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THE ADOPTION OF WEB-BASED TRAINING (WBT) BY
HONG KONG ORGANIZATIONS:
A DEVELOPMENT AND TEST OF AN INTEGRATED MODEL

CHAN CHI HONG, SIMON

A thesis submitted to The Hong Kong Polytechnic University
in accordance with the regulations
for the Degree of
Master of Philosophy

DEPARTMENT OF MANAGEMENT
THE HONG KONG POLYTECHNIC UNIVERSITY
2003
ABSTRACT

Abstract of thesis entitled 'The Adoption of Web-based Training (WBT) by Hong Kong Organizations: A Development and Test of an Integrated Model' submitted by Chan Chi Hong, Simon for the degree of Master of Philosophy at The Hong Kong Polytechnic University in 2003.

Web-based Training (WBT) is an innovative approach to delivering training through the Web, Internet, Intranet and Extranet. The increasing importance of WBT has prompted many researchers to examine facets of this important topic. However, the nature of the variables affecting WBT adoption is not well understood. Innovation adoption research has demonstrated that organizational features and perceived cost-and-benefits of innovations play significant roles in explaining organizational-level decisions to adopt new technologies. Beyond such motivations, social pressures operating at the organizational level also affect the decision to adopt innovations, even without regard to any proven or anticipated benefit from the innovation itself. Unfortunately, little or no systematic analysis of previous research has been done to study the adoption of WBT. To fill this research gap, the aim of this study was to build on the prior innovation adoption research and to test a model of WBT adoption. In this research, two studies were conducted. Given the lack of past research on WBT, Study 1 adopted a qualitative research approach to investigate the current development of WBT in Hong Kong organizations. To better understand the nature of WBT innovation, an in-depth exploratory study on the usage of WBT, the factors affecting WBT adoption, and the effectiveness and perceived benefits of WBT was undertaken. A new model of WBT adoption was developed, which integrates the past information technology (IT) adoption literature, and the qualitative findings in Study
1, taking into account the distinctive characteristics of WBT. The model examined the influence of organizational features, perceived advantages and disadvantages of WBT, and social pressures for WBT adoption, with top management support acting as a mediator between the three sets of antecedents and WBT adoption. Study 2, adopted a quantitative research approach, then aimed to test the WBT adoption model with Hong Kong survey data. The results suggested that organizations with a high reliance on advanced technology are more willing to adopt WBT. In addition, the perceived disadvantages of WBT to organizations and institutional pressures, the extent to which other organizations are seen to be using WBT, are the main factors that affect WBT adoption. Surprisingly, the degree of workforce expertise is not likely to affect WBT adoption.
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CHAPTER 1
INTRODUCTION

1 Introduction

In today's competitive business world, organizations use information systems to improve their productivity effectively and efficiently. Corporate competitiveness depends largely on an organization's ability to effectively manage change (Toffler, 1990), while change and self-renewal require lifelong training and development effort (Gardner, 1981). Thus it is in the best interest of organizations to make the "development and implementation of innovative training delivery systems an organizational agenda priority" (Kenn, 1990, p.1). In order to understand the adoption of an innovative training delivery system and to help practitioners in training and development to take advantage of this important issue, it is necessary to research empirically those key factors related to the adoption of innovation training so that organizations can predict more accurately its power in training. This chapter includes the research background, problem statement, purposes and objectives, scope of the research, significance of the research study, and structure of the thesis.

1.1 Research Background

Organizations around the world are experiencing change at a faster pace and in more ways than ever before. The changes affect not only the organization as a whole but also the individuals who make up each organization. Changes in the organizational structure, the structure of work, the type of work being done, the expectations of those in charge,
and lack of certainty about the future all have an impact on how people work and adapt to meet the changing demands (Norris, 1998).

With the ongoing changing demands, continuous learning is a must in order to survive in today's business world. Learning enhances people's capacity so that they are able to do something they were not able to do before (Senge, 1993). Pintrich, Marx, and Boyle (1993) described learning as the interaction between the experiences of an individual and his or her current conceptions and ideas. The results in the creation of their framework, that is dynamic and is very much affected by the context in which experiences take place. For example, traditionally, universities and colleges have been, and continue to be, seen as places of learning, whereas the workplace has been seen as the place where "one gets on with the business of applying what has been learnt" (Candy & Crebert, 1991, p.571).

1.1.1 Increasing Importance of Learning for Organizations

The field of learning in business organizations is changing at a steady pace. Due to the rapid changes in work and in the way work is organized, organizations frequently call upon their learning systems to enable changes (Senge, 1993). On the other hand, learning systems also have a dynamic of their own, independent of work changes (Poell, Chivers, Van der Krogt & Wildemeersch, 2000). The notion of a learning organization, although a very ambiguous concept itself (Poell, Tijmensen and Van der Krogt, 1997), has become a popular term to stress the importance of learning for organizations. The growing importance of learning for organizations' survival is usually attributed to an organizational world becoming increasingly complex and knowledge based, with
technological changes following each other ever faster and markets getting more and more dispersed and fragmented (Otte and Schlegel, 1992; European Commission, 1996; MOCW, 1998).

At the organizational level, large organizations have flattened their structures in an attempt to become less bureaucratic, which should encourage the adoption of innovations and lead to better communication with the markets served. Employees have come to bear work responsibilities that were in the hands of line managers or support staff before, a process referred to as empowerment (Andrews and Herschel, 1996). As a result, their jobs have become broader and more complex. Employees' jobs are now less individualistic and more semi-autonomous team based (Bouwen and Fry, 1996; Hoogerwerf, 1998). They have to learn different skills to fit in the multi-task work in organizations. At the individual level, employees have also become more and more responsible for their own learning, in order to ensure their employability (Block and Bates, 1995; Filipczak, 1995; MOCW, 1998). Organizations now expect employees to be flexible and adaptable at work, certainly against the background of increasingly flexible contracts. Both organizational and individual level increases the importance of learning for organization as a whole.

Particularly, in Hong Kong, The Hong Kong Special Administrative Region (HKSAR) Government stated that the pace of innovation would be very rapid in information world of tomorrow. The development of cyber world enables the flow of information worldwide in a very economical and very rapid manner (http://www.info.gov.hk). To
cope with this, people need to engage in lifelong learning to continually renew their skill sets. To sum up, the information world of the twenty-first century offers people worldwide the opportunity to transform the way they live and work. New computing and communication technologies offer new ways of learning, conducting business, and interacting socially.

### 1.1.2 Trends in the Use of Information Technology (IT) in Hong Kong

Besides the increasing importance of learning for organizations, information technology has been available for several decades and Human Resource Management (HRM) offices in both public and private business sectors have increasing made use of the new technology. The extent to which HR practitioners in Hong Kong organizations were using human resource information system (HRIS) and the Internet as an information resources to maximize their operation, improved efficiency and productivity of businesses was examined (Chan, 2000).

In the 1998 Policy Address, the Chief Executive of the HKSAR stated his vision to make Hong Kong a leader in the information world of tomorrow, and further emphasized the importance of using information technology to help Hong Kong to retain its competitive edge and to drive its overall economic expansion (http://www.info.gov.hk). The rapid pace of technology innovation, adoption and application necessitates a coherent strategic response from the Government. For Hong Kong to maintain its status as a leading international financial and business centre and to remain competitive in the global market, it must keep itself in the forefront of IT development. Furthermore, the HKSAR
has introduced the Digital 21 IT strategy to enhance and promote Hong Kong’s information infrastructure and services so as to make Hong Kong a leading digital city in the globally connected world of the twenty-first century (http://www.info.gov.hk).

1.1.3 Training and Development Market Profile in Hong Kong Organizations

According to 2001 Human Resource Management Strategies and Practices in Hong Kong: Research Report (Cheung, 2001), the report contains statistical data on the choice of HR strategies, and practices by companies. The objective is to regularly update members of Hong Kong Institute of Human Resource Management (IHRM) on the human resource management strategies and practices in Hong Kong organizations. In the research report, research questionnaires were sent to 1676 companies in September 2001. Totally, 187 valid returns were representing 11.2 percent response rate.

One hundred and thirty-nine companies (74.7 percent of 186 responding companies) had computerized human resources information system (CHRIS) in their establishments. Specifically, 38.8 percent of 186 responding companies, with 57.7 percent of large companies, indicated that their application of IT in HRM is in the application area of training and development. Moreover, 44 of the 183 responding companies implemented e-learning. E-learning was most commonly used in online learning courses, and then training administration and online corporate academy. Besides, 43 companies (23 percent of the 183 responding companies) that currently did not use e-learning were planning to implement e-learning in the near future. In the sample, 26 percent of the participating companies had no training and development policy. Of those companies that had a
policy, 79 percent had the policy in written form. 62 percent of the 185 responding companies indicated that they had an annual budget for training and development. In addition, there were many factors affecting the training and development activities of an organization (Cheung, 2001). The overall results indicated that the most important factors were “response to product changes”, “response to technological changes/ changes in workplace equipment” and “response to organization changes/ re-engineering”.

1.2 Problem Statement

Web-based training (WBT) is an innovative approach to distance learning using the technology of the Web, the Internet, the Intranets and the Extranets. Trainees can use commonly available programs called web browsers to access different types of information (i.e. text, pictures, audio, animations) over the Internet (Brown, 1999). WBT programs have been shown to reduce overall training costs (Whalen & Wright, 2000), compress training time (http://www.astd.org), and maintain or improve learning compared to traditional classroom training (Bowen, 2000). Each of these benefits relates directly to corporate competitive advantage. As the rapid changes in organization learning and widespread of human resource information systems (HRIS) in Hong Kong, human resource practitioners start to concern the use of information technology belonging with the Internet to deliver training to their staff (Chan, 2000). It seems that WBT would be one of the most useful tools to fulfill the new ongoing-learning process and enhance the concept of lifelong learning in future.
Knowledge is the new currency, and lifelong learning is critical to success (Toffler, 1990). In these conditions, traditional face-to-face instruction is becoming painfully slow and costly, requiring travel, food and lodging, and longer (paid) periods off the job. These dynamics form an environment in which the benefits of WBT (e.g. compression of training time, reduced total costs, and increased learning) are highly desirable. Jobs are intellectually more demanding, yet traditional (training) approaches seem inadequate and have become prohibitively expensive. Organizations search for ways to improve the quality of training while reducing costs (Hall, 1997). They want to restrict the practice of flying employees to central locations to be housed. They seek training systems that allow them to control information and its delivery, to insure that quality information is not diluted or changed by the time it reaches the employee.

However, while the potential benefits of WBT are substantial, they cannot be attained unless WBT programs are adopted or even implemented. If the strategic goal of increasing corporate competitiveness through WBT is to be fully realized factors, which affect WBT adoption must be identified and understood. Considerations involved in the decision to adopt WBT have been widely publicized. Unfortunately, relatively little empirical research has been undertaken in this area, although researchers have stressed the need for such studies (Kenn, 1990). It is still unclear whether common perceptions and publicized facts about WBT have any impact on its adoption. This study confronts the gap in the literature by examining the extent to which organizations are adopting WBT as a new training method, developing and testing a model of WBT adoption. An
investigation of these aspects of WBT might help to assure future success and effectiveness in the process of developing up and operating WBT.

1.3 Purposes and Objectives of the Study

Given the above issues, the purposes of this research are (a) to identify the factors affecting the adoption of WBT, (b) to develop a model of WBT adoption, and (c) empirically test the key portions of the model. The study therefore generates a better understanding of factors that affect the adoption of WBT in Hong Kong organizations. Given the relative lack of research on WBT adoption, the objectives of this study are divided into two phases, as follows.

1.3.1 Phase 1: Exploratory and Model Development

The aim of the first phase of the study is to describe the current state and development of WBT in Hong Kong and to provide the basis for the development of a theoretical framework. Specific objectives are:

(a) To identify the nature of WBT innovations in Hong Kong.
(b) To identify the factors that affect the adoption of WBT;
(c) To evaluate the effectiveness and perceived benefits of WBT in HK organizations;
(d) To contribute towards developing a model of the factors affecting the adoption of WBT.

These essentially exploratory objectives are dealt with in Study 1, a qualitative study. A set of organizational case studies examined the context in which WBT is used (or not
used) in Hong Kong organizations. The data gathered through interviews and documentary sources in the qualitative phase of the research were used to provide a sound basis for the quantitative second part of the study, ensuring that the model to be tested was grounded in the nature of WBT as a specific form of innovation and also in Hong Kong context.

1.3.2 Phase 2: Hypothesis Testing

The second phase of the research is concerned to test the theoretical framework, which was developed in Study 1 in the first part of the research. The specific objectives are:

(e) To evaluate the factors associated with WBT adoption,

(f) To test the specific hypotheses contained in the WBT adoption model, and

(g) To evaluate the relative importance of the three key theoretical perspectives on WBT adoption.

The second component of the research, Study 2, is a survey-based investigation, based on responses from a questionnaire. A quantitative analysis of the data provided a more rigorous and representative assessment of WBT from the view of Hong Kong organizations.

1.4 Scope of the Research

This study focuses on organizations, which have experience in organizing human resource management, or specifically, training and development in Hong Kong.
1.5 Significance of the Study

With such significant benefits possible, and given the increasingly competitive global economy, a clear need exists to identify and understand the relationships among factors which influence adoption of WBT programs (Kenn, 1990). Although a substantial literature base exists regarding technology implementation and information technology adoption, in general, little research has been conducted to identify the factors which influence WBT adoption in particular. Such research could increase successful WBT adoption, resulting in stronger corporate competitiveness.

This study helps to fill the gap in the training and development literature about the status of WBT adoption by Hong Kong organizations. A thorough understanding in the adoption, acceptance and usage of WBT might help organizations in making decisions about designing and developing WBT. Only when a solid understanding of the adoption of WBT from the employers' point of view is available can the adoption of training and developments programs become fully meaningful, eventually satisfying the identified training needs. The information from this study also assists future planning of the training and development programs in Hong Kong organizations.

The value of employee training is increasingly being recognized. In order to support the concept of lifelong learning and maximize the benefits of training with limited cost in organizations, it is beneficial to know what types of training is taking place and by what methods it is being conducted. This study is significant for employers who are aiming at choosing and operating the new programs of WBT in the near future. It is useful for
organizations outside Hong Kong to gain greater understanding of issues about WBT, technology transfer, that is the differences between Western experience and Chinese experience, and to understand what may or may not work when WBT moves into a different society.

1.6 Structure of the Thesis

This study is presented in nine chapters. This chapter presents the rationale for the study, its primary objectives, and its potential contributions to the training literature. The next chapter describes with the development and concepts related to WBT. Chapter Three describes the relevant literature and its theoretical development value to the present study. The method and results have been separated into the qualitative (Study 1) and quantitative (Study 2) components for clarity, therefore the fourth and fifth chapters describe the qualitative phase of the study, which provides a good supporting for theoretical development and hypotheses in Chapter Six. Chapter Seven and Eight detail the quantitative portion of this study. In Chapter Four, the subject selection and method used to conduct the qualitative phase of the study are described. Chapter Five summaries a series of case studies, that presents the results and discussion of the qualitative study. A new model of WBT adoption is developed, which integrates the past literature and qualitative findings in Study 1, in Chapter Six. In Chapter Seven, the subjects, the instruments and the method are presented, and in Chapter Eight, the results and discussion of the quantitative phase of the study are given. Lastly, in Chapter Nine, the conclusions derived from the study, implications, research contributions, and the recommendations for future research in this area are described.
CHAPTER 2
WEB-BASED TRAINING (WBT): DEVELOPMENT AND CONCEPTS

2 Introduction

Before proceeding to the review of the literature, in order to contextualise the rest of the study, nature of web-based training (WBT) is examined. The chapter describes with a development of WBT and the concepts related to WBT, an often-misunderstood term at the heart of the research study. In later section, a general view in the trend and statistics of technology-based training (TBT) in Hong Kong are described.

2.1 Development of Web-based Training (WBT)

Information technology has created a new delivery alternative for organization training. The power of WBT is indisputable, as it is possible to combine the ideals of classroom training and distance learning. Figure 2.1 shows the development of WBT from the aspects of (1) Technology, (2) Training, and (3) the Internet.
2.1.1 Technology

Generally speaking, people consider technology to be the mass of electronic devices in society. These include computers, video cameras, televisions, and other machines commonly referred to as hard technology. But numerous professionals and scholars state that technology also has an abstract component. According to Dahmer (1992), technology is defined as the systematic application of tools (concrete, or hard technology), techniques, and procedures (abstract, or soft technology) that evolve out of experience, though, and science.

Technology may take the form of either inventions (new devices) or innovations (new technology). While technology tends to be most associated with physical devices because they are concrete and highly visible, it is important to realize that technology can be
intangible in nature (i.e., procedures or techniques). Furthermore, every physical device creates a set of procedures or techniques that become an integral part of that technology. Such procedures become enshrined as traditions, roles, and skills (Kearsley, 1984).

With the rapid development of information technology in last decade, IT is affecting every aspect of daily lives, especially in business. The latest advancement in IT has not only innovated peoples’ communication technology but has also expanded the new possibilities of which knowledge transfer can take place. IT and electronic communication has led to a new era of learning and knowledge transfer on the web. Due to the new era of the web learning and knowledge transfer, new technologies are transforming the ways in which business operate and people work, boosting demand for new knowledge and new types of skills. They are providing new alternatives of learning, offering a potential solution to meet challenges such as demand for more flexibility in delivery of training in terms of time, location, content, and form (Brown, 1999). Employees need to be able to learn when they want, where they want, what they need (just-in-time), and in a format appropriate to them (Hall, 1997; Whalen & Wright, 2000). As a result, support for employer-employee, employee-employee becomes viable, allowing even geographically dispersed groups of employees to collaborate effectively (Kruse & Keil, 2001).

2.1.2 Training

The above section provides a more general idea on technology. However, the word training may require clarification as it is often used interchangeably with education and development, the word teaching and learning. Nalder (1982), a renowned educator,
author, and consultant in human resource development, defines training as a series of events designed to enhance individuals' performance in their current job. Nadler defines development as activities aimed at improving individuals' capabilities to perform future jobs, and education as activities geared toward agree with Nadler's definition of training, but reverse the definitions of education and development.

Generally, training has been defined as a planned learning experience designed to bring about permanent changes in an individual's knowledge, attitudes, or skills. When learning events are planned in a systematic way and are focused on the work environment, they are called training programs. Training has traditionally been viewed as a process of pulling people away from their work, decreasing their output and contribution for a time, and placing them into a crash course situation. Training also defined as the process of teaching new employees the basic skills they need to perform their jobs (Dessler, 1997). Whereas training focuses on skills needed to perform employees' current jobs, employee and management development is training of a long-term nature. The aim is to develop current or future employees for future jobs with the organization or to solve an organizational problem concerning. The training process is defined as the systematic acquisition of skills, rules, concepts, or attitudes that result in improved performance in the work environment (Seyler, 1997).
2.1.3 Internet

Given the above definition of technology and training, the term "technology-based training" becomes clearer. Then, it is interested to define the first part of the term "web-based training", i.e. the Internet, which is the heart of the research. Technology is increasingly changing our lives. The basic component was the emergence of the desktop computer, now it is the Internet. Those advanced technology people to have access to never-ending quantities of information and knowledge. Technology and the Internet empower individuals and facilitate a more active role in the educational process. From business point of view, the Internet has transformed the way people shop, i.e. business-to-customers (B2C) and the manner in which businesses conduct transactions with each other, i.e. business-to-business (B2B). At the same time, the electronic delivery learning to different sector is beginning to emerge. Therefore, just as the Internet has transformed the retail market, it will also transform the education and knowledge markets.

Originally, the Internet was developed in the late 1960's for the U.S. defense system to avoid the in-operation of the whole defense system due to the breaking down of any individual network. Vaughan-Nichols (1997) defined the Internet is one immense network that connects innumerable smaller networks and their individual resources via the Transmission Control Protocol/Internet Protocol (TCP/IP). Laudon and Laudon (1998) defined the Internet as an international network of network connecting over 200 million people form 100 countries. It is the largest information superhighway in the world. The Internet has changed the role of information systems by allowing the separation of work from location through the virtual organizations. Accordingly, a
statistics by Reuters & NUA Internet Surveys, the number of Internet users is now (2000) more than 100 millions. The Internet has emerged as the most powerful commerce, communication, and information medium of all time. International Data Corporation (IDC) forecasts that there will be 320 million Internet users worldwide by the end of 2002, up from 97 million at the end of 1998 (Close, Humphreys, & Ruttenbur, 2000).

According to the results of the Establishment Survey from HKSAR, 52 percent of the establishments in Hong Kong had personal computers (PCs) and 37 percent had Internet connections at the time of March to June 2000 when the survey was conducted. Analyzed by the size of the establishments, 92 percent of large establishments had PCs and 78 percent had Internet connection. These were greater than the corresponding figures for medium establishments (78 percent and 63 percent) and small establishments (48 percent and 34 percent). About 7 percent of the establishments had a web page or web site. The percentage was much higher for large establishments (43 percent) as compared with medium establishments (18 percent) and small (5 percent). A predominant proportion (96 percent) of the web pages or web sites mainly provided information on the establishments concerned and the products and services rendered. Only 1 percent served mainly as the channel for on-line ordering, payment and delivery of products and services (http://www.info.gov.hk). In addition, from the Survey on Information Technology Usage and Penetration in the Business Sector, 51.5 percent of company establishments had PCs usage, 37.3 percent had Internet connection and 7.3 percent of establishments had web page/web site (http://www.info.gov.hk).
Thus, building from these definitions and linkages, WBT is an instruction that systematically incorporates technology through the use of the Internet to enhance human performance in the job setting. WBT simply defines as training which delivery through the Web, Internet, Intranet and Extranet (the details of WBT explain in Section 2.2.7).

2.2 Concepts of Web-based training (WBT)

As there are so many different concepts and definitions to the terms related to WBT, it is needed to clarify all the conceptual terms in this research. Figure 2.2 shows the concepts of WBT in this study.

Figure 2.2 Concepts of WBT
2.2.1 Distance Learning

Distance learning is the delivery of educational programs to off-site students through text-based materials and the use of technologies such as cable or satellite television, video and audio-tapes, fax, computer modem, computer and video conferencing, and other means of electronic delivery (Kohl, 1999). The term distance learning or distance education refers to the teaching-learning arrangement in which the learner and teacher are separated by geography and by time. Distance learning can be traced to the mid-1800s with correspondence study in higher education. Not until 1972 did the International Council for Correspondence Education (ICCE) coin the term distance education to describe the family of educational practices that had sprung up through the years around correspondence education (Moore, 1990).

Today, distance learning environments have continued to evolve with advancing technology, moving toward virtual classrooms where instruction from host site is delivered to distance sites using a combination of live, two-way interactive audio, video, or both synchronous/asynchronous computer-based interactions that take advantage of local area networks (LANs), wide area networks (WANs), the Internet, and the World Wide Web (WWW or the Web). Through the years, the practice of correspondence study took advantage of current technologies. Incorporating into the teaching and learning environment the telecommunication technologies of radio and television broadcasting as well as audio and video recording (Horton, 2000).
2.2.2 E-Learning

"Social, technological, and economic drivers are transforming education around the world. As globalization encompasses local economies like never before, the development of a skilled workforce becomes a genuinely international concern. And as human capital becomes the chief source of economic value, education and training become lifelong endeavors for the vast majority of workers."

(Peter J. Stokes, Eduventures.com, 1999)

In this study, the term E-learning is the same as technology-based learning (TBL). E-learning defines as the delivery of content via all electronic media, including the Internet, Intranets, extranets, satellite broadcast, audio/video tape, interactive TV and CD-ROM. It had the same meaning of TBL. It also defined more narrowly than distance learning, which would include text-based learning and courses conducted via written correspondence (http://www.learnframe.com). The term e-learning covers a wide set of applications and processes such as web-based learning (WBL), computer-based learning (CBL), virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio/video tape, satellite broadcast, interactive TV, and CD-ROM.

International Data Corporation (IDC), an IT research firm, released a report predicting a 33 percent increase between 1998 and 2002 in the number of learners using online learning (Barron, 1999 Sep). With e-learning, the concept of lifelong learning moves into
the practical realm and becomes a viable response to the rapid business and economic changes of the 21st century (http://www.isopia.com).

2.2.3 Difference between Training and Learning

Training can be defined as the activity, often specific skill oriented, planned by an external agent to improve task performance. Another important term that needs to define is learning. The ultimate measure of successful training is to determine if the individuals learned the material presented. Learning is the change in human disposition or capability, which persists over a period of time, and which is not simply ascribable to processes of growth (or maturation) Learning is a psychological process that takes place within the individual. Learning may be the result of training, but is difficult to assess directly. The measurable outcome of learning is a change in task performance, or the ability of participants to apply the information (Gittelman, 1998). In business, where most companies have training departments rather than learning departments, the term technology based training is most frequently encountered. The main difference is that just the word “learning” most commonly used in academic field whereas “training” used in corporations.

2.2.4 Technology-based Training (TBT) = E-Training

“Technology-based training provides a practical and highly useful perspective on how to tackle the world of learning and technology. Enjoy and learn!”

--Elliott Masie, president, The Masie Institute (Kruse and Keil, 2000)
TBT is the all-inclusive term for training delivered by a number of means. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), satellite broadcast, audio/video tape, interactive TV, and CD-ROM. TBT includes computer-based training (CBT) and web-based training (WBT). TBT is really nothing more than using technology to deliver training and educational materials. In the past, these have included the use of mainframe computers, floppy diskettes, multimedia CD-ROMs, and interactive videodisks (Kruse and Keil, 2000).

As shown in Figure 2.3, TBT includes computer-based training (CBT), computer-based learning (CBL), computer-based instruction (CBI), computer-based education (CBE), Web-based training (WBT), Internet-based training (IBT), Intranet-based training (also IBT), browser-based training (BBT), and any number of others.

![Figure 2.3 Synonyms for Technology-based Training](image)

(Kruse and Keil, 2000)

2.2.5 Computer-based Training (CBT)

CBT is an interactive instructional approach in which specially designed training programs are executed on a computer. A series of choices or questions are presented,
with feedback based upon the response received. This would include any type of
instruction that takes place via computer, including programs on kiosk, CD-ROM, DVD,
hard drive, or disk (Rada, 1998). CBT also referred as computer-based learning (CBL),
computer-based instruction (CBI), or computer-aided instruction (CAI), which is a subset
of distance education. The term CBT commonly refers to the entire category of training
that includes the use of a computer. As technologies have grown, so has CBT, and today
the category contains extensive options for companies diverse in product or service, size
and structure.

2.2.6 Internet-based Training (IBT)

Internet-based training is defined as a delivery of educational content via a Web browser
over the public Internet, a private intranet, or an extranet (LAN/WAN). IBT provides
links to learning resources outside of the course, such as references, e-mail, bulletin
boards, and discussion groups. It provides the advantages of CBT while retaining
advantages of instructor-led training (Kruse and Keil, 2000).

IBT is a subset of CBT and is any type of instruction that is provided through the
Internet, using methods such as electronic-mail (e-mail), mailing lists, and certain types
of multi-user domains (MUDs) on multi-user domains object oriented (MOOs) (Rada,
1998). IBT is already well underway whether by harnessing the data network as an
economical distribution mechanism for CBT, as an electronic “correspondence course”
approach, or as platform for interactive multimedia CBT.
2.2.7 Web-based Training (WBT)

Web-based training is an innovative approach to distance learning using the technology of the Web, the Internet, the Intranets and the Extranets. It is a formal effort to change job-related knowledge and skill through the use of information and activities presented on the computer. The training typically involves computer programs and data that reside on a single computer but can be accessed by many computers via network technology. Trainees can be use commonly available programs called web browsers to access different types of information (i.e. text, pictures, audio, animations) over an Internet (Brown, 1999). WBT presents live content, fresh and easily modified, in a structure that allows self-directed, self-paced instruction on any topic (Kruse and Keil, 2000).

WBT is one kinds of CBT that uses Web technologies (TCP/IP, HTTP, browsers) and is delivered across networks. It also referred as Web-based instruction (WBI), is a subset of IBT and one of the newer forms of distance education. The term was coined in 1994 by Tim Kibby, who maintains the excellent Web-based Training and Information Center on the World Wide Web at: http://www.filename.com/wbt (Rada, 1998).

P.S.: Glossary in Appendix A clarifies the terms related to WBT.

2.2.8 Delivery Methods in Different Type of Training

Figure 2.4 shows various kind of delivery methods and the differences among distance learning (DL), e-learning (technology-based training), computer-based training (CBT), Internet-based training (INT), and web-based training (WBT).
As there are so many different meanings and terms in empirical studies, these chapter summaries all contextual terms related to WBT with clear concept. It can determine the misunderstanding with the terms of DL, TBT, CBT, IBT and WBT. After the detail explanation of the terms in this study, use of technologies to deliver training, trend and statistics of TBT in Hong Kong are examined.

2.3 Use of Technologies to Deliver Training

The use of electronic learning technologies to deliver information and facilitate the development of skills and knowledge will revolutionize learning (Block and Bates, 1995). But despite increasing use of the term learning technologies, it does not have a universally accepted definition. A unifying attribute of learning technologies is that they seek to enhance the flexibility of learning options through electronic means (Hall, 1997).
The line between work and training is beginning to blend as technology continues to evolve and advance. Technology has changed how people work, and it is rapidly changing how people are learning to work (Leonard, 1996). An annual look at trends in 1997 by the research department of the American Society for Training and Development (ASTD) reported: For centuries, the technology for transferring skills and knowledge has changed little: one human being teaching another. Generations of classroom trainers have deployed the time-honored "chalk and talk" approach. Only the over-head projector loomed on the horizon of a training landscape devoid of technology. Now the landscape is awash with a torrent of new technologies, creating almost limitless possibilities for heightened learning (Bassi, Cheney & Van Buren, 1997).

Computers and other electronic technology are becoming more and more important in the delivery of training and information to improve employee performance. The Internet is one of the most important technologies in delivering training and information to employees today (Asirvatham, 2000). The World Wide Web (www) offers educators a new medium to deliver teaching and learning material, which can bring new and exciting ways of learning, and an alternative to traditional teaching techniques. These new techniques can provide solutions to the demands of a changing environment, allowing flexibility for learning from home and work, and the ability to cope with a widening variety of backgrounds and qualifications (Allen, 1998). Organizations are now replacing, enhancing, or supplementing their traditional classroom programs with e-learning and advanced distance-learning tools (CD-ROMs, Web-based courses, satellite-based distance learning, video-conferencing, and so on).
Until recently, companies have been exploring the use of the Internet and Intranets cautiously. But as technology continues to improve their efficiency, the Internet and Intranets will increasingly be used to deliver training (http://www.astd.org). Transitioning from traditional training to WBT is still a new, quite radical, unfamiliar change for many businesses. Not only can training through web embrace many different technologies and appearances, costing can range anywhere from questionably low to unbelievably high. The overall environment is awash with a torrent of new technologies, creating almost limitless possibilities for heightened learning.

In an ideal training world, a wide range of viable options is available to learners, and they have a deep understanding of their relative strengths, weaknesses, and attributes (Lewis & Orton, 2000). To keep up with the fast pace of business in a global economy, instant access to continuing education is a priority. Business professionals need to stay current in a variety of areas including specialized industry skills, human resources issues, personal and professional development, compliance and licensing, safety and security and a host of other topics. But it is often very expensive and time consuming to attend traditional workshops and seminars or enroll in college courses. That is why the alternative, WBT with the ability to take classes online anywhere, anytime is gaining widespread acceptance (Robb, 2000).

With the rapidly of the modern age, employees cannot learn enough, fast enough, and remain competitive without the use of proficient tools and new technologies, e.g. computers, CD-ROM, Internet, e-mail, and voice mail (Bulloch, 2001; Dillion, 1997).
Distance learning methods, using the Internet or the Intranet for delivery, are better alternatives if the office staff or members to be trained are at distant locations. For those who need a guide through the educational method, there are instructor-led courses, or more free-ranging individuals can take part in non-instructed WBT. The potential of this educational tool is unlimited (Robb, 2000).

2.4 Trend and Statistics of Technology-based Training (TBT) in Hong Kong

This section includes Internet usage and overview of e-learning in Hong Kong. It provides the most updated and latest Hong Kong-based information on WBT. Distance learning and the Web are two of the most rapidly developing areas in the information technology arena (Whalen & Wright, 2000).

The growth of the Internet is a result of the following:

1. Continually increasing multimedia capabilities;
2. Broad geographic accessibility;
3. The number and sophistication of users.

2.4.1 Hong Kong Internet Usage

From the survey from Network Wizards, the Internet users around the world of the year 2000 was around 72.4 millions. In the year of 2001, there is a great rise in the Internet user with 109.5 millions. Moreover, the Internet user in Hong Kong in 2001 is about 2.2 millions, i.e. 33 percent of the population (www.nw.com).
2.4.2 E-learning in Hong Kong

A survey on e-learning was jointly organized by the Classified Post of the South China Post and IHRM during the 21st IHRM Annual Conference which concluded on November 23, 2001. A total of 254 people have responded to the survey during the 2-day Conference. The results indicated that 132 companies (51.97 percent) were providing e-learning to employees in Hong Kong and 122 companies (48.03 percent) were not providing e-learning to employees (http://www.hkihrm.org).

The main objective of initiating e-learning in organizations at the moment is to improve employee’s productivity and performance (79.55 percent). The other main objectives are to retain staff (20.45 percent), to save cost (39.39 percent), to transform the company’s business model into something new (31.82 percent) and others (3.03 percent). For e-learning sections, 51.16 percent of the respondents have delivered staff orientation to their organization, 60.47 percent of them have delivered computer/IT skills, 42.64 percent of them have delivered hard skills (e.g. language, product and services information), 48.84 percent of them have delivered soft skills (e.g. customer service, management skills, etc).

In 2000, The Management Development Centre of Hong Kong (MDC)’s “Survey on E-learning” aims to assess the current status and trends of e-learning in Hong Kong. The aims is to find out the current status of e-learning adoption, the driving factors that make companies consider or adopt e-learning, companies implement on e-learning and the key concerns of companies towards e-learning (for both adopters and non-adopters).
According to the survey, the period is between September to October 2000. 101 respondents from supervisory to senior management levels have been entered into the survey. Over 57 percent of respondents' companies have an employee size of over 250 and over 78 percent participants' companies have been established for more than 10 years (http://www.vtc.edu.hk).

In the area of current status of e-learning adoption, 42 percent of respondent companies have adopted some form of e-learning facilities, reflecting favorable readiness levels, and 56 percent and 2 percent of them have not adopted and undeclared about the adoption of e-learning. Moreover, Majority of respondent companies are still only evaluating their e-learning project with 14 percent of them are looking for vendors and 52 percent of them are in feasibility study in e-learning. In respondent companies' favorable outlook, 17 percent of them have started e-learning more than 12 months, 19 percent of them have started during the last 12 months, and 64 percent of them plan to start in the next 12 months. As a result, the e-learning market for business sector in Hong Kong is expected to grow in 2001.

In the area of driving factors that make companies consider or adopt e-learning, respondent companies' have perceived several potential benefits of e-learning, which include flexible learning (32 percent), promote culture (24 percent), enhanced effectiveness (17 percent), great variety (16 percent) and ability of tracking (9 percent). In conclude, respondents' perceptions of the main potential benefits of e-learning towards
enhanced learning and a learning culture are most encouraging indicating respondents' readiness to embrace learning.

In the area of implementing e-learning in companies, in general, most companies seem to take a relatively more conservative approach in rolling out e-learning, with just around 21 percent of them with 50 percent over of staff participate in e-learning. Not surprisingly, the target learner groups for e-learning is offered to employees at all levels, with focuses on management levels (21 percent of senior management, 42 percent of middle management, and 37 percent of frontline staff).

The key concerns of companies towards e-learning, for non-adopters, are high investment (20 percent), lack of expertise (16 percent), technical issues (13 percent), difficult to source (13 percent), difficult to convince staff (10 percent), not enough PC skills (8 percent), not convinced on value (7 percent), and lack of interest (7 percent). The key concerns suggest that e-learning solutions and content providers need to offer products and services that require low entry investment, and use a total solution approach to make it easy for implementation. Interestingly, the key concerns for adopters are similar to those of non-adopters. They are technical issues (18 percent), lack of expertise (15 percent), difficult to source (13 percent), high investment (12 percent), difficult to ascertain effectiveness (12 percent), difficult to convince staff (10 percent), lack of tracking system (9 percent), not enough PC skills (5 percent), and lack of support (4 percent).
Companies in Hong Kong are showing increasing interest in e-learning, although, in general, most adoptions are still in the early stages. It is encouraging that many companies perceive the value of e-learning as to promote a learning culture. The flexibility in delivery and enhanced training effectiveness are other major perceived benefits. E-learning is offered to employees at all levels, with focuses on management levels. Application of e-learning on management skills appears to be well accepted. Perceived high investment, lack of expertise in implementation, and difficulties in acquiring quality contents, are the major challenges to overcome (http://www.vtc.edu.hk).

In conclusion, WBT may appear similar or even identical to other training methods that involve the use of computers and which use inanimate trainers to provide training or instructions (Kruse & Keil, 2000). It is important to specify the similarities and delineate the differences between WBT and other IT-based training. After a comprehensive review in the terms related to WBT, different IT innovative training methods are clearly clarified. The trend and statistics of TBT in Hong Kong provides a preliminary view in the nature of WBT among Hong Kong organizations for Study 1. In addition to further evaluating a framework for factors affecting the adoption of WBT, this study fill the gap by developing a research model for WBT adoption among organizations, which rarely been done. Therefore, a literature review is presented, discussing the characteristics, theories of WBT, specific factors included in the WBT adoption model, in next Chapter.
CHAPTER 3

LITERATURE REVIEW

3 Introduction

This study focuses on the factors that affect the adoption of web-based training (WBT) in Hong Kong organizations. In order to identify possible factors, and provide a theoretical framework resulting from the study, it is necessary to review the relevant literature. The literature review contains three main sections. First, the advantages and disadvantages of distinctive characteristics of WBT are discussed. Second, the empirical research on factors affecting the adoption of information technology (IT) by organizations is reviewed. However, a framework for the study of WBT adoption is non-existent. Therefore, the third section of this chapter presents three possible underpinning theories for a new explanatory framework of WBT adoption. Building on these theories, a model of three main groups of antecedents of WBT adoption is developed.

3.1 Advantages and Disadvantages of the Characteristics of WBT

WBT is a formal effort to change job-related knowledge and skills through the use of IT and activities presented on the computer through the network (Brown, 1999). The training typically involves computer programs and data that reside on a single computer but can be accessed by many computers through network technology. Trainees can use commonly available programs called web browsers to access different types of information (i.e., text, pictures, audio, animations) over the Internet and the Intranet (Kruse & Keil, 2000). WBT plays an important role by allowing the delivery of courses
and training modules in a timely, convenient, easily updated, accessibility, flexibility and cost-effective manner (Pritchard-Becker, 2001).

Technology is changing so quickly that it is not practical to ask employees, business partners, and customers to attend traditional instructor-led classes each time when a new product release is issued. The advent of a global economy has led to a worldwide customer base with employees scattered around the globe in satellite facilities and home offices. These realities point to the business and educational benefits of WBT. Definitely, the ideal assessment of WBT would probably include data from a return on investment or utility analysis in business. However, it is difficult to get this kind of information. Table 3.1 summarizes the information sources of perceived advantages and disadvantages of WBT.
Table 3.1 Advantages and Disadvantages of WBT

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<td>17. Quality Problems</td>
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<td>18. Problems on Copyright, Privacy and Security</td>
<td>Connors (2001)</td>
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3.1.1 Advantages

There are some advantages in implementing WBT that increase the effectiveness of training and value of training significantly (Lewis, 1999). No learning environment is ideal for all potential participants. For some, the best or only possible form of instruction might well be training through the Internet.

3.1.1.1 Geographic Independence/ Anywhere

The Internet offers a rich, collaborative learning environment, available any places and any situations (Davis, 2001). The larger and more geographically dispersed the company is, the more likely WBT will save money. WBT can access to expert instructors regardless of geographic location (Whalen & Wright, 2000; Dewhurst, Macleod and Norris, 2000; Ganzel, Gordon, Picard, & Stamps, 1997). As a result, geography becomes irrelevant through the use of a “real-time” or synchronous e-learning (Asirvatham, 2000). Employees with the Internet connection can access Web-based programs at any time and from nearly any place (Weinstock, 2000). Training is no longer restricted to training centres or physical place, the relative geographic locations of the employees and the instructors are no longer a prohibitive factor affecting the training experience. For examples, CBT can be offered in floppy disks or CD-ROMs; LAN training via corporate networks through a central server; and IBT can come from any source and be delivered to any recipient anywhere on earth. WBT can deliver training to employees in elsewhere. It shows that individual in various places can effectively communicate with co-workers or instructors without being in the same room (Kruse & Keil, 2000).
3.1.1.2 Self-Paced

WBT allows employees to learn at their own pace, at home or in the office (Davis, 2001). WBT can be synchronous (live) or asynchronous (self-paced). An individual can proceed through courses or programs as the information is fully comprehended. Trainees can convert information to knowledge on their own timetable with individually-tailored learning path through the course program (McDermott, 2001). Individuals can acquire knowledge at their self-paced and can practice skills without feeling threatened or embarrassed (Bowen, 2000). WBT introduces an entirely new model for training, which is one that focuses primarily on the needs of the trainer, instead of on the abilities of the instructor. It provides a consistent, easy-to-learn, and sometimes fun way to navigate through learning material at the individual's own chosen pace. Learning is individual, private and critical to professional and personal growth (Barkley & Bianco, 2001).

3.1.1.3 Temporal Independence / Time Access / Anytime

The idea of WBT is of three hundred and sixty-five days, twenty-four hours by seven days does not necessarily apply to home office associates (the same way) it does to agents in the field (Gallagher, 2001). Employees can receive training not just anywhere, but also at any time. The asynchronous communication and web information distribution can free the training experience from the bounds of time. There is no longer any need for trainers and trainees to synchronize their schedule to meet at the same place and the same time. WBT creates the unique opportunity for companies to provide training when it is needed without time limitation (Persun, 2000; Barkley & Bianco, 2001).
3.1.1.4 Savings in Training Time

The speedy rate of training delivery is a clear advantage of most electronic learning technologies. From the survey of American Society for Training and Development (ASTD), more than one hundred companies shows that multimedia training can reduce training time by fifty percent, compared with classroom training due to a tighter instructional design and learners' option to bypass content already mastered. (http://www.astd.org). The potential of WBT can reach more trainees with less training time (Barkley & Bianco, 2001; Kruse & Keil, 2000). WBT experience has grown tremendously because of the growing importance of quality time spent on the job. The use of WBT to delivery training saves in time if compared with time spend on normal training (Connors, 2001). It minimizes the time between when employees need training and the time they can receive it.

3.1.1.5 Just-in-Time

A major benefit of training delivery through the Internet or an Intranet is that different computers and different operating systems can be used simultaneously to share information and communicate worldwide. The growth and ubiquity of the Internet, and high speed desktop computers make WBT available twenty-four hours a day, seven days a week, at multiple locations. Employees, whether at home or in the office, can access training at the exact time it is needed. The "just in time" concept facilities continuous access to the most current data and allows individuals more control over their learning process (McDermott, 2001; Pollard & Hillage, 2001). WBT allows individuals to learn on an as-needed basis (http://www.astd.org). WBT programs can be scheduled at
convenient hours, carved into manageable pieces for just-in-time training, and tailored for
the individual (Zager, 2001). Trainees can access information closer to the time the
knowledge is needed rather than obtaining information that may never be used or may be
used in long-term. The rapid pace of change in technology requires that workplace
learning occur on a just-in-time, just-what’s-needed, and just-where-it’s-needed basis.
Trainees can choose how to allocate their time. They can even spend as much or as little
time as they need on a particular subject or even topic (Ryan, 2001).

3.1.1.6 Content Updated Rapidly

The Internet allows organizations to get training materials to their employees much
sooner than other methods, and can better keep pace with new technologies and business
practices (Rice, 2000, Pollard & Hillage, 2001). Product and procedural changes can be
updated and delivered in real-time (Rossett & Sheldon, 2001). WBT increases the rate at
which knowledge is acquired, which is especially important in the corporate market.
WBT serves as either an effective pre-requisite or follow-up to a class session that
continues to be valued by and offered to learners at set times. If the changes need to be
made in the WBT program after the original implementation, they can be made on the
server, which stores the program and everyone worldwide can access and update (Hall,
1997; Dewhurst, Macleod and Norris, 2000). Changing technologies and market
globalization have placed companies under greater stress, and the need to deliver fast,
effective, and easily updated training materials is more important than ever before
(McDermott, 2001). Massive amounts of information are now available on the web, and
more intellectual resources are uploaded every day (Twing, Miloff, & Noam, 1998).
3.1.1.7 Standardization

The information delivered can be standardized and consistent to all users, therefore reducing the possibility for misinterpretations (Pollard & Hillage, 2001). WBT creates a common or standardized training experience for an organization’s entire workforce, even when multiple sites are involved. For example, through WBT, a manufacturer with sites across the US or around the world can assure that it delivers the exact same information to all its engineers (Persun, 2000). Consistent delivery of content that would be diluted by filtering through instructors is possible with WBT (Kruse & Keil, 2000). WBT ensures all the appropriate trainees in the organization get the same quality and standard of training at the same time. WBT delivers consistently high quality training to employees (Horton, 2000).

3.1.1.8 Platform Independence

The platform independent nature of the web almost totally removes the problem posed by most of the currently available training tools. WBT can centralize storage and maintenance in its platform (Horton, 2000, Bowen, 2000, Beer, 2000). WBT is independence in platform by means of the various methods (Cannell, 1999).

3.1.1.9 Interactivity

Advancements in technology and the subsequent growth in the Internet have led to the development of interactive learning environments (Pollard & Hillage, 2001). These learning environments create a renewed interest in the educational and training process. Employees can learn when they actively participated in a hands-on, interactive, relational
environment (Barkley & Bianco, 2001, Rossett & Sheldon, 2001). WBT can add value to the learning experience through the interactivity of technology-assisted instruction (Whalen & Wright, 2000; Bowen, 2000). WBT provides many choices for how to deliver learning, provides interaction and interactivity (Horton, 2000). As well, look for new WBT products that are more entertaining, with interactive multi-media content using music, animation and role playing that simulates business situations (Bulloch, 2001).

3.1.1.10 Cost Effectiveness

Cost savings are the primary benefits of WBT (Emerson & Cook, 2000; Ganzel, Gordon, Picard, & Stamps, 1997; Huang, 1997; McGee, 1999). WBT is seen as offering a cost-effective alternative to more traditional methods (McDermott, 2001, Pollard & Hillage, 2001). WBT is receiving a great deal of interest in academic and private industry, and cost analysis has become increasingly important. WBT allows training departments to deliver quality training efficiently and cost-effectively, thereby minimizing the effects of cutbacks to training programs (Whalen & Wright, 2000). WBT tends to cost less than comparable in-person training (Beer, 2000, Zager, 2001, Rossett & Sheldon, 2001). According to Horton (2000), WBT can save cost in travel expenses, facilities and supplies, salaries, and lost opportunity costs. The elimination of costs associated with instructors’ salaries, meeting-room rentals, and employees’ travel, lodging, and meals is directly quantifiable (Kruse & Keil, 2000). Organizations move WBT to cut training delivery and travel costs, and to reach large audiences-both employees and customers rapidly and at multiple sites (Persun, 2000, Driscoll, 1998; Barkley & Bianco, 2001).
3.1.1.11 Convenience and Flexibility

WBT can provide convenience and flexibility to both organizations and individuals (Ryan, 2001, Davis, 2001, Rossett & Sheldon, 2001). Convenience and flexibility allows an organization to provide small packets of learning when the employee needs the specific information, or when they need a quick refresher course (Bowen, 2000; Huang, 1997; McGee, 1999). Dewhurst, Macleod and Norris (2000) mentioned that one of the advantages of using WBT is employees can be more flexible to allocate their time to learn. WBT is as effective as classroom training, and more flexible and engaging than traditional CBT (Zager, 2001). For example, the real key behind WBT is an organization's ability to provide employees and customers with technology upgrade training at their fingertips without having to participate in month-long courses or all-day seminars held outside the office (Persun, 2000).

3.1.1.12 Increased Communication

The web allows employees to chat with each other individually or as a group, and to send questions or hold conversations, oral or electronic, with their educator agreed upon at their convenience. The digital world has removed boundaries inherent within the traditional classroom, facilitating the extension of learning paradigms that support active learning and ease of communication (Yaverbaum & Liebowitz, 1997). Individuals in various places can effectively communicate with co-workers or instructors without being in the same room. WBT enables communication to happen one-to-one, one-to-many, many-to-many and many-to-one (Centre for Educational Research and Innovation, 2001). Communication and information technologies, such as electronic mail, group decision
support systems, and computer conferencing, are valuable tools for encouraging equality in group decision making. Both participation in group discussion and influence over final decisions had generally been found to be more equal in electronic groups than in traditional face-to-face groups (Weisband, Schneider & Connolly, 1995).

3.1.1.13 Increased Learner Control

WBT allows trainees to log-on their programs in their own choice. Trainers can control their experience in training to meet their personal needs. Technology has given individual greater authority over the training environment. Moreover, WBT provides more privacy than regular CBT for trainees who are too embarrassed to ask questions (Huang, 1997; McGee, 1999). WBT helps increase the feeling of control that employees have over their training experience, and is a way to increase employees’ motivation. This means that employees feels more free to learn the way they like to learn rather than being imposed by someone else of learn in a certain manner. WBT can incorporate learner-controlled training concepts that enhance learning by providing employees with control over the path, pace, and other features of the training process (Blotzer, 2000).

3.1.2 Disadvantages

Although WBT have several advantages with distinctive characteristics, there are still some disadvantages in WBT implementation. No matter what form of training is used, some individuals find that they are at a distinct disadvantage, while in a different environment their disadvantages may disappear.
3.1.2.1 Access and Resources Problems

There are some concerns when considering WBT as an alternate delivery system for training. Accessibility becomes an issue when concerning any technology-based solution. Computer speed, bandwidth and availability need to be compatible with the training package chosen whether delivered through a CD or the Internet (Pritchard-Becker, 2001). The most cited problem with WBT is to have access to computers and the Web that enable both the trainers and trainees to communicate interactively in real time. In many places around the world, employees do not have proper or in fact any form of computer communications. Another issue is the availability of adequate compute hardware for employees. More than one organization has investigated the benefits of WBT only to find that a large number of the employees need substantial upgrades to the current equipment on their desktops (Whalen & Wright, 2000). Like any first time challenge, learning about and implementing new technology takes more resources than expected.

3.1.2.2 Technical Problems

The lack of technological standards at present is a barrier on the growth of WBT (McDermott, 2001, Pollard & Hillage, 2001). Such standards are essential to the interoperability of the products and services offered by the various vendors. Many WBT programs delivered through the Internet are relatively slow. The key challenge is to integrate all kind of technologies into a coherent electronic learning environment (Twing, Miloff, & Noam, 1998; Kruse & Keil, 2000). One of the big demands for WBT is
information technology, and with such a shortage of trainers, quality courseware software is a huge seller.

Technology issues that play an important role include whether the existing technology infrastructure can accomplish the training goals, whether additional technology expenditures can be justified, and whether compatibility of all software and hardware can be achieved (Kruse & Keil, 2000). One problem is the availability of bandwidth. Limited bandwidth means slower performance for sound, video, and even extensive graphics. These restrictions can cause long waits for download and can adversely affect the learning process (Hall, 1997). Even organizations with state-of-art intranets may find that existing applications running over the network occupy most of the bandwidth available, leaving expensive upgrades to the network the only option of WBT is to be implemented (Whalen & Wright, 2000).

3.1.2.3 High Setup Costs

WBT takes more time and more money to develop than expected (Hall, 1997, Pollard & Hillage, 2001, Rossett & Sheldon, 2001). Although the computer hardware prices have fallen drastically, other expenditures like the Internet connection software cost, and other maintenance costs all put together are still high (Kruse & Keil, 2000, Yaverbaum, 1993). The cost of developing WBT courses can be prohibitive (Whalen & Wright, 2000).
3.1.2.4 Quality Problems

WBT courses are seldom or never verified for their quality and quantity. Sometimes, it is easy to find that not all courses could be delivered through the computer and the Internet. Some training topics or courses are not best served by WBT and require more personal touch (Hall, 1997). It is difficult to ensure the quality of WBT programs.

3.1.2.5 Problems of Copyright, Privacy and Security

The issues of copyright, privacy, security, and authentication are all important to consider in WBT (Kruse & Keil, 2000). Preventing employees from copying and cheating become more difficult on the Internet. The need for supervisors to be able to check on the WBT course completion and have it documented that the trainees did in fact take the course a necessity. The majority of WBT programs is password-protected and requires the trainee to log into the program. This process documents the date and time the training was taken, whether or not the individual finished the program, and what they scored on the test following the training (Hall, 1997). Such concrete documentation provides some protection form liability by proving the company offered the training to the individuals, and it leaves an electronic paper trail as proof (Connors, 2001).

3.1.2.6 Workforce Problems

WBT is a relatively new way of learning or training style (Hall, 1997). There is a need to build awareness and trainee acceptance. Individuals have different learning styles and WBT may not be suitable for everyone. It is important to recognize that it has limitations, particularly in the provision of soft-skills training on topics like team-working or
presentation skills (McDermott, 2001, Pollard & Hillage, 2001). In addition, certain individuals lack the motivation and will-power to succeed in a self-study program and high drop-out rates have been a feature of WBT (McDermott, 2001, Pollard & Hillage, 2001).

3.2 Adoption of Information Technology (IT)

Research on innovation adoption and diffusion has long converged on a core set of theoretical frameworks that seek to explain target adopter attitudes and their innovation-related behavior. These core frameworks - Diffusion of Innovations (Rogers 1983), the Theory of Reasoned Action (Ajzen & Fishbein, 1975), the Technology Acceptance Model (Davis, Bagozzi & Warshaw, 1989), the Theory of Planned Behavior (Ajzen, 1985; Taylor & Todd, 1995), have received widespread validation for many technological innovations where individual autonomy is permitted to adopt or reject an innovation. These models are more applicable at the individual level of analysis. Increasing evidence suggests that these traditional frameworks neglect the realities of implementing technology innovations within organizations, especially when adoption decisions are made at the organizational, division, or workgroup levels, rather than at the individual level (Fichman & Kemerer, 1997; Orlikowski, 1993; Wynekoop, 1992). Under these conditions, which correspond to contingent authority innovation decisions (Zaltman, Duncan & Holbeck, 1973), authorities make the initial decision to adopt and targeted users have few alternatives but to adopt the innovation and make the necessary adjustments for using it to perform their jobs. Thus rather than fitting the conditions under which traditional models of innovation adoption and diffusion (Rogers, 1983) or technology acceptance (Davis, 1989; Ajzen & Fishbein, 1975) were created, the reality of
innovation adoption and implementation within organizational settings may require modifications to these frameworks - or entirely new ones - to explain implementation of contingent authority innovation decisions, that is non-voluntary adoption processes.

Several studies (Teo et al, 1997, Hartley, 2000, Stenenage, 2000) have sought to explain why organizations adopt innovations such as Internet websites (Flanagan, 2000), information systems (Thong, 1999). Teo et al (1997) examined factors affecting Internet adoption amongst large business, based in Singapore. Hartley (2000) listed 13 reasons that why e-learning is a preferred medium of training. Stenenage (2000) stated that online learning is recommended because it can give flexibility for both individual and the organization. Furthermore, Stefanov (1998) reported that student would be motivated because of the involvement on managing their own learning and also the participation of negotiation and discussion. Stefanov concluded that organizational and technological factors were more important than environmental factors in the adoption of the Internet.

As mentioned by Swanson (1994), current innovation theories explain little about IT innovation. Innovation studies tend to focus on specific innovations, which may have their own particular characteristics. Such studies have, for example, examined the innovation such as ATMs (Hannan and MCDowell, 1984), scanners (Sinkula, 1991), EDIs (O'Callaghan, et al, 1992), personal computers (Bretschneider and Wittmer, 1993), Lind et al, 1989), laptops (Gatignon and Robertson, 1989), Internet (Teo et al, 1997). Moreover, Chau and Tam (1997), based on the work of Tornatzky and Fleischer (1990), developed a model for testing open system adoption.
On the other hand, many researchers have identified various kinds of barriers to the adoption of technological innovations. For example, Lee and Clark (1996) examined adoption barriers for electronic markets drawing upon results in transaction cost economics and business process reengineering research. They suggested that the efficiency and effectiveness of market transactions could be limited by transaction risk and perceived lack of market power. They also showed how these barriers have affected adoption for a number of electronic markets. Moreover, barriers to adoption of new technologies are suggested by a number of organizational learning theories as well. The more complex a technology, the harder it is for untrained users to adopt (Attewell, 1992). Organizations and individuals alike have an absorptive capacity, developed over time, which helps them internalize new knowledge and use it effectively (Cohen, & Levinthal, 1990). Lack or underdevelopment of this capacity will create knowledge barriers that hinder the adoption of new technology even where there is a willingness to adopt.

3.3 Factors Affecting the Adoption of Information Technology (IT)

As there is no systematic analysis of previous studies in identifying the specific factors affecting WBT adoption, a review on general factors affecting the adoption of information technology (IT) are discussed. These include application development factors, organizational factors, support factors and environmental factors (Sumner & Hostetler, 1999). In addition, workforce factors are important to affect the adoption of IT in relevant literature. These factors may be applied to the process of introducing the adoptive use of WBT in Hong Kong organizations. Table 3.2 summarizes the sources of factors affecting WBT adoption.
### Table 3.2  Factors Affecting the Adoption of Information Technology

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<th>Factors Affecting the Adoption of IT</th>
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<tr>
<td><strong>Environmental Factors</strong></td>
<td>Sumner &amp; Hostetler (1999)</td>
</tr>
<tr>
<td><strong>Workforce Factors</strong></td>
<td></td>
</tr>
</tbody>
</table>
3.3.1 Application Development Factors

Adoption of innovation must be consistent with an organization's capacities and skills. This means that a technological infrastructure must exist and that the innovation itself must be compatible with the experiences and values of potential adopters. The developers and users of WBT would need to have skills and capabilities relevant to designing such materials, as well as access to the appropriate hardware, software, infrastructure, and cost to support its application through the Internet (Sumner & Hostetler, 1999).

3.3.1.1 Skills and Capabilities

Many organizations have deployed some form of WBT or are in the process of examining potential online learning solutions. WBT is included as a complicated computer technology or system that requires input from many areas of the organization, such as management information systems (MIS), business unit managers, line managers in field offices, and the learners (Driscoll, 1998). Trainers or trainees must need to have basis skills and capabilities relevant to the design and operation of WBT. The knowledge of IT is needed so as to receiving training through the Internet.

3.3.1.2 Technical Infrastructure

Technology allows more work to be accomplished for a smaller investment of resources, in less time, or with a better quality result. Increased productivity is a function of human abilities extended through the soft (methods) and hard (equipment) components of technology (Kearsley, 1984). Improvements at the operating system level also reduce the
complexities currently experience (Yaverbaum, 1993). Without appropriate technical infrastructure support in an organization, WBT would never be success.

3.3.1.3 Estimated Cost

The costs of developing a WBT program can be broken down into at least four categories (http://www.itcetera.com). They are web access costs (one-time costs providing the computer hardware, web-browser software, networking access to the learners, one-time cost of purchasing and establishing a web server or on-going costs of leasing server space), design and project management costs (one-time costs for collecting basic tutorial copy, optimizing course navigation, analyzing essential vs. supplemental learning content, assessing the need and impact of interactive media, motif selection and layout design, content asset and web page tracking setup, and user/content-owner design input and approval), production costs (web page construction, creation and preparation of graphics, creation of animation, creation of Java applets, database creation and linking, and administrative shell creation or acquisition), on-going support (webmaster monitoring and maintenance of the Web site, establishment of learner ID, and revisions to keep material current). Estimated cost in implementing WBT is one of the most important factors for organization to consider.

3.3.2 Organizational Factors

Organizational size, structure design, and organization computer experience are another three key factors in facilitating IT. Organic structures, which offer flexible communications, internal interaction, and networking, are more likely to foster
innovation. Innovation is most likely to occur in functionally differentiated, decentralized organizations, as compared with hierarchical structures with centralized control (Sumner & Hostetler, 1999).

3.3.2.1 Size of Organization

The size of an organization is an important issue as it affects both economics and instructional effectiveness of the training course. As systems are less likely to succeed in small organizations than in large organizations (Ein-Dor & Segev, 1978), the researcher expected that users in larger organizations would be more satisfied and use the system to a greater extent. The fact that small firms are highly dependent on external support gives credence to this notion (DeLone, 1981). For example, small businesses would find that they have fewer options for implementing IT system than have larger businesses. While larger corporations have the resources to develop customized courseware, smaller companies usually are limited to commercially available courses, which at least for the time being, are fairly generic (Zager, 2001). WBT is a practical alternative for small businesses as well.

3.3.2.2 Organizational Structure

Using the Web or the Internet, with its interactivity and ability to be custom designed for specific applications, requires a culture change. WBT is more focused on the individual than traditional forms of training. In order to fit the new structure design of organization, i.e. individual-oriented, WBT allows employees to test their skills and continually track improvement as they move through a program. Programs can be tailored to an
individual's preferred mode of learning (Weinstock, 2000). Corporate restructuring would continue to reshape the business environment. Downsizing, smaller businesses, a lack of job security, and low employee morale would continue to affect the types of training and how training is delivered.

3.3.2.3 Organization Computer Experience

Not only individual computer experience, organization computer experience is important to affect the new innovation adoption. Users in organizations expected that they have enough computer experience to overcome the adoption of technology-based training. However, users in organizations that have more computer experience are expected to exhibit lower levels of user satisfaction in training and development (Raymond, 1985).

3.3.3 Support Factors

Most likely, all things need support in organization for day-to-day operation. Support factors include the availability of technical support as well as top management, user support, and effective vendor support. Effective marketing of a technological innovation is critical, and champions of an innovation play a vital role in success.

3.3.3.1 Technical Support

Advances in technology revolutionize training delivery. Developments in hardware, computer networking, multimedia software and video-conferencing have tremendous potential for multiple-site delivery and bring training closer to employee’s workplaces (http://www.astd.org). Technical support is essential in the adoption of WBT.
3.3.3.2 Top Management Support

Top management support defines as providing the money and commitment to operate the company more effectively (McGinnis & Ackelsberg, 1983). This typically means taking a more active role in the implementation. Involvement means learning how to do inventory transactions, how to master schedule, or how to perform any other detail activity. Success with an existing information technology resulted in a positive bias in managers’ interpretations of training program. This bias was stronger among managers who had greater amount of experience with the existing technology and among managers whose organizations did not engage in proactive information seeking about new information technologies (Martin & Kambil, 1999). Top management support is important to determine the adoption of IT.

3.3.3.3 User Support

The availability of user support within the organization is expected to be an important success factor. In a study of end-user computing, a group of key users played an important role in helping other users. Similarity, other possible user-support strategies such as training and documentation are included in the system conditions group of variables (Haines & Petit, 1997).

3.3.3.4 Effective Marketing

Besides human support, an effective marketing would indirectly support the adoption of WBT. Simple marketing and promotion techniques can contribute substantially to the
success of an organization's IT initiative, especially in increasing and maintaining employee participation (Hipwell, 2000).

3.3.4 Environmental Factors

Environmental factors often facilitate technology diffusion and use. Organizations, which try to stay technologically ahead of other organizations in a particular market environment, are likely to introduce innovation. The rate of IT adoption bears a strong relationship to the number of organizations within the environment or industry which have already adopted it.

3.3.4.1 Market Demands

Success in today's job market demands increasingly effective and efficient learning as the body of relevant information and knowledge escalates (Alavi, 1994). Employees need to have multi-skills in order to fit in the market demands. At the same time, the increasing openness, democratization, and globalization of the world economy have made it clear that to compete effectively, businesses must be the best in the world at what they do. The competitive market has caused corporations to hone their core competencies to be world-class (http://www.astd.org).

3.3.4.2 Competitiveness

Businesses continue to become more globally competitive (Toffler, 1990). Providing value-added services to its customers and giving employees access to current information and technology is a priority for organizations. This priority is a strategic element in
organization's plan for short-term growth. Regardless of the e-learning approach, training can help to keep employees and company competitiveness (Jefferson, 2000).

3.3.4.3 Public Policy

Government must help educational institutions, the private sector, and the public understands the need for a new learning vision and the critical role that a digital learning infrastructure would play. Government needs to deregulate education so that a wide range of providers can set standards, and accredit, develop, and deliver content. (Twing, Miloff, & Noam, 1998).

3.3.5 Workforce Factors

After a review of the relevant literature, there are several workforce characteristics that are expected to affect IT adoption.

3.3.5.1 Age

Users who are older are expected to be less satisfied with systems (Igbaria & Nachman, 1990) and to use them to a lesser extent (Lee, 1986). Older users are more likely to exhibit higher levels of computer anxiety and resist computer-based systems to a greater extent (Haines & Petit, 1997).

3.3.5.2 Gender

Because the data processing professions have been dominated by males and because it is a common belief that women exhibit higher levels of computer anxiety (Zmud, 1979),
and because computers have been associated with the male domain (Dambrot, Watkins-Malek, Silling, Marshall, & Garver, 1985), there may be sex differences in computer attitudes and behaviors. Thus women users are expected to be less satisfied with systems and to use them less than men do. However, the proposition that gender could influence user information satisfaction or usage was not supported in recent studies (Igbaria & Nachman, 1990; Igbaria, Pavri, & Huff, 1989).

3.3.5.3 Education

Education is another individual variable that has been included in IS research (Lucas, 1975). One study found that education is negatively related to computer anxiety (Igbaria & Nachman, 1989) whereas other studies have found non-significant relationships between education and user satisfaction (Igbaria & Nachman, 1990) and between education and system usage (Mawhinney & Lederer, 1990).

3.3.5.4 Task Characteristics

Some task characteristics such as the structure of decision making, the type of work accomplished, and the decision making level in the organizational hierarchy are expected to influence system success. The more structured the tasks being accomplished, the easier the development process and the greater the likelihood of implementation success (Cheney, Mann, & Amoroso, 1986). Furthermore, the tasks at higher levels of an organization tend to be less structured and thus less easily assisted by computers (Mawhinney & Lederer, 1990).
3.3.5.5 Work Experience

Work experience is expected to influence IT system usage. It has been suggested that the length of time in an organization or in a position can change the way individuals make use of the formal and informal information flow (Fuerst & Cheney, 1982).

3.3.5.6 Computer Experience

Users with more computer experience are expected to be more confident in their ability to use the system and more satisfied with the experience (Igbaria & Nachman, 1990). A study showed that subjects with more previous computer experience were more likely to develop their own applications in the early stages of an experiment than were subjects with limited previous computer experience (Kasper & Cerveny, 1985).

3.3.5.7 Computer Understanding

Computer understanding means employees can understand the implementation or use of computer. They can implement computer or its system independently. Users with a better understanding of computers are expected to be more satisfied with the system (Raymond, 1988) and to use the system to a greater extent (Montazemi, 1988).

3.3.5.8 Self Motivation

WBT trainees must be more self-motivated (Lyons, 1995), instead of taking an "entertainment" attitude and passively waiting for actions from instructors (Huang, 1997). The motivation for seeking learning experiences is extremely variable. Employees
are more inclined to remain loyal to an organization that is committed to their ongoing development.

3.3.5.9 Attitudes

The general attitude of the user can influence the adoption of WBT in organizations. Given the importance of communication to the employee's job (Mintzberg, 1973) and the multiple communication media that are now available to accomplish that job (such as telephone, letters, meetings, electronic mail, and videoconferencing), it is important to understand employees' media attitudes and behaviors (Webster, 1998).

3.3.5.10 Self-confidence

The self-confidence of learners affects the success of a learning experience. Some are lacking in confidence and need reassurance of their learning abilities. Others have a high degree of self-confidence from their progression, which expect to be treated accordingly in a learning situation. (Grabowski, 1980).

3.4 Theoretical Underpinning Theories of WBT

In response to the lack of a unifying theory of innovation adoption, it is essential to include the distinctive characteristics of WBT context in the development of a strong theory (Chau and Tam, 1997), combining with a comprehensive review in factors affecting the adoption of IT, to study the adoption of WBT. In this section, a review on general theories of innovation by discussing contingency theory of organizations,
rational-efficiency theory, and institutional theory to WBT adoption are examined, which provide the basis for the model used in this research.

3.4.1 Contingency Theory of Organizations

For organizations to be effective, there must be a "goodness of fit" between their structure and the conditions in their external environment. A contingency is any variable that moderates the effect of an organizational characteristic on organizational performance (Donaldson, 2001). As it applies to organizations, contingency means that the effectiveness of a particular organizational structure or strategy depends upon the presence or absence of other factors. In this sense, there are no absolutely right or wrong structures or strategies. Instead, rightness or wrongness must be gauged relative to the situation, the circumstance, or the other factors. Many of these other factors exist in the environment of the organization. The essence of the contingency theory paradigm is that organizational effectiveness results from fitting characteristics of the organization, such as its structure, to contingencies that reflect the situation of the organization. Contingencies include the environment, organization size, and organizational strategy. Because the fit of organizational characteristics to contingencies leads to high performance, organizations seek to attain fit between the organization's structure, its size, its technology, and the requirements of its environment (Van de Ven, Andrew and Diane, 1980). For this reason, organizations are motivated to avoid the misfit that results after contingencies change, and do so by adopting new organizational characteristics that fit that new level of the contingencies. This perspective is known as "contingency theory".
3.4.2 Rational-efficiency Theory

According to King (2000), rationality is the standard by which all things are measured. Rationality demands three things: instrumental action, objectivism and analytical means. Besides, objectivism (all things are done through reference to a universal set of standards, applied equally to all), which governs rational belief and morality. Analytical means (dis-aggregation of complex problems into simple components), which governs the decision-making process (Dryzek, 1990; Drysek & Torgenson, 1993).

Rational theories of organizational decision making presume that voluntary decision making presume that voluntary choices are made intentionally in the name of individual or collective purposes and on the basis of expectations about future consequences of today’s actions (Harrison, 1981; Newell & Simon, 1972; Simon, 1965). Certain rational-efficiency theorists make the complete-information assumption that non-adopters become instantaneously aware of information about innovations another technical efficiency or returns.

The efficient-choice perspective is similar to the concept of rational theory. The efficient-choice perspective assumes that agents, usually organizations or their top management teams, have little uncertainty about their preferences or goals be they profit maximization, market share growth, competitive advantage, or any other strategic preferences, and about the technical efficiency of innovations measured as the ratio of outputs to inputs (Grandori, 1987). Therefore, given existing resource constraints, agents rationally choose the innovation that we allow them to most efficiently produce the
outputs that are useful for attaining their goals (Abrahamson, 1991). Theories in the efficient-choice perspective can explain when and by what processes administrative technologies are diffused. Certain rational-efficiency theorists make the complete-information assumption that non-adopters become instantaneously aware of information about innovations' technical efficiency or returns. (Abrahamson & Rosenkopf, 1993). Rational-efficiency choices largely reflect the perceived advantages and disadvantages of particular innovations. Under this theory, organizations would make decision in a logical and cost-effective way.

3.4.3 Institutional Theory

From an institutional perspective, imitation of other organizations is conceived as a response to environmental uncertainty (DiMaggio & Powell, 1983). As uncertainty rises, the relationship between strategic choices and outcomes become unpredictable and strategy conformity may be preferred. Other forms of uncertainty leading to imitation include fear of loss of competitive advantage (Abrahamson & Rosenkopf, 1991) and share (Fligstein, 1991). The unique contribution of institutional theory is its emphasis on how cultural understanding shapes the ways organizational populations emerge and evolve in context.

Institutional theory proposes that the actions of organizations are deeply influenced by those organizations around them. Normative institutional pressures prompt mimetic action on the part of organizations, suggesting that under conditions of high uncertainty and low information the adoption of innovations by a few organizations might prompt
wide-scale adoption overall (Flanagan, 2000). In this conception, behavior is guided not primarily by self-interest and expediency, but by an awareness of one’s role in a social situation and a concern to behave appropriately, in accordance with others’ expectations and internalized standards of conduct.

3.4.3.1 Fashion Perspective

The fashion and fad perspective were also consistent with this view. Perspectives that assume conditions of uncertainty concerning environmental forces, goals, and technical efficiency claim that under these conditions organizations will tend to imitate other organization (DiMaggio & Powell, 1983; Thompson, 1967). According to such perspectives, organizations’ decisions center less around which technology they should adopt, and more around which organization they should imitate. The fashion perspective assumes that under conditions of uncertainty organizations in a group imitate administrative models promoted by “fashion-setting organizations”, organizations, outside thus group, such as consulting firms or business mass media, whose missions involve the creation or dissemination of such models (Hirsch, 1972).

3.4.3.2 Fad Perspective

Both the fad and fashion perspectives assume that the diffusion of innovations occurs under conditions of uncertainty because organizations imitate other organizations’ adoption decisions. The fashion perspective assumes that organizations in a group imitate other organizations, such as management consulting firms, that reside outside that group. The fad perspective differs, however, because it assumes that the diffusion of innovations
occurs when organizations within a group imitate other organizations within that group. Theorists have advanced explanations in the fad perspective that focus on the communication of knowledge, social interactions, or economic interests.

Similarly, the concept of bandwagons are diffusion processes whereby organizations adopt an innovation, not because of their individual assessments of the innovation's efficiency or returns, but because of a bandwagon pressure caused by the sheer number of organizations that have already adopted this innovation. Abrahamson and Rosekopf (1993) mathematically modeled "bandwagon" pressures and found that innovations with ambiguous returns can diffuse in a bandwagon manner. Bandwagons can animate cycles in which increases in the number of adopters raise bandwagon pressures, causing the number of adopters to grow.

For the concept of bandwagons, diffusionists have long recognized that increases in the number of organizations that adopt an innovation influence the remaining organizations (Mansfield, 1961). At least two types of theories explain this phenomenon. They are rational efficiency theories and theories of fads (Abrahamson, 1991). Proponents of rational efficiency theories assume that organizations rationally choose to adopt an innovation, diffusing based on updated information about the innovation's technical efficiency or returns. Advocates of theories of fads, in contrast, assume that organizations choose to adopt innovation based on what other organizations have adopted it, rather than its technical efficiency returns.
To sum up, the three main theories, which discussed in the literature: contingency theory of organizations, rational-efficiency theory, institutional theory, provide the basis for a model of WBT adoption. The new model has three main sets of antecedents, corresponding to the theories, provided the detail in Chapter 6. I label these as "organizational features", "perceived advantages and disadvantages", and "social pressures".

In conclusion, a review of the literature provided the theoretical framework for this study. A comprehensive review on the perceived advantages and disadvantages are examined. The research literature has shown a variety of results in the studies of the characteristics of WBT, IT adoption literature, especially in specific factors affecting IT innovations. The overall conclusion is that organizational features (Nambisan & Wang, 1999), environmental forces, support factors, workforce factors, are the most essential variables in IT innovation literature. Further research is needed to provide additional knowledge on factors affect WBT adoption. To develop a prior adoption model, three main theories as discussed in the literature: contingency theory of organizations, rational-efficiency theory, institutional theory, provide the basis for a model of WBT adoption. Based on the three main theories, it further combines the literature and research findings in relation to the various effects on factors affecting IT innovations.

As there is little or no systematic analysis in previous research on the adoption of WBT, the next chapter will discuss the methodology of Study 1 and Chapter Five will indicate the case study findings, which confirm the identified variables in literature and provided
the basis for the research model. Chapter Six will develop a new WBT adoption model, based on the three different approaches.
CHAPTER 4

STUDY 1: RESEARCH METHODOLOGY

4 Introduction

In order to study the factors affecting the adoption of WBT, success and failure of WBT, a two-phase approach was adopted combining both qualitative (Study 1) and quantitative (Study 2) research methods. It has been argued that combining these methods in information technology (IT) research can prove useful in building a wider picture of the phenomenon studied (Reichardt and Cook, 1989), can enable the validation of findings (Jick, 1979), and can help in explaining diverging results (Trend, 1989). This chapter describes the research methodology used in Study 1, which adopts an exploratory approach, based on a series of semi-structured interviews designed to investigate the factors affecting the adoption, success and failure of WBT in Hong Kong organizations. The chapter begins by explaining the research questions. It then explains the rationale for the methods used and describes the methodology in detail.

4.1 Research Questions

The research questions for Study 1 are:

(1) What is the nature of WBT innovations in Hong Kong?
(2) What are the perceived factors that affect the adoption of WBT?
(3) How effective has WBT been and what are the perceived benefits of WBT?
4.2 Research Design

The case study approach is a research method, which emphasizes in-depth understanding and qualitative analysis. Case studies involve an in-depth consideration of an entity with intense investigation of the facts that contribute to the characteristics of the case (Yin, 1989). This method is useful for investigating contemporary phenomenon in a real life context, especially where the boundaries between the phenomenon and context are not definitive. Yin (1989) further concludes that one of the applications of case studies is to explain the casual links in real-life interventions that are too complex for survey or experimental strategies. The case study method is considered appropriate for the first stage of this research study as it matches with the characteristics of the research questions, does not require any control over behavioral events and is about contemporary events.

Data for each case study are collected through a single semi-structured interview with a management informant. Interviewing is a well-established method of gathering data when undertaking research in the social sciences. Bailey (1994) has described interviews as encounters between a researcher and a respondent in which an individual is asked a series of questions relevant to the subject of the research. As this is an exploratory study, the researcher needed to get new insights and ideas in Study 1. Therefore, semi-structured interview was used as the medium to collect the primary data. The use of semi-interviews can focus directly on case study topics and provides perceived causal inferences, which is a formal assembly of evidence distinct from the final case study (Yin, 1989). These
interviews are conducted to foster an understanding of how current conditions are developed for practical reasons (Tellis, 1997).

A total of thirteen semi-structured interviews were conducted with key senior human resource managers or training managers in Hong Kong organizations. It was interested that the results from the interviews would provide additional insights into the nature of WBT innovations and why organizations are adopting it. In addition to being of interest in their own right, these results are also a great help in establishing the focus and content of the quantitative research instrument for Study 2. After completing the interviews, the data was analyzed using a comparative case study approach (Yin, 1989). Each organization was treated as a single case study. The overall case study design for this study was an exploratory, cross case analysis of thirteen organizations. Table 4.1 summarizes the details of the research design.

Table 4.1 Research Design

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cases</td>
<td>Thirteen</td>
</tr>
<tr>
<td>Unit of Analysis</td>
<td>Organization (Both Public and Private)</td>
</tr>
<tr>
<td>Primary Respondent</td>
<td>Senior Training Manager/ Officer</td>
</tr>
<tr>
<td>Study Objectives</td>
<td>Exploratory</td>
</tr>
<tr>
<td>Method of Analysis</td>
<td>Cross Case Analysis</td>
</tr>
</tbody>
</table>

4.3 Case Study Stages

This sub-section describes the stages of data collection used to conduct the case study research.
Stage 1: Develop Case Study Protocol
Stage 2: Sample Selection of Multiple Case Studies
Stage 3: Data Collection
Stage 4: Analysis of Data

4.3.1 Stage 1: Develop Case Study Protocol

Yin (1989) states that having a case study protocol is essential if a multiple case design is being used. A case study protocol, which is a data collection instrument, is intended to increase the reliability of case study research. Lee (1989) states that since multiple case studies require cross-case comparisons, some standardization of instruments is necessary for comparative analysis. An interview protocol was therefore drafted out (Appendix B). In the interview protocol, a definition of web-based training (WBT) was given, questions were asked on the four main aspects, namely “Current Status”, “Factors that influence successful introduction of WBT”, “Effectiveness of WBT”, and “Impact of WBT”. For examples, a question in the “Current Status” part, “Do you currently use WBT? Please provide details.” could meet the first research question in Study 1. Moreover, question on “What is the main principle driver(s) of the implementation of WBT in your organization?” could overview the whole picture on factors affecting the adoption of WBT.

4.3.2 Stage 2: Sample Selection of Multiple Case Studies

As mentioned by Sekaran (1992), judgment sampling, a non-probability sampling method, was used to select appropriate cases on the basis of the nature of the research
aims. Judgment sampling provides more appropriate information for interpretation, because it involves the deliberate choice of potentially revealing or interesting cases. There was no attempt here to select typical or statistically representative cases, since statistical generalization was not an objective. Sampling was thus purposive rather than statistical. In order to locate suitable cases, the researcher attended several E-learning or WBT seminars, as summarized in Table 4.2. Through these seminars, the researcher was able to establish contact with senior human resource and training managers in Hong Kong organizations. Part of the target sample was chosen through these contacts.

Table 4.2 List of Seminars and Conferences

<table>
<thead>
<tr>
<th>Organizer</th>
<th>Seminar Name / Annual Conference/ Exhibition</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Hong Kong Polytechnic University (HKPU)</td>
<td>PolyU IT Showcase 2000</td>
<td>3-4, November, 2000</td>
</tr>
<tr>
<td>The Hong Kong Polytechnic University (HKPU)</td>
<td>Exhibition e-learning Symposium</td>
<td>3-4, November, 2000</td>
</tr>
<tr>
<td>Hong Kong Institute of Human Resource Management (IHRM)</td>
<td>20th IHRM Annual Conference</td>
<td>6-7 November, 2000</td>
</tr>
<tr>
<td>Hong Kong Institute of Human Resource Management (IHRM)</td>
<td>Creating an e-learning environment in 3 days</td>
<td>7 November, 2000</td>
</tr>
<tr>
<td>The Management Development Centre of Hong Kong (HKMDC)</td>
<td>How can you get the best out of e-learning</td>
<td>9 March, 2001</td>
</tr>
<tr>
<td>SUNeVision Super-Office Limited</td>
<td>Boosting Effectiveness in Corporate Training</td>
<td>10 April, 2001</td>
</tr>
<tr>
<td>Hong Kong Institute of Human Resource Management (IHRM)</td>
<td>21st IHRM Annual Conference</td>
<td>22-23 November, 2001</td>
</tr>
</tbody>
</table>
4.3.3 Stage 3: Data Collection

Interviews were the primary source of data. This raw data was collected through face-to-face semi-structured interviews between March and May 2001. These interviewees were contacted by formal letter or through e-mail (Appendix C). Twenty letters or e-mails were sent to the targeted senior human resources or training managers in organization, with thirteen of them being successfully interviewed.

Interview varied in length from thirty minutes to forty-five minutes and all were tape-recording. For analysis, the researcher transcribed the original answers from Cantonese into English. A funnel approach was used in the interviews. First, the definition of WBT was provided and explained to respondents. Second, a predetermined list of questions was provided, i.e. interview protocol (Appendix B). Third, every respondent was asked in the same list of open-ended questions.

4.3.4 Stage 4: Analysis of Data

As this study was based on multiple case studies, the findings on each case were presented individually. A comparative case study approach (Yin, 1993) and pattern-matching logic were used. The data collected for each company was matched with the research questions. A case study report was written, based on an English translation of the interview transcript, supplemented by information drawn from other sources including the web homepage of the organization, recent annual reports, newspaper reports, etc. These case study reports formed the raw data for the analysis in Chapter 5. The reports themselves are included in Appendix G.
CHAPTER 5

STUDY 1: FINDINGS

5 Introduction

There is little prior research on web-based training (WBT). Although the use of WBT is widespread in the United States (http://www.astd.org), it is likely that it is less widely used in Hong Kong. To better understand the nature of WBT innovation in Hong Kong, the researcher first conducted an exploratory study on the usage of WBT, the factors affecting the adoption of WBT, and the effectiveness and perceived benefits of WBT. This chapter summarizes the findings from Study 1, based on a comparative analysis of thirteen case studies.

5.1 Organization Backgrounds

Thirteen organizations of different natures were invited to participate in Study 1 of this research. Table 5.1 shows the full list of interview organizations. The researcher tried to interview a range of organizations including some which (a) had well-established in WBT, (b) were willing to adopt WBT and (c) were not willing to implement WBT.
<table>
<thead>
<tr>
<th>Organization ID/Organization</th>
<th>Nature of the Organization</th>
<th>Ownership</th>
<th>Number of Employees in Hong Kong</th>
<th>Types of training</th>
<th>Progress in WBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/ Organization A</td>
<td>Public</td>
<td>Hong Kong</td>
<td>14000</td>
<td>TT/ WBT</td>
<td>Well-established</td>
</tr>
<tr>
<td>B/ Organization B</td>
<td>International Retailing</td>
<td>International</td>
<td>800</td>
<td>TT/CBT/WBT</td>
<td>Establishing</td>
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<tr>
<td>C/ Organization C</td>
<td>Information Technology</td>
<td>Hong Kong</td>
<td>90</td>
<td>WBT</td>
<td>Well-established</td>
</tr>
<tr>
<td>D/ Organization D</td>
<td>Banking</td>
<td>International</td>
<td>5000</td>
<td>TT/CBT</td>
<td>Not willing to establish</td>
</tr>
<tr>
<td>E/ Organization E</td>
<td>Utility</td>
<td>Hong Kong</td>
<td>2000</td>
<td>TT/CBT/WBT</td>
<td>Establishing</td>
</tr>
<tr>
<td>F/ Organization F</td>
<td>Academic</td>
<td>Hong Kong</td>
<td>150000</td>
<td>TT/WBT</td>
<td>Well-established</td>
</tr>
<tr>
<td>G/ Organization G</td>
<td>Railway</td>
<td>Hong Kong</td>
<td>4600</td>
<td>TT/CBT</td>
<td>Planning</td>
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<td>H/ Organization H</td>
<td>Internet</td>
<td>Mainland China</td>
<td>2400</td>
<td>TT</td>
<td>Not willing to establish</td>
</tr>
<tr>
<td>I/ Organization I</td>
<td>Insurance</td>
<td>International</td>
<td>2000</td>
<td>TT</td>
<td>Not willing to establish</td>
</tr>
<tr>
<td>J/ Organization J</td>
<td>Jewelry</td>
<td>Hong Kong</td>
<td>1300</td>
<td>TT</td>
<td>Willing to establish</td>
</tr>
<tr>
<td>K/ Organization K</td>
<td>Store</td>
<td>Japan</td>
<td>3200</td>
<td>TT</td>
<td>Willing to establish</td>
</tr>
<tr>
<td>L/ Organization L</td>
<td>Construction</td>
<td>Hong Kong</td>
<td>400</td>
<td>TT</td>
<td>Planning</td>
</tr>
<tr>
<td>M/ Organization M</td>
<td>Printed Circuit Board (PCB)</td>
<td>Mainland China</td>
<td>700</td>
<td>TT/CBT</td>
<td>Planning</td>
</tr>
</tbody>
</table>
As all the thirteen organizations were chosen by personal judgment, they each had different types of training practice. Figure 5.1 summarizes the current situation of training and development in each organization. Seven organizations (A, B, D, E, F, G, & M) had more than one type of training method, where two of them (B, E) had all three types of training method, i.e. web-based training (WBT), computer-based training (CBT), traditional training (TT), two of them (A, F) had WBT and TT, and another three of them (D, G, M) had CBT and TT respectively.

Figure 5.1 Summary of Current Status of Training

![Venn Diagram]

TT = Traditional Training
CBT = Computer-based Training
WBT = Web-based Training

Interestingly, Organization C was the only organization which freely delivered training through an innovative channel – web-based training (WBT). The President and CEO of Organization C mentioned that:
"Today's business operates in a real-time world where innovation rules. Competitors appear from all corners, knowledge provides more leverage than capital, and the old rules no longer apply."

(President, Organization C)

However, five out of thirteen organizations (H, I, J, K & L) delivered TT (classroom / face-to-face training) to their employees. For example, Organization I just used the traditional face-to-face training to delivery their training programs. One interviewee mentioned that:

"Striving for the best and focusing on human investment".

(HR Manager, Organization I)

5.2 Perceived Factors Affecting WBT Adoption

The results of the case study analysis suggested that there were many internal and external factors that might influence the decision of adopting WBT. Table 5.2 summaries the results of the perceived factors in adopting WBT. These categories were application development, organizational, support, environmental, and workforce factors. These findings provided some basic insights into factors affecting WBT adoption. In Table 5.3, the identified factors are divided into five main categories, based on the IT adoption literature reviewed in Chapter 3, and discussed in detail.
<table>
<thead>
<tr>
<th>Organization ID/Organization</th>
<th>Perceived Factors Affecting WBT Adoption</th>
<th>Difficulties in Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/ Organization A</td>
<td>Application Development Factors</td>
<td>1. Lack of technical infrastructure</td>
</tr>
<tr>
<td></td>
<td>• Technical infrastructure (resources)</td>
<td>2. Problem of privatization</td>
</tr>
<tr>
<td></td>
<td>Organizational Factors</td>
<td>3. Employees’ attitude</td>
</tr>
<tr>
<td></td>
<td>• Structure design (culture)</td>
<td>4. Political problem</td>
</tr>
<tr>
<td></td>
<td>Support Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Top management support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Employees support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Market demand (Trend of information technology)</td>
<td>1. Problem of multiple-language</td>
</tr>
<tr>
<td></td>
<td>• Public policy</td>
<td>2. Technical problem</td>
</tr>
<tr>
<td>B/ Organization B</td>
<td>Organizational Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Structure design (corporate policy/nature of industry)</td>
<td>1. Problem of multiple-language</td>
</tr>
<tr>
<td></td>
<td>Support Factors</td>
<td>2. Technical problem</td>
</tr>
<tr>
<td></td>
<td>• Top management support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Market demand (Trend of information technology)</td>
<td>1. Problem of multiple-language</td>
</tr>
<tr>
<td>C/ Organization C</td>
<td>Application Development Factors</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>• Cost effectiveness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organizational Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Size of organization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Structure design (work-task oriented)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Support Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Top management support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Public policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workforce Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Task characteristics (heavy workload)</td>
<td></td>
</tr>
<tr>
<td>D/ Organization D</td>
<td>Nil</td>
<td>1. High development cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Lack of technical support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Difficult to control individuals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Not convenience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Lack of interaction</td>
</tr>
<tr>
<td>E/ Organization E</td>
<td>Nil</td>
<td>1. Technical problem (software and hardware implementation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Uncertain in employee acceptance</td>
</tr>
</tbody>
</table>
### F/ Organization F
- **Support Factors**
  - Top Management support (mission)
- **Environmental Factors**
  - Market Demand (Trend of information technology)

### G/ Organization G
- Nil

### H/ Organization H
- **Application Development Factors**
  - Skills and abilities
- **Support Factors**
  - Top management support

### I/ Organization I
- **Organizational Factors**
  - Structure design (nature)
- **Support Factors**
  - Employees’ support

### J/ Organization J
- **Application Development Factors**
  - Technical infrastructure (resources)
- **Organizational Factors**
  - Structure design (Culture)
- **Support Factors**
  - Top management support (management style)
  - Employees’ support (participation)

### K/ Organization K
- **Organizational Factors**
  - Size of organization (Manpower coverage)
  - Structure design (location)

### L/ Organization L
- **Application Development Factors**
  - Technical Infrastructure
  - Cost effectiveness

### M/ Organization M
- **Application Development Factors**
  - Cost effectiveness

---

1. Technical problems
2. Employees’ attitude

1. Uncertain in adoption of employee
2. Lack of technical support
3. Nature of the job

1. Training content
2. Nature of the job
3. Job task

1. Employees’ attitude
2. Low computer literacy
3. Lack of resources
4. Lack of trainers

1. Low educational level
2. Nature of business

1. Employee’s attitude

1. Technical infrastructure
2. High set up cost
3. Employees’ acceptance
Table 5.3  Main Perceived Factors Affecting WBT Adoption

<table>
<thead>
<tr>
<th>Perceived Factors Affecting WBT Adoption</th>
<th>Organization(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Development Factors</td>
<td></td>
</tr>
<tr>
<td>1. Technical infrastructure</td>
<td>A, J, L</td>
</tr>
<tr>
<td>2. Cost effectiveness</td>
<td>C, L</td>
</tr>
<tr>
<td>3. Skills and abilities</td>
<td>H</td>
</tr>
<tr>
<td>Organizational Factors</td>
<td></td>
</tr>
<tr>
<td>2. Size of organization</td>
<td>C, K</td>
</tr>
<tr>
<td>Support Factors</td>
<td></td>
</tr>
<tr>
<td>1. Top management support</td>
<td>A, B, C, F, J, K</td>
</tr>
<tr>
<td>2. Employees support</td>
<td>A, I, J, K</td>
</tr>
<tr>
<td>Environmental Factors</td>
<td></td>
</tr>
<tr>
<td>1. Market demand</td>
<td>A, B, F, L, M</td>
</tr>
<tr>
<td>2. Public policy</td>
<td>A, C</td>
</tr>
<tr>
<td>Workforce Factors</td>
<td></td>
</tr>
<tr>
<td>Task characteristics</td>
<td>C, M</td>
</tr>
</tbody>
</table>

5.2.1 Application Development Factors

As regards application development factors, the case study findings suggested that technical infrastructure, cost-effectiveness, and skills and abilities were the factors that affected WBT adoption. Of course, technical infrastructure was necessary for the organization to build up a new WBT program. The adoption of WBT for organization would involve several technical infrastructures, for example hardware, software, computers, and the network. As one interviewee commented:

"Technology is a main concern in implementing WBT. Organizations should have sufficient support in technical infrastructure."

(HR Manager, Organization A)
In addition, cost effectiveness was another key factor influencing the adoption of WBT. Most likely, in the business sector, the balance of cost-and-benefits was the key to success. Organizations would concern about the cost effectiveness in adopting WBT, included training and development aspects of human resource functions. One interviewee perceived that:

"The use of WBT can save cost in long term, but not in short one."

(General Manager, Organization C)

Comparatively speaking, skills and capabilities of employees are not as important as the other two factors mentioned above.

5.2.2 Organizational Factors

Interestingly, six organizations (A, B, C, I, J & K) stated that organizational structure influenced the level of WBT adoption. Different culture, nature, work-task, and even location of an organization would affect their considerations in adopting WBT.

The findings indicated that the size of organization also affected the adoption of WBT. Two organizations (C & K) mentioned that the number of employees participated in training would influence their decision to build a new training system. As a HR Manager stated that:

"In our organization, there is around 1700 full-time and 1700 part-time staff. The coverage of manpower will be one of the most important factors affecting the adoption of WBT."

(HR Manager, Organization K)
Since Organization K has huge number of staff who willing to participate in WBT programs, WBT could be organized and implemented in a more effective way. Moreover, one interviewee stated that:

"Organizations can start by attempting the WBT programs in small scale. Organizations can try some pilot test first, so that organizations can learn experience and manage it more effective and efficient."

(General Manager, Organization C)

5.2.3 Support Factors

Six organizations (A, B, C, F, J & K) mentioned that top management support was the main factor affecting WBT adoption. Without top management support, organizations would not implement WBT. One interviewee stated that:

"We organize WBT programs in top-down approach, which means top management will make the decision for implementing new training practices."

(HR Manager, Organization A).

In addition, another interviewee stated that:

"Different management style will have different decision in organizations."

(General Manager, Organization J)

The need of WBT in organization would foster the decision of top management to investigate in WBT application. Four organizations (A, I, J, K) stated that employees' support is another important factors in support aspects of WBT. As most of the employees are not willing to receive self-paced learning through the network, to some
extent, the participation and acceptance of employees to WBT are the important elements for organizations in decision making.

5.2.4 Environmental Factors

Five organizations (A, B, F, L, & M) determined that the adoption of WBT was influenced by other organizations. Social pressure is one of the main incentives to drive organizations to invest in WBT. The trend of information technology and the continuous importance of self-directed learning have encouraged some organizations to enhance WBT. The market demand of implementing WBT is an underlying factor that force organization to adopt WBT. Interviewee of Organization M stated:

"We want to implement a new technology-based training to our employees in order to maintain the bargaining power among their competitors. With the rapid change of market demand, our organization will follow the latest trend of training and development aspects."

(HR Manager, Organization M)

Moreover, two interviewees (Organization A and Organization C) mentioned that the government support was also significance to WBT adoption.

5.2.5 Workforce Factors

Regarding the task characteristics, different employees have different job duties. As a variety of job-task, the use of WBT might be useful to meet different employees' training needs. For example, one interviewee mentioned that:
"With heavy workload of its human resource officers, organizations would not deliver a variety of training courses to their staff. HR officer just can fulfill one-third of employees' training needs."

(General Manager, Organization C)

In addition, another interviewee stated that:

"The responsibility of each employee in work is becoming wider nowadays. The nature of work for employees is turning into multi-job tasks. Employees need to have multi-skills to perform different characteristics of job task."

(HR Manager, Organization M)

5.3 Difficulties in Implementation

Table 5.2 shows that the main difficulty in implementing WBT is the lack of technical infrastructure. Seven organizations (A, B, D, E, G, H & M) did not have enough technical support (in terms of number of computers, support of the network, support from technical engineer, etc) in implementing WBT. A training manager commented that:

"Our organization cannot provide enough personal computer to each employee who can receive training through the Internet."

(Training Manager, Organization K).

Another difficulty is the high development cost of WBT. Two interviewees (Organization D and Organization M) mentioned that WBT is too expensive to develop at a time. To implement a new IT system, a diverse set of costs are involved. The costs of WBT
included connecting to the network, preparing online courses, purchasing both hardware and software. Employees might not accept to receive training through the computer interface and the Internet, preferring to receive training by traditional face-to-face instruction.

5.4 Perceived Effectiveness and Benefits of WBT

This section examines the characteristics of WBT in its perceived advantages, and perceived disadvantages. In general, these results confirm the advantages and disadvantages identified in the existing literature.

5.4.1 Perceived Advantages

Table 5.4 shows the summary of perceived advantages and disadvantages of the characteristics of WBT.
Table 5.4  Summary of Perceived Advantages and Disadvantages of Using WBT

<table>
<thead>
<tr>
<th>Organization ID/ Organization</th>
<th>Perceived Advantages</th>
<th>Perceived Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/ Organization A</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>B/ Organization B</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>C/ Organization C</td>
<td>1. Geographic Independence (Anytime, anywhere)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Cost effectiveness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Save time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Increase learner control (Control and tracking)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Content Updated (Best and latest knowledge)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Self-paced (Customized experience)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Just-in-time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Interactivity (Collaborative and interactive)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. <em>Enterprise wide impact</em></td>
<td></td>
</tr>
<tr>
<td>D/ Organization D</td>
<td>1. Standardization</td>
<td>1. High set up cost</td>
</tr>
<tr>
<td></td>
<td>2. Flexibility</td>
<td>2. Low interaction</td>
</tr>
<tr>
<td></td>
<td>3. <em>Diverse concept through CD (advantages of CBT)</em></td>
<td></td>
</tr>
<tr>
<td>E/ Organization E</td>
<td>1. Cost-effectiveness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Geographic Independence (Anytime, anywhere philosophy)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Convenience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Platform independence (Knowledge base)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Standardization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. <em>Raise up interest</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Review frequently</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. <em>Avoid damage in real life</em></td>
<td></td>
</tr>
<tr>
<td>F/ Organization F</td>
<td>1. Self-paced (Experience in all interface)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Flexibility and convenience (Interchangeable and portable)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Increase Communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Geographic independence (distribution)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Save time (Timeliness)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Increase learner control</td>
<td></td>
</tr>
</tbody>
</table>

*Note: * Some entries are marked with an asterisk (*) indicating specific areas or concepts related to WBT.
<table>
<thead>
<tr>
<th>H/ Organization H</th>
<th>1. Save time</th>
<th>Employee acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Geographic independence (Anywhere)</td>
<td>1. Transaction period</td>
</tr>
<tr>
<td></td>
<td>3. Interactivity (Feedback)</td>
<td>2. Afraid of computer</td>
</tr>
<tr>
<td></td>
<td>4. Self-paced (Individualized)</td>
<td>3. Educational level</td>
</tr>
<tr>
<td></td>
<td>5. Increase learner control (Assessment)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Flexibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Cost effectiveness (Save cost)</td>
<td></td>
</tr>
<tr>
<td>I/ Organization I</td>
<td>1. Cost effectiveness</td>
<td>1. Low interaction</td>
</tr>
<tr>
<td></td>
<td>2. Save resources</td>
<td></td>
</tr>
<tr>
<td>J/ Organization J</td>
<td>1. Save time</td>
<td>1. Access and Resources</td>
</tr>
<tr>
<td></td>
<td>2. Contented updated (Trend of information technology)</td>
<td>2. Lack of Content</td>
</tr>
<tr>
<td>K/ Organization K</td>
<td>1. Geographic independence (Location)</td>
<td>1. High set up cost</td>
</tr>
<tr>
<td></td>
<td>2. Save time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Increase communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Increase learner control (Evaluation)</td>
<td></td>
</tr>
<tr>
<td>L/ Organization L</td>
<td>1. Standardization</td>
<td>1. Non interactive</td>
</tr>
<tr>
<td></td>
<td>2. Increase Learner control (pace of learning)</td>
<td>2. Technical Problem</td>
</tr>
<tr>
<td>M/ Organization M</td>
<td>1. Flexibility</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>2. Self-paced</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Interactivity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Standardization</td>
<td></td>
</tr>
</tbody>
</table>

### 5.4.1.1 Cost Effectiveness in Long Term

According to Figure 5.2, one of the key advantages of WBT was cost-effectiveness. Interviewees (Organization C, E, G, H, I & M) stated that WBT could provide a cost effective way in delivering training programs. One interviewee mentioned that:

"Although there is no accurate figures and numbers in the return on investment (ROI) of WBT in market, our organization forecasts that the use of WBT can save cost in long term."

(HR Manager, Organization G)
Figure 5.2  Perceived Advantages of WBT

<table>
<thead>
<tr>
<th>Advantages</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographical independence</td>
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<td></td>
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<tr>
<td>Self-paced</td>
<td></td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>Temporal independence</td>
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<td>✓</td>
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<td>Time Savings</td>
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<tr>
<td>Just in time</td>
<td></td>
<td>✓</td>
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<td>Standardization</td>
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<tr>
<td>Platform independence</td>
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<td></td>
<td>✓</td>
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</tr>
<tr>
<td>Interactivity</td>
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<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost effectiveness</td>
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<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
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<tr>
<td>Convenience and flexibility</td>
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<tr>
<td>Increase communication</td>
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<td></td>
<td>✓</td>
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<tr>
<td>Increase learner control</td>
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</tbody>
</table>

In addition, many interviewees mentioned that geographical independence (Organization C, E, G, H & K), save in time (Organization C, G, H, J & K), convenience and flexibility (D, E, F, H & M) and increase learner control (Organization C, G, H, K & L) are the advantages of WBT.

5.4.1.2 Geographical Independence

WBT can deliver training to any location. WBT was especially good for international organizations which had different branches across different countries. One interviewee stated that:
"Besides users can access WBT courses 24 hours a day, they can repeat the program any number of times until they meet their objectives. Courses can be taken at the office, at home or anywhere users feel comfortable."

(HR Manager, Organization C)

5.4.1.3 Time Savings

A major problem in training is to examine on time devoted. The capability of WBT to reduce training time is one the most well documented and impressive outcomes. Actually, the time saving with WBT is almost completely due to the individualization of instruction, not the use of computer. The use of WBT can save the traveling time of both trainers and trainees, and at the same time, save the training time in working hours. A general manager stated that:

"The use of WBT could save the allocation time than before. Employees can receive training when they are available."

(General Manager, Organization J)

5.4.1.4 Convenience and Flexibility

WBT is more convent and flexible than traditional training. Learning can take place when there is a quieter time in any business day, immediately before the work period. One interviewee stated that;

"Traditional training, whether in-house or out-sourced, is inflexible and only be run on predetermined places and dates."

(General Manager, Organization C).
By the time, a member of staff has attended the training course, priorities have changed and attendance was often cancelled, causing an unnecessary expense in unused course fees and a missed learning opportunity.

5.4.1.5 Increase Learner Control

A HR Manager stated that:

"Sometimes, it is difficult to evaluate the effectiveness of training courses. Different tests and evaluation forms also cannot evaluate employees' participation in a systematic way precisely."

(HR Manager, Organization E)

However, WBT can easily record down the training time, test results of each participant. It can increase the learner control for organizations.

5.4.1.6 Standardization

Few interviewees stated that the standardization of WBT content could increase the adoption level in organizations. The need for standardized and consistent programs depends on the nature of the training that is being given, but for subjects consistency is vital. One interviewee mentioned that:

"The benefits of WBT can always offer the same information in the same way and can check the learner has understood the point."

(HR Manager, Organization A)

This can ensure that not only WBT is consistent in content, but also the quality and the quantity of training is right as well.
5.4.1.7 Self-paced

From learners’ point of view, the ability to study at their self-paced is of considerable benefit. A general manager stated that:

"With traditional training, the pace rarely meets anyone's needs at most of the time. Achieving the right pace for each employee is difficult, even on a one-to-one basis. With the use of WBT, the learner can proceed through the training course at the rate that suits them. Trainees are in total control on receiving training. They can review back over when they are not sure of or gloss over those parts of the training courses with which they are already familiar."

(General Manager, Organization C)

5.4.2 Perceived Disadvantages

Table 5.4 summarizes the case study findings on the perceived disadvantages of implementing WBT.

5.4.2.1 High Set Up Cost

An interviewee mentioned that:

"The development and maintenance cost of WBT is high. The high set up cost and up-front investment required of a WBT solution is larger than for traditional approaches mainly due to the development costs. Budget and cash flows need to be negotiated."

(HR Manager, Organization D)
Technology issues that play a role include whether the existing technology infrastructure can accomplish the training goals, whether additional technology expenditures can be justified, and whether compatibility of all software and hardware can be achieved.

5.4.2.2 Non-interactive

Three interviewees (Organizations D, I & L) stated that WBT could not provide interactive training. They perceived that WBT could not be used to train staff in personal skills, such as delivery communication skills or presentation skills.

5.5 Nature of the Training Courses

The above difficulties, especially the lack of interpersonal contact in WBT, it suggested that the nature of training needs may affect WBT adoption. It is interest to investigate the characteristics of different training courses that interviewees felt WBT programs could or could not be delivered through WBT. Table 5.5 lists the training courses that could or could not be delivered through WBT according to the interviews. The most common types of training courses which were felt to be suitable for WBT were orientation training, information technology training, product knowledge training, service skills training, management development training.
Table 5.5  Perceived Training Courses that Could or Could not be Delivered through WBT

<table>
<thead>
<tr>
<th>Organization ID / Organization</th>
<th>Courses that Delivery through WBT</th>
<th>Courses that not delivery through WBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/ Organization A</td>
<td>1. PC training</td>
<td>1. Interactive courses</td>
</tr>
<tr>
<td></td>
<td>2. Procedure courses</td>
<td>2. Communication skills</td>
</tr>
<tr>
<td></td>
<td>3. Orientation</td>
<td>3. Management training</td>
</tr>
<tr>
<td></td>
<td>4. Information</td>
<td>4. Language (Uncertain)</td>
</tr>
<tr>
<td></td>
<td>5. Document / Rules</td>
<td></td>
</tr>
<tr>
<td>B/ Organization B</td>
<td>1. PC training</td>
<td>1. Communication skills</td>
</tr>
<tr>
<td></td>
<td>2. Orientation</td>
<td>2. Management training</td>
</tr>
<tr>
<td></td>
<td>3. Information</td>
<td>3. Language</td>
</tr>
<tr>
<td>C/ Organization C</td>
<td>1. PC training</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>2. Communication skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Management training</td>
<td></td>
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<td></td>
<td>4. Language</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Procedural courses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Orientation</td>
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</tr>
<tr>
<td></td>
<td>7. Information</td>
<td></td>
</tr>
<tr>
<td>D/ Organization D</td>
<td>1. Product training</td>
<td>1. High interaction courses</td>
</tr>
<tr>
<td></td>
<td>2. Orientation</td>
<td>2. Live-side skills</td>
</tr>
<tr>
<td></td>
<td>3. Information</td>
<td></td>
</tr>
<tr>
<td>E/ Organization E</td>
<td>1. PC training</td>
<td>1. Discussion</td>
</tr>
<tr>
<td></td>
<td>2. Procedural courses</td>
<td>2. Role play</td>
</tr>
<tr>
<td></td>
<td>3. Orientation</td>
<td>3. Interactive courses</td>
</tr>
<tr>
<td></td>
<td>4. Information</td>
<td></td>
</tr>
<tr>
<td>F/ Organization F</td>
<td>1. Teaching (solid) courses</td>
<td>Nil</td>
</tr>
<tr>
<td>G/ Organization G</td>
<td>1. Procedural courses</td>
<td>1. High level management</td>
</tr>
<tr>
<td></td>
<td>2. Orientation</td>
<td>2. Interactive courses</td>
</tr>
<tr>
<td></td>
<td>3. Information</td>
<td></td>
</tr>
<tr>
<td>H/ Organization H</td>
<td>1. IT skills</td>
<td>1. Employee attitude</td>
</tr>
<tr>
<td></td>
<td>2. Product features</td>
<td>2. Team building skills</td>
</tr>
<tr>
<td></td>
<td>3. Orientation</td>
<td>3. Management training</td>
</tr>
<tr>
<td></td>
<td>4. Information</td>
<td></td>
</tr>
<tr>
<td>I/ Organization I</td>
<td>1. Procedural courses</td>
<td>1. Presentation skills</td>
</tr>
<tr>
<td></td>
<td>2. Orientation</td>
<td>2. Communication skills</td>
</tr>
<tr>
<td></td>
<td>3. Information</td>
<td>3. Management training</td>
</tr>
<tr>
<td>J/ Organization J</td>
<td>1. Procedural courses</td>
<td>1. Sales presentation skills</td>
</tr>
<tr>
<td></td>
<td>2. Orientation</td>
<td>2. Communication skills</td>
</tr>
<tr>
<td></td>
<td>3. Information</td>
<td>3. Management training</td>
</tr>
<tr>
<td>K/ Organization K</td>
<td>1. Product features</td>
<td>1. Sales presentation skills</td>
</tr>
<tr>
<td></td>
<td>2. Orientation</td>
<td>2. Communication skills</td>
</tr>
<tr>
<td></td>
<td>3. Information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. IT courses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Language</td>
<td></td>
</tr>
<tr>
<td>L/ Organization L</td>
<td>1. Procedural courses</td>
<td>1. Leadership skills</td>
</tr>
<tr>
<td></td>
<td>2. Orientation</td>
<td>2. Communication skills</td>
</tr>
<tr>
<td></td>
<td>3. Information</td>
<td>3. Team building skills</td>
</tr>
<tr>
<td></td>
<td>4. IT courses</td>
<td>4. Management training</td>
</tr>
<tr>
<td>M/ Organization M</td>
<td>1. Language</td>
<td>1. Management training</td>
</tr>
<tr>
<td></td>
<td>2. IT skills</td>
<td>2. Discussion</td>
</tr>
</tbody>
</table>

93
5.5.1 Training that Could be Delivered through WBT

From Figure 5.3, nearly all of the organizations perceived that procedure courses, orientation and information courses are the most common ones that could be delivered through WBT to employees. With the increasing importance of information technology, training courses on IT skills and PC knowledge are in high demand. As a matter of fact, organizations are willing to deliver PC training to their staff by WBT. For example, Microsoft Word, Excell, Powerpoint can be delivered to employees through the use of computers and the Internet.

Figure 5.3 Training that Could be Delivered through WBT

<table>
<thead>
<tr>
<th>Courses</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC training / IT Skills</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td></td>
<td>✓</td>
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<td>✓</td>
</tr>
<tr>
<td>Procedure courses</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>Orientation</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Information</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>Documents / rule</td>
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<td>Management training</td>
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<tr>
<td>Product training</td>
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<td>Language</td>
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</tbody>
</table>

5.5.2 Training that Could Not be Delivered Through WBT

Eight organizations (A, B, G, H, I, J, L & M) perceived that management training could not be delivered through WBT (Figure 5.4). Management skills such as communication, team building, sales presentation, and leadership, etc, involved more personal contact between trainers and trainees.
Figure 5.4  Training that Could Not be Delivered through WBT

<table>
<thead>
<tr>
<th>Courses</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication skills</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>Management training</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<td>✓</td>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>Language</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Live-side skills</td>
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<td>✓</td>
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<tr>
<td>Interactive</td>
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<td>✓</td>
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<td>Role play</td>
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<tr>
<td>Discussion</td>
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<td>✓</td>
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<tr>
<td>Employee attitude</td>
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<td></td>
<td></td>
<td>✓</td>
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<tr>
<td>Team building skills</td>
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<td></td>
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<td></td>
<td>✓</td>
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<tr>
<td>Sales presentation skills</td>
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<td>✓</td>
<td>✓</td>
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<tr>
<td>Leadership skills</td>
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</tbody>
</table>

5.6  Role of Trainers

Table 5.6 summarizes the new role of trainers when implementing WBT. Some interviewees mentioned that trainers involved more job duties (Organization A, K & M) and multi-skills (Organization D, E & G) in the implementation of WBT. The most obvious was that the function of trainers would replace by the computer and the network. The field of training is changing, as are many other fields. Trainers would be able to spend their time in developing instruction rather than in delivering a course to only a few trainees at multiple locations and times. Because many trainers are intuitive, interpersonal, the idea of web-based delivering their training may make them uncomfortable.
Table 5.6  Summary of the Perceived New Role for Trainers

<table>
<thead>
<tr>
<th>Organization ID / Organization</th>
<th>Role of Trainers</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/ Organization A</td>
<td>More duties</td>
</tr>
<tr>
<td></td>
<td>• Preparing materials</td>
</tr>
<tr>
<td></td>
<td>• Communicate</td>
</tr>
<tr>
<td></td>
<td>• Organization</td>
</tr>
<tr>
<td>B/ Organization B</td>
<td>Not change</td>
</tr>
<tr>
<td>C/ Organization C</td>
<td>Nil</td>
</tr>
<tr>
<td>D/ Organization D</td>
<td>Different focus</td>
</tr>
<tr>
<td></td>
<td>1. Tutor role</td>
</tr>
<tr>
<td></td>
<td>2. Searching new knowledge</td>
</tr>
<tr>
<td></td>
<td>3. Influence participants to enjoy</td>
</tr>
<tr>
<td>E/ Organization E</td>
<td>Different skills</td>
</tr>
<tr>
<td></td>
<td>1. Technical knowledge</td>
</tr>
<tr>
<td></td>
<td>2. Development time</td>
</tr>
<tr>
<td></td>
<td>3. Competency level</td>
</tr>
<tr>
<td>F/ Organization F</td>
<td>Nil</td>
</tr>
<tr>
<td>G/ Organization G</td>
<td>Different skills</td>
</tr>
<tr>
<td></td>
<td>• Instructional design and delivery</td>
</tr>
<tr>
<td>H/ Organization H</td>
<td>Nil</td>
</tr>
<tr>
<td>I/ Organization I</td>
<td>Nil</td>
</tr>
<tr>
<td>J/ Organization J</td>
<td>Nil</td>
</tr>
<tr>
<td>K/ Organization K</td>
<td>Negotiation</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
</tr>
<tr>
<td>L/ Organization L</td>
<td>Nil</td>
</tr>
<tr>
<td>M/ Organization M</td>
<td>More duties</td>
</tr>
<tr>
<td></td>
<td>1. Multi-tasks</td>
</tr>
</tbody>
</table>

5.7 Conclusion and Implications

The main purpose in Study 1 is to identify some unknown or unexplored factors that particular appear in Hong Kong. This study was intended to be exploratory in investigating the factors affect WBT adoption as a new and little studied technological innovation. However, in the event, the findings from Study 1 revealed relatively little that was different from previous innovation studies (Chapter 3). Thus, it seems that, after all, the factors affecting the adoption of WBT are similar to the factors affecting the adoption of IT innovations in general.
Based on the thirteen case studies, there are several important implications in this study. First of all, the size of an organization appears to have a direct influence on the adoption of a new training practice. Besides the size of organization, different sector of industry have its own characteristics. Manufacturing-based and service-based organizations seem to have different views to WBT adoption.

Surprisingly, organizational structure was another factor that appears to affect WBT adoption. It seems that different nature of organizations has different degree of acceptance level. In most organizations, the final decision to adopt IT system was taken by top management. With different organizational culture and environmental forces, top management support became the main immediate factor affecting WBT adoption.

Moreover, technical support was directly influenced the adoption of WBT. Organizations were concerned with their technical infrastructure in operating IS system, which consistent with the findings in literature. In addition, institutional pressures, such as following the latest fashions in training methods, and copying visible and leader in training and development field, were important. Pressures from other organizations or from the market situation would foster the adoption of WBT.

WBT allowed “at-employee-own-place”, “at-employee-own-pace”, trainees could back on the job sooner. However, coordinating schedules and transporting employees to remote locations were not the factors for WBT, as it is for an instructor-led curriculum. The case study findings indicated that the return on investment (ROI) of WBT in long run
was rather high compared with traditional training. The philosophy of "anyplace, anytime" was the main advantage in implementing WBT. WBT could cross the "training boundaries" among different districts, or even different countries. Many organizations are presently at the stage of evaluating different type of distance learning, and the focus tended to be on which WBT best meets the need of an organization. Trainees could easily access to online courses. WBT made it much easier to track whether trainees have taken course and the results.

On the other hand, WBT included a significant amount of technical support that are expensive to develop. Although the reduced costs of delivery was more than offset production costs when enough trainees need to be trained, this initial investment could intimidate organizations considering the adoption of WBT. The high investment cost blocks the intention to take the risk of implementing WBT without a guaranteed market. Market globalization and changing technologies have placed organizations under great stress, the need to deliver fast, effective, and updated training materials were more important than ever before.

In concluding the case study results, training that could or could not be delivered through WBT, comparatively, hard skills training, such as procedure course, seems best to be delivered by WBT whereas personal skills are not. However, personal skills such as communication, interactive, could not be delivered through the Internet. The role of trainer in future increasingly support on the particular needs of individuals. First, the trainers would impact by themselves personally, working in new ways, under new rules,
with new options. Second, providing training services to a dispersed workforce will offer new challenges for remote learning support. It needs assessment, solution design, implementation/delivery, and the evaluation of outcomes. Third, trainees need to learn new skills to work effectively in a dispersed, distributed workplace as a need particularly urgent for those who manage work in such a workplace.

Based on the case study findings, several specific factors were identified as being likely to influence the adoption of WBT: (1) Organization features: technical infrastructure, workforce factors, (2) top management support, (3) institutional pressures. These variables will be incorporated into the WBT model and subjected to regression testing in Study 2. In addition, the results further confirm the (4) advantages and disadvantages of WBT identified in the literature. The identified perceived advantages involved: geographical independence, self-paced, cost effectiveness, time savings, content updated, standardization, increase communication, increase learner control. The identified perceived disadvantages involved: technical support, lack of interaction, high investment cost, limited types of training. Again, these perceived advantages and disadvantages were included in the formal model developed in Chapter 6.

Study 1 found little that was contributed or generated new ideas, however, provided a good foundation for linking the findings of Study 1 and the development of the research model. The construct of perceived advantages and disadvantages were specifically developed in this study. To a large extent, the new research model of WBT comes nearly from the literature review, which similar in identifying the factors that affect the adoption
of IT. Accordingly, the case study findings integrated with the variables that reviewed in the literature (Chapter 3), corresponding with the three main theories: contingency theory of organizations, rational-efficiency theory, and institutional theory, to build up a new model of innovation related to WBT – WBT adoption model.
CHAPTER 6
STUDY 2: THEORETICAL DEVELOPMENT AND HYPOTHESES

6 Introduction

A review of the published information technology (IT) adoption literature shows that, to date, the majority of research on IT adoption has concentrated on the features of the organization, with a lack of empirical research on other factors. Furthermore, there is little or no systematic analysis in previous research on the adoption of WBT in particular. Because of the unique characteristics of WBT, there is a need to re-examine whether models of innovation adoption developed in the general IT literature can be transferred to the WBT case. This chapter aims at developing a new WBT adoption model. It develops the research model and theoretical framework for Study 2, combining organizational features, perceived advantages and disadvantages, social pressures, and top management support for the adoption of WBT, in an integrated adoption model.

6.1 Research Model

Based on theories from the technological innovation literature and IT adoption literature reviewed in Chapter 3 and on the findings of Study 1 (Chapter 5), an integrated model of WBT adoption will be developed in this Chapter. A review of the adoption literature suggested that the frameworks developed by Tornatzky and Fleischer (1990), and by Chau and Tam (1997) provide useful starting points to look at WBT adoption. These authors highlight the specific context in which the adoption process takes place. To a
large extent, the model proposed for this research explicitly considers variables integrated from the research streams identified in Chapter 3. Thus, the main contribution of Study 1 comes in the unique characteristics of WBT, i.e. perceived advantages and perceived disadvantages in this study.

The research model thus focuses on three broad sets of antecedents of adoption: organizational features, perceived advantages and disadvantages, and social pressures. These sets of variables correspond to the three theoretical perspectives identified in the literature review: contingency theory of organization, rational-efficiency theory, and institutional theory. The model suggests that these antecedents provide the context within which potential WBT adopters evaluate the new training and development practice.

6.2 Theoretical Framework

Recently, several factors have been studied to explain why organizations adopt innovations such as Internet websites (Flanagan, 2000), information systems (Thong, 1999), and other IT innovations. Based on past research, organizational centralization (Dewar & Dutton, 1986; Ettlie, Bridges, & O'Keefe, 1984), formalization (Ettlie et al., 1984; Pierce & Delbecq, 1977), size (Damanpour, 1987; Lai & Guynes, 1997; Moch & Morse, 1977; Swanson, 1994), complexity (Cooper & Zmud, 1990; Tornatzky & Klein, 1982), and the relative advantage of technologies (Robertson & Gatignon, 1986; Tornatzky & Klein, 1982; Utterback, 1974), have all been demonstrated to predict organizations' tendency to adopt innovations. Damanpour (1991) also reviewed 13 major structural features of organizations that affect innovativeness, and Tornatzky and Klein
(1982) listed 30 characteristics that have been proposed as determinants of organizational innovation adoption.

Many reviews and meta-analyses of organizational innovation adoption studies suggest that almost all factors proposed to explain adoption can be classified as either (a) characteristics of organizations and the environments or (b) benefits and advantages of the innovation itself (Damanpour, 1988, 1991; Downs & Mohr, 1976; Tornatzky & Klein, 1982). However, especially for early adopters, according to Study 1, the use of WBT in organizations has high investment cost in the short run, which makes adoption problematic. In addition, concerns over cost-effectiveness, and acceptance by employees mean that the actual benefits are still not well understood. In spite of these constraints, however, it seems that many and varied organizations continue to adopt WBT in Hong Kong (Study 1). This suggests that organizational features and perceived benefits may be insufficient to explain organizational adoption, at least with regard to relatively novel, interactive communication and information technologies, such as WBT. Other factors may also be important to organizations’ innovation adoption decisions.

Flanagan (2000) mentioned the importance of social pressures in affecting organizational innovation. In fact, evidence suggests that social pressures operating at the organizational level are critical determinants of organizational innovation adoption, particularly in the case of relatively new innovations. Ambiguity surrounding rapidly diffusing and largely unproven innovations, coupled with the fact that high uncertainty inhibits rational organizational decision making (March & Simon, 1958) and increases the social
influence of others (Moscovici, 1976), further suggests that adoption decisions may be subject to social pressures.

As Tornatzky and Klein (1982) point out, studies of organizational innovation adoption should examine multiple explanations of adoption behavior in order to assess the relative impact of different forces. Therefore, this study examines the adoption of WBT in Hong Kong organizations, focusing simultaneously on factors that represent organizational features, perceived advantages and disadvantages, and the social pressures acting on organizations.

In addition, this research looks beyond the adoption decision alone, considering the adopting of WBT, and willingness to use WBT. This research thus adds to our understanding of innovation adoption processes at the organizational level. Based on the work of Flanagin (2000), a perception-based model tailored for WBT adoption is developed and depicted, as shown in Figure 6.1. This ties together six factors representing three major theoretical approaches: contingency theory of organizations, rational-efficiency theory and institutional theory described in Chapter 3, to WBT adoption. Organizational features refer to the reliance on advanced technology and workforce expertise, the perceived advantages and disadvantages refer to the perceived advantages and the perceived disadvantages, and social pressures refer to the institutional pressures and perceived faddishness.
Figure 6.1  Theoretical Framework: The Adoption of WBT in Hong Kong Organizations

Organizational Features
- Reliance on Advanced Technology (+)
- Workforce Expertise (+)

Perceived Advantages and Disadvantages
- Perceived Advantages (+)
- Perceived Disadvantages (-)

Social Pressures
- Institutional Pressures (+)
- Perceived Faddishness (-)

Management Support
- Top Management Support (+)

WBT Adoption
- Adoption of WBT
- Willingness to Use

Control Variables
- Organization Size
- Nature of Organization
- Sector of Organization
6.3 WBT Adoption

Dependent variables are WBT adoption, and perceived willingness to use WBT. It was decided not simply to look at adoption versus non-adoption, but also to look at the willingness of organizations to use WBT in future. The aim was to provide a more comprehensive evaluation of behavior and attitudes towards WBT.

Table 6.1 shows the definition and sources of variables, and the nature of hypotheses.
### Table 6.1: Independent, Mediated, Dependent & Control Variables and Hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definitions</th>
<th>References</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workforce Expertise</td>
<td>Extent to which employees' knowledge in handling information technology or computer skills in organization</td>
<td>Davis (1982), Fox (1982), McFarian (1981)</td>
<td>H2 / +</td>
</tr>
<tr>
<td><strong>Perceived Advantages</strong> and Disadvantages</td>
<td></td>
<td>Study 1</td>
<td></td>
</tr>
<tr>
<td>Perceived Advantage</td>
<td>Extent to which advantages or benefits of WBT</td>
<td>Downs &amp; Mohr (1976), Tomatzky &amp; Klein (1982), Study 1</td>
<td>H3 / +</td>
</tr>
<tr>
<td>Perceived Disadvantages</td>
<td>Extent to which disadvantages or barriers of WBT</td>
<td>Study 1</td>
<td>H4 / -</td>
</tr>
<tr>
<td><strong>Social Pressures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faddishness</td>
<td>Extent to which the ephemeral or faddish to organization</td>
<td>Flanagin (2000)</td>
<td>H6 / -</td>
</tr>
<tr>
<td><strong>Mediated Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WBT Adoption</td>
<td>Adopt or non-adopt of WBT from organizations</td>
<td>Study 1</td>
<td></td>
</tr>
<tr>
<td>Willingness to Use</td>
<td>Extent to which organization declares a willingness to use WBT in the future</td>
<td>Study 1</td>
<td></td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Size</td>
<td>Total number of employees in organization</td>
<td>Moch &amp; Morse (1977), Swanson (1994), Study 1</td>
<td></td>
</tr>
<tr>
<td>Nature of Organization/Sector</td>
<td>Owned of organization / Manufacturing Vs Service industry</td>
<td>Study 1</td>
<td></td>
</tr>
</tbody>
</table>
6.4 Organizational Features

Characteristics of IT innovation have been frequently studied in past research. Organizational features have been demonstrated to explain organizational innovational adoption (Damanpour, 1987, 1991; Lai & Guynes, 1997; Tornatzky & Klein, 1982).

6.4.1 Reliance on Advanced Technology

The organization’s reliance on advanced technology is one of the possible variables that may influence the organizations’ use of WBT. Reliance on advanced technologies is defined as the extent to which the reliability and strength of technology infrastructure in an organization, which support the technical issues in operating the whole IT system. Adoption decisions are typically consistent with the experiences and needs of adopters, complementing rather than contradicting existing values and habits (Rogers, 1995).

LaRose and Hoag (1996) found that the adoption of Internet technologies was predicted by the previous adoption of clusters of similar innovations and “organizations who process, produce, use or transmit information as their primary activity should more readily adopt advanced information services like the Internet than organizations who are not a central part of the information economy” (p.52). A review of past studies showed that technical compatibility and reliability were two major predictors of the initial use of information technology in the first application. Thus, organizations complement existing technologies with new innovations. The innovation literature strongly proposes that any technological innovation adoption should be based on an organization’s technological
strengths (Burgelman, 1983; Damanpour & Even, 1984; Maidique & Zirger, 1984; Rogers & Shoemaker, 1971).

Similarly, Tornatzky and Klein (1982) and Grover (1993) noted the importance of the compatibility of new innovations with existing ones in organizational adoption decisions. Grover (1993) found that a "proactive technological orientation," including factors such as the sophistication of the organization's orientation to technology, an infrastructure compatible with the innovation, and a pro-technology policy, was the strongest predictor of organizational information systems adoption. As Cohen and Levinthal (1990) argued, the ability to recognize and exploit new information technology depends on organizations' level of prior, related experience. The case study findings in Study 1 suggested that technical infrastructure was important factor influencing WBT adoption. Thus, organizations with greater reliance on advanced technologies in their day-to-day operations are more likely to adopt WBT.

Hypothesis 1: A high reliance on advanced technology will be positively related: (a) to WBT adoption, and (b) to the willingness to use WBT.

6.4.2 Workforce Expertise

In adopting WBT, workforce expertise in IT is likely to be a key factor. Many IT adoption or implementation problems result, because the users of WBT frequently do not know what is possible to achieve with the WBT programs (Davis, 1982). Workforce expertise is defined as the extent to which employees' have knowledge in handling information technology or computer skills. The knowledge of the user (e.g. with the
application, requirements, technology) can influence the perception of a new information system (Davis, 1982; Fox, 1982; McFarlan, 1981). If the knowledge of employees towards information technology and computer skills is favorable, it is more likely that they will adopt WBT.

Hypothesis 2: The high degree of workforce expertise will be positively related: (a) to WBT adoption, and (b) to the willingness to use WBT.

6.5 Perceived Advantages and Disadvantages

The influence of characteristics of innovations on the innovation process has been studied in the IT innovation literature. Based on rational-efficiency theory, an important group of factors affecting the degree of influence are those related to the cost-and-benefits trade off of adopting a particular innovation (Hall, 1997). Organizations incur costs with the adoption of any innovation. Innovation adoption can be accompanied by risk, uncertainty, and expenditures of money, time, effort, etc (Kruse & Keil, 2000). To justify these costs, organizations perceive the potential advantages (Study 1) from WBT innovation that make them worthwhile. On the other hand, organizations also perceived disadvantages from the use of WBT. Rational-efficiency choices of an organization largely reflect the perceived advantages and disadvantages of particular innovations. This research examines the effect of perceived advantages and disadvantages of WBT on WBT adoption.
6.5.1 Perceived Advantages

Perceived advantages represent in relation to an organization's specific setting. In this study, the context of perceived advantages and disadvantages is proposed as one of the key aspects in affecting WBT. In particular, perceived advantages of WBT refer to the advantages or benefits of implementing WBT, the degree to which an innovation is perceived as being better than the idea it supersedes.

Researchers have consistently discovered strong links between the perceived benefits of innovations and their adoption in organizations (Downs & Mohr, 1976; Tornatzky & Klein, 1982). As mentioned in Study 1, there were several perceived advantages of implementing WBT. According to rational-efficiency theory, organizations make decision in adopting a new information technology in a rational way. Organizations consider the trade off between costs and benefits of adopting WBT. More specifically, the perception of relative advantages for WBT, such as geographical independence (Weinstock, 2000), saving of time (Kruse & Keil, 2000), standardization and flexibility (Horton, 2000), are likely to influence WBT adoption. Such relative organizational advantages serve to justify the expenditures and risks incurred in adoption.

Hypothesis 3: The significance of the perceived advantages of WBT will be positively related: (a) to WBT adoption, and (b) to the willingness to use WBT.
6.5.2 Perceived Disadvantages

Also likely to be significant are the perceived disadvantages of WBT. The perceived disadvantages of WBT refer to the disadvantages or barriers of implementing WBT. From the case study findings, for example, with the high setup cost of WBT in an organization, the impact of adopting WBT may be negative (Kruse & Keil, 2000). There are few empirical findings on which barriers are considered by organizations when determining to adopt WBT.

Hypothesis 4: The significance of the perceived disadvantages of WBT will be negatively related: (a) to WBT adoption, and (b) to the willingness to use WBT.

6.6 Social Pressures

Although the relative cost-and-benefits of innovation is clearly an important element of the adoption decision, it has not always been proven to be a significant predictor of adoption (Grover, 1993). Numerous studies in both the IT innovation literature and the strategic management literature have focused on environmental variables and their impact on organizational innovation (Study 1). Social pressures are also included in this research model to reflect the influences from the external environment.

6.6.1 Institutional Pressures

Based on the concept of institutional theory, an organization may be willing to adopt WBT due to the influences exerted by its organization partners and/or its competitors. Pressures from organization partners or competitors have been found to be an important
factor in organization adoption. Institutional pressures are defined as the pressures from other organizations to adopt WBT. These social pressures are more pronounced under conditions of high ambiguity (Abrahamson & Rosenkopf, 1993; DiMaggio & Powell, 1983; O'Neill, Pouder, & Buchholtz, 1998), such as when new technologies are introduced and little reliable information is available.

Institutional theory proposes that organizations are influenced by one another's actions, patterning their own behavior after that of other organizations. Previous studies found strong support for the notion that organizational adoption of policies or innovations are influenced by the extent to which they are institutionalized, either by policy or gradual legitimization among related organizations (DiMaggio & Powell, 1983; Scott, 1995). Similarly, Galaskiewicz and Wasserman (1989) found that extra-organizational networks guided organizational decisions through mimetic institutional forces.

Hypothesis 5: The extent to which other organizations are seen to be using WBT will be positively related: (a) to WBT adoption, and (b) to the willingness to use WBT.

6.6.2 Perceived Faddishness

On the other hand, innovations characterized by highly enthusiastic support and relatively low availability of reliable information run the risk of being perceived as ephemeral or faddish. Those managers who perceive WBT to be nothing more than a fad may in fact dismiss WBT as such and so be less positive about WBT. In such cases, organizations
might react negatively to WBT, perceiving it as lacking substance or proven benefit to the organization. Thus, organizations might remain cautious, not adopting WBT because of its unproven nature and the attendant cost for an innovation that they believe might bring only limited, temporary, or unproven benefits (Flanagin, 2000).

Hypothesis 6: The extent to which the more the organizations view WBT as merely "fashionable" or as a passing "fad" will be negatively related: (a) to WBT adoption, and (b) to the willingness to use WBT.

6.7 Mediating Role of Top Management Support

Top management support refers to the extent to which there is support from the top management of an organization. Many researchers, while studying the process of innovation in a firm, have concluded that highly enthusiastic and committed individuals who are willing to take risks, often play a vital role in overcoming resistance to the innovation, securing resources for adoption, and vigorously promoting its implementation (Ettlie, Bridges & O'Keefe, 1984; Kimberly & Evanisko, 1981; Maidque, 1980; Maidque & Zirger, 1984; Van De Ven, 1986).

The importance of support from top management for a proposed innovation is accepted as conventional wisdom. This support is not merely approval from the front office to go ahead with a project, but active, enthusiastic support which is transmitted throughout the organization at all level. McGinnis and Ackelsberg (1983) describe this support as top management commitment to providing a positive environment for innovation. Quinn
(1985) describes the need for top management to provide the long-term vision and support, while Burgelman (1983) discusses top management strategic recognition of initiatives. Empirical work (Baldridge & Burnham, 1975; Ettlie, 1986; Zmud, 1984) clearly points to the conclusion that without management support, an innovation is less likely to be adopted. Similarly, MIS implementation research also discusses top management support as being a good predictor of successful introduction of new or different systems (Ives & Olson, 1984; Kander, 1985; Lucas, 1978). However, I suggested that top management support might, in itself, be a consequence of the three sets of factors identified above. Hence I suggest that top management support acts as a mediator between organizational features, perceived advantages and disadvantages, and social pressures to WBT adoption. I set up the hypothesis in full mediation form.

Hypothesis 7: The degree of top management support for WBT mediates the relationship between (a) reliance on advanced technology, (b) workforce expertise, (c) perceived advantages, (d) perceived disadvantages, (e) institutional pressures and (f) faddishness, to WBT adoption and willingness to use WBT.

Last but not least, based on the overall importance of the main three theoretical perspectives (organizational features, perceived advantages and disadvantages, social pressures), in order to perceive which set of variables contributes most incrementally to WBT adoption, a research question (objective (g) in Chapter 1) is then proposed:
Research Question: Which set of variables (organizational features, perceived advantages and disadvantages, social pressures) contributes most incrementally to (a) WBT adoption, (b) willingness to use WBT?

6.7 Control Variables

According to previous IT adoption literature, organization size, nature of organization, and sector of industry (Damanpour, 1987; Lai & Guynes, 1997; Moch & Morse, 1977; Swanson, 1994), are widely confirmed as factors affecting IT adoption innovation. As a result, these variables are examined as control variables in this study.

This chapter integrates the literature and the case study results in Study 1, to build up a new model of WBT adoption. Six variables, based on three underpinning theories: contingency theory of organizations, rational-efficiency theory and institutional theory, are explained in detail. A detailed explanation of the research methodology in Study 2 will describe in next chapter.
CHAPTER 7

STUDY 2: RESEARCH METHODOLOGY

7 Introduction

This chapter presents a detailed explanation of the research method, instruments, procedures and analysis of the research methodology of Study 2. The research project of Study 2 involves a questionnaire survey. The main objective of Study 2 is to test specific hypotheses based on the new WBT adoption model, as described in Chapter 6. The model proposed synthesizes much of the inductive and deductive work on innovation adoption. As distinct from the thirteen case studies in Study 1, a larger sample was required in Study 2. Both case-based (Chapter 4 & 5) and survey-based (Chapter 7 & 8) approaches were used to explore issues of WBT adoption in Hong Kong organizations. While the case study method could provide a richer description of the issue being investigated, the survey study could permit replicability, generalizability, analyzability, and cross study comparability.

7.1 Quantitative Research Method

The research method used in this study was primarily quantitative, following a concurrent, criterion-related validation strategy (Cascio, 1982) i.e. predictor and criterion data were gathered concurrently. As a result, a survey method was employed, which serves for several purposes. First, it is important to produce results that can be generalized to a larger population and a survey can provide these results. Since the Internet, Intranet and Extranet are a new, fast evolving environment in human resource
management, especially for business sector, many organizations have not taken full advantage of the Internet with training and development. Second, because of the newness of training and development approach that deliver training through the Internet, just a small proportion of organizations have adopted WBT in Hong Kong. Therefore, by using a survey method, both adopters and non-adopters of WBT could be included in this study. Accordingly, this methodology well serves the purposes of research.

**Figure 7.1** shows an overview of the research methodology in this study, and highlights the steps and methods in each phase. In **Phase 1** of the overview of methodology, a questionnaire was developed based on the WBT adoption model described in the previous chapter, from issues identified in the literature (Chapter 3) and issues highlighted from the qualitative research findings in Study 1 (Chapter 5). The research instrument was thoroughly pre-tested using respondents by a selection of an appropriate target group.
Figure 7.1: Overview of Research Methodology

Phase 1:

Specify the domain and dimensionality of the construct

Phase 2:

Generate item pool
Modify the instruments of questionnaire

Exploratory sort of items into six dimensions of independent variables, one dimension of mediating variable and two dependent variables.
Assess the reliability of the scales and add, delete or modify items

Phase 3:

Questionnaire to a large sample (Hong Kong Institute of Human Resource Management) with 3,200 local members, excluded 100 overseas members

Method

- Literature
- Interviews (Study 1)

- Pretest (2 Professors & 3 Master Students)
- Pilot Study 1 (Interview 3 Training and Development Managers)

- Pilot Study 2 (59 Master Students majoring in the subject of Human Resource Management at The Hong Kong Polytechnic University)
- Simple Exploratory Factor Analysis and Reliability Test

- Exploratory Factor Analysis
- Hierarchical Logistic Regression Analysis
- Hierarchical Multiple Regression Analysis
7.2 Instrument

Since organizations but not individuals adopt WBT, the unit of analysis for this study was therefore at the organizational level. Subjects for this study were required to be senior informed respondents within an organization. A self-completion questionnaire served as the primary means for data collection. The relatively new nature of the WBT phenomenon made it extremely important to ensure that the respondents understood the nature of WBT. Therefore, the cover message in the questionnaire was drafted with great care to enable concise yet effective communication. A brief definition of a WBT was provided. The database represented the potential respondents in the field of human resource management and training & development. The cover message stated the purpose of the study and the strict confidentially of the data, was sent along with the survey questionnaire. It also asked the respondents to return the completed questionnaire within two weeks time using an enclosed self-addressed, reply-paid envelope. In this study, the time horizon was cross-sectional while data gathered just once. In order to increase the response rate, a short reminder was sent two weeks after the initial mailing.

7.3 Phase 1 of Variable Operationalization

This section describes the measures on the dependent variables, mediating variable and independent variables. As discussed in the literature in Chapter 3, no previous research studies have been conducted in the context of WBT adoption in particular. Therefore, to operationalize the constructs in the model, direct use of previous innovation adoption instruments in previous studies is not always possible. Over half of the items used in this study were therefore specifically developed, based on the literature in a variety of
sources, including management information system (MIS) journals and the findings from Study 1. Operationalization of the factors is discussed as follows.

The variables identified in the research model were measured using multi-item indicators that aimed to capture the underlying theoretical domain of the construct. Most of the variables described in the WBT adoption model were measured by items written in the form of statements with which the respondent was to agree or disagree on a 7-point likert type scale. Many of the variables were adopted from earlier empirical work on innovation. When such items were not available, they were constructed from statements in the literature or from the case studies in Study 1. Table 7.1 describes the operationalization of each variable along with corresponding sources.

For all multi-item scales, the items were refined through reliability and validity testing using methods proposed by Churchill (1979) and Nunnally (1978), and recently applied by other researchers (e.g. Joshi, 1989, Sethi, & King, 1991). For reliability, Cronbach's alpha was computed for each unidimensional scale along with total item correlations. Items with low correlations were dropped. Each scale was subject to factor analysis to observe dimensionality (Nunnally, 1978). Items that loaded on non-interpretable factors or which cross-loaded on several factors were dropped from subsequent analysis. The questionnaire was shown in Appendix D, called "Managerial Attitudes to Web based Training (WBT): A Comparison of Users and Non-users survey".
### Table 7.1 Measures of Study Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Operationalization</th>
<th>Source(s)</th>
<th>Alpha</th>
<th>Question Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables: WBT Adoption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Adoption of WBT</td>
<td>Yes/ No</td>
<td>--</td>
<td>--</td>
<td>Question 1</td>
</tr>
<tr>
<td>2. Age of WBT</td>
<td>No. of years in implementing WBT</td>
<td>--</td>
<td>--</td>
<td>Question 2</td>
</tr>
<tr>
<td>3. Adoption Level</td>
<td>Mean of 3 items</td>
<td>--</td>
<td>--</td>
<td>Question 3-5</td>
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<tr>
<td>4. Description of Training</td>
<td>Types of training</td>
<td>Study 1</td>
<td></td>
<td>Question 6a-f</td>
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<tr>
<td>5. Willingness to Use WBT</td>
<td>Mean of 7 items</td>
<td>Study 1</td>
<td></td>
<td>Question 12a-g</td>
</tr>
<tr>
<td><strong>Independent Variable: Organizational Features</strong></td>
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<td></td>
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<tr>
<td>6. Reliance on Advanced Technology</td>
<td>Mean of 4 items</td>
<td>Flanagan (2000), Study 1</td>
<td>--</td>
<td>Question 9a-d</td>
</tr>
<tr>
<td>7. Workforce Expertise</td>
<td>Mean of 5 items</td>
<td>Flanagan (2000), Study 1</td>
<td></td>
<td>Question 7a-e</td>
</tr>
<tr>
<td><strong>Independent Variables: Perceived Advantages and Disadvantages</strong></td>
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<tr>
<td>Perceived Advantages</td>
<td>Mean of 9 items</td>
<td>Literature Review, Study 1</td>
<td>--</td>
<td>Question 10a-i</td>
</tr>
<tr>
<td>Perceived Disadvantages</td>
<td>Mean of 9 items</td>
<td>Literature Review, Study 1</td>
<td></td>
<td>Question 11a-i</td>
</tr>
<tr>
<td><strong>Independent Variables: Social Pressures</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Institutional Pressures</td>
<td>Mean of 6 items</td>
<td>Flanagan (2000)</td>
<td>.94</td>
<td>Question 9e-j</td>
</tr>
<tr>
<td>9. Perceived Faddishness</td>
<td>Mean of 4 items</td>
<td>Flanagan (2000)</td>
<td>.93</td>
<td>Question 10k-n</td>
</tr>
<tr>
<td><strong>Mediating Variable: Top Management Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Top Management Support</td>
<td>Mean of 4 items</td>
<td>Grover (1993)</td>
<td>.95</td>
<td>Question 8a-d</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Nature of Organization</td>
<td>Owned of Organization</td>
<td>Study 1</td>
<td>--</td>
<td>Question 13d</td>
</tr>
</tbody>
</table>
7.3.1 Dependent Variables: WBT Adoption

WBT adoption was defined as delivering training to employees through the Internet, the Intranet and the Extranet. The first measure of WBT adoption was measured by asking whether organizations have adopted WBT or not. The question was "Does your organization currently use Web-based training (WBT)?" The dependent variable, WBT adoption, was represented as a binary measure, with 0 indicating non-adopters, and 1 with adopters. The second measure was the willingness to use WBT for both adopters and non-adopters. Totally, seven-items were specifically developed. The measurement on this variable was operationalized in this study by responses to the seven items shown in Table 7.2. Responses were measured in a 7-point-Likert type scale, ranging from 1 = strongly disagree to 7 = strongly agree.

<table>
<thead>
<tr>
<th>Table 7.2 Dependent Variable – Willingness to Use WBT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Willingness to Use WBT</td>
</tr>
<tr>
<td>1. All things considered, WBT seems to have a lot to offer for my organization.</td>
</tr>
<tr>
<td>2. It is likely that my organization will be an enthusiastic user of WBT in the future.</td>
</tr>
<tr>
<td>3. WBT is the way forward for my organization.</td>
</tr>
<tr>
<td>4. We plan to use WBT for many of our training needs in future.</td>
</tr>
<tr>
<td>5. In my organization, we need WBT to meet all our training needs effectively.</td>
</tr>
<tr>
<td>6. WBT does not seem to be appropriate for my organization.</td>
</tr>
<tr>
<td>7. I do not think my organization will make much use of WBT in the future.</td>
</tr>
</tbody>
</table>
7.3.2 Independent Variables: Organizational Features

For organizational features, four items were used to measure the construct reliance on advanced technology (Table 7.3). Both adopters and non-adopters were asked about the reliance on advanced technology. The measure was based on that used by Flanagin (2000), with the addition of two questions “Our organization relies on advanced communication and information technology in its day-to-day operations.” and “Advanced technology is central to my organization.” (All items were responded to on a 7-point-Likert type scale, ranging from 1 = strongly disagree to 7 = strongly agree).

Furthermore, five items were used to measure workforce expertise. Items on self-confidence, basic skills and capabilities and experience in using information technology were asked. Based on Flanagin’s (2000) study, with the addition of two questions “knowledgeable about WBT, know how to work WBT” in measuring the variable of workforce expertise. 7-point-Likert type scale, ranging from 1 = strongly disagree to 7 = strongly agree was used to measure the above variables.
Table 7.3  Independent Variables – Organizational Features

<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizational Features</strong></td>
<td></td>
</tr>
<tr>
<td>Reliance on Advanced Technology</td>
<td>1. Our organization has a high reliance on technology.</td>
</tr>
<tr>
<td></td>
<td>2. Our organization has strength in technical infrastructure.</td>
</tr>
<tr>
<td></td>
<td>3. Our organization relies on advanced technology in its day-to-day operations.</td>
</tr>
<tr>
<td></td>
<td>4. Advanced technology is central to my organization.</td>
</tr>
<tr>
<td>Workforce Expertise</td>
<td>1. Most employees are knowledgeable about information technology.</td>
</tr>
<tr>
<td></td>
<td>2. Most employees seem to have self-confidence in using information technology.</td>
</tr>
<tr>
<td></td>
<td>3. Most employees have basic skills and capabilities in using information technology.</td>
</tr>
<tr>
<td></td>
<td>4. Most employees have some experience in using information technology.</td>
</tr>
<tr>
<td></td>
<td>5. Most employees know how to use the Internet.</td>
</tr>
</tbody>
</table>

7.3.3  Independent Variables: Perceived Advantages and Disadvantages

For perceived advantages, nine items were used in measuring perceived advantages of WBT, based on the findings of Study 1. In addition, there were nine items representing perceived disadvantages, also based on the case study findings. With the unique characteristics of WBT, perceived advantages and disadvantages are the new constructs in the research model for WBT adoption. Table 7.4 shows the items.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Advantages and Disadvantages</td>
<td>1. WBT allows users to undertake training any time, anywhere.</td>
</tr>
<tr>
<td></td>
<td>2. With WBT, users can go through a training program at their own pace.</td>
</tr>
<tr>
<td></td>
<td>3. WBT is more cost-effective than other forms of training.</td>
</tr>
<tr>
<td></td>
<td>4. WBT can help reduce training time.</td>
</tr>
<tr>
<td></td>
<td>5. WBT programs can be designed to access the most up to date information.</td>
</tr>
<tr>
<td></td>
<td>6. WBT provides a consistent delivery of content to each trainee.</td>
</tr>
<tr>
<td></td>
<td>7. WBT improves communication between trainers and trainees.</td>
</tr>
<tr>
<td></td>
<td>8. WBT allows trainees to have more control over their own learning.</td>
</tr>
<tr>
<td></td>
<td>9. WBT allows an organization to provide a wider range of training programs.</td>
</tr>
<tr>
<td>Perceived Disadvantages</td>
<td>1. WBT requires a lot of hardware technical support.</td>
</tr>
<tr>
<td></td>
<td>2. WBT requires a lot of software technical support.</td>
</tr>
<tr>
<td></td>
<td>3. With WBT, the interaction between trainers and learners is limited.</td>
</tr>
<tr>
<td></td>
<td>4. WBT involves high initial investment costs.</td>
</tr>
<tr>
<td></td>
<td>5. WBT programs take a lot of time and effort to develop.</td>
</tr>
<tr>
<td></td>
<td>6. Not all types of training can be delivered through WBT.</td>
</tr>
<tr>
<td></td>
<td>7. WBT is unsuitable for training in people-related skills, such as communications.</td>
</tr>
<tr>
<td></td>
<td>8. WBT reduces social interaction among trainees.</td>
</tr>
<tr>
<td></td>
<td>9. WBT does not fit well with the training philosophy of our organization.</td>
</tr>
</tbody>
</table>
7.3.4 Independent Variables: Social Pressures

All remaining measures of independent variables were composed of multiple items measured on a 7-point Likert scale (ranging from 1 = strongly disagree to 7 = strongly agree). Institutional pressures (six items), and technological perceived faddishness (four items) were all composed of multiple items that loaded on single factors (Flanagin, 2000). Based on the items of Flanagin (2000) with some modification, institutional pressures and perceived faddishness were operationalized in this study. The Cronbach’s alpha of the two constructs in Flanagin’s study were 0.94 and 0.93 respectively. To further enhance the reliability of these two constructs, an additional item was added for each variable. For institutional pressures, “Organizations in the same field as our organization have their own WBT program.” was added to the Flanagin (2000) measure. For faddishness, “It is fashionable for business to have WBT” was added (Table 7.5).
Table 7.5  Independent Variables – Social Pressures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Pressures</td>
<td></td>
</tr>
<tr>
<td>Institutional  Pressures</td>
<td>1. Typically, organizations similar to ours use WBT.</td>
</tr>
<tr>
<td></td>
<td>2. Organizations in the same field as our organization have their own WBT program.</td>
</tr>
<tr>
<td></td>
<td>3. Organizations in the same business as ours typically use WBT.</td>
</tr>
<tr>
<td></td>
<td>4. Organizations in our business have WBT these days.</td>
</tr>
<tr>
<td></td>
<td>5. Organizations in my area of business typically don’t use WBT.</td>
</tr>
<tr>
<td></td>
<td>6. Normally, organizations that do what we do don’t use WBT.</td>
</tr>
<tr>
<td>Perceived Faddishness</td>
<td>1. It is fashionable for businesses to have WBT.</td>
</tr>
<tr>
<td></td>
<td>2. Right now it is “stylish” for companies to have WBT.</td>
</tr>
<tr>
<td></td>
<td>3. Right now businesses are going through a WBT “craze”.</td>
</tr>
<tr>
<td></td>
<td>4. Organizations that have adopted WBT are doing it simply to look good.</td>
</tr>
</tbody>
</table>

7.3.5 Mediating Variable: Top Management Support

Top management support was measured by four items which previous research had loaded on a single factor (Grover, 1993). From both the previous studies and findings from Study 1, four items were included (Table 7.6). Responses were measured in a 7-point-Likert type scale, ranging from 1 = strongly disagree to 7 = strongly agree. The Cronbach’s alpha of these four items in Grover’s study (1993) was 0.95, which was relatively high in variables concerning innovation adoption.
Table 7.6  Mediating Variable – Top Management Support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top Management Support</strong></td>
<td></td>
</tr>
<tr>
<td>1. Top management in my organization is interested in the implementation of WBT.</td>
<td></td>
</tr>
<tr>
<td>2. Top management in my organization considers WBT as important to the organization.</td>
<td></td>
</tr>
<tr>
<td>3. Top management in my organization has effectively communicated its support for WBT.</td>
<td></td>
</tr>
<tr>
<td>4. Top management in my organization will support the use of WBT.</td>
<td></td>
</tr>
</tbody>
</table>

7.3.6 Control Variables

Organizational size, nature, and sector of organization were measured as control variables in this study (Table 7.7). Organization size was measured by the total number of employees in an organization, a popular measure used by researchers on organizations and innovation adoption (Thong, 1999), and especially likely to be appropriate in a study concerned with what was essentially a training innovation. Organization size was denoted using dummy variables by 0 indicating small organization (less than or equal to 500 employees) and 1 with large organization (more than 500 employees).

The nature of the organization referred to ownership, specifically whether the organization was locally owned, Mainland China-owned, or foreign-owned. It was denoted using dummy variables for nature of organization, with 0 indicating locally owned and 1 with non-locally owned. The sector of the organization was also represented
by dummy variables, with 0 indicating manufacturing industry and 1 indicating service industry.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
</tr>
<tr>
<td>Organization Size</td>
<td>Number of employees in your company</td>
</tr>
<tr>
<td>Sector</td>
<td>Please specify industry sector of your organization</td>
</tr>
<tr>
<td>Nature of Organization</td>
<td>Basis of organization owned</td>
</tr>
</tbody>
</table>

### 7.4 Phase 2 of Research Methodology: Pilot Studies

In order to ensure the validity and reliability of all the constructs in the questionnaire, pilot studies were used. The written survey instrument was refined. In these pilot studies, a pre-test of research instruments and two pilot studies were included.

### 7.4.1 Pre-test of Research Instruments

The pre-test of the questionnaire involved conducting a focus group discussion, with professionals were familiar in the field of human resource management or training and development in order to uncover any problems before administering the full-scale questionnaire to the selected sample group of members. The purpose of the pre-test was to confirm that all variables and their measurement scales were appropriate, correct and understandable for the respondents. Two professors and three students with master level qualification in Faculty of Business Information System (BIS) at The Hong Kong Polytechnic University carefully reviewed the questionnaire. They have a comprehensive review in the questionnaire with detailed correction on the questionnaire. Items were
evaluated for ambiguity, construction faults, sequencing, and flow. The questionnaire was then revised.

7.4.2 Two Pilot Studies

After the pre-test, two pilot activities were conducted on the revised questionnaire for field-testing. Both face-to-face interviews and small-scale target group of pilot study were included.

7.4.2.1 First Pilot Study

First, three senior human resource or training and development managers from Study 1, qualitative approach, were re-interviewed in sequence in the period of September to October 2001. The feedback and comments from the pretest resulted in several changes and modifications to the questionnaire. Each interviewee completed the questionnaire in the presence of the researcher and was then asked to discuss his interpretation of individual items with respect to the overall objectives of the research. They were all done interactively, with the executive giving verbal comments and asking questions of the researcher while completing the questionnaire. These interviews lasted half an hour. Any changes require in the instrument were incorporated and the revised instrument was administered to the next respondent. The general information section of the questionnaire was completely reworked. Changes included clarification of certain ambiguous items, emphasis on the organizational unit adopting the WBT as the unit of analysis of the study, and the addition of certain descriptive items.
7.4.2.2 Second Pilot Study

Second, in order to ensure the instrument had both face and content validity, the initial questionnaire was pre-tested by a convenience sample from a University. A pilot sample of 59 Master (Master of Science) students from two classes, which major in human resource management, and training and development were chosen from Department of Management in The Hong Kong Polytechnic University. They were asked to respond to the WBT questionnaire and freely mark the instrument, and instructions wherever there was a lack of clarity and provide any comments on the instrument in general. The extent of their detailed comments provided indication of the currency and interest in the topic. After collecting the raw data from the pilot test, simple exploratory factor analysis (EFA) and reliability tests were used to evaluate levels of reliability and validity. EFA employed both principal components analysis and alpha factoring, each with oblique and varimax rotation. These preliminary results in reliability of each constructs and factor analysis of all multiple items in the pre-questionnaires were as anticipated. Only one modification was made, the researcher added one item in the variable set of “reliance on advanced technology” and “faddishness”. Moreover, some items were revised from negative code into positive code, with just four items of negative code remaining in the confirmed questionnaire.

7.5 Sample

A cross-sectional survey research design with multiple items to measure the independent and dependent variables were used in order to reduce measurement bias. Since human resources managers and organization executives did not necessarily think alike in the
field of training and development, these groups (HR managers, senior manager, general managers as well as CEOs) have been sampled in this research.

As compared with other sample frames, Hong Kong Institute of Human Resource Management (IHRM) membership list was the most appropriate targeted sample frame in this study. Being the largest human resource professional body in Hong Kong, IHRM is active in representing the profession at various sectors of the community, including related units of HKSAR, academic institutions, private enterprises and training bodies. Moreover, according to the past experience of IHRM mailing from Dr. Warren Chiu and Dr. Catherine Ng, Department of Management, The Hong Kong Polytechnic University, the response rate with completed questionnaires was around eleven percent of the total amount of IHRM members in 1997. In their case, 2700 set of questionnaires were sent out with 297 copy of questionnaires return.

For this study, the hypotheses and measures development were empirically tested by sending a large-scale field survey. The mailing list was send to a list of 3,200 local members who are (a) actively involved in human resource management and training decisions for major Hong Kong companies, and (b) dedicated to their own professional growth in human resources/personnel, management and training fields, in IHRM. This study excluded 100 overseas members. The sample was comprehensive to cover the human resource professionals and senior managers who were interested in the field of human resource management.
Members of IHRM were mainly human resource management (HRM) and training or HR development (HRD) professionals at various levels, as well as business executives with people responsibilities. IHRM member by job category is as follow (as of Feb, 2001):

- Director 13.6%
- Manager 49.4%
- Consultant 18.5%
- Officer 2.5%
- Miscellaneous 16%

(Source: http://www.hkihrm.org)

7.6 Data Collection Procedures

The final questionnaire consisted of thirteen questions. The questionnaire was mailed to the IHRM membership list in a separate mailing on 13 December 2001, due to IHRM schedule. Both English and Chinese were used in the questionnaire. The questionnaires, with an attached cover message, were sent to the respondent. The cover message briefly described the purpose and objectives of the study, the importance of their inputs and explained that the data were confidential and would be used for academic purpose only. Respondents were asked to return the questionnaire using a reply-paid envelope, endorsed with each questionnaire, within two weeks time.

7.7 Follow-up Procedure

Follow-up procedure was conducted to remind the respondents two weeks after the initial mailing. A follow-up message in the magazine of “Human Resources” was sent out on 27
December 2001 in order to increase the response rate (Mangione, 1995). The follow-up message, as shown in Appendix E, was used to thank those who had requested and also to remind those who had yet to do so. The closing date for receiving the returned questionnaires was 11 January 2002.

7.8 Phase 3 of Research Methodology: Research Analysis

For the analysis part of the study, the constructs were tested for two psychometric properties, validity and reliability, to ensure that the measurement was accurate and sound. While validity assesses the degree to which the items measure the theoretical construct, reliability assesses the stability of the scale based on an assessment of the internal consistency of the items measuring the construct. Evaluation of the measurement with exploratory factor analysis (EFA) was used to evaluate the measurement model. Hierarchical logistic regression and multiple regression analysis were used to test the hypotheses.

7.8.1 Validity of the Scales

The validity of a measure is the extent to which it measures what it is supposed to measure. Since the very definition of a construct implies a domain of content (Pedhazur and Schmelkin, 1991), this study assessed the content validity (i.e. theoretical support/face validity) and the construct validity of the scales (i.e. convergent and discriminant validity using factor analysis).
7.8.1.1 Content Validity

In developing multi-item measures, the domain of the construct needs to be well specified and the items should be generated based on this domain (Grover, 1997). A logical analysis of the domain in the adoption of WBT revealed that its closest link was to the innovation adoption. First, a critical evaluation of the definition of each construct was conducted by reviewing theories and research findings relevant to the construct under consideration. Second, the item content for each construct was adapted either from existing scales reported in the literature or from the qualitative studies (Study 1). Thus, the measures were believed to have sufficient content validity.

7.8.1.2 Construct Validity

Construct validity was determined using factor analysis of the multiple items comprising each construct. Specifically, a principal component analysis was used to assess the factor structure of each scale and determine if the items for each independent variable load together and do not cross load onto other factors. Unidimensionality of a scale would indicate the emergence of a single factor (Churchill, 1979). Factor analysis of multi-item indicators can be used to evaluate if the theorized items for a construct converge together for convergent validity. The extent of cross loading of an item on other factors where it does not theoretically belong can be used to examine discriminant validity.

7.8.2 Reliability of Constructs

Reliability refers to the extent to which the constructs are free from error and therefore, yield consistent results. Cronbach’s alpha was used to measure the internal consistency of
the multi-item scales used in this study. High values of Cronbach’s alpha indicate high internal consistency of the multiple items measuring each construct, hence indicating high reliability of the individual constructs. When it exceeds 0.7, it considered to be accepted when the scales were not used in that particular context previously (Churchill, 1979).

7.8.3 Hypothesis Testing

For the main hypotheses, logistic regression analysis was used to explore relationships between the study variables and, the binary dependent variable, WBT adoption. Logistic regression based on the maximum likelihood estimation method was used to investigate the relationship between the adoption of WBT and the three main independent variables, since the dependent variable was binary. Logistic regression is preferred over discriminant analysis because, unlike discriminant analysis, this technique does not rely on strict assumptions of multivariate normality and results are not affected by differences in sub-sample sizes (Hair et al, 1992). Logistic regression is the best all around method in a two-group case. The dependent variable was categorized as a 0 or 1, based on the decision of WBT or not respectively. Since logistic regression does not require normality or equal variance, but requires a large sample size it was deemed appropriate for this study.

Logistic regression was used to determine factors predicting reliance on advanced technology, workforce expertise, perceived advantages, perceived disadvantages, institutional pressures, and faddishness to WBT adoption (Hypotheses 1-6a). The
mediator hypothesis of top management support between the six different constructs and WBT adoption (Hypothesis 7 a-f) were tested by using hierarchical logistic regression. The goodness of fit of the model was assessed by examining the likelihood, which was the probability of the observed results, given the parameter estimates. The estimated coefficient and related statistics from the logistic regression model that predicts adoption of WBT from the three main contexts were described.

The tests of hypothesized relationships between the three variables (organizational feature, perceived advantages and disadvantages, and social pressures) and the second dependent variable, willingness to use WBT. The analysis was performed by regressing reliance on advanced technology, workforce expertise, perceived advantages, perceived disadvantages, institutional pressures, and faddishness on the indicators of the willingness to use WBT (Hypotheses 1-6b).

In the proposed WBT adoption model, three sets of variables (organizational feature, perceived advantages and disadvantages, and social pressure) were considered as antecedents of WBT adoption and willingness to use WBT. Those corresponded to the three theoretical perspectives: contingency theory of organizations, rational-efficiency theory, and institutional theory. Usefulness analysis was used in both the logistic and OLS regressions to allow simultaneous investigation of (a) the unique contribution that each group (alternatively subset) of predictor variables adds to explanation of WBT adoption and willingness to use WBT. Usefulness analysis allows partitioning of the total variance explained by discrete subsets of the antecedents (Organ & Konovsky, 1989).
Usefulness analysis varies the order of entry of different groupings of predictor variables so that a subset of predictors' "contribution to unique variance in a criterion beyond another predictor's contribution" may be examined (Organ & Konovsky, 1989. P.161). It was used to determine which of the three sets of independent variables (organizational feature, perceived advantages and disadvantages, and social pressure), contribute most to explaining WBT adoption and willingness to use WBT.

7.9 Confidentially of Data

All survey and usage data are strictly confidential. Survey information reported in this research was in aggregate form, allowing no individual's response to be identified. At no time identifiable individual responses would be discussed or reported. All the cases in Study 1 and the database from the responding questionnaires in Study 2 were used for academic purposes only.
CHAPTER 8

STUDY 2: FINDINGS AND ANALYSIS

8 Introduction

This chapter presents the research findings and results for Study 2. The methods and procedures described in Chapter 7 serve as the basis for the analyses.

8.1 Survey Administration and Responses

In order to improve the response rate for this research effort, an initial mailing and a follow-up reminder message were used to collect data. A total of 176 questionnaires were returned in the original mailing. A reminder in the regular IHRM membership magazine "Human Resources" was sent to all potential respondents (Appendix E). A total of 169 instruments were returned after this reminder.

In order to minimize the sample bias in Study 2, only one response was used per organization. For those duplicated responses in an organization, the researcher tried to narrow down the most appropriate response for analysis in this study. At first, completed questionnaire was the first priority in selecting the questionnaire. Then, those respondents with higher job position were chosen. For example, director was chosen as the representative in an organization if compared with managerial level or others. Thirdly, when both human resources and training and development specialist of equal job status returned the questionnaire, the respondent in the field of training and development were
chosen. All in all, after the selection, one response in an organization was used for further analysis so as to overcome the sample bias of different weighting in analysis.

A total of 345 questionnaires, or 10.78 percent, was returned. After deleting those incomplete and duplicated responses, there were a total of 302 usable instruments for a final usable response rate of 9.44 percent. The response rate was consistent and approximately the same as those previous studies from IHRM 2001 Human Resource Management Strategies and Practices in Hong Kong (Cheung, 2001) with 11.2 percent response rate, and The Hong Kong Polytechnic University (Dr. Warren Chiu and Dr. Catherine Ng, Department of Management) with 11 percent, as discussed in Chapter 7.

8.2 Exploratory Factor Analysis (EFA)

Exploratory factor analysis was used because model of the measures used in this study are new. Over half of the items used were specifically developed for this study. A principal components factor analysis using oblique rotation was performed using the forty-eight items proposed to measure the eight constructs in the model: top management support, reliance on advanced technology, workforce expertise, perceived advantages, perceived disadvantages, institutional pressures, faddishness and willingness to use WBT. For oblique rotation, oblimin method was used for exploratory factor analysis. It is because the ultimate goal in this study is to obtain several theoretically meaningful factors or constructs, which may well be correlated (Hair et al, 1995). With oblique rotation, the factors are allowed to correlate.
The criteria used to determine the number of factors to extract was an eigenvalue that was greater than or equal to one. The scree plot was also reviewed (Zeller and Carmines, 1980). Dimensionality of each of the factors was assessed by examining the factor loadings. Items with factor loadings of greater than .50 on the factor with which they are hypothesized to load were considered adequate indicators of that factor (Hair et al, 1995). However, items with factor loadings of at least .30 on other factors were examined to see if they measured an additional factor. Items were dropped sequentially when the cross-loaded on a second factor with a value of .30 or greater, or if the difference between two factors loadings was less than .20.

Three steps of EFA were performed in this study, as shown in Appendix F. The first and second factor analyses led to the elimination of three items with double loadings. The third factor analysis was performed using the forty-five items hypothesized to assess ten factors identified. Ten factors emerged with eigenvalues were greater than 1.00. All items in the model had factor loading greater than .50 on the factor with which they were hypothesized to load, as shown in Table 8.1, with exception of the four items in top management support (TMS), which loaded on another factor, willingness to use (ADOPT). The ten factors are top management support, reliance on advanced technology, workforce expertise, perceived advantages for organizations, perceived advantages for individuals, perceived disadvantages for organizations, perceived disadvantages for individuals, institutional pressures, faddishness and willingness to use WBT. On the basis of this analysis, two main changes were made relative to the original hypothesized measurement model.
<table>
<thead>
<tr>
<th>Label</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>Factor 9</th>
<th>Factor 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGWE1</td>
<td>0.757</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORGWE2</td>
<td>0.733</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>ORGWE3</td>
<td>0.925</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORGWE4</td>
<td>0.895</td>
<td></td>
<td></td>
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<td></td>
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The first change concerns top management support. Interestingly, the four items hypothesized to measure TMS loaded on the same factor as the items in hypothesized to measure ADOPT. The results showed that these items were highly correlated with each other. Analysis of these two constructs indicated that those items in TMS relate to a general organizational attitude or perception of the managerial level to the willingness to use WBT. Because it is generally the responsibility of top management within the organization to judge whether their organizations tend to adopt or willing to adopt WBT. Due to the double loadings of the two constructs in top management support and willingness to use WBT, originally hypothesized as a mediator, was eliminated for the analysis of the dependent variable willingness to use WBT. Therefore, multiple regression analysis examined the relationship between the three main aspects to the willingness to use WBT. However, top management support was retained as a mediator in the analysis of the dependent variable WBT adoption.

The second change concerns perceived advantages and perceived disadvantages. Based on the results of the EFA, the construct of perceived advantages was split into two variables, named perceived advantages for organizations and perceived advantages for individuals. Also, the construct perceived disadvantages was split into two variables, named perceived disadvantages for organizations and perceived disadvantages for individuals. Thus, hypothesis 3 and 4 were modified to be:

Hypothesis 3: The significance of the perceived advantages of WBT for organizations: (a) will be positively related to WBT adoption, and (b) to the willingness to use WBT.
The significance of the perceived advantages of WBT for individuals: (c) will be positively related to WBT adoption, and (d) to the willingness to use WBT.

Hypothesis 4: The significance of the perceived disadvantages of WBT for organizations: (a) will be negatively related to WBT adoption, and (b) to the willingness to use WBT.

The significance of the perceived disadvantages of WBT for individuals: (c) will be negatively related to WBT adoption, and (d) to the willingness to use WBT.

In addition, due to the modification of Hypothesis 3 and 4 i.e. perceived advantages and disadvantages for both organizations and individuals, Hypothesis 7 was modified, two additional variables, i.e. perceived advantages for individuals and disadvantages for individuals, were used in hypothesis 7 as antecedent variables. A mediation hypothesis for the three main sets of antecedents and willing to use WBT was then deleted.

Hypothesis 7: The degree of top management support for WBT fully mediates the relationship between (a) reliance on advanced technology, (b) workforce expertise, (c) perceived advantages for organizations, (d) perceived advantages for individuals, (e) perceived disadvantages for organizations, (f) perceived disadvantages for individuals, (g) institutional pressures, (h) perceived faddishness and WBT adoption.
Descriptive statistics and correlations for all variables appeared in Table 8.2. This shows the inter-correlation between the eleven variables (eight independent variables, one mediated variable, and two dependent variables). Reliabilities are shown on the diagonal.

From the findings in Table 8.2, all constructs had coefficient alphas values exceeding .70. Nunnally (1978) suggested that a set of items with a coefficient alpha greater than .70 is considered internally consistent. Significant correlations exist between most of the variables, except perceived disadvantages for organizations and reliance on advanced technology, perceived disadvantages for organizations with workforce expertise, perceived disadvantages for individuals and workforce expertise, perceived disadvantages for individuals and perceived advantages for organizations, perceived disadvantages for organizations and institutional pressures, perceived disadvantages for organizations and willingness to use, perceived advantages for individuals and WBT adoption, perceived disadvantages for individuals and WBT adoption. Particularly, the correlation between top management support and willingness to use WBT was high with .747 (P<0.01). These two constructs are highly correlated with each other, not surprisingly, given that they loaded on a single factor in the EFA. In this study, top management support was used only in the logistic regression for WBT adoption, omitting this potential mediator from the analysis of willingness to use WBT.
Table 8.2: Correlations and Reliabilities for the Study Variables

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n = 295 to 302 (Pairwise deletion).

*P<0.05; **P<0.01; *** P<0.001

Note: Cronbach’s alphas are shown on the diagonal.
8.3 Hypothesis Testing

To test the research hypotheses, logistic regression analysis, multiple regression analysis and usefulness analysis were applied to investigate the relationships between each of the dependent variables, mediator variable and independent variables.

8.3.1 WBT Adoption

Given the use of a dichotomous dependent variable, logistic regression analysis was used, owing to the binary dependent variable. Table 8.3 shows the parameter estimates of regression models for WBT adoption. Model 1 includes only the control variables. Model 2 adds the variables relating to organizational features, perceived advantages and disadvantages and social pressures. Model 3 is the full model, consisting of control variables, the main effects from the antecedent variables and top management support.
Table 8.3  Results of Logistic Regression Analysis – WBT Adoption

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<td>-.751 **</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Disadvantages for Individuals</td>
<td>.328</td>
<td>.282</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Social Pressures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutional Pressures</td>
<td>.952 ***</td>
<td>.716 **</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Faddishness</td>
<td>.043</td>
<td>-.052</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mediating Variable</td>
<td></td>
<td></td>
<td>.755 ***</td>
</tr>
<tr>
<td></td>
<td>Top Management Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>288</td>
<td>288</td>
<td>288</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>3</td>
<td>11</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>23.142 ***</td>
<td>98.260 ***</td>
<td>113.152 ***</td>
<td></td>
</tr>
<tr>
<td>Change in $\chi^2$</td>
<td>75.118 ***</td>
<td>14.892 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of cases correctly classified</td>
<td>75.7</td>
<td>79.9</td>
<td>82.3</td>
<td></td>
</tr>
</tbody>
</table>

*  P< .05  
** P< .01  
*** P< .001
Model 1, with the control variables, resulted in around 75.7 percent of the organizations being correctly classified. The chi-square in Model 1 was significant with $P<0.001$. Size, nature, and sector of organization have a positive and significant effect on WBT adoption.

Model 2, with the variables relating to organizational features, perceived advantages and disadvantages, and social pressures, allows correct classification of 79.9 percent as influence to WBT adoption. The chi-square in Model 2 was significant with $P<0.001$. Based on the results in Model 2, hypothesis 1a, a higher reliance on advanced technology positively related to WBT adoption, was supported ($P<0.01$). In addition, hypothesis 2a, the high degree of workforce expertise positively related to WBT adoption, was slightly supported ($P<0.05$). Hypothesis 3a, the significance of the perceived advantages of WBT for organizations positively related to WBT adoption, and hypothesis 3c, the significance of the perceived advantages of WBT for individuals positively related to WBT adoption, were not supported ($P>0.05$).

Hypothesis 4a, the significance of the perceived disadvantages of WBT for organizations negatively related to WBT adoption was strongly supported ($P<0.001$). On the other hand, hypothesis 4c, the significance of the perceived disadvantages of WBT for individuals negatively related to WBT adoption, was not supported ($P>0.05$). Hypothesis 5a, the extent to which other organizations are seen to be using WBT positively related to WBT adoption, was strongly supported ($P<0.001$). Lastly, hypothesis 6a, the extent to
which the more the organizations view WBT as merely “fashionable” or as a passing “fad” will be negatively related to WBT adoption, was not supported (P>0.05).

Model 3, consists of control variables, the main effects from the antecedent variables and top management support, resulted in around 82.3 percent of the organizations being correctly classified. The chi-square in Model 3 was significant with P<0.001. Based on the results in Model 3, top management support was significant in the whole model with .755 (P<0.001). The results also show that top management support partially mediates the relationship between reliance on advanced technology, perceived disadvantages of organizations and institutional pressures and WBT adoption. With mediator, some small reduction in the coefficients for the variables of reliance on advanced technology, perceived disadvantages for organizations, institutional pressures, however, these remain significant, suggesting that top management support is at best only a partial mediator of these relationships.

However, the results indicated that top management support is not mediating the relationship between the variables of workforce expertise, perceived advantages for organizations, perceived advantages for individuals, perceived disadvantages for individuals and faddishness and WBT adoption. Hypothesis 7b, 7c, 7d, 7f and 7h were not supported. There were no significant difference in these constructs between Model 2 and Model 3. Table 8.4 shows the summary of the hypotheses for WBT adoption.
Table 8.4  Summary of the Hypotheses for WBT Adoption

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Significance</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1a</td>
<td>Supported</td>
<td>Reliance on Advanced Technology</td>
</tr>
<tr>
<td>Hypothesis 2a</td>
<td>Not Supported</td>
<td>Workforce Expertise</td>
</tr>
<tr>
<td>Hypothesis 3a</td>
<td>Not Supported</td>
<td>Perceived advantages for Organizations</td>
</tr>
<tr>
<td>Hypothesis 3c</td>
<td>Not Supported</td>
<td>Perceived advantages for Individuals</td>
</tr>
<tr>
<td>Hypothesis 4a</td>
<td>Strongly Supported</td>
<td>Perceived disadvantages for Organizations</td>
</tr>
<tr>
<td>Hypothesis 4c</td>
<td>Not Supported</td>
<td>Perceived disadvantages for Individuals</td>
</tr>
<tr>
<td>Hypothesis 5a</td>
<td>Strongly Supported</td>
<td>Institutional Pressures</td>
</tr>
<tr>
<td>Hypothesis 6a</td>
<td>Not Supported</td>
<td>Perceived Faddishness</td>
</tr>
<tr>
<td>Hypothesis 7</td>
<td>Not Supported</td>
<td>Top Management Support</td>
</tr>
</tbody>
</table>

The model was also assessed for its discriminating power. As there were 74 adopters and 228 non-adopters, guessing the adoption decision by random choice would result in a 63% accuracy \( (74/302)^2 + (1-(74/302))^2 = 0.63 \). The logistic regression model achieved a classification accuracy of 79.9%, which is much better than by random choice.

8.3.2 Willingness to Use WBT

Multiple regression analysis based on the ordinary least squares method, was used to test the relationship between the willingness to use WBT and the eight independent variables. Table 8.5 shows the parameter estimates of regression models of willingness to use WBT. Model 1 includes only the control variables. Model 2 adds the variables reflecting organizational features, perceived advantages and disadvantages and social pressures.
Table 8.5  Results of Multiple Regression Analysis – Willingness to Use WBT

<table>
<thead>
<tr>
<th>Step</th>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Control Variables</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Size of Organization</td>
<td>3.303</td>
<td>.115</td>
</tr>
<tr>
<td></td>
<td>Nature of Organization</td>
<td>.450 **</td>
<td>.009</td>
</tr>
<tr>
<td></td>
<td>Sector of Organization</td>
<td>.006</td>
<td>-.248 *</td>
</tr>
<tr>
<td>2</td>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Organizational Features</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reliance on Advanced Technology</td>
<td></td>
<td>.189 ***</td>
</tr>
<tr>
<td></td>
<td>Workforce Expertise</td>
<td></td>
<td>.017</td>
</tr>
<tr>
<td></td>
<td><strong>Perceived Advantages and Disadvantages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Advantages for Organizations</td>
<td>.391 ***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Advantages for Individuals</td>
<td>.129 *</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Disadvantages for Organizations</td>
<td>-.162 **</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Disadvantages for Individuals</td>
<td>.010</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Social Pressures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutional Pressures</td>
<td>.452 ***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Faddishness</td>
<td>.209 ***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>286</td>
<td>286</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>3.308 *</td>
<td>51.240 ***</td>
</tr>
<tr>
<td></td>
<td>$R^2$</td>
<td>.184</td>
<td>.782</td>
</tr>
<tr>
<td></td>
<td>Adjusted $R^2$</td>
<td>.024</td>
<td>.596</td>
</tr>
<tr>
<td></td>
<td>$R^2$ change</td>
<td>.034 *</td>
<td>.145 ***</td>
</tr>
</tbody>
</table>

*  P< .05  
** P< .01  
*** P< .001
Model 1, with the control variables, was significant. The F value was 3.308 with P<0.05. From the result, nature of organization has a positive and significant effect on the willingness to use WBT.

Model 2, with the variables relating to organizational features, perceived advantages and disadvantages, and social pressures, were significant. The F value was 51.240 with P<0.001. As shown in Table 8.5, most of the hypotheses were supported, except the relationship between workforce expertise and willingness to use WBT, and perceived disadvantages for individuals and willingness to use WBT. Hypothesis 1b, was strongly supported (P<0.001), while hypothesis 2b was not (P>0.05). In addition, hypothesis 3b, was strongly supported (P<0.001), and hypothesis 3d was slightly supported (P<0.05). Hypothesis 4b was supported (P<0.01) and hypothesis 4d was not supported. Hypothesis 5b and hypothesis 6b were strongly supported (P<0.001). Interestingly, hypothesis 6b, the extent to which the more the organizations view WBT as merely "fashionable" or as a passing "fad" negatively related to willingness to use WBT, was supported. Table 8.6 shows the summary of the hypotheses for willingness to use WBT.
Table 8.6  Summary of the Hypotheses for Willingness to use WBT

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Significance</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1b</td>
<td>Strongly supported</td>
<td>Reliance on Advanced Technology</td>
</tr>
<tr>
<td>Hypothesis 2b</td>
<td>Not Supported</td>
<td>Workforce Expertise</td>
</tr>
<tr>
<td>Hypothesis 3b</td>
<td>Strongly Supported</td>
<td>Perceived advantages for Organizations</td>
</tr>
<tr>
<td>Hypothesis 3d</td>
<td>Slightly Supported</td>
<td>Perceived advantages for Individuals</td>
</tr>
<tr>
<td>Hypothesis 4b</td>
<td>Supported</td>
<td>Perceived disadvantages for Organizations</td>
</tr>
<tr>
<td>Hypothesis 4d</td>
<td>Not Supported</td>
<td>Perceived disadvantages for Individuals</td>
</tr>
<tr>
<td>Hypothesis 5b</td>
<td>Strongly Supported</td>
<td>Institutional Pressures</td>
</tr>
<tr>
<td>Hypothesis 6b</td>
<td>Strongly Supported</td>
<td>Perceived Faddishness</td>
</tr>
</tbody>
</table>

8.3.3  WBT Adoption (Usefulness Analysis)

In order to determine which set of variables (organizational features, perceived advantages and disadvantages, and social pressures) contributes most incrementally to WBT adoption, one approach of hierarchical regression analysis called usefulness analysis was conducted. First, three control variables (i.e. size, nature and sector of organization) and two sets of variables were regressed on WBT adoption. Second, the remaining set of predictor variables was added and the change in $X^2$ was investigated for significance.

Table 8.7 shows the results of the usefulness analysis. When added after all other variables, the final change in $X^2$ for organizational features, perceived advantages and disadvantages, and social pressures were 12.776, 15.948, 25.292 respectively (all
p<0.01). The results indicate that these three sets of variables receive significant support on the overall WBT adoption model. Based on the $X^2$ change, the social pressures appear to account for the greatest amount of variance in WBT adoption, whereas organizational features variables were account for the smallest amount of variance in WBT adoption.
Table 8.7  Usefulness Analysis –WBT Adoption

<table>
<thead>
<tr>
<th>Step</th>
<th>Variables</th>
<th>OF</th>
<th>PAD</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Size of Organization</td>
<td>1.270 **</td>
<td>1.270 **</td>
<td>1.270 **</td>
</tr>
<tr>
<td></td>
<td>Nature of Organization</td>
<td>0.689</td>
<td>0.689</td>
<td>0.689</td>
</tr>
<tr>
<td></td>
<td>Sector of Organization</td>
<td>0.401</td>
<td>0.401</td>
<td>0.401</td>
</tr>
<tr>
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<td>Independent Variables</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organizational Features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reliance on Advanced Technology</td>
<td>.654 **</td>
<td>.654 **</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workforce Expertise</td>
<td>-.414 *</td>
<td>-.414 *</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Advantages and Disadvantages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Advantages for Organizations</td>
<td>.233</td>
<td></td>
<td>.233</td>
</tr>
<tr>
<td></td>
<td>Perceived Advantages for Individuals</td>
<td>-.045</td>
<td></td>
<td>-.045</td>
</tr>
<tr>
<td></td>
<td>Perceived Disadvantages for Organizations</td>
<td>-.825 ***</td>
<td></td>
<td>-.825 ***</td>
</tr>
<tr>
<td></td>
<td>Perceived Disadvantages for Individuals</td>
<td>.350</td>
<td></td>
<td>.350</td>
</tr>
<tr>
<td></td>
<td>Social Pressures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutional Pressures</td>
<td>.916 ***</td>
<td></td>
<td>.916 ***</td>
</tr>
<tr>
<td></td>
<td>Perceived Faddishness</td>
<td>.058</td>
<td></td>
<td>.058</td>
</tr>
<tr>
<td>2</td>
<td>Independent Variables</td>
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<td></td>
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<td>Organizational Features</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reliance on Advanced Technology</td>
<td>.654 **</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Workforce Expertise</td>
<td>-.414 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Advantages and Disadvantages</td>
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<td>Perceived Advantages for Organizations</td>
<td>.233</td>
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<td>Perceived Advantages for Individuals</td>
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<td>Perceived Disadvantages for Organizations</td>
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<td>Social Pressures</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Institutional Pressures</td>
<td></td>
<td>.916 ***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Faddishness</td>
<td></td>
<td>.058</td>
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</tr>
<tr>
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<td>Change in $X^2$</td>
<td>12.776 **</td>
<td>15.948 **</td>
<td>25.292 **</td>
</tr>
</tbody>
</table>

*Note: Non-standardized Regression Coefficient*

* P<.05
** P<.01
*** P<.001
8.3.4 Willingness to Use WBT (Usefulness Analysis)

Similar in testing which sets of variables (organizational features, perceived advantages and disadvantages, and social pressures) contribute most incrementally to WBT adoption, for willingness to use WBT, usefulness analysis was conducted. First, three control variables (i.e. size, nature and sector of organization) and two sets of variables were regressed on WBT adoption. Second, the remaining predictor variables were added and change in $R^2$ was investigated for significance. As compared the change in $R^2$ among the three sets of variables, the domain indicator for willingness to use WBT was shown.

Table 8.8 shows the results of the usefulness analysis. When added after all other variables, the final change in $R^2$ for organizational features, perceived advantages and disadvantages, and social pressures were 12.776, 15.948, 25.292 respectively (all $P<0.001$). The results indicate that these three sets of variables receive significant support on the overall WBT adoption model. Based on the $R^2$ change, the social pressures appear to account for the greatest amount of variance in willingness to use WBT, whereas organizational features variables were account for the smallest amount of variance in willingness to use WBT.
Table 8.8  Usefulness Analysis –Willingness to Use WBT

<table>
<thead>
<tr>
<th>Step</th>
<th>Variables</th>
<th>OF</th>
<th>PAD</th>
<th>SP</th>
</tr>
</thead>
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<td>.115</td>
<td>.115</td>
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<td>-.089</td>
</tr>
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<td>-.248*</td>
<td>-.248*</td>
</tr>
<tr>
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<td><strong>Independent Variables</strong></td>
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</tr>
<tr>
<td></td>
<td><em>Organizational Features</em></td>
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</tr>
<tr>
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<td>.189***</td>
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</tr>
<tr>
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<td>Workforce Expertise</td>
<td>-.017</td>
<td>-.017</td>
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<td><strong>Perceived Advantages and Disadvantages</strong></td>
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<tr>
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<td>Perceived Advantages for Individuals</td>
<td>.129*</td>
<td>.129*</td>
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<tr>
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<td>Perceived Disadvantages for Organizations</td>
<td>-.162**</td>
<td>-.162**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Disadvantages for Individuals</td>
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<td>-.096</td>
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<td><strong>Social Pressures</strong></td>
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<td>Institutional Pressures</td>
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<td><strong>Independent Variables</strong></td>
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<tr>
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<td>Perceived Advantages for Individuals</td>
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<td>Perceived Disadvantages for Organizations</td>
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<td></td>
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<tr>
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<td>-.096</td>
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<td></td>
<td><strong>Social Pressures</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Institutional Pressures</td>
<td>.452***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perceived Faddishness</td>
<td>.209***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in R²</td>
<td>.025***</td>
<td>.073***</td>
<td>.145***</td>
</tr>
<tr>
<td></td>
<td>F Change</td>
<td>8.972***</td>
<td>12.962***</td>
<td>51.240***</td>
</tr>
</tbody>
</table>

*Note: Non-standardized Regression Coefficient*

* P<.05
** P<.01
*** P<.001
8.4 Conclusion

In conclusion, this chapter fulfills the objectives of Study 2, to test the specific hypotheses, and evaluate the identified factors contained in WBT adoption model. The results suggested that organizations with a high reliance on advanced technology are more willing to adopt WBT. In addition, the perceived disadvantages of WBT to organizations and institutional pressures, the extent to which other organizations are seen to be using WBT, are the main factors that affect WBT adoption. Surprisingly, the degree of workforce expertise is not likely to affect WBT adoption. In comparing the three main sets of antecedents, the results indicated that each set of variables contributed uniquely to explaining WBT adoption across organizations, with social pressures variables explaining the most unique variance in both WBT adoption and intention to use WBT. Hong Kong organizations apparently have a strong awareness of what other organizations are doing on WBT and this appears to influence their decisions on the use of WBT to a high degree.
CHAPTER 9
DISCUSSION AND CONCLUSIONS

9 Introduction

The final chapter proceeds as follows. First, an overview of findings in Study 1 is presented. Next, the research findings in Study 2 are reviewed. The discussion explores the factors affecting the adoption of WBT. Third, the implications for theory and practice are discussed. The chapter ends by pointing out the limitations of the study, and, finally, by suggesting directions for future research.

9.1 Findings from Study 1

The main purposes in Study 1 were to describe the current state and development of WBT in Hong Kong organizations, and to provide the basis for the development of a theoretical framework. The specific aims were to identify the nature of WBT innovations in Hong Kong, to identify the factors affecting the adoption of WBT, and to evaluate the effectiveness of WBT in Hong Kong organizations.

9.1.1 Identify the Nature of WBT Innovations in Hong Kong

Study 1 revealed a clear picture of the nature of WBT innovations in Hong Kong organizations. WBT is gaining popularity in Hong Kong, particularly after receiving the government's implicit endorsement, but its usage is not widespread. Multi-national organizations are more likely to adopt WBT, which maximizes the innovativeness of WBT by delivering consistent training twenty-four hours a day, seven days a week,
independent of location. WBT provides a potential market for companies offering training and development services. Since Hong Kong organizations that are willing to conduct training through the Internet often need to commission e-learning firms to do it for them.

To a certain extent, the nature of WBT innovations is likely to be beneficial to Hong Kong organizations in the long term, but if is unlikely to fully substitute for face-to-face training. WBT is therefore, expected to continue playing a supplementary role in training programs in the foreseeable future. In most situations, WBT is not suitable for all training needs, particularly those that require direct contact and interaction between trainees.

9.1.2 Identify the Factors Affect the Adoption of WBT

Study 1 revealed some of the factors affecting the adoption of WBT in Hong Kong organizations. With limited empirical studies to date, this study sought to gain a better understanding of factors that may have an important role in the adoption of WBT. The thirteen case studies provide the basis for the theoretical framework for Study 2, and provided an input in to the design of the questionnaire. Thirteen case studies were examined the context in which WBT in Hong Kong organizations.

Based on the case study findings, several specific factors were identified. Not surprisingly, those factors are similar to those identified in the general IT adoption literature. The main factors encouraging the adoption of WBT are the prior existence of a sophisticated technical infrastructure in an organization, employee’s capability in
information technology, support from top management and a tendency to follow the lead of other organizations. Critical success factors identified in Study 1 were not unlike those for any IT innovation literature (Sumner & Hostetler, 1999), with the exception of the importance of a high reliance on advanced technology and support from top management.

According to Study 1, top management support is the main immediate factor influencing the decision to adopt WBT. On the other hand, WBT requires a significant amount of multimedia that is expensive to produce. Although the reduced costs of delivery may more than offset production costs when enough trainees are to be trained, this initial investment can intimidate companies considering the use of WBT. The high investment cost blocks the intention to take the risk of implementing WBT without a guaranteed market. Furthermore, there may also be risks associated with not adopting WBT. Market globalization and changing technologies have placed companies under great stress, the need to deliver fast, effective, and updated training materials are more important than ever before.

9.1.3 Evaluate the Effectiveness of WBT in Hong Kong Organizations

One of the objectives in Study 1 was to identify the factors that maximize the effectiveness of WBT. Many factors impact the effectiveness of WBT in Hong Kong organizations. An investigation on the perceived advantages and the perceived disadvantages are important in evaluating the effectiveness of WBT. In general, the results confirm the advantages and disadvantages identified in the literature. The identified perceived advantages included: geographical independence (Whalen & Wright,
2000; Weinstock, 2000), self-paced (Davis, 2001; McDermott, 2001), cost effectiveness (Whalen, & Wright, 2001; Kruse & Keil, 2000), time savings (Barkley & Bianco, 2001), content updated (Rice, 2000; Hall, 1997), standardization (Pollard & Hillage, 2001. Horton, 2000), increased communication (Yaverbaum & Liebowitz, 1997), increased learner control (Blotzer, 2000; Huang, 1997). For example, a chief advantage of WBT is its accessibility. WBT can be carried out any time, any place, with trainers having better control of what they are training to trainees. Moreover, WBT can reduce training time and is more cost-effective over a long period.

According to Study 1, the identified perceived disadvantages included: technical support (McDermott, 2001; Hall, 1997), lack of interaction (Kruse & Keil, 2000), high investment cost (Hall, 1997; Yaverbaum, 1993), limited types of training (Hall, 1997). But the initial high cost of setting up the system is believed to be one reason why the private sector, has not adopted the system, as have large public sector organizations in Hong Kong.

9.2 Findings from Study 2

The main purpose in Study 2 was to test the theoretical framework, which was developed on the basis of Study 1 and the literature review. The specific aims were to evaluate the factors associated with WBT adoption and to further evaluate which factors are most influential in the WBT adoption decision. This study examined these sets of factors: organizational features variables (reliance on advanced technology, workforce expertise), perceived advantages and disadvantages (perceived advantages for organizations,
perceived advantages for individuals, perceived disadvantages for organizations, perceived disadvantages for individuals), social pressures (institutional pressures, perceived faddishness). The factors were derived on the basis of a review, integration, and extension of the training and development and IT innovation adoption literature, and the results in Study 1. The three sets of variables were based on three underpinning theories: contingency theory of organizations, rational-efficiency theory and institutional theory. Thus, the evaluation of the model can be seen as a test of the contribution of these three theoretical perspectives to an understanding of the WBT adoption decision.

9.2.1 Evaluate the Factors Associated with WBT Adoption

Judging from the results of Study 2, in which the WBT adoption model was tested. The critical factors influencing adoption are prior reliance on advanced technology, workforce expertise, perceived disadvantages for organizations, and institutional pressures for WBT adoption. For the willingness to use WBT, the critical factors are prior reliance on advanced technology, perceived advantages for organizations, perceived advantages for individuals, perceived disadvantages for organizations, institutional pressures and perceived faddishness. The details discuss as below.

9.2.1.1 Findings on WBT Adoption

A reliance on advanced technology was found to be a significant factor affecting the adoption of WBT by Hong Kong organizations. Organizations with a higher reliance on advanced technology are more likely to have adopted WBT. This result further extends the findings from Study 1 related to innovation adoption and is in line with studies
examining key issues in the use of WBT in the business sector. This finding no doubt reflects the fact that in order for WBT to operate efficiently, a sophisticated technological infrastructure needs to be in place (LaRose and Hoag, 1996). Reliance on advanced technology increases the extent which WBT represents the "best-fit" for a particular organization consistent with the contingency theory of organizations (Donaldson, 2001).

The level of workforce expertise in information technology was also associated with WBT adoption, although contrary to expectations, this was a negative relationship. One possible explanation for this is that in fact simple IT skills may actually be sufficient for trainees to receive training through the Internet (Davis, 1982). Even those organizations with a low degree of workforce expertise may in fact be able to use WBT. The negative relationship may reflect that WBT used mainly for simple training needs in organizations with large number of relatively junior front line staff.

As for factors related to the characteristics of WBT, perceived benefits of adopting WBT were found to be insignificant. Even though benefits such as providing a more flexible training time, offering a more cost-and-effective training methods, providing unlimited geographical independence have been constantly advocated by human resources and training and development practitioners. This study fails to find any significant relationship between WBT benefits and adoption. Organizations may focus on technical issues, finance support, or social pressures from others, rather than the advantages of WBT. A more possible explanation is that perhaps the advantages of WBT are self-evident and universally recognized by adopters and non-adopters alike, so that the
recognition of the potential advantages in the same for these two groups. Furthermore, the perceived advantages for individuals were not a significant factor in affecting the adoption of WBT. One possible explanation may be due to the actual usage rate of the total number of employees in an organization is limited. The actual perceived advantages for individuals were not important.

Perceived disadvantages for organizations were found to be significant in affecting WBT adoption. Similar to rational-efficiency theory (Dryzek, 1990; Drysek & Torgenson, 1993), the perceived disadvantages have negative impact to organizations. This finding supports the view that adoption of WBT is a process of building up a new system. To the extent that an organization can lower the perceived barriers, it may facilitate the path in implementing WBT. Among those disadvantages, several obstacles are identified to be most critical. Hardware and software technical support is the main obstacles in implementing WBT. WBT also needs high initial investment cost and takes lot of time to develop. This suggests that advantages are universally recognized but that disadvantages are the key factor. In addition, perceived disadvantages for individuals were not a significant factor in affecting WBT adoption. When organizations have adopted or willing to adopt WBT, they will not perceive any disadvantages that bring to individuals.

Institutional pressures were found to be a significant factor that influences the adoption of WBT. It appears that organizations are influenced by other organizations in adopting WBT. As a result, the influence from others has evolved to include effectiveness of the WBT adoption. Perceived faddishness was not a significant factor that influences the
adoption of WBT. In an economy, organizations are looking for a quick return on their technology investments. That makes WBT appealing to organizations that have mostly used in-person training.

Top management support, generally speaking, had found to be important (McGinnis & Ackelsberg, 1983). In this study, top management support was found to be a significant factor in WBT adoption. Top management support was important to make decision for organization. However, top management support was not found to be a mediator between the three sets of variables to the adoption of WBT. The result indicates a major shift in the factors that are critical in adopting WBT. Even many previous findings clearly pointed to the conclusion that without top management support, an innovation is less likely to be adopted. Top management cannot fully control the competence of technical infrastructure, or predict the external environment of training market.

9.2.1.2 Findings on Willingness to Use WBT

A reliance on advanced technology was found to be a significant factor affecting the willingness to use WBT by Hong Kong organizations. Several technology issues must be addressed before WBT can be adopted or even implemented successfully. These issues include the choice of an operating system, web browser, network bandwidth, the learning management system database, and video servers, among others.

Workforce expertise was positively associated with the willingness to use WBT, but insignificant in affecting the willingness to use WBT. Organizations expect that a higher computer literacy for the existing staff, their feeling of anxiety can be reduced by training
through the Internet. To a large extent, organizations have assumed that the degree to which workforce expertise in IT will positively influence the intention of WBT adoption in future.

The perceived advantages for organizations were significant to the willingness of adopting WBT. At the early stage of adopting WBT, no one should be surprised that many organizations would face difficulties or barriers. After that, a wide range of follow-up issues needs to be considered and evaluated if WBT initiative is to meet its own training objectives. Furthermore, the perceived advantages for individuals were not a significant factor in affecting the willingness to use WBT.

However, the disadvantages may be more organizations specific, and more salient on the adoption decision. The perceived disadvantages for organizations were a significant factor in affecting willingness to use WBT. Disadvantages of WBT always bring negative impact to organizations in making the final decision because of the high investment cost and uncertainty of the actual usage of WBT development. Perceived disadvantages for individuals were not an indicator for WBT adoption. For organizations, in general, WBT serves as an alternative or better way for employees to receive information and training courses in Hong Kong organizations.

Institutional pressures were found to be a significant factor that influences the willingness to use WBT. Organizations will compare their strength and weakness in terms of their training strategy, policy and facilities with others. According from institutional theory,
the influence from others has involved the effectiveness of WBT adoption. Hong Kong organizations are more likely to influence by other organizations in the same field or industry. Moreover, one of the issues raised in the adoption was whether the use of WBT is a fad. Faddishness was a significant factor associated with the willingness to use WBT. Organizations are more or less affected by the external environment. For example, pressures from government and business sector, these impress organizations the way in human resource strategy. As there are so many existing WBT providers and e-learning solutions, it provides a wider channel for organizations to search information and share experience. WBT would improve the efficiency of an organization’s training policy.

9.2.1.3 Conclusion

Overall, despite some limited differences in the detailed findings for WBT adoption and willingness to use WBT, the results of the two investigations were encouragingly similar. Prior reliance on advanced technology, workforce expertise, perceived disadvantages for organizations, and institutional pressures were significant to WBT adoption. Moreover, prior reliance on advanced technology, perceived advantages for organizations, perceived advantages for individuals, perceived disadvantages for organizations, institutional pressures and perceived faddishness were significant to willingness to use WBT. Importantly, key predictors of the three sets of antecedents were virtually identical across the two studies.
9.2.2 Evaluate which Factors Contribute Most to Adoption and Willingness to Use WBT

One of the purposes in this study was to assess the importance that organizations place on three key set of antecedents named organizational features, perceived advantages and disadvantages, and social pressures. Social pressures were the key predictors of WBT adoption and willingness to use WBT, in terms of explaining the highest proportion of variance in these two dependent variables.

Across both analyses, i.e. WBT adoption and willingness to use WBT, organizational features are significant to the adoption of WBT and willingness to use WBT. It is because reliance on advanced technology and workforce expertise are the basis and elements of an organization. According to contingency theory of organizations, organizations must strengthen its features to maximize or “best-fit” the effectiveness in the contingency environment. Even organizations do not adopt WBT, the sophisticated use of technical infrastructure is important to organizations nowadays.

Moreover, the results reveal that perceived advantages and disadvantages are the predictors to WBT adoption and willingness to use WBT. Perceived advantages and disadvantages, in particular, appeared to be a critical antecedent of WBT adoption. To a large extent, the result explains the contribution of rational-efficiency theory to the WBT adoption decision. As there are several pros and cons in implementing WBT, organizations concern the cost-and-benefits before making adoption decision.
Interestingly, the results indicate that social pressures were the most important predictors in WBT adoption model for WBT adoption and willingness to use WBT. Thus, a rich understanding of influences from others and fashion of an information technology innovation appeared to provide a platform for adopting WBT. Organizations are more likely to affect by others, as explain in institutional theory, in competitive business environment in Hong Kong.

Overall, the results revealed that social pressures' variables contribute uniquely beyond organizational features and perceived advantages and disadvantages' predictors to explaining WBT adoption. Thus, the results provide strong impact in the understanding of the WBT adoption decision, which contributed by the three theoretical perspectives: contingency theory of organizations, rational-efficiency theory, and institutional theory.

9.3 Implications of the Research

WBT programs or systems have been concern for many human resource practitioners in recent years. However, no or little research has been conducted to study the adoption of the training and development programs. It remains uncertain whether the use of WBT by Hong Kong organizations, will have any effect on the field of training and development. The model was empirically examined through thirteen semi-structured interviews and a large scale research questionnaire with human resources practitioners. This study provides implications to two main areas, which can be categorized as theoretical and practical implications, are discussed in the following part.
9.3.1 Theoretical Implications

From the theoretical perspective, the present study builds up the WBT adoption model in the areas of training and development. It further empirically tests conceptual relationships among organization characteristics, cost-and-benefits approach, and social pressures. Accordingly, the WBT adoption model strengthens the ties between the disciplines and the business field such as human resource management, training and development. It integrates innovation adoption theory and training research to advance a general perspective of human resource management. To that end, this study not only adds to the wealth of training and management literature but also creates a new research dimension focusing on understanding the components of WBT.

This study demonstrates the value of using the Chau and Tam (1997) framework to understand the adoption of WBT innovation. This study suggests an alternative framework to study IT innovations and was found to be of value in the field of training and development as well. The results of this study provide empirical evidence that supports the need for a more context-based model of innovation adoption. The results of this study provide empirical evidence that supports the need for a more context-based model of innovation adoption. In particular, the results suggest that social pressure, include institutional pressures and perceived faddishness, had great influence in WBT adoption.

The theoretical contribution of the research stems from the development and validation of WBT adoption model that is pioneering in identifying the major drivers influencing the
adoption of WBT. The model provides a rich theoretical tool to better understand the factors to be considered in the adoption decision. The model stresses the significance of organizational features, perceived advantages and disadvantages, and social pressures in adopting WBT.

Furthermore, this study includes addressing and reporting the current training and development practices with the use of the Internet, and suggesting directions for future research and implementation, which highlights the need for greater participation and investigation in the use of WBT by both academic scholars and HR practitioners. Contributions specific to model and scale development include developing and testing a conceptual model, which adds to the empirical research on training and management and innovation adoption.

9.3.2 Managerial Implications

Clearly the findings of the present study have implications for managerial practitioners. From managerial perspective, the present research specifically examines Hong Kong organizations in adopting WBT. First, the results from this empirical research of determining the critical factors affecting the adoption of WBT not only identify and discuss issues of concern to managerial practitioners but also determine the most critical factors that managers should understand and address. From a managerial standpoint, the findings of this study suggest that organizations tend to focus more on “social pressures from others” than on the “advantages of WBT”.
Second, this study suggests that some organizations have used WBT for better training solutions and fulfill their training needs. Thus, the focus contributes to more efficient WBT practices, leads to more successful and understands on the conditions of adopting WBT. The research offers implications for managers on the basis of the results of the study, especially given the realities of WBT in today’s competitive environment in Hong Kong. The findings suggest the importance of managers taking a broad view of the characteristics of an effective WBT provider as their responsibilities and strategic importance increases.

Given the strong link between the field of training and management practices, the model guides the HR practitioners in their effort to identify major variables to be considered in their adoption decision of WBT. In addition, the comprehensive methodology used in this research, which considers different views can be of significant use to decision makers when applied to WBT in an organization. Perhaps, more important, managers might try to ascertain specifically how their competitors are achieving these particular benefits and thus how they might implement WBT.

In conclusion, this research reduces the gap between academic research and managerial practitioners’ concerns. It addresses a timely issue of utilizing the Internet and Web to establish WBT. In other words, the research sample is a group of highly educated managers who are familiar with the real issues surrounding human resource management, training and development.
9.4 Limitations

As an exploratory study, this work has several limitations. As is common in all empirical research, there are numerous methodological and operational factors that may work independently or in combination to limit the validity of the findings in this study. First, WBT is a relatively new concept to users in the business world in Hong Kong. HR practitioners whose organizations adopted WBT several months or years ago may be unable to provide unbiased perceptions of why their firms initially chose to adopt. This problem is typical of studies about innovation adoption after the adoption has occurred and is considered a reasonable limitation to furthering research in this area (Grover, 1993, Tornatsky and Klein, 1982).

Case study research elicits some traditional concerns and exhibits inherent validity issues. By definition, case methodology offers the researcher low control of the environment, which in turn provides the real-world emphasis desirable for theory building. Lack of rigor of the methodology is often cited, as well as possibility that a biased view of the data influences findings and conclusions. It is up to the case investigator to report all evidence fairly. “Case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes” (Yin 1994 p.10). Study 1 used Yin’s recommendations for developing and following a case study protocol, as well as a technical prototype for the automated survey, to increase process and data collection reliability.
As this study is cross-sectional basis to examine the hypothesized relationship in Study 2. The adoption and willingness to use WBT are dynamic in nature. The cross-sectional data do not capture any continuous transformations that might affect the hypothesized relationships. For example, reliance on advanced technology in an organization could be improving from day-to-day because of continuous technical explosion. There may be lagged effects of reliance on advanced technology on outcomes. The dynamism of these constructs would be better captured by a longitudinal study.

Furthermore, WBT is quite different from other IT innovations studied before. The model should be tested using other independent samples. Additional samples would help to determine if the present research capitalized on peculiar characteristics of this data set. Testing with different data sets is needed before the generalization of the results can be widely accepted.

Some specification problems encountered with model development were dealing with the conflict of a parsimonious model and a comprehensive model since there is little guidance in the literature for establishing the human resources management practices and training and development constructs. Focusing only on WBT and excluding other training methods from the study limited the generalizability of the results. The factors used in this study and the items used to assess those factors may only be appropriate for WBT research. A review of past IT adoption studies indicated that there are few, if any, reliable and valid scales that can be used to assess technology adoption for all IS technologies. The factors examined ranged from organizational to environmental. Although there is a
body of research on individual personal characteristics that affect adoption behavior, this was not an aspect examined by this study.

Concerning with the sample frame used in Study 2, i.e. IHRM, appeared the problem of duplication in an organization, which means more than one response from an organization. To address this issue, information on the name of organization was asked for and duplicate questionnaires from the same organizations were eliminated, the most appropriate questionnaire was retained for the analysis based on certain ranking criteria. Research indicates that larger organizations tend to adopt new technologies, like WBT, more quickly than smaller organizations because they have the in-house expertise and financial resources available to readily evaluate the technology and training and development system for possible future adoption (DeLone, 1981; Zager, 2001). To address this issue, the organization variable size was evaluated as a control variable in this study. However, we cannot allow for the fact that very small organizations were probably under represented in the sample.

9.5 Directions for Future Research

This study demonstrates the value of using the Tornatzky and Fleischer, Chau and Tam framework to understand the adoption of WBT adoption innovation. This study suggests an alternative framework to study other combination of Internet-based training and what found to be of value. The results from this study may provide several possible directions for researchers and additional avenues for additional IT adoption research. In an effort to build upon both existing descriptive and empirical research, scales used in this study were
based on a synthesis of prior research. The findings from the study indicated that there are currently few sets of reliable scales that can be universally used to determine the importance of salient organizational, perceived advantages and disadvantages and social factors in the adoption of WBT. Thus, new organizational and marketplace adoption constructs were generated in order to identify salient factors used in WBT adoption. Additional empirical research using large research samples across multiple information technologies is warranted to establish reliable scales to measure the WBT adoption phenomena within organization.

This study focused on only the organizational, perceived advantages and disadvantages and social factors used by organizations in the adoption of WBT. Future research could take the model one step further by analyzing the effect of adopting WBT in individual level. Future research could identify the critical factors involved in initiating and implementing WBT in order to create a complete portfolio of critical issues related to each stage of the diffusion of innovations within organizations. It is quite possible that these factors, along with other individual factors, significantly impact on the decision to adopt WBT. The research includes a combination of individual, organizational and marketplace adoption variables may yield valuable results.

Future research should move beyond the locus of the innovativeness of individuals to study factors related to the innovation supplier and other intermediate parties involved in the innovation adoption process. In addition, this study looked at the current status of WBT adoption within a cross section of large Hong Kong organizations. In order to
obtain a better understanding of the complete adoption process over time, a longitudinal study which traces WBT adoption from first appearance in organizations to widespread acceptance in the business community may provide a more complete series of findings. Likewise, WBT adoption in a discreet cross section of large Hong Kong organizations may not provide a clear understanding of the adoption process in all organizations.

In conclusion, this study builds up a theoretical framework for WBT adoption in Hong Kong context. It fills the gap in the training and development literature about the adoption of WBT by Hong Kong organizations. A thorough understanding in the adoption of WBT might help HR practitioners in making decisions about the implementation of WBT. More practically, the findings in this study assist future planning in the training and development programs. This study is significant for HR practitioners who are aiming at choosing and operating WBT programs in the near future. It is useful for organizations outside Hong Kong to gain greater understanding of WBT issues.
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APPENDICES

THE ADOPTION OF WEB-BASED TRAINING (WBT) BY
HONG KONG ORGANIZATIONS:
A DEVELOPMENT AND TEST OF AN INTEGRATED MODEL

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2003
Appendix A  Glossary

Asynchronous Communication: Network communication that is not done in real time (for example, e-mail or the use of HTML pages).

Asynchronous Course Delivery: Asynchronous learning describes a learning event in which people cannot communicate without time delay. Examples are self-paced courses taken via Internet or CD-ROM, videotaped classes, streamed audio/video Web presentations, Q&A mentoring, online chats and discussion groups, and e-mail.

Asynchronous Learning: Any self-paced learning event that is delivered after the original live event. Also used to indicate a learning event where the interaction is delayed over time, such as a correspondence course. Forms of asynchronous communication include e-mail, listservs, audiocassette courses, videotaped courses and Internet courses.

Asynchronous Training: Training that is self-paced. A learning program that does not require the student and instructor to participate at the same time.

Audiographic Conferencing: The use of real-time audio and graphics-only (using a device such as a whiteboard) among groups of people, often in specially equipped rooms.

Browsers: Web browsers are powerful tools, performing many different functions. There is no standard way of viewing or navigating the Web. Although there are some differences in levels of support and overall performance, most browsers are still being updated and improved, new releases every two or three months. Each comp using platform will have a number of browsers available on them, including character cell browsers like Lynx for terminal-based users (without the graphics support, of course).

CD-ROM: Compact disc-read only memory. An optical disc recorded on and read by a laser, used to store large quantities of information. One CD-ROM has 650 megabytes of storage capacity.

Collaborative Learning: Learning through the exchange and sharing of information and opinions among a peer group. Computers excel in mediating collaborative learning for geographically dispersed groups.

Computer-assisted Instruction: A term used to more commonly in education for any instruction where a computer is used as a learning tool.

Computer-based Education: A generic term for a computer program used by a learner to acquire knowledge or skills.

Computer-based Interactive Multimedia Training (CBIMT): CBIMT is the use of CBT and/or CBIVT training environments to encourage learning through active processing of information. A variety of other media can used, including text and graphics.
Computer-based Interactive Video Training (CBIVT): CBIVT is the addition of video to computer-based training. The most common technology used for the video portion is analog videodisc but there is growing interest in and some use of digital video technologies such as CB-ROM.

Computer-based Training: An all-encompassing term used to describe any computer-delivered training.

Computer-managed Instruction: The components of a TBT that provide assessment, student tracking, and personalized lesson plans.

Computer-supported Learning Resources (CSLR): The parts of a TBT product other than those that instruct, test, or track progress. These include glossaries, bulletin boards and chats, bibliographies, databases, and so forth.

Content Item: Information stored in a database and used to communicate skills or knowledge. It can be in any media format, including text, graphics, animation, video, audio, and HTML plug-in. It is combined with practice items and assessment items to create a RIO.

Content on Demand (CoD): Immediate availability via the network of an offering packaged in a media format such as audio on demand (AOD) and video on demand (VOD).

Courseware: Courseware is the special type of software used for CBIMT. It includes lessons, simulations, exercises, tests and other instructional materials.

Delivery Method: Term describing the way in which training is distributed to learners. Print, classroom, video, CD-ROM, and the Internet are all sample delivery methods.

Desktop Training: A real time conference using live pictures among two or more people on a network that communicates via computer.

Desktop Video Conferencing: A real time conference using live pictures among two or more people on a network that communicates via computer.

Distance Learning: A broadcast of lecture to distant locations, usually through video presentations.

Domains of Learning: Three divisions used to classify types of learning: psychomotor (physical), cognitive (mental), and affective (emotional).

DVD-ROM: Digital video disc-read only memory. Like a CD-ROM, an optical disc recorded on and read by a laser, but used to store even larger quantities of information, especially 8.5 gigabytes.
E-book: Information and graphics that have been organized in electronic or computerized lessons or chapters and made available via computer.

E-Learning = Technology-based Learning: The term e-learning covers a wide set of applications and processes, including computer-based learning, Web-based learning, virtual classrooms, and digital collaboration. We define e-learning as the delivery of content via all electronic media, including the Internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM. Yet, e-learning is defined more narrowly than distance learning, which would include text-based learning and courses conducted via written correspondence. For the purpose of this report, the term e-learning is used synonymously with technology-based learning. Terms like e-learning, technology-based learning, and Web-based learning are defined and used differently by different organizations and user groups. Moreover, use of these terms is constantly changing, as the world of e-learning evolves.

Electronic Classroom: A classroom equipped with multimedia devices that are used to enhance learning.

Electronic Performance Support System: A program that provides on demand assistance on a discrete task. Considered to be a support tool or job aid. A good example of an EPSS is the built in help functions of many software programs.

E-mail: Short for electronic mail. The process of one user employing a computer to send a text message to an electronic mailbox to be retrieved and viewed by another user.

Ethernet: A means of connecting computers in a local area network with high-bandwidth coaxial or optical cable connections. Sometimes called 10baseT.

Expert System: An artificial intelligence program in which a decision tree is created based on an experts decision criteria.

File Transfer Protocol: Generally called FTP. One method of transferring files over intranets or the Internet.

Firewall: An application that isolates part of a network, like a company's private intranet, from access to or by other parts of the network, like the public Internet.

Graphical User Interface: A way of representing the functions, features and contents of a program to a user by way of visual elements, such as icons, as opposed to textual elements, such as words and character strings. The Microsoft Windows operating system is the classic example of a program with a GUI.
Group Training: Group training occurs when more than one person is being trained in the same content at the same time. It usually involves interaction among learners as well as between learners and instructor. CBIMT may be used for group training in a hybrid teaching environment where a human instructor teaches some of the time and the computers cooperative learning situation, where two or more learners work on the computer together.

Hardware: Hardware is the psychical computer equipment. A typical computer includes such hardware as a central processing unit (CPU), memory, and input/output devices.

Help Desk: A group that can be contacted by end-users for assistance with hardware and software problems.

High-bandwidth: A high-bandwidth connection, like a cable modem, will allow transmission rates in the range of Gigabits per second and allow the use of data intensive information like video, audio and complex animation.

HTML (hypertext markup language): A language used to create electronic documents, especially pages on the World Wide Web (WWW) that contain connections called hyperlinks. HTML tells a web browser how to display the Web pages it receives.

Hypermedia: Hypermedia links text, graphics, video, audio, and animation and leaves the control of navigation through its elements in the hands of the user.

Hypertext Markup Language: More commonly referred to as HTML. The standard programming language for web documents meant to be accessed by browsers.

Hypertext: Text elements within multimedia documents, classically underlined and in colored font, that can be clicked on by the user to follow a path to a new location in a document, supplemental material like a graphic or another page on the net.

Individual Instruction: Technique in which a learner follows a specific curriculum that covers only the material not already known as opposed to working through a generic curriculum designed for a whole class of learners. Does not refer to a learner working without regard to the activities of other learners while still in a shared curriculum.

Individual Training: An individual being trained by himself, is participating in individual training.

Instructional Designer (ID): An individual who, using systematic methodology and instructional theory, creates content for learning events.

Instructional Systems Design: Term describing the systematic use of principles of instruction to ensure that learners acquire the skills and knowledge essential for successful completion of overtly specified performance goals.
Instructor-led Training (ILT): A scheduled event conducted by an instructor, either in a classroom or on the network. Sometimes called leader-led training (LLT) or lecture/lab training (if the course includes hands-on lab exercises).

Instructor-led Training (ILT)=C-Learning: Standard face-to-face training in a classroom or lab. The term instructor-led training is used synonymously with on-site training and classroom training (c-learning).

Interactive Training: An umbrella term that includes both computer-based and multimedia training.

Interactivity: A term whose use is frequently debated and misused by trainers and learners but is the agreed upon key to successful training. An interactive training product challenges and engages the learner. The final goal of interactivity is to maintain learner interest, provide a means of practice and ultimately increase learner understanding of the training content.

Internet: The modern network of tens of thousands of interlinked computers, evolved from the US government’s ARPANET project of the 1960’s. The public Internet encompasses the World Wide Web, the popular multimedia portion, as well as the e-mail, FTP, gopher, and other services.

Intranet: A private network inside a company or organization that uses the same kinds of software that you would find on the public Internet, but that is only for internal use. As the Internet has become more popular many of the tools used on the Internet are being used in private networks, for example, many companies have Web servers that are available only to employees.

ISP (Internet Service Provider): An organization that provides access to the Internet, which can be provided in two ways: (1) Modem: Uses a common telephone line to dial directly to the ISP that connects the user to the Internet. (2) T1 line: Direct connection to the Internet using a T1 line. It offers speed far superior to a modem.

LAN (local Area Network): A group of two or more computers linked together for communication purposes, generally within a small geographical area, such as a floor of an office building.
Learning Style: An individual's unique approach to learning based on strengths, weaknesses, and preferences. Though experts do not agree how to categorize learning styles, an example of a categorization system is one that separates learners into auditory learners, visual learners, and kinesthetic learners. Levels of sophistication of online learning vary. A basic online learning program includes the text and graphics of the course, exercises, testing, and record keeping, such as test scores and bookmarks. A sophisticated online learning program includes animations, simulations, audio and video sequences, peer and expert discussion groups, online mentoring, links to material on a corporate intranet or the Web, and communications with corporate education records. In this report, the term online learning is used synonymously with Web-based learning or Internet-based learning.

Log-in: Procedure performed by a user to declare that a specific system or application is going to be used. Log-in information is used by the computer to mark and track information specific to the user. It can also be used to declare to other users that an individual is presently active on a network.

Low-bandwidth: A low-bandwidth connection, like a telephone line, will allow transmission rates in the range of kilobits per second and restrict the use of data intensive information like video and photo quality graphics.

LSP (learning service provider): A learning service provider is a specialized type of ASP offering learning management and training delivery software on a hosted/rental basis via diverse business models. LSPs also include companies providing certification and testing services, online collaboration services, media production and delivery services, and online tutoring.

Mastery Learning: Also known as criterion referenced instruction, in which students are evaluated as having "mastered" or "not mastered" specific criteria or learning objectives.

Mixed-Media: The combination of different delivery media like books, audiotapes, videotapes and computer programs in one curriculum. Not to be confused with multimedia, where different media are integrated into one product.

Modem: A piece of hardware used by computers to transfer and receive information. The term is taken from the full title Modulator-Demodulator.

Multimedia Training: Multimedia training is a type of computer-based training that uses two or more media, including text, graphics, animation, audio (sound/music), and video. In practice, multimedia uses as many of these media as is practical to produce a colorful, engaging program delivered via computer. A typical program allows users to control their progress and pace through the course so everyone can learn at his or her own speed. A catch-phrase that reflects this impact is "With computer-based training, we captured their heads with multimedia we capture their hearts." (Brandon Hall, 1997)
Multimedia: The term "multimedia" generally refers to presentations, demonstrations, and shows that are created on a computer and are intended to be run on a computer.

Network: A collection of computers that can exchange information and share resources. Newsgroup

Offline: Operation of a computer while not connected to a network. One of the key concepts behind the Web is that the user should be able to control the presentation, so most browsers provide ways to tailor the interface (e.g. size, color and type of fonts, whether images are always shown, whether traversed links are highlighted, and so on). The most used browser today is the Netscape browser, which is used by an estimated 75-80% of the current user base.

Online: Operation of a computer while connected to a network.

Operating System: A computer program that controls the components of a computer system and facilitates the operation of applications. Windows 98, Windows NT, UNIX, and MacOS are common operating systems.

Pedagogy: Opposite of andragogy. The art and science of helping children learn.

Performance: One of the three required parts of a properly composed learning objective. Observable and measurable actions that should be demonstrated by the learner after the completion of training are detailed in the performance statement.

Plug-in: A small piece of software that works in conjunction with web browsers to add additional functionality, like streaming audio or video.

Portal: A location on the Web that serves as a central source for information and content targeted to a specific group. Serves as a gateway to information and e-Learning from a variety of different sources.

Prescriptive learning: Matching a learner with offerings designed to fill gaps in the learner’s knowledge and skills.

Processor: The chip or chip set that performs the operations central to a computer's functioning.

Program: A detailed set of instructions that make a computer able to perform some function. A program can be written by the user but the term is commonly used to refer to a specific pre-created software package, such as a word processor or spreadsheet.

Prototype: A working model created to demonstrate crucial aspects of a program without creating a fully detailed program. Adding details and content incrementally to advancing stages of prototypes is one process for creating successful applications.
Real-time: Instantaneous response to external events. A real time simulation, like a driving simulator, follows the pace of events in-reality: A simulated time one compresses or distorts time for instructional effect, like a financial model.

Relationship between the Web and the Internet: The basis for the Web is the Internet. The Web is built on the Internet, and makes use of many of the mechanisms the Internet provides. The Internet is the physical aspects - computers, networks, and services. It allows us to connect to thousands of other computers across the world. But it doesn't mean that those systems users' can look at, and understand, the information there. The Web is an abstraction and common set of services on top of the Internet. It is the set of protocols and tools that let us share information with each other. The Web was developed with the concept of "universal readership" any participating system should be able to read the information on any connected system using a common set of tools, such as browsers, servers/gateways, addressing schemes, common protocols, format negotiation.

Return on Investment (ROI): The incremental savings (or losses) resulting from the use of WBT.

Search Engine: The two types of search engines, the catalog and the crawler, both locate requested information on a web site or on the whole of the World Wide Web. A catalog engine compares the user request with a collection of data that it contains concerning web sites. A crawler engine scours the contents of sites themselves to find a match to a word or string of words.

Self-paced Instruction: Lets the novice work through difficult challenges and lets the expert-speed through basic materials.

Self-paced Training: Training which is taken at a time and a pace determined by the user. Used historically for text or audio/ video self-study courses, the term is used by some organizations now to include computer-based, web-based, and multi-media training.

Server: A networked computer that is shared by many other computers on the network. Intranets use servers to hold, or "host", web pages.

Simulation: A mode of instruction that relies on a representation in realistic form of the relevant aspects of a device, process, or situation.

Software: Programs that allow a user to complete tasks with computers, such as word processing and graphics programs. Compare to application.

Storyboard: A collection of frames created by a developer that detail the sequence of scenes that will be represented to the user; a visual script.
Subject Matter Expert: The member of a project team who is most knowledgeable about the content being instructed upon. Frequently, the SME is an expert contracted or assigned by an organization to consult on the training being created.

Synchronous Communication: Real-time network communication such as videoconferencing.

Synchronous Course Delivery: Synchronous learning stands for a real-time, instructor-led online learning event, in which all participants are logged on at the same time and communicate directly with each other. Examples include virtual classrooms, audio/video conferencing, Internet telephony, and two-way live satellite broadcasts of lectures to students in a classroom.

Synchronous Training: A training program in which the student and instructor participate at the same time. For example, an instructor-led chat session is a form of synchronous training.

Target Population: The audience defined in age, background, ability, and preferences, among other things, for which a given course of instruction is intended.

Task Analysis: A process of examining a given job to define the discrete steps (tasks) that ensure effective and efficient performance of the job's requirements.

TCP/IP: Transmission control protocol/Internet protocol. The set of rules and formats used when transmitting data between servers and clients over the Internet.

Technology-based Training: The term encompassing all uses of a computer in support of learning, including but not limited to tutorials, simulations, collaborative learning environments, and performance support tools. Synonyms include CBL (computer-based learning), TBL (technology-based learning), CBE (computer-based education), CBT (computer-based training), and any number of other variations.

Terminal Objective: A learning objective the student should be able to master after completing a specific lesson or part of a lesson.

Text: The medium of delivering information via words to be read and interpreted by the learner. Compare to audio, video, graphic, and animation.
Text-based Training: Includes the delivery of content through books and manuals. There are two main purposes for these programs: (1) Promotional. A multimedia presentation can help you demonstrate your product to consumers and put it in the best light. This type of program may integrate text, sound, still photos, and video clips. Strictly speaking, any combination of two or more of these elements can be considered "multimedia." (2) Training. Computer-Based Training has taken on a broader definition to include not only programs that pace a user through the operation of a computer program, but also includes training in all kinds of technical subjects. The computer takes the place of or supplements a live instructor to make training efficient and user-focused.

Tutorial: A mode of instruction that presents content, checks understanding or performance, and continues on to the next relevant selection of content. Tutorials may be linear or branched.

Uniform Resource Locator: More commonly referred to as URL. The standard address for a web page on the Internet or on an Intranet.

URL: A URL is simply a "Web address" - the identifier for a specific place on the Web. URL stands for Uniform Resource Locator. A URL can be as a networked extension of the standard filename concept: not only can you point to a file in a directory, but that file and that directory can exist on any machine on the network. It can be served by any of several different methods and might not even be something as simple as a file. URLs can also point to queries, documents stored in databases, or the results of a system command. It is possible to represent nearly any file or service on the Internet with a URL.

User Interface: The components of a computer system employed by a user to communicate with the computer. These include the equipment, such as a keyboard or mouse, and the software environment, such as the desktop of Windows or the program lines of DOS.

Vertical Slice: A program prototype that includes the development of one section, usually a complete lesson, for the course.

Video: The medium of delivering information created from the recording of real events to be processed simultaneously by a learner's eyes and ears. Compare to audio, text, graphics, and animation.

Video-Conferencing: Real-time audio and video between groups, often in specially equipped rooms.

Virtual Classroom (VC): A scheduled offering that is available at multiple locations (either desktop or classroom) via a network.

VPN (virtual private network): A means of augmenting a shared network on a secure basis through encryption and tunneling. Through encrypting, the organization secures its data from prying eyes, while realizing the cost advantages of the shared network.
WAN (wide area network): A group of two or more networks at different geographic locations that are linked together for communication purposes.

Web: A network of multimedia documents stored on Internet or intranet servers, which can be seen by using a browser. Documents are formatted with the HTML standard and transmitted with the HTTP standard.

Web-based Learning = Online Learning: Online learning constitutes just one part of technology-based learning and describes learning via Internet, intranet, and extranet.

Whiteboard: A shared electronic drawing board that can be displayed on each workstation.

WWW: The World Wide Web is a global, seamless environment in which all information (text, images, audio, video, computational services) that is accessible from the Internet can be accessed in a consistent and simple way by using a standard set of naming and access conventions.

XML (extensible markup language): XML is an emerging markup language standard for data content representation of documents and for exchanging information over the Internet. It is becoming a universal standard for exchanging data in e-services environments.
Appendix B  Interview Protocol

INTERVIEW PROTOCOL

Definition:  Web-based training (WBT) is an innovative approach to training using the technology of the Web, the Internet, the Intranets or the Extranets.

Research Objectives
The main purpose of this research project is to study the factors that influence the adoption of web-based training (WBT) in Hong Kong business.

The objectives of this research project are to:
(a) Observe the current status of WBT in Hong Kong;
(b) Determine the factors that influence the adoption of WBT;
(c) Evaluate the effectiveness of WBT in HK organizations;
(d) Evaluate the main impact of WBT in HK environment.

A/ Current Status
1. Do you currently use WBT? Please provide details.
2. Have you considered using WBT in the past?
3. Are you considering using WBT in the future?

B/ Factors that Influence the Adoption of WBT
4. What is the main principle driver(s) of the implementation of WBT in your organization?
5. What are the critical success factors (CSFs) of using WBT in your company?
6. What are the perceived factors that influence the adoption of WBT?
7. How do you perceive the usage of the WBT to end-users? Can you explain why?

C/ Effectiveness of WBT
8. What are the perceived barriers for your company to set up WBT?
9. In your opinion, what are the main advantages of using WBT?
10. To what extent do you consider the degree of benefits achievable through adoption of WBT in your organization?
11. In your opinion, what are the main disadvantages of using WBT?
12. To what extent do you perceive these barriers for your company on WBT?

D/ Impact of WBT
13. What are the main impacts when implementing WBT?
14. What is the change of trainers’ roles after implementing WBT?
15. Which kind of courses that can delivery through WBT?
16. How do you perceive the future trend of training and development?
17. From your own point of view, will WBT dominate the role of training in the coming 10 years?

The END!
Appendix C  Invitation Letter

THE HONG KONG POLYTECHNIC UNIVERSITY

Department of Management,
The Hong Kong Polytechnic University,
Hung Hom,
Hong Kong.
<Date>

<Title>
<Company>
<Address>

Dear <Name>,

The Use of Web-based Training (WBT) in Employee Training and Development

The Hong Kong Polytechnic University’s Department of Management is conducting a study of the use of web-based training in employee training and development in Hong Kong. Our aim is to find out how firms like yours can best start up and operate your training and development program effectively and efficiently. Your participation will very helpful for us to understand the current status of web-based training in Hong Kong.

It would appreciate it if you would agree to meet with a member of the research team for around 30 minutes. I guarantee that all information will be kept strictly anonymous. We are interested in the overall pattern of training and development practice in Hong Kong, so that results will be printed in summary firm only.

The meeting will be arranged at your convenience. The interview protocol is enclosed for your reference. Should you have any queries, please contact me at 2766-7356 or E-mail at: simon.ch.chan@polyu.edu.hk.

Thank you in anticipation for your help!

Yours sincerely,

Chan Chi Hong, Simon
Department of Management

Encl: Interview protocol
MANAGERIAL ATTITUDES TO WEB-BASED TRAINING (WBT):
A COMPARISON OF USERS AND NON-USERS SURVEY

有關管理人員對網上培訓的態度:
用者及非用者比較
問卷調查

Please return your completed questionnaire in the attached reply-paid envelope to Mr. Simon Chan,
Department of Management, The Hong Kong Polytechnic University, Hunghom, Kowloon, Hong Kong.
Thank you very much in advance.
請將填妥的問卷放進回郵信封內(已付郵資)，寄回香港九龍紅磡香港理工大學管理學系陳志匡先生收。多謝合作。
Dear Sir/Madam,

We are conducting a research survey on Web-based training (WBT), defined as the delivery of training through the Web, Internet, Intranet and Extranet. Whether or not your organization uses WBT, we would very much appreciate your giving us just a few minutes of your time to complete the questionnaire.

Our aim is to examine the use of WBT in Hong Kong and also to explore the views of Hong Kong managers on WBT. A key aim of the study is to gain a better understanding of the factors that influence the adoption of WBT in Hong Kong organizations. The findings should be of interest to HR practitioners whether or not they are currently using WBT.

If you believe that another person in your organization is better placed to complete this questionnaire, please pass it on to him or her. Your response will be treated in the strictest confidence; results will be analysed on an aggregate basis only. If you wish us to send you a summary of the findings, you should forward your name, address and telephone number either at the end of the questionnaire or in a separate letter.

It would be appreciated if you would return this questionnaire to us within TWO WEEKS in the reply-paid envelope. If you have any question(s) about the survey, please contact Mr. Simon Chan, at (852) 2766 7362 or by email: simon.ch.chn@polyu.edu.hk.

Thank you in anticipation for your help.

Yours faithfully,

Professor Edward Snape  
Associate Head  
Department of Management  
The Hong Kong Polytechnic University

Dr. Eric Ngai  
Assistant Professor  
Department of Management  
The Hong Kong Polytechnic University

Mr. Simon Chan  
Department of Management  
The Hong Kong Polytechnic University

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Q1. Does your organization currently use Web-based training (WBT)? (Please circle one number)  
請問貴公司現在有否採用網上培訓？（請圈出一個代表數字）

1 Yes, we are currently using WBT.  
(Yes, we are currently using WBT.  
(Please go to Q2))

2 No, but we are actively considering it.  
(No, but we are actively considering it.  
(Please go directly to Q7))

3 No, we have never used WBT.  
(No, we have never used WBT.  
(Please go directly to Q7))

4 No, we have used WBT in the past, but no longer.  
(No, we have used WBT in the past, but no longer.  
(Please go directly to Q7))

Q2. How long has your organization been using WBT? (Please circle one number)  
請問貴公司已採用網上培訓多久？（請圈出一個代表數字）

1 Less than 1 year  
(少於一年)

2 1 up to 2 years  
(1至2年)

3 2 up to 3 years  
(2至3年)

4 3 or more years  
(3年或以上)
Q3. Approximately, what percentage of your organization’s training needs is met through WBT?

<table>
<thead>
<tr>
<th>Less than 10%</th>
<th>11-30%</th>
<th>31-40%</th>
<th>41-60%</th>
<th>61-80%</th>
<th>81-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Q4. Approximately, what percentage of total training days in your organization is delivered by WBT?

<table>
<thead>
<tr>
<th>Less than 10%</th>
<th>11-30%</th>
<th>31-40%</th>
<th>41-60%</th>
<th>61-80%</th>
<th>81-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Q5. Approximately, what percentage of employees in your organization have participated in WBT in the past?

<table>
<thead>
<tr>
<th>Less than 10%</th>
<th>11-30%</th>
<th>31-40%</th>
<th>41-60%</th>
<th>61-80%</th>
<th>81-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Q6. To what extent is WBT used to provide each of the following types of training in your organization? (Please circle one number for each item – None of our training through WBT = 1 to All of our training through WBT = 7.)

<table>
<thead>
<tr>
<th>Type of Training</th>
<th>None of our training through WBT</th>
<th>1-20%</th>
<th>21-40%</th>
<th>41-60%</th>
<th>61-80%</th>
<th>81-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Orientation for new employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>b) Product knowledge training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>c) Customer service training (such as selling skills, presentation skills, etc)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>d) Information technology skills training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>e) Language training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>f) Personal skills training (such as team building, communications skills, etc)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Q7. Thinking about the employees in your organization, to what extent do you agree or disagree with each of the following statements? (Please circle one number for each item – Strongly Disagree = 1 to Strongly Agree = 7.)

<table>
<thead>
<tr>
<th>In my organization...</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Most employees are knowledgeable about information technology.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b) Most employees seem to have self-confidence in using information technology.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c) Most employees have basic skills and capabilities in using information technology.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d) Most employees have some experience in using information technology.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>e) Most employees know how to use the Internet.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please answer all the remaining questions whether or not your organization currently uses WBT. Not all questions will be included for all organizations. If your organization does not use WBT, please answer the remaining questions.
Q8. The following items are concerned with top management attitudes towards WBT in your organization.
(Please circle one number for each item - Strongly Disagree = 1 to Strongly Agree = 7.)

下列各句子描述公司的高級管理階層對網上培訓的態度。（請在各題中圈出其中一個代表數字）

<table>
<thead>
<tr>
<th>Top management in my organization...</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...is interested in the implementation of WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...有興趣推行網上培訓。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...considers WBT as important to the organization.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...認為網上培訓是重要的。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...has effectively communicated its support for WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...已有效地表達了他們對網上培訓的支持。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...supports the use of WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...支持採用網上培訓。</td>
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</tr>
</tbody>
</table>

Q9. To what extent do you agree or disagree with each of the following statements?

請指出閥下對下列各描述句子的同意或不同意程度。

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Our organization has a high reliance on technology.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>我們的公司對可靠性高的科技。</td>
<td></td>
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</tr>
<tr>
<td>b) Our organization has strength in technical infrastructure.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>我們的公司在科技基礎上有足夠的實力。</td>
<td></td>
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</tr>
<tr>
<td>c) Our organization relies on advanced technology in its day-to-day operations.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>我們的公司依賴先進科技應付日常運作。</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>d) Advanced technology is central to my organization.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>先進科技是本公司的中心。</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>e) Typically, organizations similar to ours use WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>其他與我們相似的公司有採用網上培訓。</td>
<td></td>
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</tr>
<tr>
<td>f) Organizations in the same field as our organization have their own WBT program.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>跟我們在同行業的公司設有他們自己的網上培訓課程。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Organizations in a similar business as ours typically use WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>跟我們相似業務的公司有採用網上培訓。</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Organizations in our business have WBT these days.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>近日，在我們業務內的公司均有採用網上培訓。</td>
<td></td>
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</tr>
<tr>
<td>i) Organizations in my area of business typically don't use WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>與本公司在同一業務範圍內的公司通常沒有採用網上培訓。</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>j) Normally, organizations that do what we don't use WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>一般來說，其他和我們做相同業務的公司都不採用網上培訓。</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>k) It is fashionable for organizations to have WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>公司使用網上培訓是很流行的。</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>l) Right now it is &quot;stylish&quot; for organizations to have WBT.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>現在這一剎，公司使用網上培訓是很時髦的。</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>m) Right now organizations are going through a WBT &quot;craze&quot;.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>現在這一剎，公司都處於網上培訓的熱潮中。</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>n) Organizations that have adopted WBT are doing it simply to look good.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>已接受採用網上培訓的公司目的只是為了提升公司形象。</td>
<td></td>
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</tbody>
</table>
Q.10. WBT is said to have several **advantages**. Some of these are listed below. For an organization like yours, to what extent do you think that each would be an important advantage?

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Extremely Unimportant</th>
<th>Unimportant</th>
<th>Slight Importance</th>
<th>Moderate Importance</th>
<th>Important</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) WBT allows users to undertake training anytime, anywhere.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓容許用戶在任何時間及地點進行培訓。</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>b) With WBT, users can go through a training program at their own pace.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>使用網上培訓，用戶能配合自己速度進行培訓課程。</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>c) WBT is more cost-effective than other forms of training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓比其他培訓方式更具成本效益。</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>d) WBT can help reduce training time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓可以幫助減少培訓所需時間。</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>e) WBT programs can be designed to access the most up to date information.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓能設計課程以取得最新的資訊。</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>f) WBT provides a consistent delivery of content to each trainee.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓能提供統一的課程內容予每一位學員。</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>g) WBT improves communication between trainers and trainees.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓能改善培訓人員與學員之間的溝通。</td>
<td></td>
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</tr>
<tr>
<td>h) WBT allows trainees to have more control over their own learning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓讓學員更能自主地學習。</td>
<td></td>
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</tr>
<tr>
<td>i) WBT allows an organization to provide a wider range of training programs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓為公司提供更廣泛的培訓課程。</td>
<td></td>
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</tr>
</tbody>
</table>

Q.11. WBT is said to have several **disadvantages**. Some of these are listed below. For an organization like yours, to what extent do you think that each would be an important disadvantage?

<table>
<thead>
<tr>
<th>Disadvantage</th>
<th>Extremely Unimportant</th>
<th>Unimportant</th>
<th>Slight Importance</th>
<th>Moderate Importance</th>
<th>Important</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) WBT requires a lot of hardware technical support.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓需要大量硬體技術支援。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) WBT requires a lot of software technical support.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓需要大量軟體技術支援。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) With WBT, the interaction between trainers and learners is limited.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓限制培訓人員與學員之間的交流。</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>d) WBT involves high initial investment costs.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓需要高昂的投資成本。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) WBT programs take a lot of time and effort to develop.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓課程需大量時間和努力去發展。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>f) Not all types of training can be delivered through WBT.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>不是所有培訓類別都能透過網上培訓傳達。</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>g) WBT is unsuitable for training in people-related skills, such as...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓不適用於培訓人與人之間的技巧，例如：溝通。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) WBT reduces social interaction among trainees.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓減低學員之間的社交機會。</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) WBT does not fit well with the training philosophy of our organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>網上培訓與本公司的培訓哲學不相符合。</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q.12. To what extent do you agree or disagree with each of the following statements?  
(Please circle one number for each item – Strongly Disagree = 1 to Strongly Agree = 7.)  
請在下表圈出代表您意見的數字。

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>
| a) All things considered, WBT seems to have a lot to offer for my organization.  
總括而言，網上培訓為我組織帶來很多利益。 | 1 2 3 4 5 6 7 |         |                   |         |               |       |                |
| b) It is likely that my organization will be an enthusiastic user of WBT in the future.  
本組織將來有可能成為網上培訓的積極使用者。 | 1 2 3 4 5 6 7 |         |                   |         |               |       |                |
| c) WBT is the way forward for my organization.  
網上培訓是我組織應走的路徑。 | 1 2 3 4 5 6 7 |         |                   |         |               |       |                |
| d) We plan to use WBT for many of our training needs in future.  
我們計劃未來會應用網上培訓來應付多方面的培訓需要。 | 1 2 3 4 5 6 7 |         |                   |         |               |       |                |
| e) In my organization, we need WBT to meet all our training needs effectively.  
在我組織，我們需要有效地應用網上培訓來應付我們所有培訓需要。 | 1 2 3 4 5 6 7 |         |                   |         |               |       |                |
| f) WBT does not seem to be appropriate for my organization.  
網上培訓似乎不適用於我組織。 | 1 2 3 4 5 6 7 |         |                   |         |               |       |                |
| g) I do not think my organization will make much use of WBT in the future.  
我不認為我組織將來會廣泛應用網上培訓。 | 1 2 3 4 5 6 7 |         |                   |         |               |       |                |

Q.13. The following information is needed to help us to analyze the results. Please respond by circling a number or completing the blank, as appropriate.  
以下資料會有助我們分析調查結果，請圈出適當的數字或在適當之處填上答案。

a) Job category in your organization  你所在單位的工作類別:

<table>
<thead>
<tr>
<th></th>
<th>Human Resource Management  人力資源管理</th>
<th>4 Operations Management  營運管理</th>
<th>7 Purchasing and Logistics  購買及後勤</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Training and Development  培訓及發展</td>
<td>5 Information Technology  資訊科技</td>
<td>8 Marketing Management  市場管理</td>
</tr>
<tr>
<td>3</td>
<td>Administrative Management  行政管理</td>
<td>6 Account and Finance  會計及財務</td>
<td>9 Others:  其他：</td>
</tr>
</tbody>
</table>

b) Job position  人員職級分析:

<table>
<thead>
<tr>
<th></th>
<th>Director  董事</th>
<th>2 Manager  經理</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Consultant  顧問</td>
<td>4 Officer  主任</td>
</tr>
<tr>
<td>5</td>
<td>Miscellaneous  其他</td>
<td></td>
</tr>
</tbody>
</table>

b) Job position  人員職級分析:

<table>
<thead>
<tr>
<th></th>
<th>Corporate Member  公司會員</th>
<th>2 Fellow, F.I.H.R.M. (HK)  資深會員</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Member, M.I.H.R.M. (HK)  會員</td>
<td>4 Associate Member  副會員</td>
</tr>
<tr>
<td>5</td>
<td>Associate Member (Full-time student)  副會員(學生)</td>
<td></td>
</tr>
</tbody>
</table>
d) Is your organization locally-owned, Mainland China-owned or foreign-owned?
請問貴公司是由本地擁有、中國大陸擁有還是海外擁有？

1 Locally-owned (Hong Kong only) 本地擁有（只限香港）
2 Mainland China-owned 中國大陸擁有
3 Foreign-owned, please specify: 海外擁有 (請註明)

e) Number of employees employed by your organization within Hong Kong:
貴公司在香港所聘用的員工人數：

1 <500
2 500-1000
3 1001-1500
4 1501-2000
5 2001-2500
6 2501-3000
7 3001-3500
8 3501-4000
9 >4000

f) Please specify the industry sector of your organization:
請指出貴公司所屬的行業：

1 Manufacturing (Industry)
製造業 (工業)

2 Electricity, Gas and Water (Industry)
電力、瓦斯及水務 (工業)

3 Wholesale, Retail and Import/ Export Trades
批發、零售及進出口貿易 (貿易)

4 Financing, Insurance, Real Estate and Business Services (Service)
融資、保險、房地產及商業服務 (服務業)

5 Ownership of Premises (Service)
業主 (服務業)

6 Government Departments
政府部門

7 Mining and Quarrying (Industry)
開采及花崗岩業 (工業)

8 Construction (Industry)
建築業 (工業)

9 Transport, Storage and Communications (Service)
運輸、倉儲及通訊業 (服務業)

10 Community, Social and Personal Services (Service)
社區、社會及個人服務 (服務業)

11 Restaurants and Hotels (Service)
飲食及酒店 (服務業)

12 Others:
其他：

Please specify (請註明) ____________________________

Name of your organization 貴公司的名稱：

~ Thank you very much for your help in completing the questionnaire. ~
If you have any further comments, please write them below.
多謝您協助完成整份問卷。如有任何進一步的意見，請填寫在以下的空白位置。

Please return the completed questionnaire to Mr. Simon Chan, Department of Management, The Hong Kong Polytechnic University, Hung Hom, Kowloon.
請將填妥的問卷寄回香港九龍紅磡香港理工大學管理學系陳志匡先生收，多謝合作。
Appendix E  Reminder

Department of Management
The Hong Kong Polytechnic University
香港理工大學管理學系

REMINDER

MANAGERIAL ATTITUDES TO WEB-BASED TRAINING (WBT):
A COMPARISON OF USERS AND NON-USERS SURVEY

You may recall receiving a questionnaire from us on the above topic, which was sent to you on 13th December, 2001. If you did not receive the questionnaire or have any question(s) about the survey, please contact Mr. Simon Chan, at 27667362 or by e-mail: simon.ch.chan@polyu.edu.hk.

Your participation in the survey is very important to the success of the research. Thank you very much in advance.
Appendix F  Three Steps on Exploratory Factor Analysis (EFA)

First Factor Analysis

The first factor analysis was performed using the forty-eight items in the questionnaire. As shown in Table A1, the analysis yielded eleven factors.

The items hypothesized to measure the construct of perceived advantages loaded on two separate factors instead of hypothesized on one factor. An analysis of the items that loaded on each factors seemed to indicate the items that provide advantages to organizations loaded on one factor, while items that could be perceived as advantages to individuals loaded on another factor. Therefore, PA1, PA2, PA3, PA4, & PA5 are said to measure the construct of perceived advantages for organizations, while PA5, PA6, PA7, PA8, & PA9 measure the construct of perceived advantages for individuals. One of the items in the perceived advantages for organizations construct - PA5 - also had a factor loading on the perceived advantages for individuals factor that exceed .30 and the difference between two factor loadings was less than .20. Therefore, this item was eliminated.

In addition, the items hypothesized to measure the construct of perceived disadvantages loaded on three factors instead of hypothesized one factor. An analysis of the items that loaded on each factors seemed to indicate the items that provide disadvantages to the organization loaded on one factor, while items that could be perceived as disadvantages to individuals loaded on another factor. Lastly, one single item loaded on another factor. Therefore, PD1, PD2, PD4, & PD5 were said to measure the construct perceived disadvantages for organizations, while PD4, PD6, PD7, & PD8 measure the construct perceived advantages for individuals. The single item - PD9, which belonged as an item of perceived disadvantages, was not considered as an adequate construct and meaningless to the model. Thus, it eliminated after the first factor analysis.
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Second Factor Analysis

The second factor analysis was performed by using forty-six items that remained after the first factor analysis. Again, as shown in Table A2, the evaluation of dimensionality of items in the analysis yielded with ten factors. They were hypothesized to measure ten constructs: workforce expertise, top management support, reliance on advanced technology, institutional pressures, faddishness, perceived advantages for organizations, perceived advantages for individuals, perceived disadvantages for organizations, perceived disadvantages for individuals and willingness to use WBT. A review of the eigenvalues, scree plots and factor loadings were used to assess the appropriateness.

All ten factors had eigenvalues that were greater than 1.00. Forty-six items had factor loadings greater than .50 on the factor which they were hypothesized to load, except PA6 (-.425). Therefore, PA6 was eliminated, as this item was not a well indicator.

Interestingly, the four items hypothesized to measure top management support (TMS) also loaded together with the seven items of willingness to use WBT (ADOPT), with factor loadings of around .50. They are highly correlated with each other. Analysis of these two constructs indicated that those items relate to a general organizational attitude or perception of the managerial level to the willingness to use WBT. Because it is generally the responsibility of top management within the organization to establish or willing to adopt WBT, it is therefore reasonable that the four items loaded on the top management support factors was kept for further analysis.
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Third Factor Analysis

After the first and second factor analysis, third factor analysis was performed using the forty-five items hypothesized to assess the same ten factors identified in the second factor analysis. All the factors had eigenvalues that were greater than 1.00 and had factor loading greater than .50. As shown in Table A3, they were hypothesized to load with the exception of the four items in TMS which loaded on another factor in ADOPT. As the same reason that mentioned before, i.e. the willingness to use WBT were the responsibility of top management, these four items were kept for further analysis.

Due to the duplicated loading on the four items in top management support, by using logistic regression, top management support was acted as the mediator to test the relationship between the three main aspects of antecedents to WBT adoption. However, by using multiple regression analysis, as the constructs of top management support (TMS) and willingness to use (ADOPT) were highly correlated and loaded into the same factor. Top management support was excluded. Therefore, the multiple regression analysis would just focus on the relationship between three main aspects to the willingness to use WBT.
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Case Study:

Application of Web-Based Training (WBT)
in
Organization A

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization A, the main findings on the current status of training and development (includes computer-based training (CBT), web-based training (WBT)), perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

Organization A is a statutory body responsible for implementing Hong Kong's public housing programme within the objectives of the Government's Long Term Housing Strategy. Evolving from previous organizations set up in earlier years to deal with housing and resettlement matters, organization A was established in April 1973. It was re-organized into its present structure in April 1988, with its distinct identity and financial autonomy.

Organization A consists of 25 non-officials and 4 official members who are appointed by the Chief Executive for a two-year term. Its eight standing committees, with a total of 43 non-official committee members, deal with the full spectrum of housing issues, ranging from strategic planning, building, commercial properties, human resources, finance, home ownership and rental housing to more day-to-day matters such as administrative complaints.

1.1 Background

Organization A advises the Chief Executive of the Hong Kong Special Administrative Region on all matters relating to public housing. Through its executive arm, the Housing Department, it plans and builds public sector housing, either for rent or sale. The Department (HD) of organization A, being the executive arm of organization A, has a workforce of over 14,000 categorized in more than 40 disciplines located at over 200 outstation offices.

Organization A manages its rental housing estates and home ownership estates, with a portfolio that also includes interim housing, cottage areas, transit centres, flatted factories together with the extensive commercial facilities within its housing estates. It also invites participation from the private sector in the construction of Home Ownership Scheme flats and administers the Home Purchase Loan Scheme, helping more people to buy their own homes. Additionally, it acts as the government's agent, clearing land, preventing and controlling squatting, while also implementing improvements to squatter areas.
1.2 Civil Service Training and Development Institution (CSTDl)

The Civil Service Training and Development Institute (CSTDl) is the central training agency of the HKSAR government. They are responsible for providing strategic guidance on training and development to 75 departments and 15-policy bureaus. They supply training and consultancy services to drive central public sector reform initiatives. Programmes on management, China studies, language and information technology are also part of their core business. CSTDl provides training service for 170,000 civil servants and acts as the central training unit. For example, CSTDl have management unit, information technology (IT) language unit, and private study unit.

1.3 Training and Development Centre

Besides CSTDl, as Organization A is the second largest department with 14,000 staff and around 50 staff in training and development centre, it can provide its own training program for their staff.

From the successful experience of Organization A in training and development field (silver award for excellence in training 2000 from The Hong Kong Management Association), it had implemented web-based training for 2 years ago. In organization A, there are three types of training, they are general training, housing management training unit and core business training.

1. General training includes the training on management, language, information technology, customer service, communication, and orientation program which open to all housing staff.
2. Organization A Training Unit provides vocational training on how to manage items related to estate property.
3. Core business training includes the content of technical, engineering, construction and quality training.

1.4 Hierarchy of Training and Development Centre

```
Director of Training and Development
   ↓
Training Manager
   ↓
Assistant Training Manager
   ↓
Trainer
   ↓
Supporting Staff
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2 DESCRIPTION

2.1 E-learning Portal, Strategy and Functions

Organization A had set up its training and development "Intranet", so-called "E-learning portal". WebCT is the e-learning platform for organization A and its server is in The Hong Kong Polytechnic University.

In 1999/2000, Organization A was undergoing rapid changes and transformation rising from major corporate issues, like "Promoting Quality Housing" and "Private Sector Involvement." To assist staff in coping with these challenges, the Training and Development Centre (T&DC) devised an "e-Strategy" which aimed to support continuous learning and development for individual and enhance organization performance. Through implementing the e-Strategy, a spectrum of information and knowledge was provided to staff in a cost-effective manner. Staff could have quick access to up-to-date materials on training courses, business information and corporate knowledge for self-improvement. At the same time, better training services were provided for staff and line management by streamlining the training administration process. The foundation for a knowledge management system was laid to facilitate the sharing and retention of knowledge.

The e-learning system which was launched in January 1999 provided various kinds of multi-media learning materials, simulations exercises and quizzes that made learning more interesting and efficient. Important features included:

1. Virtual classroom that enabled anywhere, anytime learning and became an integral part to an integrated learning approach
2. Personalized learning portal which provided individualized learning support
3. e-Journal and Video-On-Demand which provided a variety of up-to-date learning resources
4. e-Square that allowed staff to share freely on personal view and experience
5. e-Nomination that assisted staff and their supervisors to have quick and updated information on training programmes and streamlined enrolment procedures

2.2 Does Organization A Needs WBT?

First, WBT can save travel cost of the trainers and all the trainees back to the headquarters to receive the training. There are so many diverse offices in different district. It is helpful to train all the staff through the Internet. Moreover, due to the problem of privatization, Organization A is not willing to design any additional program for the outsourcing company. So that, outsourcing company can rely on WBT to receive all the information.
2.3 Procedure for Application WBT

1. Proposal of WBT

Training and Development Department had formed a sub-committee called Human Resources Committee which responsible to write a proposal to apply for the fund to build up the e-learning portal. The report includes the benefits of WBT, perceived cost-effectiveness, evaluate the importance of the new training methods to Organization A.

2. Seek for Endorsement

At first, organization A had done a survey on the implementation of WBT. They ask for opinion from various sources, like employee, front line manager, several vendors (e.g. Polyu). Then, Organization A have held a pilot test to see whether the course is applicable. They have done a comprehensive evaluation survey to collect feedback and comment from both trainers and employees though out the pilot test.

3. Fund from Government

Ultimately, organization A have successful in getting the fund and support from the government. The fund in building up the whole e-learning portal is around $500,000.

At the very beginning, from some informal survey in organization A, employees have not support in the use of e-learning portal and think that the new learning type of training is just a waste and spend most of their own leisure time. But after few different e-learning/ web-based classes and programs, they accept the change of training mode. The process of e-learning needs time to accept. As a result, employees have no complaint again.

2.4 Return on Investment (ROI)

The setup cost for WBT is around HK$500,000 which includes:
1. System infrastructure
2. Vendor service
3. Administration cost

In addition, there are several costs of building up WBT. They are the cost on technology infrastructure, vendor or consultant fee, maintenance cost of the
continuous e-learning program, and the upload cost of the updated information.

From Organization A internal financial report, the expected profit is roughly around HK$600,000 in the first year and another extra HK$600,000 profit for the 2nd year and so on. ROI seems have great returns after using WBT. By comparing of the net profit after using WBT, the expected return on investment is great. Actually, training cost includes 3-5% of employee’s payroll. Companies can gain in shorter training days, trainer’s time, and trainee’s contribution.

3 EVALUATION

3.1 Factors Affecting the Adoption of WBT

Based on the data from interview, there are several factors that influence the adoption of WBT in Organization A.

1. Organization Factors – Structure Design (Culture)

In Organization A, the employees are rather young in department. They are more willing to adopt the WBT. However, in Organization A, the average age is around 35-40. It is difficult to change the learning culture at a time.

2. Support Factors – Top Management Support

Director of training and development largely support on the use of WBT. They have top-down approach to start with the e-learning project (Training manager and IT manager agree on supporting the e-learning portal).


As some of the new staff in Organization A is recruited from private companies, they are young with innovative mind. Most of them have full knowledge on information technology and familiar with the technical skills in the Internet. They are more willingly to accept in WBT.


Resource is another factor that influences the adoption of WBT. Money, of course, is the main consideration in adopting any new system. As the build up/ start up cost for the new learning mode –WBT is much larger than classroom training. It is difficult to build WBT in small company. They may not afford such a large amount of cost or have sufficient resource unless they can get management approval.

5. Environment Factors – Public Policy (Government)

The influence from government also important to any form of organizations. Government is having a top-down approach to spread out the concept of lifelong and continuous learning. Public policy will be one of the main factors that affect Organization A to implement WBT.
6. Environmental Factors – Market Demand (Trend of information technology)

Suddenly, all kinds of things is related to information technology in the late Twenties Century. Every organizations are updating their IT skills in order to survive in the competitive world. The trend of IT largely enforces companies to adopt in WBT.

3.2 Strengths of WBT

1. Learning Culture

WBT can change the learning culture in Organization A. Although the average age in housing authority is rather high (nearly over 35 to 40 in average), Organization A still can change the learning culture to more information technology-based. It is the main benefits from the Organization A.

2. Change Employees’ Mind

Employees can learn new type of technologies and equip themselves with self-continuous improvement. WBT can change the mind of employees to training. People need to learn by themselves.

3. Message of Learning

With the implementation of WBT, it can enhance the message of learning in organization A and department. Employees have chanced to learn different courses to increase their marketability.

4. Save Cost

Moreover, by substitute classroom training to e-learning, cost saving is another main benefits. Companies can save value cost, the working hours of trainers and new staff.

3.3 Difficulties

1. Technical Infrastructure

As the number of employees in Organization A is large with over 130,000, organization A cannot provide all the staff with its own computer, except those who are in headquarters have its one to one computer. In estate, only manager, assistant manager, and officer have its own computer. That may be a problem in fully implements on WBT.

Suggested Solutions by Organization A

One solution to resolve the insufficient computers for each staff is to propose a common computer for staff to use. They can attend the e-learning course in their leisure time and log-in in their personal password.
2. Privatization

After privatization in Organization A, there is too many redundant staff. They have the right to apply for voluntary leave within three years time. They have three years time to make decision. In this period, Organization A needs to rearrange them in new training/job. It wastes many resources. Organization A will outsource some of the projects to some private companies.

3. Personal Factor

People, personally, may have a bad feeling of e learning. Employees may think that they may not require learning so many new skills and receiving the new type of training courses. It is no use to have e-learning. On the other hand, from organization A point of view, Organization A will try their best to sell e-learning to their staff in order to enhance the concept of continuous learning.

4. Political Problem

One difficult is the confusion of some policy when dealing with WBT. It is still in grey area in staff e-learning program. Whether they can have WBT in office hours or not. Organization A allows its employees to have e-learning program when they get the approval from their supervisor. Obviously, organization A is no willing to handle this problem and make it in black and white area. It is quite a sensitive problem when having implementation of WBT. Therefore, benefits still are in uncertainty. Organization A still does not have clear policy to define the training time.

3.4 Criteria for Setting up WBT

Before building WBT, several criteria must need to fulfill in order to success.
1. Money (around 50000-200000 per cost)
2. Tailor-made
3. Large number of user
4. Technical infrastructure
5. Acceptance of WBT (educational level)

3.5 Considerations to Select Vendor

Here are some of the considerations for organization A to select vendor:
1. Price
2. Reputation of the organization
3. Requirements meet

3.6 Employees’ Acceptance Survey

Organization A stated that if they are willing to do comprehensive employees’ survey on acceptance of WBT, they forecast some of the problems appeared. First of all, employees will think that WBT is just a political program. E-learning is just a new policy for the Government to implement. They just are the pilot test for the Government.
Moreover, employees will not tell Organization A that the truth to the acceptance of WBT. Employees may think that this survey will be an evaluation or performance appraisal. They will answer the questions in a positive way. Lastly, government will not willing to receive the result if the acceptance of WBT from employees view is negative. They are afraid to get such a negative result.

3.7 Content that Could or Could Not be Delivered through WBT

Now, Organization A have several programs in WBT. For examples, Organization A will provide training to employee on the topic related to integrity, and all kind of PC training (Microsoft, Word, Excell, Powerpoint, Access, etc).

However, they do not have courses on management training and those courses, which involve many interactions between trainers and trainees. Organization A will provide half-day training to employees before have WBT (Briefing before)

<table>
<thead>
<tr>
<th>Course(s) that <strong>Could</strong> be Delivered through WBT</th>
<th>Courses that <strong>Could Not</strong> be Delivered through WBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PC training</td>
<td>1. Programs which change all the time</td>
</tr>
<tr>
<td>2. Procedural courses</td>
<td>2. Communication skills</td>
</tr>
<tr>
<td>3. Orientation</td>
<td>3. Management training</td>
</tr>
<tr>
<td>4. Information</td>
<td>4. Language – still don’t know</td>
</tr>
<tr>
<td>5. Document e.g. law</td>
<td></td>
</tr>
</tbody>
</table>

4 CONCLUSION

Being the pioneer in developing web-based learning programme in civil service, Organization A has successfully provided an all-in-one interactive and integrated learning system which made learning more intriguing and immediately applicable to work. Organization A strongly believes that the e-Strategy and Learning System can develop Organization A into a learning organization.

4.1 Results of WBT

The learning system was proved attractive to the staff members. Organization A logged 86,000 hits from staff for 1999/2000 and around 1,200 staff visited at least 6 pages per access each month. On programme level, 5,800 hits were logged for a specific integrated learning programme. A participant spent an average of 1.5 hours per month. Saving on staff release cost was generated because of the reduction in trainees’ working days.

In the survey on evaluating satisfaction on WBT, 90% of the staff accessed the e-learning system after office hours from places other than their offices. That means they received training after working hour (places other than office). It is interest to find this positive attitude from employees’ view on accepting the learning in off-work hours. Precisely, 75% think WBT is useful to learning, 80% found that the use of WBT have claimed as very effective and effective, 60% range e-learning as an interest tools to deliver training. The overall grade of quiz (test) in WBT is rather high with 70.7%. There were around 2500 conversions existing in E-forum for interaction.
To a large extent, e-learning system can save cost in large amount. For example, a training enrollment needs 5 days (for 8 district), but now just one-day e-learning program is enough. It can increase 80% more efficient of using e-learning than face-to-face training. From the record, organization A had over 100000 corporate lounge page in its Intranet. 1500 employee have became the register user and being received training already.

By using WBT, it can reduce the training time in organization A. For example, the orientation of training programs. It can reduce from one-day workshop to two hours programs. Another example is the housing management training. In traditional, housing officers need to attend a 18 days workshop, but now they just need to participate in 10 days WBT and review the content between both trainer and trainees. It can shorter the overall training time in certain period.

4.2 Trainers Role

From the past, trainers just need to collect all the information and organize all the training activities for the particular class. However, the role of trainers is changing to complex and involves more different duties when using WBT. Learners, with the implementation of WBT, have more work to do. They are not just focus on preparing the materials or organizing the training courses. In addition, they need to communicate with different server provider and software provider in order to compromise for the new e-learning platform. They need to deliver some paperwork to its service provider. Of course, trainers have reduced their training time.

4.3 Future in Hong Kong

The culture in Hong Kong is good for implementing WBT. It is because nearly most of the people have its own PC at home or in office. Also, as Hong Kong is an international city, people in Hong Kong have rather well in language, especially English than other Asian Countries. Hong Kong people are more information technology literacy. Due to the competitive environment in Hong Kong, people are always busy in their working hours. WBT is a good delivery tool to fit in the culture in Hong Kong.

In near future, organization A plans to extend some of its e-Learning services to its suppliers for building a common mission to provide quality housing to the community. Organization A will integrate the e-Learning system with its new Human Resource Management and Information System, so as to make the whole system more comprehensive. Moreover, Organization A will strengthen the learn@home function to facilitate learning.
Case Study:
Application of Technology-based Training
in
Organization B

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization B, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

Organization B, based in San Francisco, California, is the world's leading retailer for international travelers. Organization B operates more than 150 stores in 15 countries throughout Asia and the Pacific Basin, including the West Coast of North America.

Organization B was founded in Hong Kong in 1961 as a liquor, tobacco, cosmetics and fragrances duty free concession at the airport. In 1962, Organization B won its first duty free airport concession in Honolulu. The company concentrated on the Asia/Pacific region as the fastest growing area for international travel. In 1968, organization B opened its first downtown store in Honolulu for Japanese traveling on holiday.

Its primary store formats include Organization B's anchor stores, duty-free and general merchandise concessions, boutiques in leading hotels and resorts, and specialty stores. These stores are located downtown in major cities near hotels and restaurants and in major international airports.

1.1 Background

Organization B, now, has approximately 9,000 employees around the world in different countries. In Hong Kong, there are around 800 employees, which include 600 frontline employees and 200 administrative office staff. Specifically, there are totally 11 employees in Human Resource and Training Department. Their work nature includes administration, human resources, and training and development.

1.2 Mission

Organization B is the world's leading destination for travelers seeking distinctive, high quality, branded and destination-specific merchandise at great value, offered in an innovative, entertaining shopping environment enhanced by superior customer service.
2 DESCRIPTION

2.1 Importance of E-Learning

According to the magazine People Today, E-learning is about the acquisition of knowledge online. It can refer to either the Internet, Intranet and Extranet. In Hong Kong, 38.1% of companies are actively employing e-learning solutions, 22.3% of companies are exploring or developing such solutions for short-medium term, and 39.6% of companies are having no such solutions and are not exploring at this time.

From the survey findings of “Cisco E-learning trend and statistics”, by 2003, only half of all information technology training will be delivered via traditional instructor-led. Technology-based training will increase more than 4 fold over the next 5 years. 92% of large organizations are implementing some form of on-line learning in place by year 2002. These figures provide good evidence and supporting for Organization B to implement technology-based training. This finding increases the importance of E-learning.

2.2 Training category – Product Trend Database

Organization B has a product trend database to provide the latest information to employees. Three training categories are in Organization B:
1. Customer service
2. Product knowledge
3. Trend

Intranet service was provided from U.S. Headquarters and then delivery to each branch in different countries.

2.3 Training Methods for Different Courses

a) Customer service based on CBT together with classroom training
b) Orientation program can substitute by the use of WBT
c) Standardized training course can delivered by technology-based training.

2.4 Why DFS goes Intranet?

Organization B had review its current customer service training program by corporate office in 1999 where this review had been used since 1996. Basically, for each of the new frontline staff in Organization B in Hong Kong, they need to attain in a new “orientation” training program. The training program includes 2 main parts. They are customer service with 20 hours and product knowledge with 4 hours separately. At the time, the former part of training was taught by instructor-led training where the later part was taught directly by computer-based training (CBT).
2.4.1 Stage I \hspace{0.5cm} \textbf{Current Training Program}

Shortfalls of Current Training Program

There are several shortfalls of current training program. First of all, the contents have to be revised day by day. Information should be updated and delivered to all employees. It is difficult to arrange by current training methods. Second, the training hours is too long with 24 hours per employee. Another main shortfall is that it is costly for trainers to travel around to remote locations. For example, it is expensive to wait the trainer to travel from two different districts, Las Vegas to Hawaii, in the United States in order to deliver a training program. Staff needs to wait for the training in a particular time. As a result, change is a must in Organization B!

Key Objectives

The key objectives of the new training program or method should be:

- Revised content
- Reduced employees training hours
- Reduced travelling expense of trainers
- Reduced the downtime for off-site training
- Easy update of training content for future changes

Due to the shortfalls of current training programs, Organization B needs to consider the most suitable training methods for its company. They consider several methods to deliver training.

2.4.2 Stage II \hspace{0.5cm} \textbf{Computer-based Training}

For classroom training, it can revise the main content of information and reduce the training hours by summarize up the key points and precise content. However, it cannot reduce travelling expense of trainers, reduce downtime for training and easy update of training content for future changes.
Another new training method is self-paced learning by employees. Self-paced learning can revise content, reduce training hours, reduce travelling expense of trainers, and reduce downtime for training. At the same time, interviewee of Organization B doubts that whether self-paced learning is easy to update of training content for future changes. Ultimately, self-paced learning was used in the training program.

There still have an uncertain whether the new type of training methods is culturally acceptable in organization B or not. In organization B, each of the frontline staff had general computer literacy. Organization B has success of putting product knowledge in computer-based training. All in all, all the staff is started to use in this learning mode.

Shortfalls of Current CBT

However, there are still have some shortfalls of current CBT. They are difficult to update training materials, mass productions of CD-ROMs are required, and administration is clumsy.

For Internet as a delivery tool to delivery training, it is easy to appear that not everyone has the Internet access and it is difficult to stringent security control.

As a matter of fact, Intranet-based training may be good for Organization B. Intranet-based training can enjoy benefits of self-paced learning, easy to update of training content and material, consistent presentation of materials, staff can learn at their own pace, just-in-time training, safe security control. A study from Fortune On-line Learning Supplement find that studies indicate that learning occurs 50% faster online than in classroom training.

2.4.3 Stage III  Internet-based Training

Development Stage

Phase 1: Management Buy In
Phase 2: Training Needs Identification
Phase 3: Content Development
Phase 4: Pilot Run
Phase 5: Roll Out
Phase 1: Management Buy In

Cost Justification

The most important factor for management buy-in was cost. Organization B found that they can have cost savings of 30 to 40% are being easily achieved by organizations that are committed to online learning. Organization B experience a 40 to 60% cost savings when comparing instructor-led education with technology-delivery courses. In organization B, its main factors that make their cost justification are saving in training hours, saving in trainers travelling expenses, staff productivity, staff payroll dollars, trainer’s delivery cost. They weight the importance and make justification in these issues.

![chart]

Phase 2: Training Needs Identification

Identify Training Needs

Corporate training manager travel around different regions to understand different training practices to recognize different training needs. He also need to get input from regional training manager, identify specific needs of each region and identify cultural aspects. Needs assessment is needed before implementing a new training program.

Phase 3: Content Development

Define Performance Standard

Organization B needs to prioritize key performance standards for their employees who receive the training and agree on revised performance standards.

Develop program framework/ module structure

Organization B plans to train their employees in (1) basic customer service with CBT via Intranet, (2) advanced customer service with CBT via Intranet, (3) product knowledge with CBT via Intranet, and (4) trend of information through web-based.
Develop Instructional Objectives and Teaching Points

a. **Organization B had Perceived the Importance of Excellent Customer Service.**

Customer service is the primary way they differentiate themselves from their competition. Organization B staffs needs to speak their languages and provide consistent service.

b. **Identify Behaviors that Make Each Stage of the Customer Experience Satisfaction**

Organization B identifies three stages of customer experience and what customer does at each stage. For example, staff need to arrival when customer enters the store.

c. **Given Photos of Customer Service, Correctly Choose which Type of Greeting to Give Each Customer**

The teaching points include those for the section “use one of these four types of greeting”. They are photo, video shooting, audio recording and review of script.

**Final Product Review**

Organization B will review their final product – graphics, pictures, movies, audio and programming.

**Phase 4: Pilot Run**

In each region, Organization B carries out its own pilot test on the training program to prevent any bugs or errors in implementing WBT. Organization B also plans for regional adaptation and add-on activities to the training program. Therefore, final product i.e. so-called smile.com come out.

**Phase 5: Roll Out**

Organization B has a pre-launch activity which include theme song Chinese Lyrics Contents, Launch Ceremony, etc.

**3 EVALUATION**

Here is a pre and post cost measurement to ensure the adoption of new Intranet-based training. The opinions will from different sources: mystery shopper, sales transaction, guest comment cards, coaching feedback form.

**3.1 Savings in Hong Kong Region**

In current training program, a new employee need to have 20 hours customer service training and 4 hours product knowledge training. Totally, 24 hours is needed for each
employee. However, by the use of Intranet-based training, each new employee needs 2+2=4 hours for basic service, 2+2=4 hours for advanced service, another 2 hours for both product knowledge and trend of organization. Totally, by using smile.com to train employees, just 12 hours is needed. As a consequence, 50% of the time have saved.

Statistically, as the payroll saving for each employee is $660 and productivity gain per employee is $23,280. The total is $23,940. If DFS forecast the saving by the use of Intranet-based training, $2,883,600 will be saved by 120 employees and $14,360,000 will be saved by 600 employees. Moreover, as calculate in trainer role, there is 16 hours time saved in classroom delivery. If there are 10 classes for 120 employees, trainers can save 160 hours training time. There are 160/176=0.9 month time saved by trainer.

3.2 Challenges

There are several challenges in building up its own WBT, especially challenges in Phase 1 and Phase 2.

1. Phase 1

Organization B uses CD-ROM as an interim solution for customer service modules and product knowledge. However, there is no integration between the use of CD-ROM and human resource system. Organization B maintains updated and the latest information of an organization for updating the most frequent module in the Intranet. On the other hand, it is difficult to produce CD-ROMs in mass productions which information always requires for updated.

2. Phase 2

Organization B will have full implementation when technology advancement has lowered the cost of bandwidth expansion. However, the identification of training needs, do Organization B can have sufficient advanced technology to operate? It is still in question mark.

3. Bandwidth

In organization B, its Intranet cannot support and store so many video clips. The use of bandwidth friendly animation technology is limited. As a matter of fact, it needs huge investment in building up a good and well-established platform.

4. Language Barrier

Due to different language and culture in 15 different countries, different medium of language in training is required, like Japanese, Cantonese, Mandarin, and Spanish. The translation and production are just on the way to finish.
<table>
<thead>
<tr>
<th>Basic customer service</th>
<th>Advanced customer service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Arrival</td>
<td>1. Managing multiple customers</td>
</tr>
<tr>
<td>2. Selection</td>
<td>2. Responding to customer objections</td>
</tr>
<tr>
<td>3. Purchase</td>
<td>3. Handling complaints</td>
</tr>
<tr>
<td></td>
<td>4. Using suggestive selling (CARES)</td>
</tr>
<tr>
<td></td>
<td>5. Overcoming language barriers</td>
</tr>
</tbody>
</table>

CBT have implemented for two years where WBT just start in this year (2001) and it still in developing process.

### 3.3 Main Principle Drivers

One main principle driver that Organization B implements WBT is that it can save cost in long term. Most likely, Organization B can save cost in the following:
1. Travel cost of trainers
2. Save training time
3. Frequent in updating content

### 3.4 Factors Affecting the Adoption of WBT

There are several factors that influence the adoption of WBT in Organization B.

1. **Organization Factors – Structure Design (Corporate Policy)**

   Corporate policy is one of the major factors that influence the adoption of WBT. It mainly depends on the nature of companies. It is easier to handle and deliver training through 15 countries and updated all information. For example, private sector may not widely use WBT due to the cost and effectiveness.

2. **Support Factors -- Top Management Support**

   Top management support is important in adopting WBT. Without top management support, WBT even cannot operate and build up in such a scale.

3. **Environmental Factors – Market Demand (Trend of information technology)**

   It seems that more and more companies will use e-learning as their training methods in the coming future. The trend of information technology in their competitors or organizations will influence the adoption of WBT.

4. **Nature of Industry**

   Due to the diverse geographical of retail shops around the world, it is difficult to train all the shops in different countries at a time.
3.5 Difficulties in Training

1. Language

Now, the web-based training and computer-based training programs in organization B have just provided in English at this stage. Employees need to have certain standard of English level to receive the standard training. That may be a problem for employees who do not well in English.

2. Teaching Problems

In this stage, most of the training programs need to mix up with classroom training. It is difficult to organized training courses from 15 countries over 150 shops.

3.6 Factors Affecting the Employees' Acceptance of WBT

1. Rule

Company needs to force their employees to enter into e-learning by rules. Rules may be the most powerful tools to enforce or arouse employee's attention.

2. Technical Problems

Company needs to ensure that all employees have its basic computer literacy. Otherwise, WBT is no use to employees.

3. Behavior

Do employees have positive attitude in reinforce their skills or knowledge? Organization B still needs to give more time for employees to adopt and change their mind.

4. Depends on different content

Do the training related to employees' work task? (Voluntary to enter or force to enter into WBT). Trainees may pay attention to the e-learning courses which they feel interested.

3.7 Training that Could or Could Not be Delivered Through WBT

<table>
<thead>
<tr>
<th>Training that Could be Delivered Through WBT</th>
<th>Training that Could Not be Delivered through WBT</th>
</tr>
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<tbody>
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<td>1. Communication skills</td>
</tr>
<tr>
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<td>2. Management training</td>
</tr>
<tr>
<td>3. Information</td>
<td>3. Language</td>
</tr>
</tbody>
</table>
4 CONCLUSION

Thorough technical study is in planning stage, both technical and cost aspects, on-line training needs to align with corporate IT strategy. IT and HR department need to match together in order to implement a success Intranet-based training program. At the same time, due to the uncertain of the adoption of WBT, a balance between technology-based training and instructor-led training is needed. Technology enabled learning should never be implemented for the sake of technology. Technology is a tool or medium, not the message.

4.1 Trainers Role

Actually, there is no big difference in trainers’ role if compare with the traditional training to WBT. Their role has no change. Now, trainers in organization B just teach together with computer as assistance.

4.2 Perceived Trend in Hong Kong

Due to the growth of IT, Organization B thinks that WBT will widespread in Hong Kong. But she believes that classroom training will be important again in the future. All the training method is just a life cycle. It depends on the trend of training and development.
Case Study:

Application of Web-based Training
in
Organization C

TRANSCRIPT

This is a case study which combines various kinds of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization C, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

Organization C established in May 1999, it started with a group of instructional designers, system engineers, programmers, experienced project management team and creative designers to provide educational institutions with total e-learning solutions. Organization C is Asia’s leading Knowledge Service Provider, providing quality continuing education for corporations and working professionals via the Internet. Organization C will speed up knowledge transfer and contribute to the future development of intellectual capital.

1.1 Background

Organization C employs over 90 experts in different fields. All the staff in Organization C has experience in developing WBT. They have several teams to process on different work tasks. They are creative team, instructional design team, programming team, marketing team and supporting team. For example, supporting team performs all the work of human resource and administration.

Organization C is the pioneer in e-learning industry in Hong Kong. Of course, in its internal training and development system, all staff in Organization C is receiving web-based training. The purpose is to fully utilize the resource and deliver all the training courses into E-learning type. They think that face-to-face training trend to coaching rather than training.

1.2 Mission

Organization C is determined to be the leading knowledge service provider, aimed at providing quality continuing education for working professionals and corporations anytime, anywhere, via the Internet. Organization C will speed up knowledge transfer
and contribute to the future development of intellectual capital in this “knowledge economy”.

In the concept of Organization C, their target group of education refers to both academic and business organizations. The concept is much near the same as lifelong learning. Lifelong learning means that “embraces a set of guidelines for developing educational practice ("education") in order to foster learning throughout life ("lifelong").

1.3 Company Strategy

Organization C’s company strategy is focused on building up e-learning Intranet for corporations. They act as consultancy, provide management system, design different type of courses and even provide backup service in administration support to their target corporations. They are in business-to-business (B2B) situation.

Moreover, in the web site of Organization C, it had several courses for public to enroll, such as flash 5.0, FrontPage 2000, PhotoShop 6.0, etc. Even Organization C has several well-established courses online, it also thinks that public just gives them some basic income. Their focus group is not on public.

"Everyone is talking about e-learning."
Virginia Chan, Marketing Director, Organization C

From their investigation and past experience through attending several international conferences and public meetings they found that the potential of e-learning in corporations are increasing and growing with large target market. Many companies have known e-learning last year from June to August. These companies are all willing to implement the course of e-learning soon. In 2001, those companies can get budget from top management and are willing to motivate their corporations to enter into this new type of technology-based training method.

1.4 E-learning Industry

"Today’s business operates in a real-time world where innovation rule, competitors appear from all corners, knowledge provides more leverage than capital, and the old rules no longer apply."

Greg Priest, President and CEO of Organization C

In the early 1999, Grey Priest (now, head of Organization C) forecasted that the trend of operating information technology in organization is a must in future. He sudden left his previous companies, Sanyo, and joined with a group of expertise whose have experience in building and designing software system. He then evaluated the potential of having business in the Internet. Ultimately, he found that education is the key in the Internet industry. Education even can make profit through the Internet. That is e-learning.
1.5 Partnership

Organization C is a Hong Kong-based firm which have partners in Mainland China, and in other Asian countries. It also forms alliance with some partners in the United States. They are computer associates, AOL, IBM Business Partners, Techxpert, HKUST Business School, A-Solution Technology Development, Linux Pilot, Toppan Forms Computer Systems (TFCS).

2 DESCRIPTION

2.1 The Winning E-learning Methodology

1. Enterprise eLearning Strategy
2. SCORE Learning Management System
3. Creative Services – Courseware Creation
4. Technology Integration

From Organization C, they have the winning e-learning methodology as shown above. There are 4 stages to enter into the winning e-learning solutions.

1. Enterprise e-Learning Strategy
2. SCORE Learning Management System
3. Creative Services – Courseware Creation
4. Technology Integration

Company needs to set its own enterprise e-learning strategy and have a complete SCORE learning management system. Moreover, Organization C will provide creative services, e.g. courseware, creation. Lastly, companies can integrate technology to match up with their strategies.

2.2 Clients

Organization C's e-learning solutions are a way to use the Internet for training and education. Current employees can refresh or update their skills quickly and easily, and new employees can get up to speed in no time. Companies can now deliver their time-critical information to workforce in a cost-effective way that creates unique competitive advantage.
Organization C already is chosen by government organizations and leading companies to deliver effective e-learning programs, including:

1. **Government**
   - Civil Service Training & Development Institutes
   - Hong Kong Police Force
   - Hospital Authority
   - Housing Authority

2. **Education Institutions**
   - The Chinese University of Hong Kong
   - School of Executive Education Department, Hong Kong Polytechnic University
   - ITTDC, Vocational Training Council
   - Shenzhen Education Department

3. **Information Technology**
   - CiF Solutions Ltd.

4. **Manufacturing**
   - Vitasoy International Holdings Ltd.

5. **Publications**
   - The Commercial Press (H.K.) Ltd.
   - Oxford University Press

6. **Real Estate**
   - Sun Hung Kai Properties Limited

7. **Telecommunications**
   - Pacific Century CyberWorks

Organization C’s courses are self-paced, highly interactive, and feature an e-learning community in which learners interact with other students and experts. Organization C’s solutions can be hosted by the clients, or totally supported by Organization C, so they will not tie up with IT resources. Organization C has been creating and delivering web-based, e-learning solutions since June 2000.

Besides their client, from the eyes of Organization C, Cathay Pacific have a well-established WBT, Housing authority will finish all the development process in the coming year, Hospital Authority is in ongoing-process, and, however, PCCW still not in maturity stage of implementing WBT.
2.3 Designing Project

In order to develop e-learning project for a corporation, Organization C needs to send an
instruction design team to due with the subject matter expert. Of course, the design of
courseware should match up with the client's e-learning strategy. Communication
between the service provider and client is important in dealing with the e-learning.

2.4 Functions to Organizations

There are several functions of e-learning.
1. Whiteboard – share texts, drawing and icons
2. Chat Room – text form in English, Chinese, and other Asian languages
3. Bulletin Board – upload and download messages
4. Calendar – personal study progress
5. E-Card – greeting tool
6. Questions – building question pool
7. Assessment – generate quizzes on various criteria

2.5 Creative Learning Services – Courseware

1. Active learning – problem solving approach
2. Multimedia, interaction, collaboration
3. Module design – reusable learning objects
4. Flexibility & customization – learner centric

3 EVALUATION

3.1 Main Principle Drivers to Adopt WBT

1. Environment Factors – Public Policy (Government)

First of all, government policy is the main principle drivers for companies to choose
WBT. In the 21st digital world, government largely enhances the concept of ongoing-
learning and lifelong learning. It shows the support in the use of e-learning in
 corporations. Housing Authority and Hospital Authority is two good examples to
illustrate the success.

2. Application Development Factors -- Cost-effectiveness

Secondly, cost–effectiveness solutions is another driver for company to adopt WBT.
Mostly, those companies with large size of employees can enjoy the benefits of saving
cost, which includes saving in trainers cost, trainees training time. They can perceive the
actual benefits of e-learning to companies in future.
3. Workforce Factors – Task Characteristics (Heavy workload on HR officer)

Another interesting driver is that human resource officers have heavy workload. From Organization C’s observation and meeting with its client, most HR officer can just fulfill one-third of its organizations’ training target. One reason is that they do not have enough skills to handle the variety of training programs and collect large amount of information at a time. Most of the time, they just prepare training in hurry. WBT may overcome this problem.

3.2 Factors Affecting the Adoption of WBT

1. Support Factors – Top Management Support (Upper management)

Upper management commitment is the main factors that influence the adoption of WBT. They can spread out the concept of “WBT” to middle management to follow. It can be a top-down approach in organizations and provide after-sales services.

2. Organizational Factors – Size (Scale of participation)

Companies can start by attempting e-learning in small scale. Organization C will advance them to have pilot test first, so that companies can manage more efficient and effective. As a result, companies which have e-learning program can have initiate success.

3. Organization Factors – Structure Design (Work-task oriented)

Ideally, the e-learning program should directly relate to employees’ work task. Companies need match up the learning process with the real life work situation. However, it is a difficult question on how to link learning and work together.

3.3 Total Solutions

Instead of merely providing hardware, software and online courses, Organization C offers a total solution in e-training.

1. Customized Courses

With the expertise of instructional designers, system engineers, graphic designers, programmers and project managers, Organization C helps corporations and institutions to convert their traditional training programs into interactive online courses.

2. Accredited Off-the-Shelf Courses

Thanks to the strategic partnerships and cooperation with leading universities and renowned IT contents providers, Organization C has developed a wide range of accredited and certified business and IT courses. As Organization C continues to expand, over 200 courses will be available by 2001.
3. Servers and Networks

Organization C lowers your entry investment by providing its own servers and networks. The platform is compatible with systems commonly used in the industry.

4. SCORE – the Virtual Campus

Developed by Organization C, SCORE is a platform, which helps educational institutions and corporations to establish a virtual campus easily and cost-effectively. Features include:
- Calendar
- Digital library
- Access control
- Campus, class, course and student management
- Bulletin board, chat room, teleconferencing, videoconferencing

Training programmes can be easily created and administered, enabling student management effecticently.

5. Software Licenses

At very competitive prices, Organization C provides software licences for unlimited usage of the SCORE platform.

6. Knowledge Warehousing and Management

Digital libraries can be easily set up with SCORE. This encourages enterprise-wide knowledge sharing of a wealth of knowledge.

7. On-going Consultation and Support

Organization C provides customers with continuous consultation by offering course enhancement and technical support to guarantee smooth and effective transfer knowledge.

3.4 Benefits

A research in the United States indicates 50% of large corporations will go for online training in 2000. As e-training gains influence in the corporate world, most e-training adopters strongly recommend this new mode of knowledge transfer because of the following key advantages:
1. **Geographic Independence (Learn anytime, anywhere, interactively)**

Users can access training courses 24 hours a day and they can repeat the programme any number of times until their objectives are achieved. Courses can be taken at the office, at home or anywhere users feel comfortable.

2. **Cost effectiveness**

Once a training programme is made, the variable delivery cost is zero. Maintenance and administration costs are low compared with conventional training. More importantly, an effective training environment significantly boosts productivity, which more than justifies your training investment.

3. **Save Time (Timely)**

Training materials can be easily and quickly updated, revised and enhanced, enabling trainees to access the latest training materials, instead of waiting months for out dated materials.

4. **Increase Learner Control (Control and Tracking)**

Organization C's centralized training system ensures global consistency of content and standard. It allows management to keep track of the trainees' progress with automatically generated comprehensive reports.

**Additional Benefits**

Moreover, there are some additional benefits.
1. Content Updated -- Best and latest knowledge – provide the latest information
2. "Just-in-time" availability – receive training when employees’ needed
3. Cost efficiency – save in start-up costs, cost of employee’ time, opportunity cost
4. Self-Paced -- Customized experience – fit trainees’ need
5. Interactivity -- Collaborative and interactive – face-to-face interaction
6. Enterprise-wide impact -- good communications
7. Increase Learner Control -- Control and tracking – easy to control

3.5 **How to Deal with Difficulties**

Companies can delegate its staff to do updating process in order to ensure all the learners can receive the latest version of information or materials.
3.6 Usage and Acceptance of Employees

To ensure the usage and acceptance of employees to WBT, it mostly depends on whether the learner is learner-centric or not. Will they concentrate or participate on the training courses? Work related is the key to motivate employees to ensure the usage and acceptance of employees. The main key is will employees try this e-learning.

3.7 Training that Could or Could Not be Delivered through WBT

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<tr>
<td>3. Management training</td>
<td></td>
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<tr>
<td>4. Language – still don’t know</td>
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<tr>
<td>5. Procedural courses</td>
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<td>6. Orientation</td>
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Due to the nature of its company, they think that all content can train through WBT. The result is just largely depended on the extent to which what employees received and understood of the training content.

4 CONCLUSION

4.1 How to View on WBT

1. Realistic

People need to have positive mind to view e-learning. E-learning cannot fulfill all the expectations which people expected, like can fully substitute face-to-face training at a time.

2. Learning Process

Learners should need to enjoy the learning process. It is largely based on learners’ objectives to e-learning. Do they willing to learn some new skills and knowledge or not. It depends on the intention of learners.
3. Supplement of Training Program

E-learning can add as a good supplement of formal face-to-face training. E-learning and face-to-face training can held together to get the win-win situation. It can act as a useful assistant and delivery tool.

4.2 How to Motivate Corporations to Join their Service is the Key to Success

1. Promote and marketing – at least for top management to know the trend and application of WBT in the real market
2. Communication – increase the communication between service providers, clients, vendors and software providers, etc
3. Build culture – build up the learning culture in organizations to enhance the concept of lifelong learning.

4.3 Future Trend of E-learning in Hong Kong

As Organization C is selling the e-learning products and services, they largely perceive that e-learning is the key trend in training and development.

Basically, most of their clients are large organizations. Organization C has started to sell ASP service (affirmative service provider) for small-medium enterprises. It can provide a common platform for small companies to adopt in WBT.

Surprisingly, in their own opinion survey from various clients, the result is positive with around 80% acceptance on WBT in their organization.
Case Study:
Application of Computer-based Training in Organization D

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization D, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

Organization D is an international bank, focused on the established and emerging markets of Asia, Africa, the Middle East and Latin America with an extensive global network of more than 600 offices in 40 countries. The three principal business groups are TREASURY, Consumer Banking and Corporate and Institutional Banking.

1.1 Background

In Hong Kong, Organization D was one of the leading banks, offering an extensive range of products and services for personal customers, local companies, multi-national corporate and financial institutions. It employs about 5000 staff and 50 of them are in the human resource department. All of them can participate in training programs. It provides high quality products supported by proven delivery systems and excellent customer service. In Organization D, there are two types of training, which includes traditional face-to-face training and computer-based training (CBT).

1.2 Objective

The main objective of Organization D is to offer outstanding value to their customers by providing a knowledgeable, efficient and reliable service in a personal, helpful and responsive manner.
2 DESCRIPTION

2.1 Types of Training

All training programs are provided by its own internal training department. They have sufficient manpower and materials to deliver training. They will describe their training program as decentralized. It divides their training courses into different categories. There are four main categories of training.

1. Retail banking - consumer training
2. Hard skill - product system e.g. teller use computer, credit card training
3. Soft skill - behavior, management skills, decision making, leadership, sales and service
4. Household banking

2.2 Methods of Training

1. Classroom Training

Classroom training (face-to-face interaction) is the main part of training courses in Organization D. It still emphasis on traditional type of training due to the nature of business. They must train their staff in customer service skills by many face-to-face interactions.

2. Video Learning

Employees can watch video to receive new kinds of information related to the trend of banking and new strategy of company.

3. Self-directed Learning

Basically, it includes some written documents e.g. Personal financial consultant - sell card, fund, mortgage, etc.

In Organization D, it will not post all the training materials online. They rather produce CD-ROM rather than Web-based format. WBT just is testing for the training program.

2.3 Why Not Implement?

1. Expensive Development Cost

From the view of Organization D, the development cost of web-based training is too expensive. They are not willing to pay such a high setup cost in the early stage.
2. Lack of Technical Support

Organization D cannot provide enough technical support to their staff. There are not enough computers to fulfill the requirement of WBT.

3. Difficult to Control

It is difficult to control in both implementation and adoption of WBT. Organization D cannot just access employees’ performance on the results of WBT. For example, the recording time for accessing web site, Organization D cannot ensure each of its staffs to have a comprehensive review and understand the entire concept.

4. Paper Document and CD are Even More Convenience

Although WBT can provide training anywhere, anyplace, Organization D still think that paper document or even CD are more convenience to delivery training. Employee can get some solid things on the training courses.

5. Lack of Interaction

Although WBT has its own advantages, it cannot replace face to face training. No one can deny that face-to-face training can provide more feedback to the trainees. In Organization D, most of its CBT are in CD-ROM type where WBT is just started for few months, e.g. Entry program. Organization D also believes the trend of training will be more dominated in WBT in future.

3 EVALUATION

3.1 Perceived Benefits

1. Standardization

Organization D thinks that standardization is the most key benefits concept of WBT. Take trainers teaching training course as an example, Organization D found that even the best and reliable trainers still have different version on its presentation or conversation. Employees cannot receive the same content of training.

2. Flexibility

In case, with the use of WBT, employees can receive training not only in working hours, but also can have training at home and off-work time.

3. Diverse Concept through CD

Actually, WBT come from the concept of computer-based training. WBT can provide the same structure or format of CBT.
3.2 Perceived Difficulties

1. High Cost

As mentioned before, the setup cost is high in implementing WBT. Organization D is not willing to invest such a large amount on WBT.

2. Employees’ Perception

It is a difficult problem on how to arouse employees’ perception of the new technology-based training method. They do not know whether its employee enjoy on the new approach or not. Employees may not feel confidence to receive training through WBT.

3. Low Interaction

As the use of WBT, trainees just will receive the information and receive standard training. They will not have the chance to have direct response.

4. High Technology Investment

Besides the large amount of cost spend on building up WBT, technology investment is also high.

3.3 Criteria for CBT / E-learning

From Organization D point of view, high technology and those companies which trains their staff by simulation may fit to use E-learning type of training.

1. High Technology Company

High-tech company may have the ability to fulfill the basic requirement of technology for WBT. The set up cost may be even much lower than in other companies.

2. Simulation

Those company which train their staff through simulation, e.g. MTR, driving Organization School. Organization D thinks that those training with simulation are better to use in WBT. That kind of training needs more practical practice. The effect is much better. May not help if in service industry, they may more focus on human interaction.

3.4 Outsource of E-learning Plan

Organization D plans that the building up of E-learning portal in project base stage. They will plan to use E-learning in stage-to-stage approach. Although they try to introduce this new form of training method, they still emphasis on face-to-face training.
3.5 Critical Success Factor

1. Employees Support

The main factors that will accept the decision of management is whether it is helpful, useful and practical to staff or not. Employees support on the new type of training may be the key to affect the adoption of WBT.

2. Cost Effectiveness

Another factors that affect the acceptance of WBT may depend on whether WBT can save cost to company or not, especially in business world.

3.6 Training that Could or Could Not be Delivered through WBT

Training that Could be Delivered through WBT

Organization D thinks that some factual courses, like product training (information related to credit card) could be delivered online.

Training that Could Not be Delivered through WBT

Soft skills –selling skills, presentation skills
Live-side skills – quick response to the customers when emergency
High interaction and communication – smile to customers

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<td>2. High Interaction Courses</td>
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4 CONCLUSION

In Hong Kong case, it may not a suitable place to implement WBT due to the distance is not too far. They forecast, in short - term environment, WBT will not widespread in short period of time.

4.1 New Role of Trainers

1. Tutor Role

Trainers will not act like an assistant and contribute to the content of E-learning. They act as guidance on how to search and operate the program.
2. Cannot Update as Human

They will not focus on delivery the new knowledge, but rather searching the information and learn by employees themselves. Trainers cannot follow the updated trend of the Internet.

3. Role to Influence the Participant to Enter

Trainers need promote on the new type of learning methods and influence it trainees to enter into the course. They need to drive their staff to participate in the program.

4.2 Forecast in HK on WBT

Generally speaking, it depends on different type and educational level of workforce. If employees have a higher educational background or computer literacy, e.g. University-graduate or even master level, it seems this kind of staff are more willing to participate in WBT.

As the perception of new type of training will higher and higher, it seems that people know more information and skills about information technology. The implementation of WBT will not affect by the use of some technical problems. However, it is difficult to change peoples’ mind and make people psychological accept the new training concept. Moreover, Organization D thinks that CBT need user-friendlier.

4.3 Necessary Criteria in Building up WBT

(a) Large amount of resource
(b) Dynamic setting
(c) Market reaction
(d) Incentive to use
(e) Constraints
Case Study:
Application of Web-based Training (WBT) in Organization E

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization E, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

Organization E was founded in 1862, it was the oldest public utility in Hong Kong and the first gas utility in the Far East. Today, Organization E is a listed corporation whose business mainly comprises the production and distribution of gas, marketing of gas and appliances, and the supply of the gas and related services to 1.3 million households and businesses in Hong Kong. In the new millennium, organization E is ready for new challenges by launching new business of e-commerce, credit card and LPG filling stations.

1.1 Background

In Organization E, it has around 2,000 staff, which includes workmen, and administrative office staff. They all have the chance to receive training. Organization E also will outsource its training to outside companies to provide service, like gas appliance. Outsourcing companies will design its training course for organization E.

1.2 Mission

To provide this customers with a safe, reliable supply of gas and the friendly, competent and efficient service they expect, while working to preserve, protect and improve our environment.

1.3 Launch of Virtual Customer Centre

In February 1999, Organization E was the first utilize company to establish a Virtual Customer Centre on the Internet to deliver online customer services.

1.4 Associated Company – iCare.com

iCare.com is one of the associated companies with Organization E. iCare.com Limited is wholly owned by Henderson Cyber Limited which has the Hong Kong and China Gas Company and Henderson Investment Limited as the major shareholders. The
website of www.iCare.com.hk provides a comprehensive range of household infotainment and e-shopping services. iCare also launch as the first Internet-on-TV services in Hong Kong. For a new Internet experience with iCare.

2 DESCRIPTION

2.1 E-learning Portal

Organization E has been built an e-learning portal. The main function of this e-learning portal is on holding the “General Induction” programme for the new coming employees. The content of this programme is about the background and culture of organization E. Through the e-learning portal, organization E can save money in it.

2.2 Computer-based Training/ Intranet-based Training

From technical side (Mr. Chan Yee), it has held a so-called “computer-based training (CBT) and the Intranet-based training (IBT)” in 1995. The training courses are focused on the following two aspects:

1. Skillful

All the skillful skills are related to the computer-aided skills, like IT, word, excell, etc. They can receive this kind of techniques through CBT or even IBT.

2. Product Training

CBT/ IBT also can train employees on product knowledge. They just need to access through computer to get the latest product and model from Organization E.

Actually, in Organization E, the overall training time for total staff is around 3,600 hrs per year. CBT program contains around from 1/4 to 1/8 of the total training program or training time. It depends on different teams in order to design for the type of training.

3 EVALUATION

3.1 Perceived WBT benefits

1. Cost-effectiveness

Of course, WBT can lower its cost in long-term. Organization E can save cost in trainers training cost, and save the waiting time.

2. Geographical Independence (Anytime, anywhere philosophy)

No one can deny that e-learning can deliver training anytime and anywhere, it is the most common and popular benefit.
3. Review Frequently

In trainer’s side, they can update the content more frequently. In trainee’s side, if they miss some important key points or want to revise the content again, they can review the training content for more than one time.

4. Convenience

Employee can easily access information or receive training easily. Organization E can provide training to their staff when they are available in working hours or even at their off-work time.

Additional Benefits

Moreover, in technical side, there have several benefits of using CBT.

1. Platform Independence (Knowledge base)

E-learning portal can serve as a knowledge base portal. E-learning portal provide many information and knowledge to employees when they needed.

2. Damage on Real Life

In technical, some CBT or simulations can reduce the damage on some machines. Sometimes, some experiments are too dangerous for new employees to attend.

3. Standardization

One of the most benefits of CBT is the standardization of content. CBT can ensure that all employees can receive the same content and information from the training courses. It is because even the same trainer with the same setting in training program, he or she also cannot ensure the content in a standardized format.

4. Convenience

It is more convenience for both trainers and trainees to participate. Both are them can join in the e-learning portal when they are free.

5. Raise Up Interest

This new kind of training method can rise up the interest for employees to participate in training program.

3.2 Perceived Difficulties

1. Software and Hardware Problem - Implementation

In order to implement CBT successfully, sufficient software and hardware support is needed. It is difficult to provide full solutions on software and hardware implementation at a time.
2. Acceptance – How to Delivery WBT Concept

Another main difficulty to Organization E is how to delivery the new concept of training method to their employees. Acceptance of employee maybe the key elements of the successful of CBT.

3.3 What are the Factors that Organization fit-in?

Those companies with the following features may be good for using WBT in Hong Kong.

1. Structured-large amount of employee
2. Diverse working locations
3. Shift working hours
4. Multi-national/ International companies
5. Top management support
6. Good technical infrastructure
7. High employee computer literacy

3.4 Training that Could or Could Not be Delivered through WBT

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<td>3. Orientation</td>
<td>3. Interactive</td>
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4. CONCLUSION

4.1 Trainers role

1. Technical Knowledge
Trainers now not just have training skills, they also need to have more technical knowledge or skills in order to build up CBT.

2. Development Time
Trainers seem to spend more time on development stage of training rather than on how to deliver the content to trainees.

3. Competency Level
Trainers need to increase its competency level to fulfill the requirements. They will handle or organize different types of training.

Although Organization E wants to implement WBT in their companies, it faces many difficulties. To see whether the implementation of WBT is fit in Hong Kong, it largely depends on the nature of company. Hong Kong people are more willingly to learn and try new things.
Case Study:
Application of WebCT in Organization F

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization F, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

1.1 Background

In the year of 1995, WebCT was started to implement in Organization F. Teaching staff are piloted in web-based teaching. Organization F supported staff in network technology, web technology and other information technology (IT) related consultancy.

In the year 1997, Organization F evaluated the e-learning platform and pilot on some sample courseware. All the support were provided by Organization F. In 1999, Organization F provided the infrastructure to host and deliver e-learning courses. EDC provides the pedagogic support and Education and Development Centre (EDC) supports multimedia production. WebCT chosen as the common platform to supplement regular classroom teaching.

1.2 Main Objectives of Organization F

The main objectives of the Organization F, as stipulated in Organization F Ordinance, are "to provide for studies, training and research in technology, science, commerce, arts and other of learning."

1.3 Role of Organization F

In support of the University's vision and mission, the role of Organization F is to facilitate and support the University's teaching, learning, research, administration and communication through the provision of an up-to-date, cost-effective and efficient information technology environment; and deliver quality computer systems, facilities, and services to meet the critical needs of the University, our staff and students. We also endeavor to establish links with and provide professional consultation/technology transfer services to the community, and to foster quality education in Hong Kong through the use of information technology.
Organization F is organized into five functional areas.

(a) The Applications Development Services Section (ADS) is responsible for the co-ordination, development, implementation and maintenance of the University's computerized administrative systems and corporate databases, in support of the University's planning, administrative and communication needs. The computerized information systems cover the major administrative areas including personnel, student admission, student registration, student records, examination records, credit based system, budgeting and finance, management information, student affairs, research information etc.

(b) The Technical Services Section (TSS) provides overall technical support for the development and implementation of information technology in the University. It is responsible for the development, management and maintenance of the campus network infrastructure, and the proactive evaluation and piloting of new technologies for deployment within the University. The Section is also responsible for the development, management and support of central network services including Internet, electronic mail, Proxy, Firewall etc. It oversees the day-to-day operation of the central computer systems, as well as the management and monitoring of the system software and resources on the central computer systems.

(c) The User Services Section (USS) provides end-user support services to enable all staff and students to make the best use of information technology at their disposal. It is responsible for the operation of the HelpDesk and telephone Hotline services to all users, the provision of computer training courses to staff, the operation of the Student Computer Clusters and the co-ordination of hardware maintenance support to desktop equipment. The Section supports the administration of the central Novel LAN servers and LAN-based GroupWare applications, assists user departments in setting up LAN servers, provides user consultancy on PC software problems and supports the setting up of standard LAN-based applications for common use by departments. The Section also provides user consultancy of the development and application of web technology, and is responsible for the infrastructure, administration, technical and training support of the University's common web-based teaching platform.

(d) The Administrative and General Services Section (AGS) is responsible for administration matters including budgeting, finance, personnel, accommodation and office management etc. It also provides general support and customer services to departments in software site license co-ordination and distribution, computer training course administration and various publicity activities. The Section provides administrative and general support for the smooth running of the ORGANIZATION F's operations and services.

(e) The Quality Assurance Unit is responsible for the planning and auditing of the Organization F's quality assurance processes, to ensure that the services it provides would meet the critical needs of users and are of quality standards.
2 DESCRIPTION

2.1 Push and Pull Approach

Dr. Woo, chief of ITS in Organization F, explained that there are two approaches in promoting e-learning. They are (1) push and (2) pull system for learning approach.

(1) Push approach means it is a compulsory approach to held the system of e-learning. Top management forces organization F members to held and learn the new learning approach.

(2) Pull approach is an approach which depends on lecturers action. It means members of an organizations will willingly to use this new learning approach as their tools to deliver teaching. Employees have the right to choose whether they can use the new learning approach.

For example, in Organization F, they will give all the lecturers the right to choose whether they will use WebCT in order to assist their teaching. WebCT have implemented 2 years time. Surprisingly, there are 2000 courses WebCT post on the server. It is quite a good number in results. WebCT will be in pull system which means give choice for teachers to choose whether they use WebCT or not.

2.2 Current Organization F support in e-learning

There are several courses hosted in a Sun UE 10000 supercomputer with 4 CPUs, expandable to 64 CPUs. There are over 60 WebCT workshops offered to more than 1000 participants.

Here are the details:
1. Video streaming available from a VoD server
2. WebCT helpdesk at P-502a, by appointment
3. E-learning hotline at ext. 4948

In general, 3 levels of support service have been defined as follows:
Level 1 - comprehensive and full range support
Level 2 - confined and limited support
Level 3 - minimum, facilitating and outsourcing support

Below are the IT standards currently in force, and the corresponding level of support service provided by Organization F in five areas viz. Hardware Maintenance, networking, E-mail, End-user Computing and Applications Development:

3 EVALUATION

3.1 Factors Affecting the Adoption of WebCT

1. Support Factors – Top Management Support (Mission)

As the use of information technology and practical issues are the missions of Organization F, they just follow the mission and assist the implementation in the University.
2. **Environmental Factors – Market Demand (Trend of information technology)**

As you know, all the universities, sometimes even in secondary, and primary school, have already started to use e-learning as their teaching tools. It is a must to follow the trend in order to maintain the competitiveness in the market. Especially, in academic organizations, it needs continuous improvement to maintain the status and reputation.

### 3.2 Advantages of Common Platform

1. Students will experience similar interface for all courses
2. Course contents are interchangeable and portable
3. Reduce training effort
4. Reduce support effort

### 3.3 Support of WebCT

1. Communication on teacher to teacher and teacher to students
2. Course delivery
3. Assessment
4. Problem-based learning

### 4 CONCLUSION

From academic view, teaching still needs the mode in face-to-face traditional teaching. As mentioned by Dr. Woo "Nothing can replace tutorial lessons”. WebCT just act as an assistant in teaching.

#### 4.1 Results

In 2000, there are over 1400 websites created for different subjects with 40,000 student accounts/seats. CyberU launched in July 2000 with WebCT chosen as organization F e-learning platform. WebCT interfaced with the organization F student administration systems. They will introduce “One Stop Web Shop” – “Mega Web” which joint Organization F, EDC, and MIC.

#### 4.2 Further Expectation

WebCT will further integrate with administrative systems and personal portal for course designers and learner. It will enhance VoD and MCU support for asynchronous, synchronous and hybrid course delivery.
Case Study:
Application of Web/Computer-based Training in Organization G

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization G, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

Organization G is a public corporation charged with the task of operating and developing domestic, cross-boundary and inter-city railway services in a prudent commercial manner.

Organization G currently operates two domestic passenger rail services. East Rail operates suburban mass transit services between Hung Hom and the boundary at Lo Wu. Light Rail provides passenger services for the fast-developing North West New Territories. Both networks are supported by feeder buses. East Rail also operates inter-city passenger services to Guangzhou on its own train and provides access for other inter-city trains running to and from Guangzhou, Shanghai and Beijing. East Rail carries freight, mainly to and from the interior of the Mainland. The Corporation also develops property projects with joint-venture partners along its railway networks.

The Corporation's mission is to provide a safe, reliable, profitable and integrated railway network meeting the increasing demand for territorial, cross-boundary and inter-city railway services.

The Corporation is dedicated to finding better ways to:
- Serve customers and meet performance pledges
- Fulfil both Government and corporate objectives
- Maintain financial strength
- Develop sound business partnership
- Build teamwork and commitment in staff
- Encourage initiative and reward success

1.1 Background

The number of employees in Organization G is around 4600. All the employees would receive training (e.g. orientation, safety training courses) by their training department. Each employee has around 4-5 days per annual in the overall training hours.
Moreover, the implementation of training courses was largely depends on the training needs analysis. Most of the source is from performance appraisal or even from the forecast of training handbook.

Organization G first came into service in 1910, as a single track system. It was completely overhauled in 1983 when it was electrified and double tracked. Previous to 1982, the railway had operated as a Government department but, Organization G was created. The organization was separated from the Government, providing a sound financial foundation for the future.

1.2 Quality Corporation

Since the introduction of its quality initiatives back in 1991, Organization G has successfully established a sound quality management system. The Corporation has benchmarked itself against the most stringent measures for business practices, the USA-based Malcolm Baldrige criteria, and the success of its measures was acknowledged in May 1996 when Organization G was named the winner of the Hong Kong Management Association's Quality Award.

In October 1996, Organization G became the first railway to win a management award conferred by the Asian Institute of Management. The Management Awards of Asia are the regions acknowledged seals of excellence. Organization G won its Award in the category of General Management.

2 DESCRIPTION

2.1 Types of Training

There are two types of training in Organization G. They are management training and technical training.

1. Management training includes customer service, management training, supervisory training, quality training, language training, information technology (IT) training.

2. Technical training includes operational training, EMU (simulation of driving train), engineering, and maintenance of computers.

2.2 Stage(s) of Building up WBT and CBT

2.2.1 Stage 1: Preliminary Stage

At this stage, Organization G starts to use CBT as one of their delivery method of training. Some of the training programs began to transform into computer-based training. For examples, orientation program will transform into web-based training, and personal computer skills training will transform into CBT, i.e. CD-ROM.
2.2.2 Stage 2: Pilot Test

Pilot testing was used in order to test the employees' overall adoption of CBT in company. The pilot test would begin on specific area, like orientation. At the same time, they plan to use WBT to have a one-year implementation program.

2.2.3 Stage 3: Implementation

Organization G had started to implement WBT and CBT in the past few months (year of 2000). Organization G is now starting the use of WBT and CBT by the time.

3 EVALUATION

3.1 Benefits

There are several benefits of using WBT in Organization G.

1. Cost Improvement

Although there are no accurate figures in the return on investment (ROI) in private companies, they still think that cost will have great improvement in long term.

2. Geographic Independence (Distribution)

By using WBT, there will have no distribution problem of delivery training. It increases the accessibility for employees to access the information. In addition, WBT can help company better to decentralize the training into different branch office. It is good for distributing information.

3. Save Time (Timeliness)

Due to the fixed working hours of employees, WBT can deliver training to employee when they off-the-job. This approach especially good for some night shift and those employees that lacks time for training e.g. operation, senior management.

4. Increase Learner Control (Number of Student Increase)

Organization G forecasts that the volume of student will increase in the coming ten years. The new applicants or staff may have higher education level and computer literacy.

3.2 Difficulties

However, Organization G also faces difficulties in implementing WBT.

1. Technical Aspect

When the implementation of WBT, the main difficult for Organization G will be the technical support. They forecast that they could not fulfill the requirements of having
WBT, especially the network of the company. They will concern how to establish a stable platform for the users.

2. Attitude Change

They will face a problem of how to promote ("how to sell") the new type of training method to their staff. The promotion about CBT that is not the main concerns to exploit them. The main concern is how to gain management support to adopt the new concept of WBT. Organization G can increase the promotion of CBT, which means align with reward and role show in order to let employee see the benefit of CBT.

3.3 Perceived Prefect Model of WBT Implementation

Ideally, the perceived perfect model of WBT has the following criteria.

1. Open Flow of Information

Ideally, WBT can allow information flow to any departments (regarding to its organizational chart). It is easier for different departments to access the information, e.g. course details. Information technology companies have an advantage on sharing information. IT Company would be better in implementing WBT because they have built a good platform and network already. Furthermore, their organization chart would match with technology.

2. Economic: Limited Capital

In developing WBT, the greater the investment, company can have greater program with high quality. The lesser the investment, company just can have smaller program. The investment problem is not an important reason in building up WBT when compare with organizational and technical aspect, e.g. multinational film do product training through CBT would be suitable.

3. Instructional

CBT is just a part of training. The role of computer is just act as a tool. For example, simulation can generate the real environment for instruction. Employees just receive training through computer as one of their learning tools. In order to fully maximize the effectiveness of training, Organization G thinks that mix situation (CBT plus traditional) of training is still the most useful method to deliver training.

3.4 Outsource

One third to half of the training program were out-sourced to other companies. Those training courses included language, PC course, and management.

For all the steps, Organization G just would involve in production due to the cost problem. Organization G will also give information and monitor the process to see whether the content suitable for Organization G itself or not. They may also listen to the advice of vendor.
3.6 Content that Could or Could Not Be Delivered through WBT

3.6.1 Those Contents are Suitable in WBT
1. Informative e.g. orientation
2. Procedure Policy

3.6.2 Training that Could or Could Not Delivered through WBT
1. High level management e.g. team building, creative
2. Interactivity

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4. CONCLUSION

4.1 Trainer's Role

The trainers' role is even changing all the time. WBT and CBT are only a procedure of their work. Trainers may need to emphasis on instructional design and delivery.

4.2 Suitable in HK?

Organization G thinks that Hong Kong people have rather high computer literacy than other Asian countries. Generally, they are willingly to accept the use of computer and the Internet. In addition, people with self-discipline are more suitable in using WBT.

4.3 Survey Feedback

Organization G has done a survey on the top management to investigate their attitude to WBT. They all have positive feedback in the implementation. It is the best time for planning.

Moreover, WBT is suitable for all geographic location. For Hong Kong organizations, business activities on china is critical (e.g. china law, tax...). As a result, WBT is good for receiving information.
Case Study:
Application of Training and Development in Organization H

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization H, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

The Cable Modem Internet broadband service will be launched by Organization H shortly within the 1st quarter of 2000. It is one of the latest Internet technologies and by taking advantage of the Hybrid Fibre-Coax (HFC) network, you can connect to the Internet without the delays caused by busy telephone dial up networks. Users can enjoy 24hrs continuous connection to the Internet without worrying about interruptions or busy lines by simply install a Cable Modem and an Ethernet Card in their computer system. Cable Modem enables users to surf the Net, download multi-media files at a speed of up to 28Mbps, 500 times faster than the speed of 8Mbps provided by the traditional 56K Dial up service.

1.1 Background

Totally, there are around 2400 employees in Organization H and 23 of the staff are in human resource department. Surprisingly, Organization H has not emphasized in the field of training and development. It only has around 2 employees organized and handled for the issues related to training.

1.2 Mission

1. To be one of the leading Internet Service Providers (ISP) and to provide quality, secure and reliable broadband services.

2. To establish unique competencies in data communications and system integration. To deliver the most cost-effective Internet services and solutions to both consumers and corporate markets.

3. To develop high-speed and superior broadband services by deploying organization H's extensive infrastructure for the next digital information era.
1.3 Pledge

1. Organization H is keen to develop diversified multimedia services and to provide customers with high quality Internet value-added services.

2. Organization H aims to offer various revolutionary on-line services, bringing customers the latest worldwide information as well as a speedy and reliable global communications network.

3. Organization H focuses on offering broadband Internet services that will meet the increasing market demand for fast Internet access through Wharf's Hybrid Fibre Coaxial state-of-art network by the end of the year. Trial testing of cable modem has already been completed.

1.4 High Quality Services

Organization H provides revolutionary high-speed Internet access, a variety of comprehensive personalized on-line services, rich information and a fantastic Internet life to its customers.

1. Chinese Cyber Community – Organization H’s i-world

Organization H is one of the largest Chinese cyber communities on the net. It enables NETizens to disseminate member-generated content, create interest groups and personal homepages. Organization H also provides NETizens with unique free web mail services. NETizens can create their own humorous email address up to 32 digits long.

2. 24 Hours News

Working together with News Channel, organization H provides 24 hour News to keep users informed of all the local and international news and financial reports.

3. Cool Web-Sites

Just a click on the organization H web-site and you'll immediately be in touch with popular and cool web-site information. No time-consuming searching is required.

4. Roaming Service In Over 150 Countries

Organization H provides a roaming service in over 150 countries. It enables users to access their internet services while overseas without any extra IDD charges. (Roaming service should be registered through the organization H homepage in advance.)
5. **24 Hour Customer Technical Support**

To provide total customer satisfaction and meet the increasing demand for quality Internet services, organization H offers 24 hour technical support to solve problems and answer all enquiries regarding on-line services immediately.

2. **DESCRIPTION**

2.1 **Types of Training**

In organization H, they have two main types of training, external training and internal training. External training means Organization H will outsource some courses to other companies or organizations for employees to receive training or employees can choose different learning courses based on training needs. Internal training means employees will directly receive training by Organization H.

1. **External Training**

Most of the time, Organization H will provide a so-called “Financial Assistant Plan” for employees if they want to apply for some training courses. Employees can grant for a maximum of HK$6,000 per year training substitute fees for financial support. Most likely, employee will apply or attend courses for high diploma, or even degree in different Universities in Hong Kong (e.g. SPACE, SPEED). Of course, the course content should related to their work nature or work task.

For example, technical frontline staff can grant the assistant fund by request in order to study in those courses related to information technology (IT) or networking. So that, employees can acquire different knowledge and skills based on their individual needs. In addition, this financial assistant plan motivates employees to improve its ability and equip themselves into multi-task skills. Other common courses for employees to apply are all the courses related to management, e.g. team building, communication, leadership.

2. **Internal Training**

In Organization H, it only provides orientation course and internal training directory for their employees to attend due to their work nature (news, broadcasting, TV, operation). It is because most of the employees in organization H are in shift-work schedule. They work through 24 hours. It is difficult to arrange different type of courses for their staff. As a result, internal training directory may be helpful for their staff to enhance their training needs. They can search any information through the delivery.

2.2 **Intranet**

Although Organization H has its own Intranet which provides the latest news and information to their employees, the usage rate is low. Employees are not willing to get
news and information through the Intranet. They even prefer to read the news from the notice board in canteen or from their department notice.

2.3 Why Employees Not Adopt Training through the Intranet?

1. Norm/ Culture of Employees

Though Organization H is one of the Internet service providers in Hong Kong, the acceptance on information technology is low. Most of the employees even do not know how to use computer or not using computers in their workplace.

2. Employee Not Willing to Try

Employees are not willing to access information from the Intranet. One reason is that they do not have their own computer. Another reason may be due to the complexity of operation in computer.

3 EVALUATION

3.1 Main Principle Drivers

Anytime Access Philosophy

WBT can deliver training in anytime and anyplace. Employees can access all the information and training materials even they are having on-site job and in their home. It is useful for employees to update their knowledge.

3.2 Perceived Factors Influence the Adoption of WBT

1. Application Development Factors -- Skills and abilities

Organization H will afraid that their employees (both operation and administrative staff) do not have enough skills and abilities to handle and receive training through the Internet. Most of them are not well educated and even not use computer for their work. The skills and abilities are the factors that need to consider before implementing WBT.

2. Support Factors -- Top management support

Top management support is another main factors that influence the adoption of WBT. Even though human resource officer recognizes the trend and importance of this new type learning mode, without top management, it still cannot work.

Unfortunately, the field of training and development is not the focus areas of organization H. There are limited training resources. Even worse, the proposed budget for training is even lower than 0.1% of total staff salary.
3.3 Perceived Barriers

1. Employee Adoption

Employees may not willingly to adopt the new type of training. They need time to adopt new things. It may be an important barrier to build up WBT. Without employees support, it is difficult to held the new training mode.

2. Without Technical Support

Most of the employees in Organization H do not have its own computer, especially the frontline workers. As a result, how can employees receive training through computer and the Internet.

3. Nature of the Job

The proportion of frontline staff is large. They just do some operational work and follow instruction. Most of their work nature is not related to information technology.

3.4 Perceived Advantages

1. Time Savings

WBT can deliver training in anytime. Employees can receive training when they are free or even at nighttime. WBT can save in time to deliver training.

2. Geographic Independence (Anywhere)

Another main principle advantages is WBT can deliver training in anywhere, any place. They can access information through computers or notebook. WBT give the chance to receive training without boundary limited.

3. Interactivity (Feedback)

WBT also can receive feedback by interaction, e.g. forum, chat room, etc. The question and answer section may help employees to solve their problems.

4. Self-paced (Individualized)

The learning process is self-centralized. Employees can receive training and learn new knowledge individually.

5. Increase Learner Control (Assessment)

Even WBT, they also can provide assessment record, e.g. online time on-off, test results, etc. It is a useful method to monitor employees action.
6. **Flexibility**

It is more convenience and flexible to both trainers and trainees. Trainees have more freedom to choose what they want. It is flexible for employees to make their own judgement.

7. **Cost Effectiveness -- Low Cost**

It is not too expensive to build up WBT if companies implement this new type of training. The return on investment is high in long term.

3.5 **Perceived Disadvantages**

1. **Transaction Period**

Organization H cannot held WBT at a time. It is difficult to change the norm and culture in transaction period.

2. **Afraid of Using Computer**

Employees in Organization H still afraid in using computer in their work and learn new things through the Internet.

3. **Educational Level**

It largely depends on the educational level. If employees have low computer literacy, they may not willing to adopt computer-based training and even web-based training.

3.6 **Training that Could or Could Not be Delivered through WBT**

**Training that Could be Delivered through WBT**

1. Knowledge and information
2. Product features
3. Information Technology skills

**Training that Could Not be Delivered through WBT**

1. Employee Attitude
2. Team building skills
3. Other management concept

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H6
They think that it is suitable for Organization H to train their staff in both classroom and web-based training.

4 CONCLUSION

4.1 Perceived Company that Fit the Use of WBT

1. Staff Adoption

Employees should support the use of WBT with certain educational level. Otherwise, it is not use to those employees who do not know about computer and the Internet.

2. Culture

The culture of company is another main consideration for companies to use WBT. Without the norm of using advanced information technology, it is difficult for old employees to adopt.

3. Size of Organization

Of course, both large and small-middle enterprises can enjoy benefits from the use of WBT. However, it seems that those companies with large size will have higher return on investment.

4. District

The more diverse of the district area, the higher benefits companies can gain. They can save in traveling expenses and training delivery time.

4.2 Future Plan

Organization H plans to put "orientation" course into web-based training. For some of the job, they still think on-the-job training is better for them. For example, an operation staff needs to learn from experience in setting up the technical appliance. Moreover, employee had HK$6000 subsides for training per year. It is not a must to operate web-based training.
Case Study:
Application of Training and Development in Organization I

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization I, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

Since its establishment in 1984, Organization I has always been committed to offering customers a comprehensive range of quality insurance products and services. The company's extensive portfolio of insurance products -- which includes individual life, medical insurance and employee benefits schemes -- is tailored to meet customers' needs throughout the different stages of their lives. Moreover, affiliated companies add further depth. Organization I provides quality services and offers most types of non-life insurance products; Organization I Pension Services Limited provides expert guidance on the Mandatory Provident Fund market and ORSO scheme in Hong Kong.

1.1 Background

Organization I is one of the first integrated financial service providers in the world resulting from a full merger of the largest insurance company in the Netherlands with one of the country's largest banks. Its roots could be traced back to the year 1845 when The Netherlands Insurance Company was established. Organization I is active in the fields of banking, insurance and asset management in more than 65 countries. With its substantial worldwide experience and almost 100,000 employees, Organization I provides a full range of integrated financial services to over 50 million customers globally. The Group has total assets of over US$530 billion and a capitalization of about US$65 billion (as at end of September 2000). For combined revenues of life insurance and annuities, Organization I now ranks first in the US, and for insurance revenue, ranks second in Asia and first in South America.

According to Fortune Magazine Global 5 Hundred 2000, Organization I is ranked as:

- No. 1 by profits of stock life insurance companies
- No. 2 by revenue of stock life insurance companies
- No. 21 by profits
- No. 27 largest corporation in the world by revenue
1.2 Intranet

There are over 2000 employees in Organization I. Organization I has already had its own Intranet for employees to access information globally, for example, the news and competition information. Employees can log-in and get the most updated information. It can enhance the communication between different branches in different countries.

2 DESCRIPTION

2.1 Training Institute

"Striving for the best and focusing on human investment" is the main management philosophy of Organization I. Having over HK$10 million spending on its renovation and installment, the new organization I Life Training Institute is a practical realization of the company's theory and helps create more job opportunities for the society.

2.2 Training Commitment

Organization I has the best people in the business because we train them intensively and methodically. The constant theme that underlies all our training is building and nurturing trust with each customer through always putting their needs and best interests first. A solid knowledge base, a good attitude and productive working habits are prerequisites for a professional insurance agent. We provide creative and comprehensive training courses to help our agents maximize their potential for a successful career. An efficient system is used to control the progress of taking the training courses. A passport is given to each agent and the passport will be stamped after a training course is taken. Besides, incentives and awards will be given to those agents who attain professional qualifications.

2.3 Professional Examinations

Each frontline insurance staff needs to pass some professional examinations before he or she goes out to work.
1. Fellow, Underwriters Training Council – LUTCF
2. Chartered Insurance Agency Manager – CIAM
3. Chartered Life Underwriter – CLU
4. Chartered Financial Consultant – ChFC
5. Fellow, Life management Institute – FLMI

2.4 Training Courses

Besides the professional courses, the training institute will hold some training courses. All employees will have the chance to receive classroom training in Wanchai.
Pre-Contract Training

1. Career Orientation Reading
2. An Evening with Internal Staff
3. Registration Exam Study Course
4. Registration Exam Briefing

Agency Basic Training

1. Agency Training Course
2. Empowerment Course
3. Organization I Salesperson
4. Target Marketing Workshop
5. 100 Days Follow up Program

Agency Intermediate Training

1. The Road to Management Seminar
2. One Minute Salesperson
3. Counselor Salesperson
4. Sales Clinic
5. Income Protection Plans Training Course
6. General Insurance Training Course
7. Retirement Benefits Basic Course

Agency Advanced Training

1. Versatile Salesperson
2. Business Insurance Course
3. Retirement Benefits Advance Course

Agency Master Training

1. Business Insurance Seminar
2. Re-positioning Your Career Workshop
3. Personal Comprehensive Financial Management Course

The insurance industry is unique in that it offers unlimited opportunities and remuneration. Our agents have the power to take promotion prospects and self-development opportunities into their own hands through hardworking and dedication. At Organization I, success is recognized and rewarded, both within the company and at the industry level.
Efforts to constantly upgrade our training facilities and techniques will continue, as we believe the results of good training are paramount to developing outstanding service. And excellent service is what will ensure our long-term success.

Besides the training institute, team managers also will train their staff by district. They are willing to train their staff internally, just like coaching. This is another alternative for employees to learn new skills.

3 EVALUATION

3.1 Perceived Difficulties

1 Training Content

Because Organization I is in service industry, the training courses given by Organization I emphasis in people-to-people skills. Employees need to make quick response and decision to their client. In the sense, Organization I thinks that WBT cannot train their employees in people management skills. Most of their training is focus on customer training skills and knowledge.

2 Nature of the Job

Due to the nature of the job, team managers not only train their employees on insurance knowledge, but most importantly, train them on how to make quick response and meet different people. They need to know their clients’ need in order to fulfill them. Face-to-face training or even coaching is more effective then WBT.

3 Job Task

Most of the employees’ job duties are selling insurance and MPF package to their clients. Most of their time is just spending on meeting different people, but not using the computer. Computers just act like a tool for their work. The work in computer is so simple and unique.

3.2 Perceived Usage of Employees

1 Staff Incentive

Interviewee of Organization I does not think that staff will have self-incentive to attend the WBT. How to motivate their staff to attend in WBT courses is a great problem. Most of their employees are not willing to receive training through the Internet.
2 Uncertainty

The usage and attitude of employees are still an uncertainty. Interviewee of Organization I think that WBT cannot ensure the staff in participating in the program. Employees may just log-in the program and doing other kind of things.

3 Lack of Feedback

Again, due to the work nature, people-to-people interaction is the most important issues for them. It seems that WBT lack in quick responses and feedback on some issues.

3.3 Perceived Factors Affecting the Adoption of WBT

1. Organizational Factors – Structure Design (Nature)

The most important factor that affecting the adoption of WBT is nature of the company. Those companies with more unique work to do, will more suitable to train their staff by WBT. However, those companies with more interactive activities may not suitable to implement WBT, e.g. insurance company.

2. Support Factors -- Employees Support

Employees will not spend so many time on WBT training or simulation. They are more likely to go out and gain real life experience. Meeting a client or even a manager is useful than just sitting in front of the computer.

3.4 Advantages

1. Save Resources

Those companies using WBT can save resources; for example, they can save the training materials, or even trainer’s time. Organizations can fully utilize the resources with economies of scale.

2. Cost Effectiveness -- Save cost

Of course, the most important things for business organization are the cost-effectiveness. No one can deny that by using WBT, they can save cost in long run.

3.5 Disadvantages

- Low Interaction

Interviewee of Organization I thinks that WBT is low in interaction. They want to focus more on training in management skills, selling skills, interview skills, etc.
3.6 Training that Could or Could Not be Delivered through WBT

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4 CONCLUSION

Organization I will not use WBT in the coming few years. They still think that they are more focus on the philosophy of “people-to-people” interaction, but not know how to use computers. They need a presentable person rather than a high computer literacy person. All in all, they just focus on training by instructor-led courses.
Case Study: 
Application of Training and Development 
In 
Organization J 

TRANSCRIPT 

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization J, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT. 

1 INTRODUCTION 

1.1 Background 

Organization J is a group of companies with operations in China, Hong Kong and Taiwan, with over 1,300 employees. Its combined turnover in 1999 exceeded HK$4.3 billion (US$553 million). Its shares are listed on the Hong Kong Stock Exchange. 

Recognized as a premier manufacturer and retailer, Organization J operates 37 shops and Emphasis shops in Hong Kong, 21 Emphasis shops in Taiwan, 2 organization J shops in Shanghai and 7 in other parts of China. In Hong Kong, its retail management is the first one in its business to be ISO 9002 certified. 

Complementing the retail network, there is an eShop which offers on the Internet (www.chowsangsang.com) a complete service for shopping and sending gifts. For clients in need of corporate gifts, a special team under organization J takes care of every aspect from design to delivery. 

1.2 Structure of Organization J 

World Commercial Sales Co. Ltd. is a leading trader in precious metals, dealing in gold and platinum bullion in various forms as well as palladium. Organization J Securities Co. Ltd., together with organization J Futures Co. Ltd. offer a complete range of services in stock and futures brokering and margin financing. With six trading rights on the stock exchange, a state-of-the-art online trading platform and a 10-branch network, they offer unparalleled investment services to clients. Organization J, specializing in testing for fineness of gold and platinum, has been providing accredited service to the precious metal industry for over 10 years. 

There are over 1300 staff in organization J. They are the only Jewelry Company to get ISO 9002. Therefore, they largely focus on training in order to ensure the service provided by their frontline staff.
1.3 Intranet

Now, Organization J has its own Intranet, which provided one-side delivery of information and news. It is a top-down approach from delivery information from headquarters to different branches. However, in future, Intranet will change in two-side communication approach. Branches can send back feedback or directly report back to head quarter with the latest news. Emphasis shops only have one computer where Jewelry shops have 2 to 3 computers. The number of computer in each shop is depending on the area of the shop.

2 DESCRIPTION

In the new policy (started from 1-1-2001) of training and development in Organization J, every new staff must attend into an orientation program. Orientation is a one-day workshop which trained by both human resource department and sales operation department.

2.1 Content of Orientation
(a) Morning Session
In morning session, all the courses are trained by Human Resource Department. The contents are as below:
- Background
- Culture
- Mission
- Compensation and benefits

(b) Afternoon Session
In afternoon session, all the courses are trained by Sales Operation Department. The contents are as below:
- Jewelry product
- Standard of service industry
- Basic service skills

2.2 Type(s) of Training

1. Off-Job-Training

There is three main aspect of off-job training. They are:
1. Product Information
2. Services
3. Management

After three months, each trainee will have the chance to receive two additional training courses. They are so-called “effective selling skills” and “best service”.

Most of the methods in off-job training are fact-to-face training, watching video, and role-play. Watching some standard video and role-play can give trainees more real life conceptions on selling things.
2. **On-job Training**

Organization J will send their new employees to each branch for 2 months on-job training and gain experience in the real life sales situation. In the on-job training, at least one trainer to deliver training on information, services and product knowledge to that new employees.

Most of the trainers are branch manager or senior sales officer in branch. After two months, they will have performance appraisal on the trainees to access his/her performance. They just act like coaching. Trainers will guide the new staff in the operation and sales.

3. **Outsourcing**

Organization J had out-sourced a management program to outside consultant, C.K. Lee Associate Training Consultant to train on Management skills which special for assistant administrative and senior sales officer.

Employees also can apply for some special sponsor if they want to learn some new skills. For example, employee can grant for a fun to learn English, Japanese, etc.

2.3 **Learning Resource Centre**

Besides three different types of training, learning resource centre stores some reference books on jewelry, training materials, branch information, etc. All these materials can provide an opportunity for employees to have an in-depth knowledge on company and its industry.

3 **EVALUATION**

3.1 **Perceived on WBT**

Organization J will not implement WBT in the coming few years. Even they will implement WBT, the target will just focus on top management or senior administrative staff. It needs time to adopt in using WBT. They still have chanced to implement WBT in the coming future as they emphasis training and development.

3.2 **Perceived Difficulties**

1. **Employee Attitude**

Most of the employees in Organization J are rather old in age with solid selling experience and with much work experience, they have traditional concept of training in their mind. Their attitude is difficult to change at a time.

2. **Low Computer Literacy**

Employees do not have enough computer knowledge and practical skills to support the use of WBT. In general, all frontline staff need to use computer in their work task.
3. Lack of Resources

There are many limitations to implement WBT. For example, the lack of hardware and technique are the problems of developing the new training method.

4. Lack of Trainers

Organization J does not have enough trainers and planners to plan the program on WBT. They do not have enough talent in building up WBT.

3.3 Perceived Employees' Acceptance

1. Education Level

Due to the low education level of employees in organization J, most of the frontline employees are just graduate in secondary level.

2. Long Working Hours

They have over 10 working hours in their shops. It depends on different district. They will not willing to learn new skills even in office time. They need to meet different customers.

3.4 Perceived Factors Accepting the Adoption of WBT

1. Organizational Factors – Structure Design (Culture)

The norm in each branch is an important factor affecting the adoption of WBT. They are not in IT industry and even not IT-oriented company.

2. Support Factors – Top Management Support (Management style)

To a large extent, it largely depends on top management support. Otherwise, it cannot be success and have the resource to implement the new training method.

3. Support Factors – Employee Support (Employee participation)

If employee not participate in WBT, it is a big problem. Although you have well-established WBT program, employees not accept the new learning method. It also no use and just waste resource.

4. Application Development Factors – Technical Infrastructure (Resources)

Organization J does not have enough resource in supporting WBT. In implementing WBT, it involves many resources, e.g. money, talents, technology infrastructure, etc.
3.5 Perceived Benefits

1. Content Updated (Trend of Information Technology)

In the 21st Century, the trend of information technology seems to have a must. That may be benefits in using technology and the Internet to deliver training. The content of WBT can update day-by-day.

2. Save Time

The allocation of time is much better than before. Employees can receive training when they are available.

3.6 Barriers

1. Not Value in WBT

Organization J does not think that WBT will bring great benefit to both employers and employees. They does not think that employee will adopt the use of WBT. It is not value to implement in Organization J.

2. Limit of Content Delivery

Most of the training courses in Organization J are related to selling skills, meeting clients. This kind of training which need interactive and people-to-people is difficult to train through the Internet.

3. Incomprehensive Target Group

The implementation of WBT is greatly depended on the target of the trainees. Frontline staff will be more effective by receiving face-to-face training.

3.7 Training that Could or Could Not be Delivered through WBT

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4 CONCLUSION

Interviewee of Organization J thinks that WBT will be well-established in large companies in the coming 10 years. Due to the trend of information technology, companies will try their best to maintain the competitiveness in the market.
Case Study:

Application of Training and Development

In

Organization K

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization K, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

1.1 Organization K's Identity

Organization K's corporate identity has a high-quality look and feel, corresponding to the excellence they strive for in everything they do for their customers and community.

The intertwined "S" and "C" stand for the core ideals of their company. It symbolizes organization K's policy of "Customer first":

- S represents - Store and Service
- C represents - Corporate, Community and Customer

1.2 Organization K's Philosophy

At the stores in Organization K, they feel this identity symbolizes our ideals, and is well suited to their rising profile as they fulfill their corporate mission throughout the world.

Mission:

- Organization K’s Principal is to place the "Customer First" at all times. They also emphasize three key words, which make up the essence and character of the retail industry, "peace", "people" and "community". These precepts remain the same wherever they are doing business and they strive to act as a good corporate citizen of the local community.

- Organization K’s Strategy is to provide a wide-range of quality daily necessities at reasonable prices for our customers.

Whenever the AEON group opens a new shopping centre in Japan or Southeast Asia, they make every effort to plant trees native to the locale as part of the facility. They conceived of this as a means of having the customers plant trees and raising their awareness of environmental problems.
1.3 Background

Organization K established in Hong Kong in November 1987 and listed on the Stock Exchange of Hong Kong in February 1994. Engaged in the operation of General Merchandise Stores (GMSs), the aim is to provide a wide range of daily necessity merchandise at reasonable prices to local consumers. The merchandise is broadly categorized into fashion, food, household items and catering services. In organization K, 90% of products are sourced locally to suit local market needs. Currently operates eight GMSs in densely populated residential districts in Hong Kong and two GMS in Guangzhou, the People's Republic of China. Organization K aims to develop a chain operation in Hong Kong. They will seek more sites to fulfil the target of building a network of ten stores by the year 2004. They strive to offer value-for-money merchandise to local customers.

There are around 3200 staff in Organization K (Hong Kong) in ten different branches, where one-half of them are full time staff and the other half is part-time staff. Specifically, there are 13 staff in human resource department and 4 of them are major in organizing training courses and related activities. Organization K largely emphasis on training and development as their goal is to provide the best service.

1.4 Intranet.

Organization K has the Internet and their own Intranet in their information system (IS) which located in head office. However, the Intranet can just access by managerial level staff. The main purpose of the Intranet is for communication and share latest information among headquarters to different branches. However, administrative staff and frontline workers cannot access any information through the Intranet. Moreover, they will use a top-down approach of using computers and the Internet. The higher the level, the more ways to access information and use the technology in Organization K.

2 DESCRIPTION

2.1 Type(s) of Training

There are three main types of training. They are off-job training, on-job-training and out-sourced training program to other training consultancy.

1. Off-Job-Training

(a) Organization K University

In organization K, they have a program called “Organization K University”. This program will provide training courses on the following aspects:

1. Orientation
2. Information technology skills e.g. Word, Excell, etc
3. Product knowledge
4. Sales Techniques
5. Services Strategy
(b) Classroom-based Training

Organization K will hold some training courses to employees for updating their product knowledge and latest news in retailing service industry. Most of the classroom-based training will be delivered by internal training staff. All the full-time and part-time employees have the chance to participate in these kind of training courses in order to maintain the service quality.

2. On-job Training

At the same time, frontline staff have the chance to receive on-job-training in their workplace. Organization K thinks that on-job-training will more suitable in training their staff in sales presentation skills and communication skills.

3. Outsourcing

Sometimes, Organization K out-sources some training program to other training consultancy to provide the service. For example, Organization K will hold the outward-bound outdoor training course once a year. This program aim to improve the communication among managers and employees, at the same time, deliver the concept of leadership and management.

3 EVALUATION

3.1 Perceived Factors Affecting the Adoption of WBT

1. Organizational Factors – Size (Manpower Coverage)

In Organization K, there are around 1700 full time and 1700 part-time staff. The manpower coverage will be one of the most important factors affecting the adoption of WBT. Not many staff will try to use computer to receive their training courses and materials. The size of an organization is important to the adoption of a new information technology program. Since Organization K has huge number of staff by using WBT, training can be implemented in a more effective way. The bigger the size of organization, the larger chance and higher cost effectiveness in building up WBT.

2. Organizational Factors – Structure Design (Location)

As many of the frontline staff is located in different districts or location among Hong Kong, it is difficult for employees to attend and organize a training course at one location. Mostly, just can held training courses at headquarter.

3. Support Factors -- Top Management Support

Top management support on different kind of training is important. In 2001, Organization K has plan WBT as their future trend of training. However, the final result still needs to wait for the top management decision. Top management will also influence by certain internal and external forces.
4. Support Factors – Employee Support (Staff Acceptance)

Due to the low education level of employees in Organization K, it is difficult to gain the staff acceptance in using WBT as their deliver mode. They are not willing to try and even use computers.

5. Support – Technical Support (Facilities)

In Organization K, even in administrative office, not even staff can have their own computer and connect to the Internet. However, by the use of WBT, it needs many facilities in technology to support the training course.

6. Training Factors -- Nature of the Training Program

Interviewee of Organization K thinks that some of the training program is easy and useful by delivered training courses through WBT, e.g. orientation, IT courses. On the other hand, some management courses still cannot train by the use of WBT.

3.2 Difficulties

1  Low Education Level of Staff

Most of the staff is not familiar with using computer and the Internet, it is difficult to implement and delivery training to their employees by using WBT. It needs to spend a large effort in educate their staff of using computer first.

2  Nature of Service Provider

Since Organization K highly emphasis in service quality, face-to-face interaction or communication to their customers is the critical success factor. It is difficult to change their focus on delivery training course and culture of using information technology.

3.3 Perceived Advantages of using WBT

1. Geographic Independence (Location)

By using WBT, it delivers training to any place, even delivery training at 8 different stores in Hong Kong at a time. It also can meet the concept of just-in-time to receive the most updated information.

2. Save Time

Time is important to every industry to running their business. WBT can deliver training at any time. Staff can receive training at their non-peak hours.

3. Increase Communication

With the implementation of WBT, employees can get the latest information about the company and the new mission. It can increase the communication between headquarters to stores and also top management to frontline staff.
4. Increase Learner Control (Evaluation)

WBT can give the report on evaluation. It is more systematic of evaluation result than using manpower of accessing their staff performance on training.

3.4 Disadvantages

High Set Up Cost

WBT is a kind of new technology. It involves many hardware, software, the Internet, training materials, constancy experience, etc. The set up cost maybe very high.

3.7 Training that Could or Could Not be Delivered through WBT

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<td>4. Language, e.g. English</td>
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<td>5. IT courses</td>
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4 CONCLUSION

4.1 New Role of Trainers

1 Negotiation

The trainers will more focus on negotiate with constancy, Internet service provider, training provider rather than delivery face-to-face training.

2 Communication

Communication skills will be important to trainers to due with different kind of people. At the same time, they have the right to promote WBT in order to gain the support from employees.

4.2 Future Trend of WBT

It is useful to use WBT as the future trend of training and development. WBT can fit the needs of company and flexible to delivery different type of courses. It may be a good alternative for organization to use in future.
Case Study:

Application of Training and Development
In
Organization L

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization L, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

1 INTRODUCTION

1.1 Background

Organization L was established in the 1950s importing heavy machinery and supplying construction materials to the local market. Organization L was established in 1955, which import heavy machinery and supply construction materials to the local market. The operation of Organization L was mainly in Hong Kong and Mainland China. To reinforce operational efficiency and better define the business area of construction materials and properties, the Group proceeded with a corporate restructuring of its two listed companies in 1997. There is altogether 400 staff, which includes 250 internal staff and 150 workers. There is only 6 staff in the human resource department in head quarters.

1.2 Mission

The mission of Organization L is to satisfy market demand and customer needs with quality construction materials products and services at competitive prices. With vision, perseverance and teamwork, Organization L strives to be a leader in the industry that we serve and to provide shareholders the best return on their investment.
2 DESCRIPTION

2.1 Types of Training

In Organization L, now, they just provide traditional training (classroom-training) to their employees and workers in-site. Although Organization L recognizes the importance of training and development, they mostly just deliver training to managerial level. Employees and workers just can receive some basis kinds of training. The classroom training courses can divide into several main categories:

1. Management by Objective (Mission, Vision, Objective);
2. Core competencies and skills;
3. Computer knowledge and techniques.

2.2 Knowledge Management

Last year, Organization L has introduced the concept of “Knowledge Management". Web-based training is one of the main projects to enhance this concept. Organization L plans to build up a set of knowledge database and provide the concept of “knowledge value" to their employees. As a result, they plan to implement WBT within the coming 1-2 years.

The purpose of introducing WBT is as follow:
1. Sharing news in Organization L
2. Reviewing the current activities
3. Diversifying information
4. Introducing mission and background of Organization L

3 EVALUATION

3.1 Perceived Factors Affecting the Adoption of WBT

1. Environmental Factors -- Market Demand

As most of the companies in Hong Kong are concerned with the use of web-based training, interviewee of Organization L wants to implement this new training mode to their employees so as to maintain the bargaining power. They want to follow the market demand and the latest trend of training and development aspects.

2. Application Development Factors -- Technical Infrastructure

Besides the market demand, technology is another main concern in implementing WBT. Company needs to ensure that it should have sufficient support in technical infrastructure. Without technical support, WBT cannot exist.

3. Application Development Factors -- Cost-effectiveness

In business world, most of the organizations concern about the cost-effectiveness. They perceived that the use of WBT could save in cost in long term. Comparatively speaking, the cost of WBT is rather less expensive than traditional training.
3.2 Difficulties

- Employees Attitude

One major difficulties of implementing WBT are that employees are not willing to learn by themselves and receive training through computers. Employees still think that traditional mode of training is more suitable for them. It is difficult to ensure the learning of each employee.

3.3 Advantages

1. Standardization (Refreshment)

The main advantage of WBT is unlimited refreshment. Employees can review their training more than one time so as to refresh their memories.

2. Increase Learner Control (Pace of Learning)

As different employees have different pace of learning, WBT can provide different levels of training and fulfill different individual needs. Employees can base on their learning progress to assess themselves in attending different training program.

3.4 Disadvantages

1. Non-Interactive

Employees do not believe that the use of WBT can deliver interactive activities through the Internet. For example, it is difficult to interactive some discussions with the trainer by computers and through the Internet.

2. High Technical Support

The use of WBT needs high level of technical support. However, in Organization L, they cannot provide enough computers and the Internet service to each employee in office.

3.5 Training that Could or Could Not be Delivered through WBT

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4 CONCLUSION

4.1 Future Trend in Hong Kong

Web-based training will be the future trend of training and development in Hong Kong. The acceptance of WBT will largely depend on the new generation. Those employees who have a higher education, they will have certain standard of information technology knowledge and computer skills. As a result, it seems that the use of WBT seems the trend in future.
Case Study:
Application of Training and Development In Organization M

TRANSCRIPT

This is a case study which combines various kind of sources. The sources include an English translation of a report of a face-to-face interview which was originally conducted in Cantonese, homepage of the organization, recent year of annual report, etc. This case study will include the background information of Organization M, the main findings on the current status of training and development [includes computer-based training (CBT), web-based training (WBT)], perceived factors affecting the adoption of WBT, effectiveness of WBT and the perceived future trend of WBT.

(a) INTRODUCTION

1.1 History

Organization M was established in 1972 by three entrepreneurs, who founded the company with no more than 50 employees in Hong Kong. Organization M has evolved into a global leader in the printed circuit board (PCB) industry and serves many of the world's most reputable and recognized companies today.

1.2 Background

Organization M is principally engaged in the manufacture and sale of high density double-sided and multi-layered PCBs. Founded 27 years ago in Hong Kong, with three partners and no more than 40 staff, today the Group has its regional investment office in Singapore, eight plants across the region - two in Hong Kong, two in Thailand, and four in mainland China - and a workforce of over 5,000 experienced and skilled employees.

Moreover, Organization M is one of the region's leading PCB manufacturers. It ranks 21st in the 1998 Top Independent PCB Manufacturers World Ranking compiled by PCB research company, NT Information Ltd.

1.3 Mission

Organization M's mission is to be a leading PCB manufacturer that supplies quality high-tech PCB in mass volume at competitive price with excellent service.

1.4 Intranet

Organization M's is using the Intranet by itself. They can share the news or group interest among different branches and different level of management. However, it still has problems in supporting the use of E-learning.
2 DESCRIPTION

2.1 Types of Training

In Organization M, there are several types of training. To a large extent, it focuses on traditional-classroom training. At the same time, other training methods just act like a supplement to traditional-classroom training. Even, Organization M, sometimes use computer-based training (CBT) to deliver training to their staff. They have a CD-ROM called "Teams that work" for employees to train through computer. Organization M still focuses on classroom training.

The following are the types of training:
1. Traditional classroom training
2. Computer-based training
3. Outsourcing / receive training through training constancy
4. Exhibition
5. Video tape training
6. Library self-learning program

In training and development department, their target group can divide into three main categories and each category have its own training courses.

1 Management Level
(a) Management
(b) Supervision training program
(c) Language
(d) Information technology

2 Workers
(a) Machines knowledge
(b) Safety regulations
(c) Health concern
(d) Technical techniques

3 Engineer
(a) Job-related task
(b) Engineering techniques
(c) Specific terms in engineering
(d) Statistical techniques

In organization M, they highly focus on training to their staff. Organization M spends 2% of the total employee annual payroll on training.

Moreover, as the trainers cannot understand clearly with the specific terms and techniques in circuits. Organization M always uses "train-the-trainers approach". Therefore, training and development department will train their trainers in PCB skills and combine their specific knowledge in order to provide high-quality training to their staff.
3 EVALUATION

3.1 Perceived Factors that Affect the Adoption of WBT

1. Environmental Factors—Market Demand

Due to the rapid changes of information technology environment, they need to follow the whole economy on any changing demand. Many organizations are changing themselves as learning organizations so as to maintain the bargaining power. They want to be the leader in training and development field. Continuous learning is a must for employees nowadays. The market demand is great in competition.

2. Workforce Factors—Task Characteristics (Multi-job Tasks)

Recently, the responsibility of each employee in his/ her job-task is becoming wider and larger. The workload on employees is turning into multi-job tasks. Employees need to have multi-skills to perform different task characteristics. Web-based training can motivate employees to meet their needs and challenges. In addition, WBT can provide one more channel of delivering training courses.

3. Application Development Factors—Cost Effectiveness (Set up Cost)

As the set up cost of web-based training is too high, Organization M still considers the cost-effectiveness of WBT and the probability of implementing WBT. The implementation of WBT will involves several elements of technical infrastructure e.g. hardware, software of computers.

Perceived Difficulties

1. Technical Infrastructure

Although Organization M can provide computer and its own Intranet to each of the employees in office, it still cannot support some of the software program and with fully technical support.

2. High Set Up Cost

From business point of view, one of the main difficulties of implementing WBT is the high set up cost. It is difficult to investigate so much resources in the new technology-based training at one time, in terms of money and support of employees.

3. Employees Acceptance

Organization M thinks that the acceptance of WBT to employees is still uncertain. Employees may prefer face-to-face training rather than WBT, as the concept of delivering training through the Internet is a new concept.
3.3 Advantages

1. Flexibility

WBT can provide employees a flexible way to receive training. They can receive training when they want.

2. Self-paced

Employees can involve in planning their training courses and fulfill different needs. Employees have change to self-paced their learning process.

3. Interactivity

WBT is interactivity enough for employees to participate. WBT will ask them some questions and have some instant feedback (answers of the questions).

4. Standardization

One advantage is that WBT can standardize the content of training courses. For example, even our organization have the two best trainers, they will deliver different version of training and cannot ensure the delivery of content in a fairly way.

3.4 Training that Could or Could Not be Delivered through WBT

<table>
<thead>
<tr>
<th>Training that Could be Delivered through WBT</th>
<th>Training that Could Not be Delivered through WBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language</td>
<td>1. Management training</td>
</tr>
<tr>
<td>2. IT skills</td>
<td>2. Involve discussion</td>
</tr>
</tbody>
</table>

4 CONCLUSION

4.1 Future in Hong Kong

Organization M forecasts that web-based training will be the trend of training and development in the coming future. However, WBT will never replace the use of traditional training. It just will provide one more channel to deliver training. It acts like a supplement to trainers.

Now, WBT is not maturity enough to implement in Hong Kong. Organization M thinks that the new Hong Kong young generation can have enough computer knowledge and skills to deal with the use of computers and the Intranet to receive training. Therefore, WBT may be widespread in future time, but not now.