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The Researches on the Mobile E-Business Implements and Mode in Small and Medium-sized Enterprise

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ABSTRACT

The "mobile e-business" is a business activity derived out by the concept of the "e-business", which can finish the specific commercial service function through mobile devices, such as cell-phone, PDA, etc, with the marketing purpose of achieving products and service. Mobile e-business is gradually known by kinds of enterprises, and successively put into practice among them. This paper sets out from analyzing the prospect of mobile e-business and current situation of small and medium-sized enterprise of our country, proposes the technology, implementation means, mode of the mobile e-business for the small and medium-sized enterprise, and compared with the application mode of the large-scale company with its one's own characteristic.

Keywords: the mobile e-business, the small and medium-sized enterprise, implements, mode

1. THE PROSPECT OF THE MOBILE E-BUSINESS

As far back as 2000, the mobile e-business once becomes the focus that everybody looks forward to it. A global investigation indicates, saying 61% of those who are investigated all have their heart filled with hopes: in the near future, they can regard the wireless device as an ordinary payment tool. Analysts who engaged in this investigation predict the mobile commercial market can reach 100 billion dollars in the whole world in 2003. Though the present situation is not optimistic, the rapid development of the mobile e-business need not be queried[1].

According to the news of" net of PC World", a market survey report of Frost&Sullivan's company shows that, Because of the emerge of a large amount of portable equipment such as cellular telephone, PDA, etc, the mobile e-business after more than two years quiet, will develop at a full speed over the next several years . It is predicted, the market of mobile e-business will reach 25 billion dollars by 2006, which share will account for about 15% of the global online trade market.

Nearly there are 250 million cellular telephone users at present in China, and added about 4 million pre month; the market penetrance is 15%, which is relatively at low levels. It proves that a sizable potentials market still remain to be explored. It is estimated that by 2010, the cellular telephone will exceeds 540 million users, the popularity will reach 40%; In 2002, the value-added telecom service" short message" created over 30 billion. During the Spring Festival of 2003, the user of China Unicom and China Mobile delivers 7 billion pieces of SMS news altogether [2].

Therefore, to develop the mobile e-business, expand the products and service in the mobile field that the enterprise utilized, raising the income based on mobile service, is a piece of forward position for the enterprise's development, which will bring the enormous profit space for the enterprise.

2. THE NECESSITY THAT THE SMALL AND MEDIUM-SIZED ENTERPRISE DEVELOPS THE E-BUSINESS

Headings are numbered and capitalized. All major headings are centered in bold in 10 fonts. Do not put a period after the text of the heading. Leave one line above a major heading, and one line clear below before the start of the next paragraph or second-level heading.

As the elementary cell of national economy, the quantity small and medium-sized enterprise in our country exceeds 99% of all the enterprises, Small and medium-sized industrial enterprise account the 60%s of total gross output value, the sales income accounts for 57% of total value. So, to some extent, the level of the informationization of small and medium-sized enterprise has reflected the current situation of the informationization of enterprise in China. Their demand for informationization represents an important respect of information-based market demand of Chinese enterprise too[3].

Seen from resource of the hardware, CCID investigation has shown, in the enterprise of our country, the having rates of the desktop, printer are nearly 100%, and the having rate of the server exceeds 50% too. According to the statistics of New network ChinaDNS, now, the enterprise which participates in the e-business is only 22. 3%, and among them, the incidence of net inquiring reaches 72. 9%, issuing the information on the net reaches 71. 4%, which are relatively high, but it isn't universally applied in supplying chain integrating, net paying, distribution channel, etc. Among them, Web

sites which have online-paying system are less than 1/3, and web sites which carry on e-business are 1/7.

According to a large amount of data above, the Informationization level of the small and medium-sized enterprise of our country remains to be strengthen , The level that the enterprise uses the e-business still needs to be improved further. The enterprise utilizes the advanced means of mobile network, extend the concept of the e-business to all kinds of terminal stations, which will make enterprise as closer to customers as possible, make the customers know the enterprise and its products, make the enterprise be in the front row throughout in the fierce market competition, be keeping vigorous .

3. THE APPLICATION KINDS OF THE MOBILE BUSINESS

At present, the enterprise implementing the mobile e-business is to carry on the commercial activity on the basis of mobiles device which the user already adopted generally. According to large amount of data of cell-phone application and other mobile devices which are developing and popular, we can fulfill the mobile e-business on the basis of following several kinds of popular technology:

3.1 WAP

WAP is one of the key technologies of developing the mobile e-business. Through WAP, the cell-phone can conveniently and swiftly insert Internet whenever and wherever possible, really realizing the mobile e-business not retrained by time and region. WAP is a kind of communication protocol, it offers a set of open, unified technological platforms, the user can visit and obtain Internet or network information and various kinds of services inside the enterprise expressed with unified content very relaxed while using mobile devices. It defines one a suit of the interfaces of software and hardware. People can use cellular telephone receive and dispatch E-mail and surf Internet as using their computer. Besides, WAP has offered a kind of applicative development and running environment and it also support the most popular embedded operating system at present.

WAP can support the most wireless devices used at present , on the transmitting network, WAP support kinds of mobile networks now, for instance GSMs, CDMAs, PHSs,etc. It also support the coming third generation of mobile communication systems. Now, many telecommunications companies have put out many kinds of WAP products already, including WAP gateway, instruments for applicative development and WAP cell-phone which offer the users the services such as online information, ticket ordering, mobile bank, games, shopping and so on.

3.2 GPRS
GPRS break through GSM offer thinking that circuit

exchange fix type by network, divide into groups and exchange mode introduce and get GSM network. It through increasing corresponding function entity and stand and go on transformations come and realize and divide into groups and exchange systematically to existing base only, Thus improve the utilization ratio of resources. GPRS set up and join fast, suitable for and convey little data quantity businesses or convey heavy data quantity businesses frequently. GPRS technology can offer the speed of data which is up to 115 Kbit/secs for moving the user, because GPRS exchanges because of dividing into groups, so users can keep the online forever.

3.3 The close quarter transmitting technology

Close quarter transmit technology that we say, mainly means infrared transmitting technology, "Bluetooth"(Bluetooth), 802.11, RFID (Frequency Identification of Radio) and remote control, etc. But relatively successful ones at present are the infrared ray technology and Bluetooth technology. Infrared ray, Bluetooth, compare to 802. 11 technologies have some advantages: low costs, extensively use on the terminal stations like cell-phone, etc., correctly transmitting which reduces the danger of intercepting information, and it is difficult to be interfered by the external world in addition[4]. Because of seeing the market prospects, Visa International, KDDI, UC Card, Toyota Finance to test the infrared ray payment business.

"Bluetooth" is as another kind of communication technology which is low cost, low power, small circle. It can make the equipment carry on communication in the short distance without the line cable. For example, we can use the cellular telephone to pay in front of the dispenser. It is the key technology of realizing the wireless electronic wallet. "Bluetooth" supports 64 kb/s transition and data transmission, whose transition distance is 10 - 100 ms with the network principle of "the principal and subordinate network".

3.4 other developing Technology

At present, the movable IP technology and the moving localization systematic technology grow vigorously, especially the moving localization system. It can offer the business based on position, for instance it can offer the information, such as local news, weather and hotel, etc. to the tourist and company staff who going out to handle official business. This technology will bring the enormous opportunity for the development of tourist industry, retail business, entertainments and catering trade, etc.

4. IMPLEMENTATION MODE AND THE WAY OF THE MOBILE E-BUSINESS

Because of its own characteristic, there will be very different for the small and medium-sized enterprise

using the technology of mobile e-business to realize the mobile operation when compared to the large-scale enterprise.

First of all, on the inputting of the hardware, large-scale enterprises has much fund to buy the large-scale SP platform, the hardware such as equipment of server that can offer mobile service, while it is impossible for small and medium-sized enterprise. But they have their own advantages: setting up one's own hardware system offering mobile service, conditionally choosing one or several ordinary servers, making which to be the special-purpose server with GSM, GPRS communication equipment offering mobile service again. It can save the enormous expenses which buys SP's platform, In addition, several small and medium-sized enterprises can buy a SP platform together. So long as they add their distinguishing codes, they can realize one's own business when the system running; Or they can rent SP's platform to test or expand the mobile business of the company, Thus in case of achieving the goal of using mobile service, the input and the cost are reduced.

Secondly, on the development of the mobile business, the large-scale company can organize its own specialized development group to carry on the technological development., while the small and medium-sized enterprise can set up the software system which suit one's own scale of company by buying the shaping software the developed interface and module to carry on the secondary development through the software company. Compared with systems of the large-scale company, this method has the characteristic with low cost, high flexibility, spread the operation advantages and gain the customer quickly.

The third, on commercial operation, because of the scale, the large-scale company will put into a lot of manpower, material resources, and carry on advertising to run and maintain it. Because the systems of small and medium-sized enterprise are based on jointly, rented SP platform and ordinary servers, the expenses of running and maintaining are relatively low. When offering the service, the flexibility should be stronger than that in the large-scale company, However, at the same time, small and medium-sized enterprise can apply the system to handle the daily official business reliably to in itself, which realize purpose on" one a suit of systems plant and use more" raising the systematic frequency of utilization to the maximum extent to improve the efficiency of market expanding and inside management of the enterprise.

The fourth, on proportion between inputting and outputting, because of the large input on the mobile business, large-scale companies have to obtain the income form heavy popularity which forming a large scale. Small and medium-sized enterprise has high flexibilities for investing less. If it offers the suitable services meeting the user's needs, it will get good income even it is small. Though this kind of income may be lower than incomes of the large-scale company, it is relatively considerable to its input.

5. THE SUMMARY

The development of the mobile e-business is a inexorable trend, though it experiences the twist and turn. How to seize the opportunity and how to open up a suitable soil to grow up for the small and medium-sized enterprise in our country is the key to be strong. According to the existed mobile application level, there are 4~5 kinds of relatively ripen technology which can be used into the real mobile e-business business. The question while the small and medium-sized enterprise taking the road to mobile e-business must be noticed are as the following: to summarize the characteristic and advantage of small and medium-sized enterprise, to take different strategy from the large-scale enterprise, to draw the successful experiences of the mobile e-businesses from domestic and international case, to pay attention to the flexibility of mode and implement, to reduce the cost of investment and accelerate to obtain incomes.

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REFERENCES

[1] Jingyuan Wang, Quiet anabiosis of mobile e-business (移动商务悄然复苏), e.chinabyte.com, 2003/12/17
[2] Guobin Fu, Analysis and discusses on tempting foreground of mobile e-business, (前景诱人的移动商务应用切入模式分析与研讨), e.chinabyte.com, 2003/12/09
[3] Zheng jiang, Economic Daily, What about the informationization of small and medium-sized enterprises now, (中小企业信息化如今火候到几分), 2002/07/11
[4] Shan Li, Challenge and Opportunity of mobile payment, (移动支付的商机与挑战), 2003/05/29