

# A Model for Posting Chinese Business Incubator Association Information on EC (Electronic Commerce) B2C Mode

*Huang, Guo-Feng Cheng, Ts'ung-hsing Wang, Chao-Ming\* Lin, Ching-Fang\*\*  
eric@eric.cbia.org.tw*

*Department of Industrial Education, National Taiwan Normal University*

*\* Department of Mechanical Engineering, Chung-Chou Institute of Technology*

*\*\* De-Lin Institute of Technology*

## Abstract

Chinese Business Incubator Association (CBIA) is a non-profit organization and is assisted by SMEA to facilitate the efficiency of incubators through experience exchange and resources sharing in Taiwan. The association organizes professional activities, sets up multi-pronged information and support system. The services are provided on a membership basis. The mission is to develop an optimal model for incubating enterprises through positive interaction among all incubation centers so that both incubator centers and enterprises under incubation can successfully reach their individual goals (CBIA Web, 2002). The aim of this study is to develop a model of posting the information on CBIA web of B-C (business to customer) Electronic Commerce Mode. To illustrate the model an example of CBIA Web is used in the papers. The lists representing hierarchical knowledge and semantic networks techniques are used to analyze the data structure of CBIA Web in the beginning of the paper. An On-line transformation processing (OLTP) mechanism can transfer the product data from client side to CBIA Web sever side on Internet or Intranet, for Incubator Center processing KM (knowledge management).

Key words: Incubator, B-C (business to customer) Electronic Commerce, Entrepreneur, On-line transformation processing (OLTP)?

## I. Foreword

The 21<sup>st</sup> century is an e-commerce age! E-commerce is a fact that the future businesses must face and accept. The United States declared "The Framework of Electronic Commerce" in July, 1, 1997 with the intention of building superb competitive national strength by creating a global and free e-commerce environment. (Wang, 1998) "In the coming 21<sup>st</sup> century, e-commerce might not be able to guarantee making money for the company, but a company, which doesn't think about the issue of commerce, will definitely face the problem of competence deficiency. (Ho, 1999) SMEA (Small and Medium Enterprises

Administration), MOEA passed the "Principles of Encouraging the Civil Institutions to establish Small and Medium Enterprises Innovative Incubators" in 1996 in order to provide both government and private-run institutions the innovation-related resources and to boost opportunities of success of the entrepreneurs. (Song, 2000) Under the supervision of SMEA, the number of established incubation centers in Taiwan has increased to fifty-six. (CIBA website, 2001) CIBA, which is under the supervision of SMEA, is the cradle for future innovative businesses and products. In order to make the entrepreneurs supervised by all the innovative incubation centers prosperous not only in Taiwan but also in other parts of the world, the adoption of e-commerce idea is a necessity. The aim of this research is to develop a mechanism among the innovative incubators and entrepreneurs for immediate on-line transformation processing model of all kinds of e-commerce information. We expect this mechanism will improve the services and supervision qualities of innovative incubation centers as well as the survival rate and competency of entrepreneurs. Moreover, it can serve as a managerial application platform on which the innovative incubation centers and entrepreneurs conduct their knowledge management and decision analysis.

E-commerce has the potential of changing the commercial deals made by small and medium enterprises innovative incubation centers. E-commerce can make the supervised businesses more efficient and competitive on the Internet. Nowadays, the innovative incubation centers are distributed in different parts of Taiwan, because of unique local cultures, company characteristics and heavy work load of the people in charge and other factors, important guidance experiences and technique information are not easy to disseminate and to pass on. This research aims to analyze and construct a B2C e-commerce commercial platform, and provide on this platform the following functions for each incubation centers:

1. transmit up-to-date incubation-related information

2. share guidance experiences and techniques
3. help build information mechanism for subordinate entrepreneurs
4. provide on-line publicity and assist marketing

**II. Literature Review**

1. System analysis

System Analysis is a software science, an application of different (Chortiana, Knowledge 1999) a more scientific ways to find most appropriate decision. System analysis is also used to help decision makers handle the distribution, application and management of resources. We wish to maximize the contribution of limited resources. (Lin, 1998, p274, p.431)

2. Basic content of e-commerce

Although e-commerce is built on the scheme of traditional commercial activities, it adopts modern techniques rather than the traditional ones. It combines digital information, computerized

process, Internet and steps into a much broader field. Due to the combination of computer and Internet, e-commerce has possessed the unprecedented flexibility. (Kosiur, 1997) For instance, electronic virtual bank, electronic trade, EDI(electronic data interchange)(Lee, 1998), e-mail, transmitting information by fax, electronic catalog, net meeting, multimedia communication and all the possible types of messages among the businesses can lower management capitals and improve their product competencies by using Internet. The key to the realization of e-commerce, such as no limitations of time and space, fast and high-profit, is to adopt which electronic communication technique mode, the trust of commercial partners, the maturity and stability of electronic recognition technique and also the circulation mechanism of health products. The basic relationship scheme of e-commerce is showed as Figure 1.

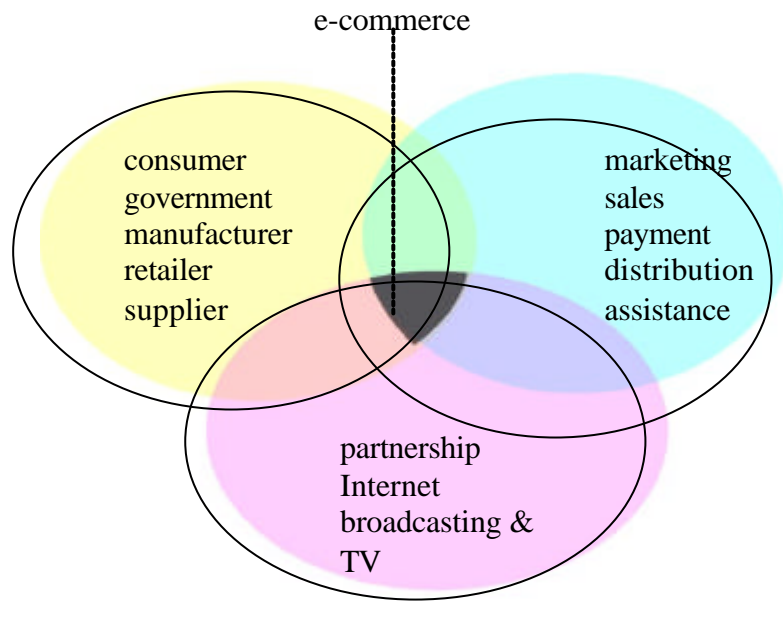


Figure 1 The basic relationship scheme of e-commerce

3. OLTP

OLTP is the acronym for on-line transaction processing. When the computer receives messages like “enter”, “renew” or “delete” from the users, it can immediately renew the data in data management system or enter the data renewal batch processing schedule. This is called the OLAP. (Hsu, 1999; Watson, 1999; Hackney, 1997)

4. Data Mining

Data mining is the factor that determines whether any business can efficiently use

information. (Berson, A and Smith, S.J., 1997, p122) It is the combination of many techniques, which can mine very useful but not yet found data collecting modes. (Berson, A., Smith, S. and Thearling, K., 2000, p.16) Data mining saves data electronically and uses computers to immediately localize necessary information or knowledge. So far, data mining has been successfully used in “inter-bank withdrawal” services. By processing “Data Mining” from “Data Warehouse” of the bank accounts, consumers can withdraw their money from banks in different cities; this can

lower consumers' loss of time and capitals. (Witten, I., Frank, E., 2000, pp.2-25) Data mining includes methods like Market Basket Analysis, Memory-based Reasoning, Cluster Detection, Link Analysis, Decision Trees and Rule Induction, Artificial Neural Networks, Genetic Algorithms and On-line Analytic Processing (OLAP), etc. (Michael J. A. Berry, Gordon S. Linoff, 2000; Michael J. A. Berry, Gordon S. Linoff, 1997) It is anticipated that visualized data mining in fields of communication, computer sciences and software development will make a definite revolution. (Westphal, C., Blaxton, T., 1998)

### 5. Relationship between innovative incubation centers and cooperative education

Technical and vocational education aims to cultivate the youth vocational knowledge and abilities, pass on to them the applied sciences and practical techniques and nurture technicians with professional ethics and culture literacy. Cooperative education bears an aim to qualify all the human resources cultivated by schools for the need of employers. Therefore, cooperative education is one of the characteristics of vocational education. To modify the impact of joining the WTO, all levels of vocational education system should re-consider their future prospects. Cooperative education is a cooperative plan of human resources cultivation, training, research and production through the cooperation among industries and businesses. From a narrow point of view, cooperative education is an educational strategy, which prepares students for their jobs. Students receive class instruction and practical job training at the same time through the cooperative between schools and businesses. They can combine the theories and practices together. To be concrete, cooperative education covers both vocational education and job training. Innovative incubation centers is one of an executive mode of development that businesses take the advantage of school resources. A lot of innovative incubation centers are set up in recently years in many schools, and it is really a plan to implement cooperative education, alliances, and strategic coalitions.

### III. Research Scope, Limits and Methods

#### 1. Scope of Research

The research target is the planning and construction of B2C e-commerce information flow website among SMEA, innovative incubators and entrepreneurs, but do not include:

- B2C e-commerce distribution between

innovative incubators and entrepreneurs.

- B2C e-commerce cash flow between innovative incubators and entrepreneurs.
- security level and users' rights of e-commerce workers

This research uses Internet/Intranet as system platform, and uses Microsoft 2000 Advanced Server as a website operating system. And also use Microsoft SiteServer 3.0, Microsoft SiteServer Commerce Edition 3.0, Microsoft SQL Server 7.0, Visual InterDev 6.0, ProntPage2000, IIS 5.0, IE 5.0, VISIO 2000, Office 2000 as development tool of e-commerce, then integrate all of these.

#### 2. Limits of Research

(1) The research target is the planning and construction of B2C e-commerce information flow website among SMEA, innovative incubators and entrepreneurs. This report doesn't discuss the cash flow or distribution of e-commerce, and doesn't guarantee the success or survival of participatory entrepreneurs.

(2) The execution of the B2C e-commerce information flow website must be modified according to current capitals of software/hardware and technique environment.

To reach the goal of constructing B2C e-commerce information flow website, this research uses ActiveX and XML. We recommend that people, who maintain the information, use Internet Explorer 5.0 or above browser to browse the websites and process on-line transformation. If users use other browsers to carry out on-line automatic transformation mechanism, we don't guarantee the best and complete functions of e-commerce.

This research uses B2C mode to establish all mechanisms, so automatic on-line processing mechanisms done by this research may not be suitable for other B2B, C2C e-commerce websites.

### IV. Analysis and Planning of Data Structure

#### 1. Lists Representing Hierarchical knowledge

Take the "Entrepreneurs" item on the website of innovative incubators as an example, its list representing hierarchical knowledge is shown as Figure 2. (Huang, 2000)

#### 2. Representation of Knowledge using Semantic network (Turban,1998)

Analyze the representation of knowledge of "Search" function on the CBIA website, with the method of semantic network. Figure 3 can serve as a reference.

## **V. Conclusion and Suggestion**

1. “Incubator B2B e-commerce information flow website” can serve as an important source of newest information of innovative incubators. This website collects and acculturates successful experiences and techniques among innovative incubators and entrepreneurs with technological management mode, as well as process knowledge management
2. All the entrepreneurs in the innovation incubators should cooperate to multiply their experiences. Use the Internet to publicize and share the results, and extend all successful, effective examples quickly.
3. Establish immediate, reactive, effective communication channel of entrepreneur consultation in order to increase the opportunities of case analysis and situational conversation. Publicize detailed consultation records using on-line immediate reaction.
4. Put into effect the individualized consultation of entrepreneurs, increase their abilities of data collection, analysis and decision through the Internet. Then realize the goal of technological management and innovative incubation.

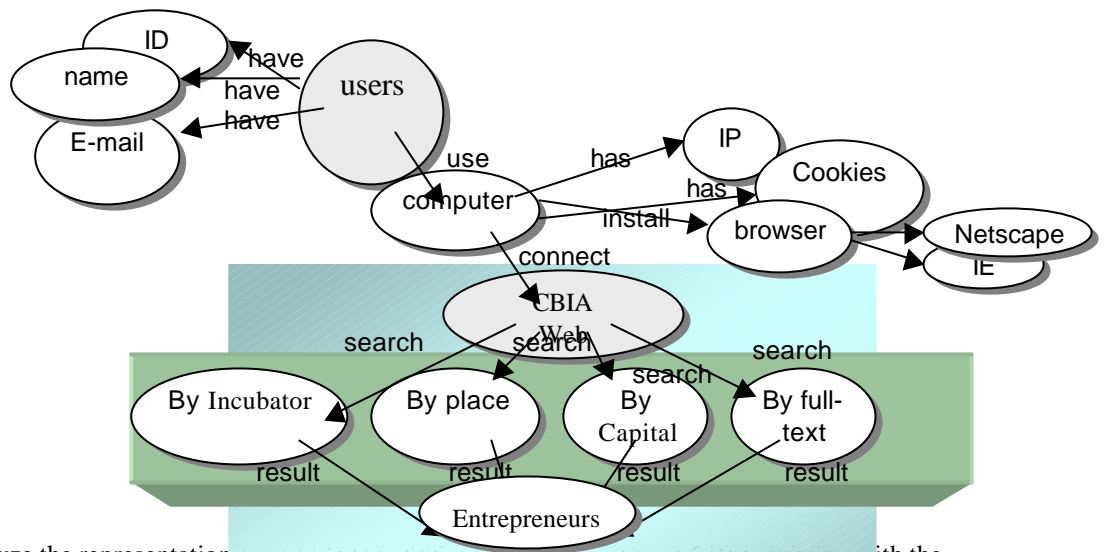
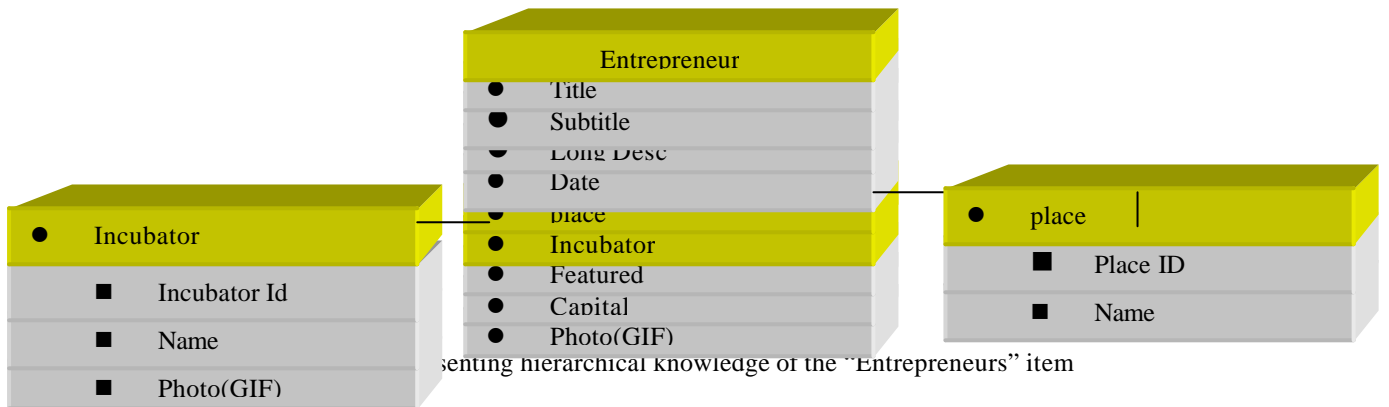


Figure 3 Analyze the representation of hierarchical knowledge of the "Entrepreneurs" item with the network diagram.

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