Establishing a governmental agenda for e-Learning development: a case of Taiwan

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Abstract: E-learning is a revolution to the manpower cultivation, and could be used in education widely. The potential effects caused Taiwan to launch a five-year National Program from Jan. 2003 to Dec. 2007. A mission of the National Program is to develop e-learning industry. This study proposed governmental strategies to help corporations or industries use e-Learning for their in-house training. To increase the quality of training by using e-learning, academia forces were conducted to assist and assess the development of e-learning applications. Award mechanism was designed not only for companies that can successfully use e-learning in in-house training, but also for the companies of e-learning service providers. Web-based services were also designed to assist companies in developing e-learning services.

Keywords: e-Learning, In-house training; Reward and consult mechanism; Industry development strategies;

1 Introduction

Taiwan is a small country that caused industrial development always needs governmental support in the global competition. E-learning is worth for Taiwan to invest in not only for job opportunity but also could increase the manpower competition in all kind of works. Rising the new knowledge-base economic in 21century, knowledge and skill replace the ground, factory buildings, and raw materials etc

[8]. The requirements of knowledge and skills are sometimes changed hugely that lead employees to learn or resign. Therefore, e-learning might be a useful tool to assist corporations in their in-house training.

Due to the bankruptcy of "dot com" companies, the IT companies in Taiwan are trying to adjust their R&D strategies and make organizations change in order to make them survived in the market [7].

E-learning is one application they could leverage their advantages to develop business.

Taiwan's government foresaw the importance of the e-learning and its impact. A five-year National Science and Technology Program for e-learning (ELNP) was executed since 2002 [6] to assist in cultivating manpower by e-learning and boosting e-learning industry. From the perspective of country development, the purposes of the program included enriching the development of rural areas and bridging the digital divide. The strategy of the program is to integrate the forces of academia, governments, and industries to build up an economic, effective and convenient learning environment, and the impacts include raising knowledge levels of our citizens, and enhancing overall competitiveness. The budget of this program costs is about 124 million US dollars on reinforcing academic researches, industrial development, and developing official e-learning courses (see Table 1). One-third of the budget spent in e-learning industry development.

Table 1: the National Program of Funding Budget in Every Year

Year	2003	2004	2005	2006	2007	Total
Amount	24	25	25	25	25	124

(Unit: US $ million)

2 Problem Analyses

In 2002, e-learning output value is only 24 millions US dollars in Taiwan. The numbers of all e-learning companies are less than forty. The scare is small and lack of advantages to compete on the international stage. The promotion of e-learning has encountered the following problems.
On the demand side:
- Lack of golden examples.
- Lack of standard for materials exchanges and quality control.
- Lack of materials and the high cost in developing e-learning courses.

- Lack of laws and regulations to support e-learning development.

On the supply side:
- Market size is too small and the value chain is not clear.
- Suppliers are new and small companies and their experts and technologies are insufficient.
- Customers are not ready.
- Naive in marketing.

Besides, the process of utilizing e-learning is slow based on the market mechanism. When demand sides suffer problems, supply sides will try to provide them with various solutions to solve their problems (Fig. 1). It is always hard to determine whether to use e-learning to replace the traditional training department. Depending on the traditional market evolution of using e-learning might not gloriously promote the e-learning industry.
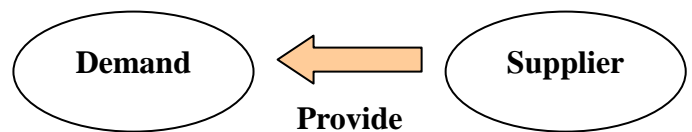

Fig.1: Traditional Market Developed Model

3 Strategies to stimulate the e-learning development

In this part, a proposed promoting model is described at first. Following comes with the method, and the three years primitive results.

3.1 Proposed Model

This study proposed an industry development model to form a circulated hoop for enlarging the effects of e-learning under the governmental supports. The trick is when demand sides applied e-learning to in-house training successfully, lots of successful cases would be published, and could stimulate suppliers increasing their quality of services (see Fig. 2). This model could also let other companies use e-learning in their training after reading these successful cases.

Suppliers can therefore have more business if there are more successful cases had been produced. In this model, government set up reward mechanism to stimulate the use of e-learning in corporation. Besides, assisting services were also conducted to let companies can consult with academic experts.
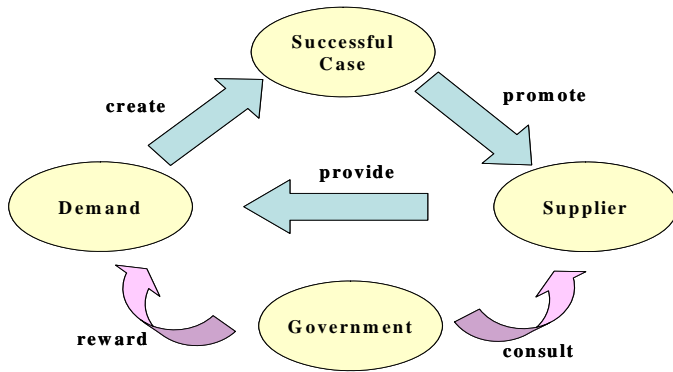

Fig.2: Through Reward and Consult Mechanism to Create New Developed Model

3.2 Method

The project of promoting e-learning industry was executed by the Ministry of Economic Affairs. The Ministry of Economic Affairs invested about 6.3 millions US dollars in promoting e-Learning industry every year. About 3 millions US dollars were used to reward companies that had successfully applied e-learning into their in-house training. Three parts (demand side, supply side, and general services) were described separately as following.

(1) Demand side methodology: the reward mechanism

After discussing with experts and e-learning companies many times, we proposed a reward program and reviewed results every year. According to the reward program, corporations should propose their plans about how to utilize e-learning for applying the reward. Every company can get assistance to meet the reward request. If the proposals pass the review process, they could gain 10%-50% reward fees of the budget of the plan. This paid-by-step award method could stimulate the willingness of corporations to initiate and accomplish their in-house e-learning projects. The more corporations use e-learning as their in-house training, the better the e-learning industry will be. In-house training in corporations is a battlefield for domestic e-learning company to practice their abilities of e-learning services. The idea is to create more business opportunities for e-learning companies reinforcing their competencies. After these domestic companies grew up stronger, hope them could find a place in International market. Another strategy is to award the successful companies with official certificates. The official certificates could be positive to their brands of companies and can gain trust from customers. The applications in reward program are described in Table 3. The applications determined by results in previous year and the current market status, year by year.

Table 3: The applications in reward program

Year	The Item Of Reward Program
2003	a. To build enterprise learning networks
	b. To establish industry learning networks
	c. To show as a golden model of application
	d. To make digital contents
2004	a. To build enterprise learning networks
	b. To establish industry learning networks
	c. To provide service learning networks
	d. To show as a golden model of application
	e. To make digital contents
	f. To set an golden example of digital content
2005	a. To build enterprise learning networks
	b. To establish industry learning networks
	c. To provide service learning networks
	d. To show as a golden model of application
	e. To outsource teaching materials
	f. To set an golden example of digital content

g. To create innovative applications

The applications are stated below:
- Enterprise learning networks: encourage enterprises to apply e-learning into their business and in-house training.
- Industry learning networks: urge industrial associations to utilize e-learning for their related companies.
- Service learning networks: encourage training company to provide e-learning.
- Golden model of application: urge the e-learning company to cooperate with each other.
- Make digital contents: force companies to design and develop innovative digital content.
- Outsource teaching materials: invigorate company outsourcing teaching materials to the professional e-learning companies.
- Golden example of digital content: stimulate the cooperation between content company and e-learning company.
- Create innovative applications: embolden the e-learning company to propose innovative application.

(2) Supply side methodology:

For stimulating development in e-learning industry, an e-learning industrial park on Internet was built to assist cooperation in its value train, and could share resources, customers, online learning entries, and learning platforms. Details are described in [3]. Demand sides could find various supply-side companies on a specific website as cooperative partners to figure out best solution while utilizing e-learning in their business operation. Table 4 shows the official services provided for the supply-side companies. These services are provided by educational college professors and e-learning experts.

Table 4: Services for the supply side

Service Category	The Work Item Of Service
Quality Service	For e-learning materials and service quality certificated. For materials and learning system interoperation standard certificated (ADL SCORM) [9]. For building up high quality learning environment.
Knowledge Service	To provide e-Learning industry with market intelligence, trend information, and successful cases of e-learning; To promote collaboration and sharing between companies; And to enhance enterprise competitiveness.
Law Service	To establish beneficial industry development legal system; To help the enterprise to utilize government reward policy; And to strengthen the copyright through a series of amendments in law.

(3) General services:

Personnel's perception of e-learning is vital to the success of corporation using e-learning. Therefore, e-learning training services are needed to broadcast the know-how of applying e-learning. Other services listed in Table 5 are designed to achieve the anticipative goals which were set up in e-learning applications. The detailed services are described in Table 5.

Table 5: General services for promoting e-learning industry

Service Category	The Work Item Of Service

Personnel Training	To execute for e-Learning course training and expertise qualification certified; To invite international specialist to help e-Learning course training; To try training infirm people, they can work at home
Promote Activity	To hold many activities to share any kinds of successful cases; To engage the people and medium attention at e-Learning; To take place prize to promote the company applied e-Learning
International Cooperation	To proceed international organization to form an alliance; To help company to participate international race and exhibition; To seek business opportunities overseas

3.3 Primitive Results

After three years execution of the program, results are showed in three parts (the demand side, the supply side, and the general services) to illustrate the outcomes.

(1) On the demand side

The Ministry of Economic Affairs invested directly about 3 millions to reward company to apply e-Learning every year.

In here, this study aimed at the most important three categories which adopt e-learning application (enterprise learning network, industry learning network, service learning network) to describe its outcome. The total reward number is 119. Excluding duplicate companies; there are 96 companies gained reward. The four outstanding companies are rewarded three times in the three years. The reward of industry domain is mainly semiconductor,

information, finance, retail business, and English language learning. These domains are all hot topics in Taiwan. There are 3,421,079 person-times to learn through e-learning course. Total courses num. is 50,288.

(2) On the supply side

In 2002, the e-Learning output value is only 24 millions in Taiwan. The total companies are less than forty, but the e-learning output value grows very fast (see Figure 3). The value of e-learning industry out is 203 millions in the end of 2005. The amount of companies is 133.
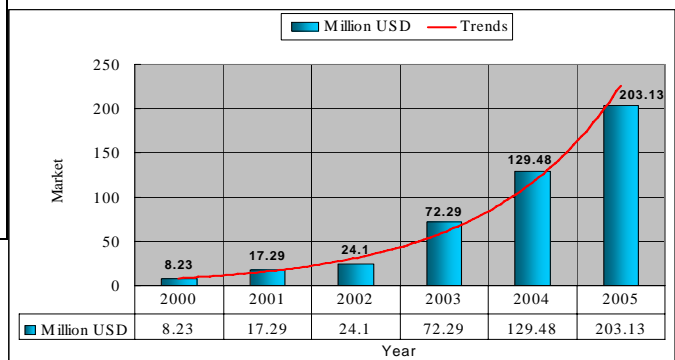

Fig.3: Market Size of e-Learning Industry in Taiwan

By the consulting mechanism, vendors based on these helps established their core competence and brand name gradually. We encouraged e-learning companies to cooperate with each other. About promoting differential industries to form alliances for various innovative business service models, a novel approach, a new business model, to practice e-learning is to build country-wide real e-learning rooms. Up to now, 44 country-wide e-learning centers had been created for citizen e-learning.

(3) About the general services:

There are many important tasks necessary to be done in this part, includes training up domestic e-learning specialist, inviting international experts for educating, proceeding with international

communication, elevating international prestige, seeking international business opportunities.

4 Conclusion

This research describes the three years results of the e-Learning National Program launched in Taiwan from 2003 to 2007. A model was proposed to promote the e-learning industry, including enlarging the market and applications, learning from golden examples, and financial award and expert supports. Mechanisms in demand side, supply side, and general services are proposed to solve the problems during the developing of e-learning industry. The statistical results show that the value of output had increased dramatically and the amount of e-learning are also increased hugely.

The development for e-learning industry in the future will focus on valued-added services. The coming issues include enlarging the scale of vendors, innovating of applications, and the International market development. Besides, the e-learning providers are working at the market of Chinese as Second Language by e-learning.

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