

Construction of Provincial Unified E-commerce Information Platform

Cuixiang Zhong Minghe Huang
Software College, Jiangxi Normal University, Nanchang ,China
cuixiang_zhong@sohu.com

Abstract—With the transformation from traditional business model to e-commerce model, e-commerce has become a necessary condition for the survival and development of enterprises and public institutions. In order to implement the party and government's strategy of accelerating e-commerce construction, some provinces have begun the construction of e-commerce, a key project is to build provincial unified e-commerce information platform. This kind of unified information platform is a comprehensive website integrating various industrial websites and information management systems of enterprises and public institutions. The application of this kind of platform can reduce the time needed in business process, and improve business environment, and adjust industrial structure, and improve economic benefits. To build such a comprehensive website into an efficient information platform, people concerned should carry out a deep research and discussion on the solution of platform construction. This paper just gives a deep research on platform construction from multiple aspects such as requirement analysis, function orientation, platform framework, construction solution and principle. Hence, it is significant to the construction of provincial unified e-commerce information platform.

Index Terms—e-commerce; unified information platform; website; information management system; construction solution

I. INTRODUCTION

With the fast development of computer networks, data communication, and information technology of today's world, especially the fast popularity of the Internet over the globe, making the electronicization of all commercial activities and trade cooperation possible, one can use developed network environment to carry out commerce activities. That is e-commerce. Due to its high efficiency, low price, high profit and fast globalization, it has attracted more and more attention all over the world. It represents the developing trends of future economy operation and trade cooperation. Any enterprise or organization wanting to survive and develop must change rapidly traditional management ideals and go along with the latest developing trend of today's world. The United States, European Union and other developed countries and organizations have adopted a series of policies and measures to develop energetically e-commerce, but the development of China's e-commerce is relatively slow [4]. To implement the informationalization development strategy proposed by

16th National Party Congress of CPC and the requirement of the Third Plenary Session of the Sixteenth CPC Central Committee about accelerating e-commerce development, and implement practically "Certain Opinions of the General Office of the State Council on Accelerating Development of E-Commerce", some province in China have begun the construction of E-commerce. Promoting e-commerce application is an objective requirement for implementing Scientific Development View, it is favorable to the adjustment of provincial industrial structure, and the change of economy growth model, and the improvement of economic operation quality and efficiency, and the formation of the new motive force of national economy development. It is favorable to the upgrade of citizen consumption structure, and the improvement of consumption environment, and the efficient enlargement of citizen consumption scale. It is favorable to promoting all-round core competition force of enterprise and comprehensive economic force, and promoting the production efficiency of enterprise, and reducing production cost, and promoting all-round, coordinated and sustainable development of economy and society of the province. Promoting the application of e-commerce is also an efficient measure to consummate the socialist system of market economy, and an important measure to construct a unified modern circulation market. It is good for putting the market-oriented allocation of resource into full play, and promoting the circulation of commodities and every element, and promoting the reasonable and rapid merging of logistics, information flow and fund flow, eliminating the factors restricting impartial competition. Accelerating the development of e-commerce is significant to improving the environment of soliciting businessmen and investment, and improving the transferring efficiency of connecting industries, and opening up regional market, and developing big circulation, and finally promoting the development of the province. Hence, it is necessary to promote energetically the development of e-commerce [1].

During all-round construction of e-commerce, every province should go along with the developing trend of e-commerce of the province, and construct provincial unified e-commerce information platform as a key project. Provincial unified e-commerce information platform is not only a center for provincial e-commerce policy guidance but also an information and service center for government agencies, enterprises, public institutions and public carrying out e-commerce. The platform should not only provide the propagation of the

¹ Supported by Jiangxi Provincial Natural Science Foundation (No. 991810).

laws, regulations and construction plans related to government agencies' e-commerce but also provide a complete set of solutions for e-commerce information security, platform, trust, certification, standard, payment, platform and modern logistics of the enterprises and public institutions in the province, and provide professional information service of good quality for these enterprises and public institutions. It becomes an influential, content-rich and practical authoritative e-commerce website [3].

Although many provinces have opened their unified e-commerce information platform, if they should be built into really efficient information platform, the future platform solution should be further studied and optimized. That is just the purpose of this paper.

II. FUNCTION ORIENTATION OF THE INFORMATION PLATFORM

Provincial unified e-commerce information platform should be built into a hub of commerce information collection and economy connection and prediction, and a platform of industrial-information-resource-interconnecting, security-sharing, and also a channel for department's internal information exchange and staff's cooperative office.

In details, provincial unified e-commerce information platform should provide the following functions:

(1) All e-commerce related information of the director departments of provincial government should be publicized unifiedly on the platform;

(2) Providing unified industrial management service such as logistics service, enterprise service, grain buying and selling office;

(3) It should serve as a unified information service platform for all e-commerce activities of the public in the province. The e-commerce information of Internet users can be released and managed through this website. It should use various major networks and media resource to realize all-round electronic transaction;

(4) It should serve as the largest scale unified information service platform for network payment and mobile payment in the province.

(5) It should serve as the largest scale talent exchange center in the province.

(6) Providing an entire e-commerce solution for the government agencies and enterprises and public institutions, and also providing technical training on website development.

III. INFORMATION PLATFORM FRAMEWORK

A. Provincial Unified E-commerce Information Platform as a Comprehensive Website

- Provincial Unified E-commerce Information Platform is a comprehensive website integrating various industrial commerce systems, it should have network domain name and Chinese real name. Through integration, the time needed in the entire business can be reduced, and the unified information platform can provide the flexibility

supporting the new commerce mode in fast environment.

- Information platforms can be divided into two classes: one is fixed information platform, and another is mobile information platform. They can be combined in applications. The platform supports various payment methods, including the methods of commerce bank, mobile communication, fixed phone (and personal handy phone system), and broad band (ADSL/LAN). They can be connected to the information platform, and users can freely choose the most convenient payment method in real time e-commerce shopping.
- The information platform should be developed gradually into a unified application information platform having multiple functions, including OA, ERP, CRM and so on.
- The information platform should be developed into a modern e-commerce supporting system providing multiple functions such as trust service, security certification, online payment, modern logistics and so on. In the unified information platform, an enterprise product information database geared to the global identification system should be built, realizing enterprise product information sharing [6].
- Provincial unified e-commerce information platform should be built as a backbone node of national e-commerce integrated service platform. It should integrate various industrial e-commerce websites, using column-division, page-links and self-maintenance to realize the integration and form a tree structure. It provides advanced, safety and authoritative e-commerce service for enterprise informationalization, online trades and so on, and is in line with international e-commerce.

B. Industrial website architecture

Each industrial website integrates multiple enterprise websites, and each enterprise web sites integrates multiple systems. Generally, an enterprise website is based on a unified platform supporting security certification, and integrates organically information and intelligence system, office automation system and decision-supporting system, so realizing the unified plan and management of these systems:

- Building information and intelligence system to construct industrial information base.
- Building information and intelligence system to all-round collect, induct, analyze, store and retrieve market information. Using this system, the enterprise can respond quickly to market change, and change "product-oriented" into "market-oriented". Using this system, the enterprise can learn about the latest status of the peers both domestic and abroad, and thus master the opportunity to develop scientifically market.
- Building operation management system to improve the management efficiency of the

- enterprise.
- Building business data system to control the production and management situation of subdivisions;
- Building computer aided decision-making system to help management layer to make scientific decision;
- Building office automation system to guarantee the efficiency and quality of daily official work.
- Building e-commerce system to carry out online selling.

IV. CONSTRUCTION OF THE INFORMATION PLATFORM

A. Construction of the content system of unified information platform

Provincial unified e-commerce information platform is a comprehensive website, it integrates various industrial websites in the province. These industrial websites also integrate multiple enterprise websites. Using column-division and page-links to form a tree structure of e-commerce. The entire platform adopts a B/S architecture.

Each enterprise websites is also an information platform: first, through the construction of traditional office system, websites can meet the demand of daily official work. It sets mail, announcement, file receiving and sending as its core, laying solid foundation for the information platform of the entire enterprise or public institution.

- Flexible mobile office can use various types of mobile terminal, and officers can do their work anytime and anywhere. It also supports short message (important mails, files and other information can be sent to personal desktop and mobile phone as short message).
- The users of enterprise or public institution information platform need only use standard browser. Through the unified internal port of enterprise or public institution, one can access all applications in the system.
- Unified user identity authentication uses the unified internal port of enterprise or public institution to realize that users can access all systems through just once validation.
- The intelligent inquiry module in Information and Intelligence System provides information navigation and full-text retrieval for all information in office management system. Information navigation can provide navigation function for current information and filed information. Full-text retrieval can realize real cross-database retrieval.
- Through the customization of personal homepage, personal service can implement employees' personal user interface in OA system.
- Using integrate operation authority management method to manage passwords, and modify and delete users' rights. Enterprise information platform should have perfect system security mechanism such as using log management function to record in detail

every operation of every operator, and producing warning for all illegal operation.

B. Hardware configuration of the unified e-commerce information platform

The hardware configuration of the unified e-commerce information platform should include at least a server connecting Internet. This server runs web server. It could be an IBM P630 or above, or a server of higher performance. It should be equipped with a memory of 4GB and an external storage of 4GB or above. The Internet connection bandwidth of this server should be as high as possible under the circumstance that the expense admits. This server can also be used as a database server. For the purpose of spreading load and adding security, another machine can be used to install the database management software. This machine is connected to web server with a local network of high speed [2].

C. Software configuration of the unified e-commerce information platform

The software configuration of the unified e-commerce information platform could be chosen as follows:

- Choosing Microsoft Internet Explorer as client-end browser.
- Choosing Internet Information Server (IIS) as the web server, and SQL Server as database server respectively.

V. CONSTRUCTION OBJECTIVE AND PRINCIPLES

Every province should launch their unified e-commerce information platform on the base of deeply comprehending and mastering various industrial commerce requirements and the plans of information systems of enterprises and public institutions. Using the unified information platform to integrate various industrial e-commerce systems or websites, optimize or rebuild the commerce flow in order to achieve the construction objective of improving commercial operation efficiency and service level.

The unified information platform should be constructed according to the following principles [5]:

- (1) Principle of combining advancement with practicality
Since the technology of computer and network develops very quickly, if advancement is ignored, equipment may fall behind quickly and abandoned, if the equipment is too advanced, it will cause investment waste. Hence, in the construction of unified e-commerce information platform, advancement and practicality should be combined, and disbursement should be guaranteed.
- (2) Principle of gradualness

The unified e-commerce information platform is a complex comprehensive system. During project implementation, a method of gradualness should be adopted. The first step is to integrate the existing websites in the province. The second step is to develop other industrial commercial websites or information systems of enterprises or public institutions. The final step is to integrate all

commercial websites in the province into an e-commerce information platform with unified access, exchange and management.

(3) Principle of scalability

With the continuous development of commerce, unified information platform should also be developed synchronously. Hence, the platform should have good scalability. The scalability of platform is embodied in two aspects: one is adding new website, another is upgrading current platform to improve commerce processing ability. The scalability of the platform has the following meaning: a) Adding a new website or system will not destroy the current architecture of the platform, and will not influence other websites or systems; b) Upgrading the current platform need not change the entire system or core equipment, but only adding some modules.

(4) Principle of reliability and safety

Since the unified information platform integrates multiple industrial websites, and each website enlarge energetically its own business volume, and platform runs 24 hours a day, there is a higher requirement for platform's performance, stability and reliability. It is necessary to guarantee the reliability of network line, the safety of data storage, the ability of application software, and reliability and stability of the platform itself.

(5) Principle of easiness of use

The users of the unified e-commerce information platform include system administrator, business operators, internal employees, external users and so on. There is a great difference of operational skills among these users. Hence, it is necessary to consider platform's easiness of use, which is embodied in human-machine interface, management and maintenance tools, online help, fault redundancy and recovery, and post audit.

VI. CONCLUSION

Traditional business model is being gradually changed into e-commerce model. E-commerce has become an important standard measuring the modernization level and comprehensive power of a country, a city or an enterprise or public institution, and also an important condition to join international competition and cooperation. Through the unified e-commerce information platform, the intermediate links and logistics cost of enterprise's commerce in the province can be reduced, and trade opportunities can be increased. In addition, the platform can also greatly improve operation circumstance, and adjust industrial structure, and promote the development of modern logistics and commerce construction, and improve the digitalization level of logistics, and realize the related government departments' highly efficient service and monitoring. Using this unified information platform, all enterprises or public institutions in the province can easily carry out standard and electronic international trades and commerce, thus improving the provincial comprehensive competition power, and economic benefits. This kind of platform can be applied widely. Every area should adjust measures to local condition in constructing unified e-commerce information platform, to promote the development of the entire economy.

REFERENCES

- [1] Chen Chun, Hou Xiaohua. E-commerce Technology and Its Applications. Beijing: Science Press, 2008.
- [2] Doug Sahlin. Building Websites All-in-One Desk Reference. John Wiley & Sons, Inc. New York, NY, USA, 2007.
- [3] [Liu Keqiang. Constructing E-commerce Platform. Beijing: People's Post and Telecommunication Press, 2007.
- [4] Liu Yanfang, Zhe Jianli. Introduction to E-commerce. Beijing: Publishing House of Electronics Industry, 2004.
- [5] Lu Chun, Bai Li. E-commerce Test. Beijing: Tsinghua University Press, 2005.
- [6] Wu Yingliang. E-commerce Security. Guangzhou: South China University of Technology Press, 2005