "organization in which workers are not physically but electronically connected". VO is also defined as imaginary organization (IO) which exist in your mind. On the other hand, A Cyber Organization is any organization efficiently utilizing the ICT and other technologies to pool resources, communicate, facilitate, coordinate and integrate different business, political, social and financial activities in both physical world and cyberspace outside its boundary or environment to foster, improve and enhance relationships with its stakeholders.

The level or degree (individual, project, organization, internal, external or meta level) and context of utilization of the ICT and other technological advances is determine factor of the degree of the cybernization of the organizational activities. Cybernization in the context of organizations can be viewed either as just a technology-facilitated phenomenon or as a strategic tool. The degree of Cybernization (DoC) by using of e.TRM of an organization is largely a measure of the technological phenomenon of cybernity. Only when the outcomes (value creation, flexibility, growth, customization, better quality life, higher trust, commitment, satisfaction and loyalty, etc.) are analyzed to see whether e.TRM and cybernization has resulted in the intended objectives do they provide insights into whether cybernity has indeed been used as a strategic tool, providing thereby a measure of cyber organizational maturity.

e.TRM Managers have to look to the marketpace to create added-value. They have to integrate the activities of the physical world with those of the marketpace (virtual world) in order to create and extract value in the most efficient and effective manner. We employ the term technologicalship relationship to show the inseparable nature and impact of ICT on all kinds of

markets and relationships. Therefore, efficient e.TRM should tightly connecting Physical and Cyber world.

Finally, e.TRM is an unforgiving and very demanding process. One weak link and the whole effort can be wasted. If the stockholders can be integrated into the product/service development process, through cooperation and collaboration in real time, an intense relationship can begin.

## **5 E. TRM AND THE POTENTIAL TECHNOLOGICALSHIP PARTNERS**

Through efficient e.technologicalship management, human resources and skills, and the use of the relationship marketing mechanisms of mutual benefits, respect, confidence, trust, trusting behaviour, commitment and adaptations, a company can establish, enhance and sustain ongoing business relationships with its different customers.

When creating and analyzing the relationship strategies, managers should consider nine primary candidates for such a technologicalship (Figure 2):

### **5.1 Workforce Technologicalship Management (WFTM)**

This is one of the areas in which e.TRM appears to have more controversial implications, in particular, in terms of the changes in the role of shop floor employees and intermediate managers as a consequence of increased levels of automation. e.TRM should facilitated team working because of better communications and reduced physical presence in meetings (e.g. e-mail).

### **5.2 Employee Attitudes and Behaviour (EAB)**

Within a e.TRM organization, a new organizational restructure is implied. The common argument that IT applications will lead to a reduction in the number of employees as its protagonists (e.g. Brynjolfsson et al., 1994). Some resistance of employees to this change is expected and that may reduce autonomy and commitment to company goals and objectives as well as the motivation.

### **5.3 Product design Process Technologicalship Management (PDTM)**

Implementing effective e.TRM should lead to increasing the innovation capability and capacity because the computer-aided design (CAD) technologies are a fundamental aid in the design process because of faster response to consumer needs and greater innovation. An effective new product design and development process requires coordination and effective flow and disseminating of information between different departments (production, marketing and R&D) and ICT. ICT is also useful in design of experiments, failure mode and effects analysis (FMEA) as well as quality function deployment (QFD).

### **5.4 Process Flow Technologicalship Management (PFTM)**

e.TRM is also useful in effective implementation of the process flow management. Well planned automation reduces process variance, because machines usually demonstrate less variability than workers and results in increased speed of production processes with a significant quality enhancement (Freund *et al.*, 1997). Automated machines require components and raw materials of high quality. Therefore e. TRM with components and raw materials suppliers is crucial.

### **5.5 Supplier Technologicalship Management (STM)**

ICT systems improve communication links with suppliers through EDI systems. EDI can be used to place orders, send product specifications, design details, etc., along with confirmation of invoices and paying for suppliers (Teague *et al.* (1997). Companies can access the inventory systems of their suppliers and place orders automatically and there can also be access to production scheduling systems.

### **5.6 Customer Technologicalship Management (CRM)**

e. TRM emphasizes the speed and extent of the shift to electronic commerce conducted between businesses, homes and countries and starts to put into place the means of controlling such invisible processes. The development of ICT improves relationships with customers in several ways. ICT

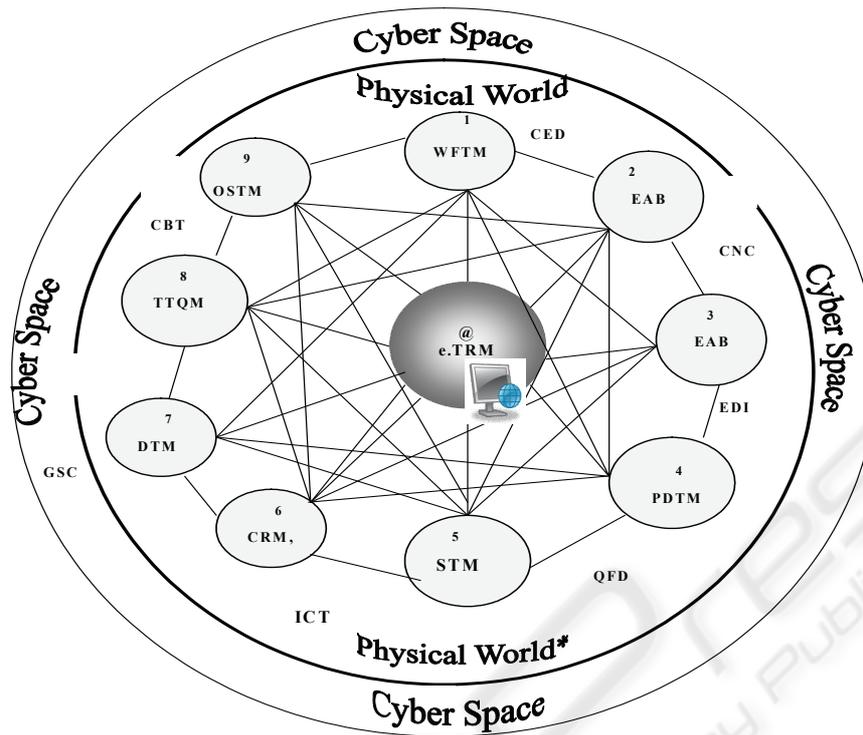


Figure 2: Zinekin's Model of e.TRM & Cybernization.

leads to direct companies-customers relationships, enabling the interchange of information. ICT enables organizations to reach customers who are geographically remote.

### 5.7 Distributor Technologicalship Management (DTM)

In most industrial and service sectors, old-line channel structures have been weakened by the introduction and rapid growth of the cyber world tools such as Internet and other third-party information service providers such as CompuServe, Prodigy and America Online. Late twentieth century retailers are now able to quickly gain accurate information regarding items which are or are not popular with their customers. IT is making change the only constant in channel

### 5.8 Technologicalship TQM (TTQM)

e.TRM provides autonomy and ease the accesses and capabilities of the entire employees of different department and function to implement the principle of TQM. The work of the TQM can be made easier because ICT and the management enable better ability to coordinate the different web of activities

and relationships, collect, analyze, transfer and disseminate the information within and outside the organization. e. TRM, therefore, facilitates TQM implementation and dissemination.

### 5.9 Others: Facilitators (Stockholders) Technologicalship (OSTM)

It is not unusual for facilitators outside the firm's boundary or market environment to foster relationships. Actions by government and academic institutions influence a firm's activities. Politicians can play key roles in helping organizations secure foreign markets. In addition, many government agencies are large existing and potential buyers, and creating a long-term relationship with them can be a competitive force for a company. e.TRM or cyber organizations need to create and maintain good cyber relationships with political parties and other regulatory agencies.

Finally, the examples outlined above, however, provide us with an insight of how creating value with e.TRM and its technologicalship relationships can be conducted faster, better, and less expensively than treating ICT as a mere supporting activity.

## 6 CONCLUSIONS AND MANAGERIAL IMPLICATIONS

It is obvious that nowadays organizations and people will have difficulties in separating a relationship from ICT. In this article, the e.TRM, cybernization and the technologicalship concepts are introduced to indicate the close and almost inseparable partnership between the physical and cyber worlds. In short, such a cybernization of the organization and people minds can be considered as a new paradigm. This paper emphasizes the inherent multidimensionalities of cybernization of the organization and its various internal and external activities and relationships. Thus, we argue, in this paper that technologicalship relationship and e.TRM should incorporate both physical and cyber worlds. We integrate these two worlds to show the inseparable nature and impact of the ICT on all kinds of relationships.

A cyber organization is a type of offers, via the e.TRM a natural linkage between the internal and external environments and the interaction processes because it emphasizes how technologies, people (including consumers and other stakeholders) and other organizations are a function of a win-win interaction. This combined perspective yields comprehensive insight into the impact of the technologies on relationship management of today's cyber world.

By failing to utilize e.TRM and technologicalship philosophy, organizations risk being isolated, while successful organizations move ahead together toward the rest of the 21<sup>st</sup> century with its borderless or virtual reality.

Finally, the issue of the cybernization of the organization and its relationships deserves more comprehensive theoretical and empirical research.

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