A Novel Four-Faceted Telecommunication Model based on Distributed Connectivity Technology Systems (FFDC)

Navid Hashemitaba, Ahdieh Sadat Khatavakhotan and Siew Hock Ow

Department of Software Engineering, Faculty of Computer Science and Information Technology,
University of Malaya, 50603, Kuala Lumpur, Malaysia

Abstract. The distributed connectivity model presented in this article provides a strategic perspective for development plan using distributed infrastructures and tools for global organizations with e-learning opportunities. Focusing on e-education, using virtual world unique features, supporting medical education and treatments, and modifying consumption patterns are four main dimensions of the Four-Faceted Distributed Connectivity Model (FFDC) in this article. Definition and redefinition of groups in organizations and equipping them with ICT tools, and providing formal communication with related departments round the globe, are two necessary rules for implementing the FFDC model. These two rules are the needed infrastructure for FFDC model.

Keywords: Distributed Connectivity, Global Village, Information Technology Infrastructure, E-Learning, Telecommunication Facilities.

1. Introduction

The term global village refers to profound social and technological concepts. Important features of a village are based on close contact, trust, ease of business, and knowing others. Therefore it can be said that during the past three decades when computer networks infrastructures, especially those of the internet, have been made available to everyone, the said features are now possible to attain.

In the current dynamic world, achieving higher speed in giving services, serving clients and higher level of efficiency in all industries is only possible by choosing correct solutions. Basically industries and companies' speed in production and giving services is indebted to the development of communication and information services. Consider air industries for example. From the most complicated industries - air industries - and its integrity provided by distributed information networks to online ticket sale where the passenger can even book a seat, everything can be customized. All these require trained specialist groups and advanced IT devices, in addition choosing correct solutions. For example, Focusing on Jeter, L.'s reports shows that if wireless solution has used in many stated instead of wired one, after some natural tragedies such as Hurricane Katrina, recovery could be done better [1].

2. Four-Faceted Distributed Connectivity Model (FFDC)

Using IT infrastructure and wireless capabilities provide a significant opportunity for each organization to develop the strategic plans. Figure 1 shows the Four-Faceted Distributed Connectivity Model (FFDC) for global development of every type of an e-learning global organization. Focusing on e-education, using virtual world unique features, supporting medical education and treatments, and modifying consumption patterns are four global aspect of the suggested model in this article. The important point for applying the FFDC model is the definition and redefinition of groups in organizations and equipping them with ICT tools [2]. Another remarkable issue is the definition of formal communication used for providing proper contact with formal departments round the globe [3].
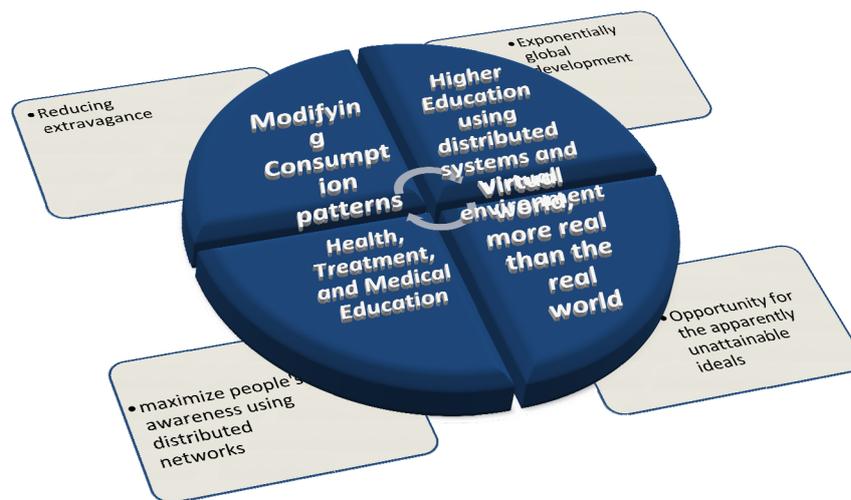
Fig 1. Four-Faceted Distributed Connectivity Model (FFDC)

2.1. FFDC Model Components.

There are four components for FFDC model which are described briefly.

- **Higher Education using Distributed Systems and Virtual Environment.** Being late to class and missing the class has passed. Virtual classes and online attendance from every corner of the world, sharing knowledge and experience is now available worldwide. Such facilities help higher education level, which is the basis of global development, rise exponentially [4]. The more distributed networks are available, the more distributed use will apply. In that, knowledge and experience of a professor in a university in the Far East can be used in a hospital in the Far West.

- **Virtual World, More Real than the Real World.** Second Life environment has minimized the gap between the real and the virtual world. Now, the wish of living doing business ideally has come true in Second Life. In this world, a number of real world limitations such as appearances, dialects, nationality, and family relations have been faded out. People can start a new life. New personality in a virtual world provides the opportunity for the apparently unattainable ideals to be obtained. Redefining values while you are in chat room and deal merely with the thoughts of people has nothing to do with their appearances, blood, nationality, family relations, minimizes prejudice and dogmatic ideas.

- **Health, Treatment, and Medical Education.** Using distributed networks can maximize people's awareness in health and medical fields. Physicians can have access to the records of their patients, through distributed databases, even if it is their first visit to the doctor. They can also get the latest on scientific, pharmaceutical, and medical issues and also report their latest findings. General education on health can be sent through integrated information networks and even through local and international television and radio networks.

- **Modifying Consumption Patterns.** Distributed networks including internet, intranet, and extranet can elevate the level of understanding and awareness in a society [5]. Establishing and modifying consumption patterns in a family, society, and even in global community can be put on the agenda using distributed networks backed by competent concentrated and non-concentrated management [6]. Educating and implementing how to modify consumption patterns, i.e. reducing extravagance, lack of wisdom, shall lead to higher efficiency and better life style in general [7].

2.2. Model Implementation Necessities.

To implement the suggested FFDC model, two important major stages are required:

- **Balancing Groups which Include Knowledge Workers and Formal Structures.** To get rid of old worn out and formal structures, organizations require the support of able work groups. To enjoy this support, groups must define "work" precisely, and be provided with flexible dynamic structure. Distributed IT tools can include various types of services, from defining groups to establishing relations and feedback as well as evaluation and redefinition. But what seems to be quite necessary is the issues of relationships between groups and command structures in organizations, in a way that groups can maintain their independence and do not turn into merely working bodies which do not respond to anybody; this disturbs the identity of organizations.
- **Consuming Computers and Networks – a Catalyst not a Substitute.** If integrated computers and networks are used as main issues instead of being used as accelerators and efficiency elevators, i.e. subsidiary, can lead to bad social and moral consequences, and accordingly in efficiency failure. Men, in their interactions, can provide the most efficient situation using body language, looks, and even tone of voice. Therefore, in many cases teleconferences are more fruitful than shared hand writings [8]. Live picture of people can lift creativity and confidence [9]. We should bear in mind that groups include individuals, and IT, mechanical, and electronic tools are only considered as environment [10]. Therefore, it requires the interaction between man and the environment to be perfect, and intensify each other in a right way.

3. Conclusions

Public growth in every aspect in today's world requires useful continuous communication and sharing concepts and findings. Companies, organizations, and institutions, thorough technological devices can join global networks, add to the existing information, and benefit from it as much as they need. The important point is the definition and redefinition of groups in organizations and equipping them with ICT tools. The more important point is the definition of formal communication used for providing proper contact with formal departments round the globe. Today's world is the world of secure and useful communication. However, to elevate the efficiency, defining technical skill and moral protocols in the form of active professional groups seems to be undeniable.

4. References

[1]   L. Jeter. No simple task: rebuilding region's tech infrastructure. *Mississippi Business Journal.* 2006, 28(2): 17-18.

[2]   M. E., Simon and J. A. De Ridder. Renewing connections and changing relations: Use of information and communication technology and cohesion in organizational groups. *Communications: The European Journal of Communication Research. 2004,* 29(2): 159-177.

[3]   K. Henttonen and K. Blomqvist. Managing distance in a global virtual team: the evolution of trust through technology-mediated relational communication. *Strategic Change.* 2005, 14(2): 107-119.

[4]   Connectivity Key to a Network of Progress. *Foreign Affairs.* May 2008, 87(3): 4.

[5]   Country Profile. *Spain.* Resources and infrastructure: Transport, communications and the Internet. 2005: pp.19-21.

[6]   C. Haythornthwaite. Social networks and Internet connectivity effects. *Information, Communication & Society.* Jun2005, 8(2): 125-147.

[7]   Telecoms and technology report. *Telecoms Industry Report: Slovakia.* October 2010, 2(2): 9-19.

[8]   K. L. Trope. Voice over internet protocol: The revolution in America's telecommunications infrastructure. *Computer & Internet Lawyer.* 2005, 22(12): 1-15.

[9]   F. Cores, A. Ripoll, X. Y. Yang, B. Qazzaz, R. Suppi, P. Hernandez and E. Luque. Improving bandwidth efficiency in distributed video-on-demand architectures. *Parallel Processing Letters.* Dec2003, 13(4): 589-600.

[10]   N. H. Woodward. Words to recover. *HR Magazine, 2005,* 50(12): 52-56.