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Article

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Japanese Business Models for Electronic Commerce — Laying the Foundation of a Ubiquitous Networking Infrastructure with Mobile Phones and Convenience Stores

By Hilda Joffe *

Summary

The last decade has been marked by U.S. leadership on the Internet market. Consequently, in most parts of the world Internet access and usage is PC-centred. This is not the case in Japan, where Internet usage and electronic commerce in business-to-consumer markets is mainly promoted by mobile phones and convenience stores. Japanese e-commerce models are products of the regional urban structure and lifestyles. Distinct features of Japan's urban areas favouring the use of mobile Internet are traffic jams and long commuting times. They explain why entertainment services are the most popular among mobile Internet contents, since they seem to be most suitable to bridge waiting time in an entertaining way. Another typical feature of Japanese cities are the ubiquitous convenience stores. They have become focal points in the B2C e-commerce, serving as payment and distribution centres, as well as Internet access points through multimedia terminals. Japanese e-commerce models are about to expand to other Southeast Asian countries, where urban structures are similar to those in Japan. One has to conclude that e-commerce in different countries is developing in various ways, according to local culture and habits. Hence, promoting global e-commerce involves the necessity of understanding and respecting local and regional culture and customs.

1. Japan's Old Economy in Transition

In a joint study about Japan's state of e-commerce released in the beginning of this year, the Ministry of Economy, Trade and Industry (METI), the Promotion Council for Electronic Commerce (ECOM) and the business consulting company "Accenture" point at Japan's slowness in taking on the Internet. According to their estimations, in terms of Internet usage Japan is lagging at least two years behind the US. However, when it comes to ubiquitous networking it is conceivable that the US and Europe might be trailing behind Japan.

The term "ubiquitous" here means access to the Internet that is available "everywhere and all the time", i.e. access that has moved beyond the PC. In contrast to the US's and Europe's PC-centrism, in Japan "ubiquitous access" to the Internet is provided by cell phones and convenience stores (C-stores). Both constitute the foundation of Japan's emerging networked information society. The info-communications network will operate through interconnected information devices, such as cell phones,

video game machines, digital TVs, multimedia kiosks, car navigation systems etc. These systems will soon be linked through optical fiber communications networks that will provide most of Japan's households with high-speed, high volume Internet access (Hamajō, 2000, 66; Matsuyama, 2000, 69; Iwasaki, 2000, 84).

Japan's emerging info-communication- and e-commerce infrastructure foreshadows revolutionary changes in post-war economic structures, comparable in their significance to historic changes initiated by the Meiji Restoration and the Occupation reforms enacted following World War II. During these previous reforms political and economic leadership was restricted from above, the "IT Revolution" admits power restrictions from below. This becomes most evident in view of the recent Sogo Depart-

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ment Store case. After 150 years in business, the retailer collapsed in summer 2000 after Japanese citizens organized a spontaneous boycott over the Internet. Forced by public pressure the government abandoned its controversial plan of financing the failed retail chain with tax money (Mitchell, 2001).

A certain irony of the Sogo Department Store case lies in the fact that traditionally powerful politicians, bureaucrats and businessmen could not assert their interests against housewives, who were traditionally positioned low in the Japanese relationship hierarchy. Hence, one can say that the Internet has restructured the traditional relationship network behind Japan's economy, where the granting of loans, subsidies, licenses etc. to date has often depended on personal relationships. At the same time, in certain fields, the Internet has also accelerated the erosion of central pillars of Japan's post-war economic structures. This erosion becomes most evident in the following areas:

Administrative guidance (gyōsei shidō): The term "gyōsei shidō" characterizes a principal instrument of enforcement used by Japanese ministries to give unofficial instructions to the industries they regulate. Hence, there are no official penalties in the case of non-compliance, but public officials can withhold finance or tax concessions, government contracts, import permits, approval of cartel arrangements, etc. Used in the post-war period to stimulate the development of the Japanese economy, the government does not intend to apply gyōsei shidō for the stimulation of the e-commerce sector. The government has declared that it will leave the leadership of promoting e-commerce to the private sector and confines itself to the creation of a conducive environment in this area (Kantei, 2000).

Multi-layered distribution system: Distribution channels in Japan are longer than in many other countries, resulting in higher consumer prices. Moreover, it has been common practice in Japan for a distributor to work exclusively with a single manufacturer and for stores to carry only one brand of a particular product. This practice was developed after World War II, when there were few distribution alternatives. Established manufacturers applied this strategy to hamper market entry for competitors. By linking the vendor directly to the consumer, e-commerce has the potential to effectively cut out an order of middlemen.

Keiretsu system: Keiretsu outsiders often refer to the term "keiretsu" as a non-tariff barrier, since it constitutes a tight-knit web of business relationships that links banks, manufacturers, suppliers and distributors. They closely cooperate for mutual benefit and compete against other keiretsu, limiting market entry for keiretsu outsiders and also limiting price competition. While price competition is a key factor driving the development of e-commerce in the US and Europe, buying decisions of Japanese consumers were less determined by price discounting, and more by brands and quality. This specific consumer attitude may

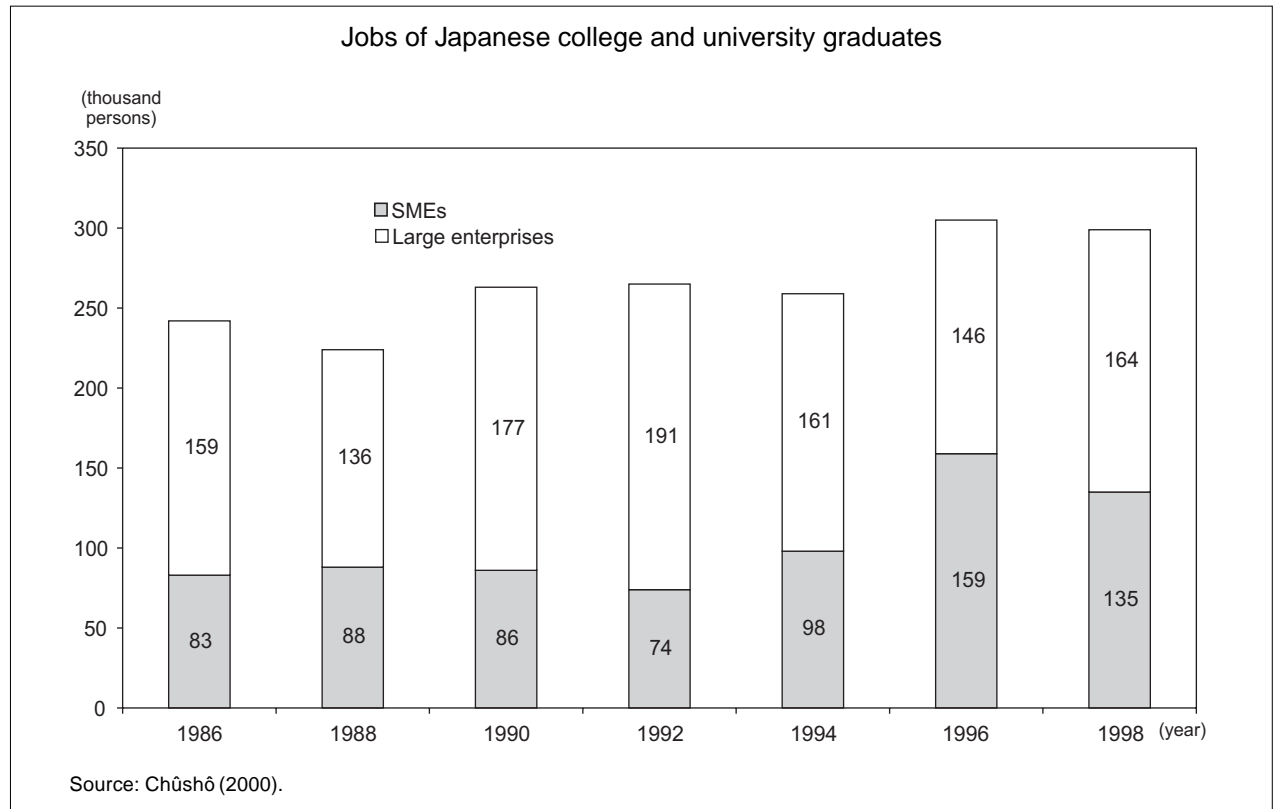
have significant implications for the types of e-retail business that are emerging and trying to attract Japanese consumers. As the economy is loosening keiretsu ties,¹ competitive dynamics are breaking out and fuelling the Japanese e-commerce market.

Long-term employment: The Japanese system of education and employment puts the country at a disadvantage in fostering entrepreneurship. The Japanese bureaucracy copied the education system from the Nazi *Volkshochschule* system in the 1940s. This system suppressed thought, initiative and individuality and required above all obedience and conformity. Emphasizing memorization and group orientation, Japanese schools and universities are often criticized for graduating people who lack critical thinking, creativity and personal flexibility, all of which are distinctive features of entrepreneurs. Japan's employment system shows many of the same deficits. Long-term employment was implemented after World War II, when a severe shortage of skilled labour enabled workers to shift easily to higher paying companies. Employers solved the problem of high labour fluctuation by hiring unskilled workers, training them and binding them to the company through seniority-based salaries. Whereas the first choice of graduates from top U.S. universities is to set up their own businesses, Japanese top university graduates aim at being employed in large corporations or government bureaus (Sakaiya, 1999).

SMEs could not guarantee lifetime employment and therefore used to have the reputation of being weak (SME Agency, Japan, 2000). Imbuing the mentality of working for only one organization over a long period certainly does not foster the adventurous spirit needed to start up one's own company. Due to its education and employment system, Japan suffers a dearth of experienced, flexible managers for fast changing Internet-related companies. However, since the end of the last decade, nearly all major electronics and car industries, big banks and airline companies have made large-scale personnel cuts and are continuing to do so, in order to make their businesses more profitable and competitive. The corporate restructuring of Nissan Motors, NTT, KDD, NEC, Mitsubishi Heavy Industries, Japan Airlines and the banks mentioned above have resulted in the laying off of tens of thousands of employees, bringing lifetime employment with a seniority-based salary system to an end (Hara, 1999; Jobson, 1999). This development helps small businesses in com-

¹ The recent merger between Dai-Ichi-Kangyo Bank (DKB), Fuji Bank and Industrial Bank of Japan (IBJ) has weakened the keiretsu system. Also the merger between the descendants of two major zaibatsu banking houses, the Sumitomo Bank and Sakura Bank shook the foundations of their respective keiretsu groups (Sumitomo and Mitsui), since member firms of both groups compete in many sectors, e.g. Sumitomo Real Estate competes with Mitsui Real Estate and Sumitomo Chemical competes with Mitsui Chemicals.

Figure 1



peting with large businesses as employers. They are becoming more attractive to Japanese University graduates (Figure 1). As start-ups are essential for e-commerce markets, increasing employment of university graduates in SMEs can be interpreted as growing dynamism in the Japanese e-commerce landscape.

While Japan's unique post-war economic structures are becoming obsolete, new pillars are rising, holding up the new "e-Japan" and giving a new uniqueness to the Japanese economy. The paper elaborates on e-business models on two different markets: the mobile phone market and the retail market for C-stores. Given the fact that the field of e-commerce is developing dynamically, e-commerce estimations in general tend to include a significant bias in terms of growth forecasts, sales estimations, consumer numbers, etc. and differ heavily depending on the source they are taken from. Therefore the focus of this paper lies on qualitative rather than on quantitative analysis.

2. Barriers to E-commerce

For e-commerce to flourish, it is important to identify obstacles that hamper its growth and to work towards their elimination. Critical elements can be ascertained in various areas of the Japanese economy:

Telecom charges: Japan has the highest combined telecom and ISP (Internet Service Provider) fees, at US-\$ 67.12 per 20 hours compared to US-\$ 30.05 in the US (Figure 2). A closer look at interconnection charges explains Japan's high telecom charge. The former national monopoly telecommunication company NTT is the owner of Japan's telecommunication network, including the so-called "last mile segment" entering households and offices. NTT charges other telecom companies for access to its network. These interconnection rates are four times higher than in the US, and some New Common Carriers (NCCs) spend 80% of their return to cover these costs. Until 2002 interconnection fees in Japan will remain the highest in the world. Thereafter, NTT will lower its fees by 22.5% (Pawasarat, 2000). Lowered access charges mean that ISPs can pass on their cost reductions to their customers, who then can spend more time online.

PC penetration: Even though Japan is a leading producer of Information and Communication Technology (ICT), it has a relatively low level of ICT diffusion. When former president Clinton outlined the policy for a National Information Infrastructure (NII) in September 1993, Japan compared unfavourably to America on the following points:

- Japanese employees were five times less likely to have a personal computer,

Figure 2

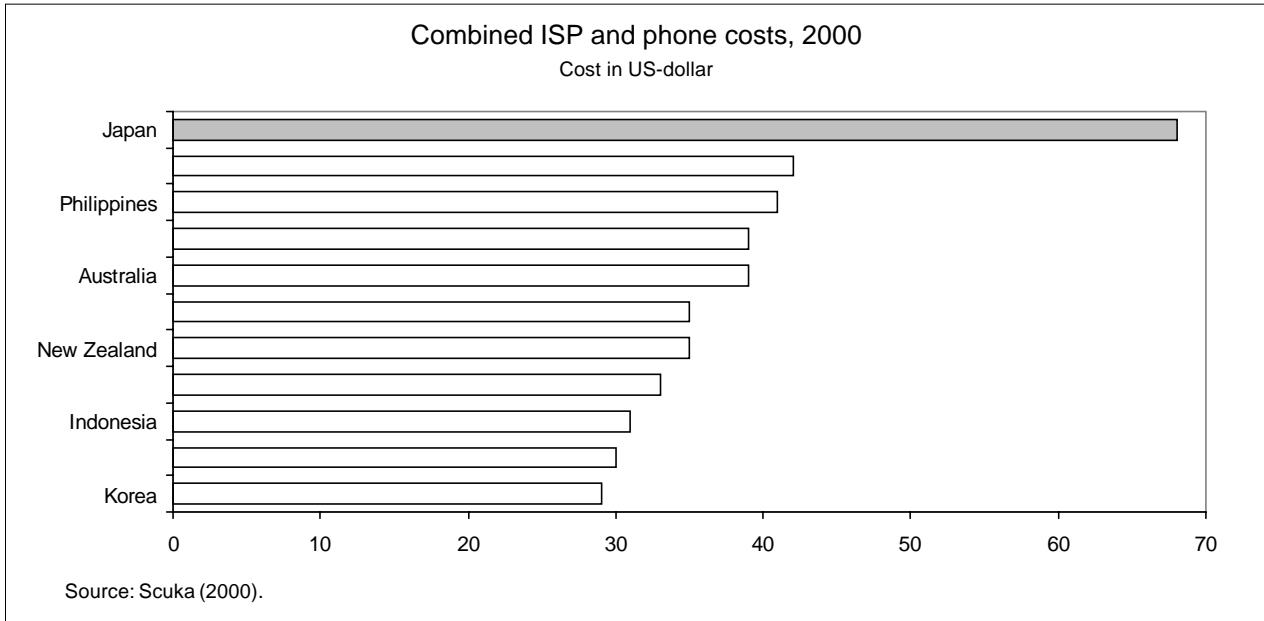
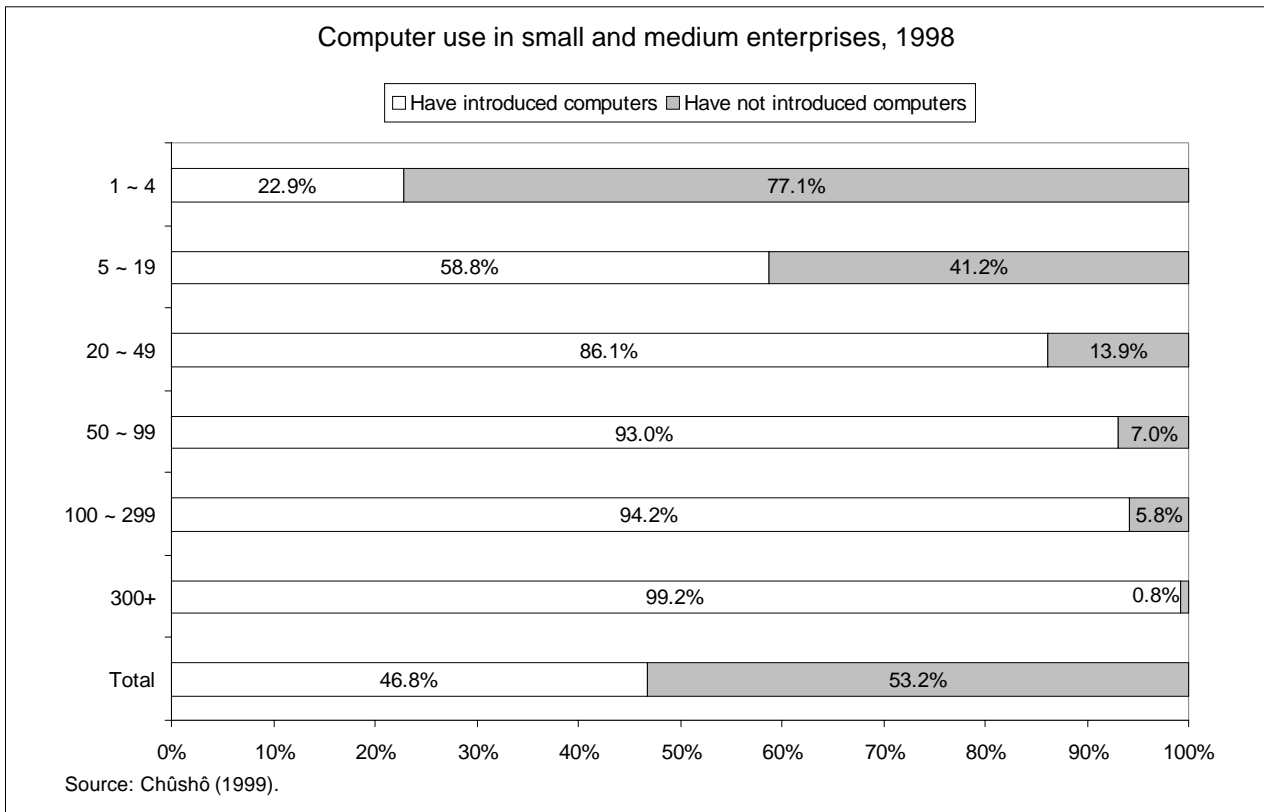


Figure 3



- Japanese employees were six times less likely to be connected to a local area network (LAN) and
- Japanese business managers were eight times less likely to use a PC (Laird, 1996; Saito, 2000, 85).

In 1995 only 14% of Japan's labour force used a PC in contrast to 46% in the US (DFAIT, 2001). In 1998 nearly 50% of small and medium sized enterprises (SMEs) had yet to introduce computers into their operations (Figure 3) (SME Agency Japan, 1999). The economic implications of such ICT figures for the country's e-commerce development is rather unfavourable, considering the significant contribution of SMEs to the national economy: 99% of Japanese firms are SMEs, accounting for about 72% of employment and 65% of GDP (Dedrick and Kraemer, 2000, 4).

Statistics of PCs per 100 inhabitants in Japan are also showing Japan's PC lag (Figure 4). While PC penetration in the US is at 59%, it is almost half of that in Japan (32%) (ITU, 2001). Nevertheless PC penetration into households is growing at a very fast rate. While 17% of households possessed a PC in 1995 (DFAIT, 200), this number grew to 40% in 2000 (Garner Group, 2000; Asiaweek, 2000). A reason for the relatively low computer penetration lies in the fact that Japanese people have historically relied less on keyboards, typewriters and computers because of the nature of their written language. While one can type about 50 words per minute in English, while it takes about four min-

utes to type the same number of words in Japanese. Limited space in Japanese apartments, which tend to be small, is another reason for Japan's relatively low PC penetration.

Figure 5

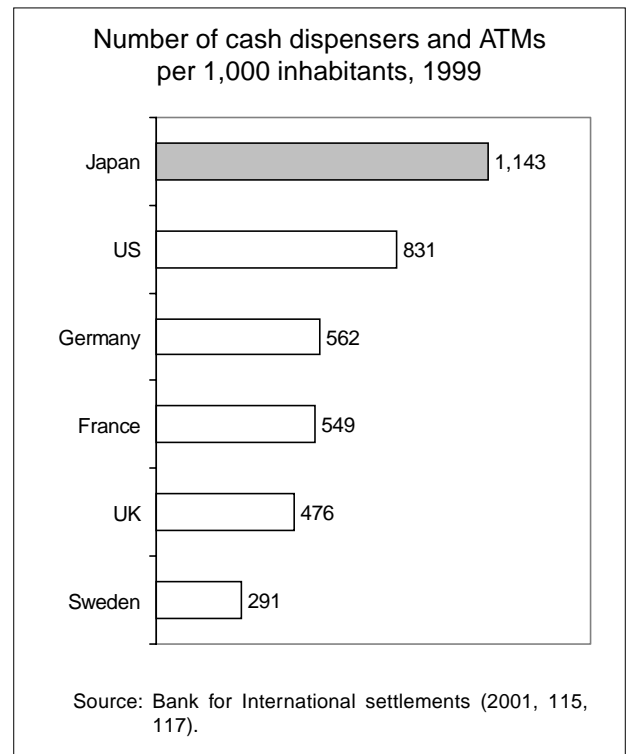


Figure 4

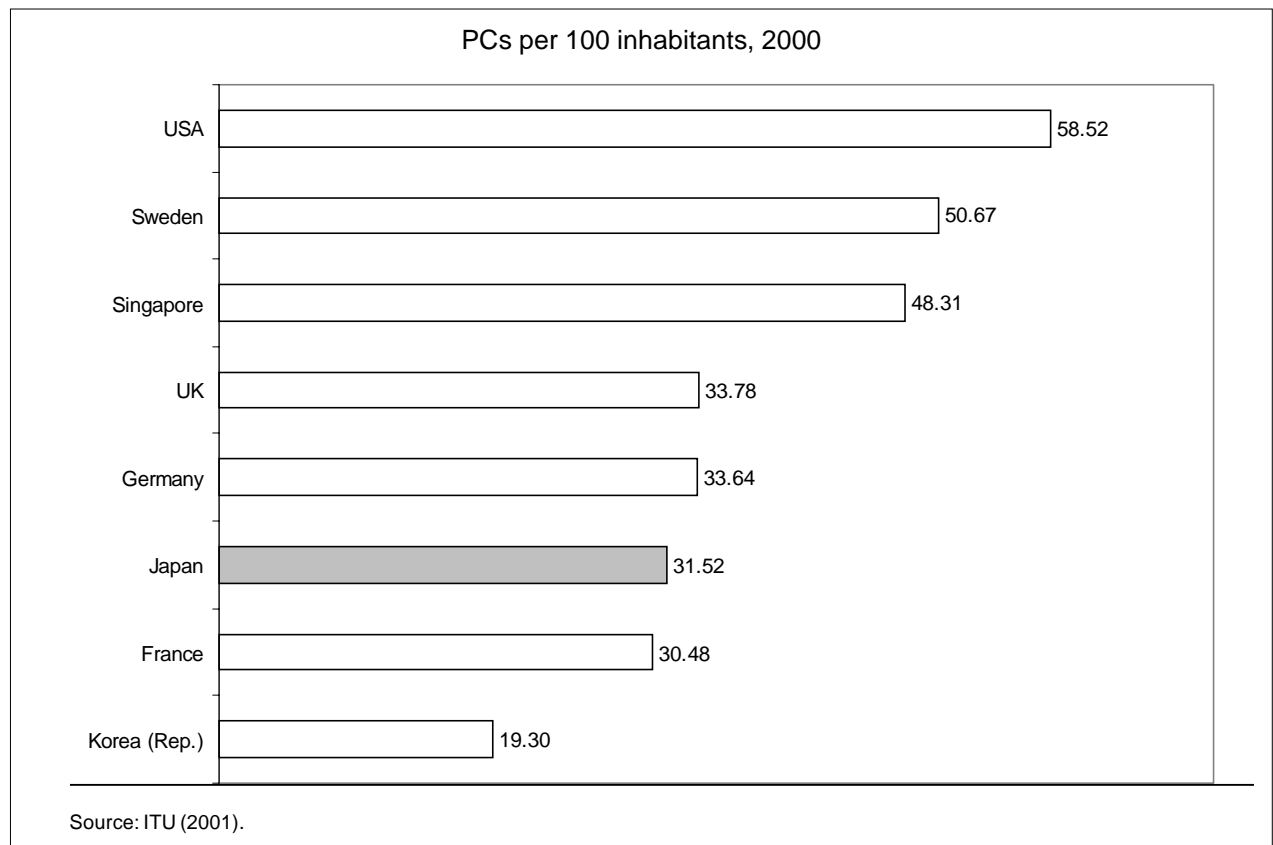


Figure 6

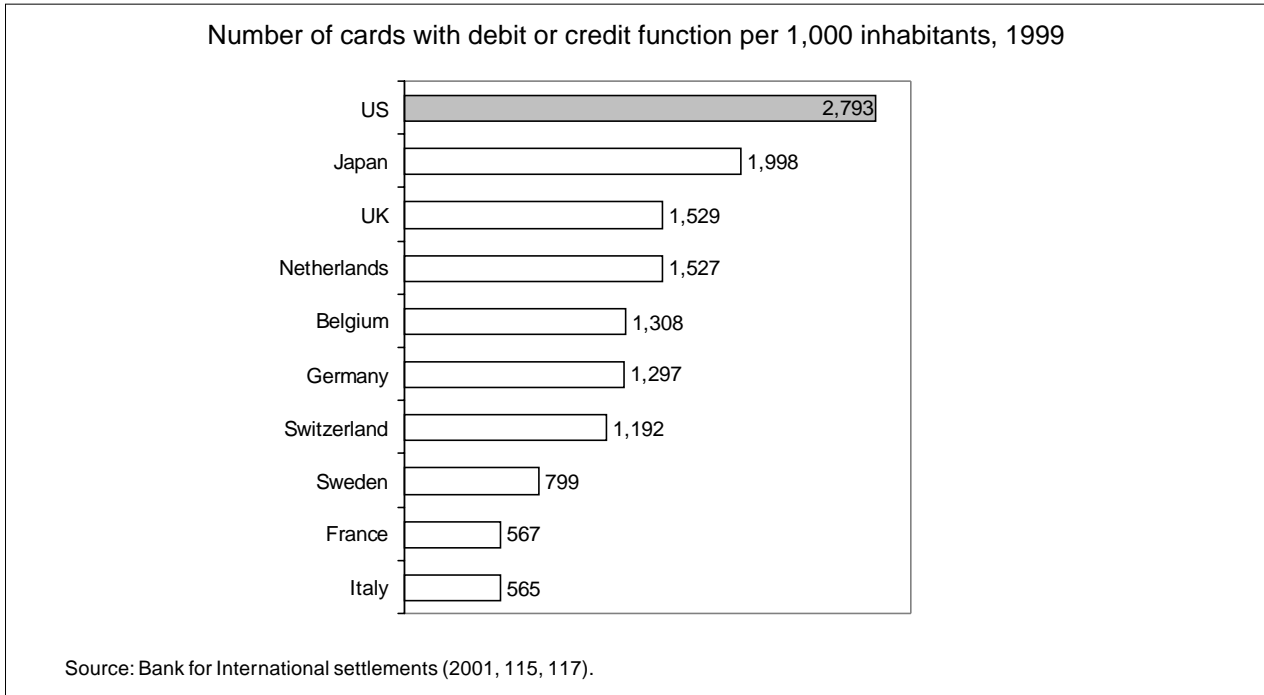
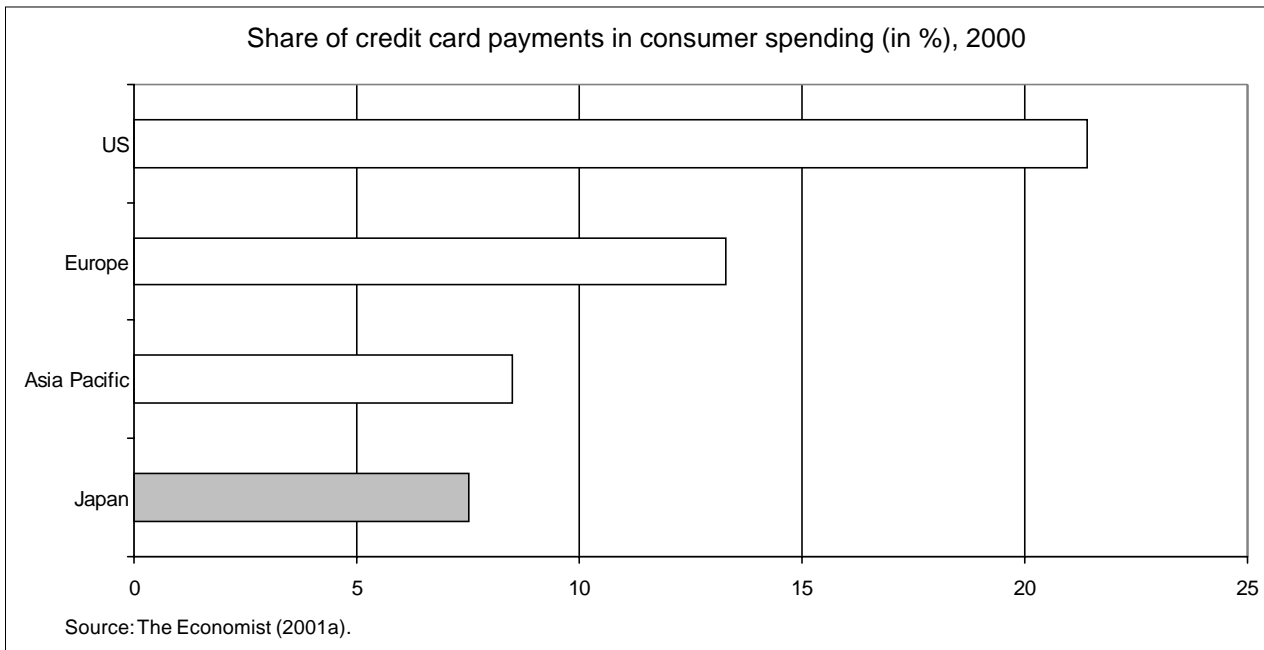


Figure 7



Cash-based purchasing habits: Compared to the US, Japan's higher number of ATMs together with its lower penetration of credit cards are reflective of the paying habits of the broad majority of Japanese consumers (Figures 5 and 6). Whereas customers in the US pay more frequently by credit card at the point-of-sale, Japanese consumers

prefer to pay in cash. Compared to Europe, the number of issued credit cards is higher in Japan, yet, Japanese pay less frequently by credit card. Japanese people are wary of credit card fraud and online privacy violation (Figure 7). Cultural barriers to assuming consumer debts keep the number of cards issued low compared to

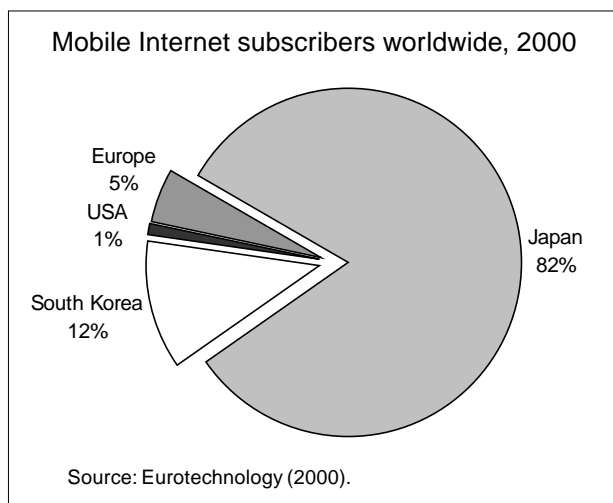
the US. Since B2C e-commerce models largely rely on credit card payments, Japan's relatively low level of credit card usage is a critical obstacle to the country's B2C e-commerce.

3. Elements of a Ubiquitous Infrastructure

3.1 Mobile phones

In comparison with PCs, cell phones are user friendly, mobile and have a high penetration rate in large parts of the world. Therefore, the PC is an unsatisfactory access and user platform for the further development of the Internet. Hence, the Internet is in the process of migrating to a new platform. From this perspective, Japan is one of a few countries in the world to have a substantial mobile Internet market. It currently accounts for about 82% of the world's total Internet-enabled mobile phones (Figure 8) and it will be the first country to introduce third generation (3G) mobile phones.

Figure 8



The ability of the Japanese network operators to produce revenue in a field where their European counterparts were less successful in regards to their WAP services is of great interest to other telecom companies and begs the question what factors are behind the success of the Japanese m-commerce markets.

3.1.1 Engines of mobile Internet

Some of the e-commerce barriers mentioned above are at the same time engines for Japan's successful m-Commerce.

Internet access fees: The Japanese were the first nation to have full-time, constant mobile access via cell phones.

Their operating system is based on packet switched networks, which are inherently more efficient for intense data traffic than circuit switched networks. Packet switched networks show three clear advantages:

- Content-based billing system: users of circuit switching networks are charged according to their connection time. This implies that users are very conscious of the time spent online. By contrast, in packet switching networks, users are charged for the amount of data downloaded, regardless of how long they are online. Hence, billing systems based on the amount of actual downloads are more economical than those based on the amount of online time and therefore, help spread Internet use.
- Always-on connection: users in circuit-switching networks need to dial up every time they set up a connection. Packet switching networks allow mobile terminals to be continuously connected to the network, which makes access to the Internet more convenient.
- Efficient use of limited bandwidth: with a packet system there is no need for each user to receive an exclusive radio channel. The system makes use of a channel only during data transmission. As network bandwidth is a very limited resource, packet switching networks allocate bandwidth more efficiently.

Mobile phone diffusion: in comparison to PCs, mobile phones are more suitable for the expansion of the Internet user base in Japan, since their penetration rate is much higher than the PC penetration rate. Since the introduction of mobile services in Japan in 1978, to date more than half of the Japanese population (53%) owns mobile phones, i.e. Japan has overtaken the US (40%).

Billing system: billing is a critical element in B2C e-commerce. Charging a PC Internet user a micro-payment of a few cents for a weather forecast will not justify the risk of transmitting his credit card data over the Internet. Not to mention that inputting this data in some cases could turn out to be more time-consuming than viewing the requested information. Hence, billing small amounts over the PC is rather impractical. Having the necessary data already, mobile phone operators can simply add online-service fees to the regular bill of the mobile phone subscriber.

Typing function: mobile phones provide function keys to move the cursor on the display in four directions. This being the case, users do not chose a function by typing single letters, rather they navigate through menus by pressing the cursor and the selection key. Furthermore, integrated smart dictionaries remember common phrases and words and make it easy to input with a few clicks. This way, data transmission is facilitated by the use of only around 15 buttons instead of the PC keyboard with 110 keys.

Privacy protection: Banks, insurance and investment companies focus their B2C-strategies on mobile phone Internet users rather than on PC-Internet users. Due to

high Internet access fee and low PC penetration, most Japanese access the Internet from work. Working space in typical Japanese open-plan offices is cramped and employees work at a short distance from each other. Hence, one does not feel comfortable checking on one's bank account or job openings. During private online transactions, the small display of a mobile phone offers better protection for one's private sphere than big PC screens.

3.1.2 Selected characteristics of the mobile phone market

3.1.2.1 Main operators

NTT DoCoMo, the wireless subsidiary of Nippon Telephone and Telegraph (NTT), is Japan's leading wireless telecommunication provider. Its mobile Internet service "I-mode" was the first commercial packet switched wireless Internet service in the world, launched in February 1999.

KDDI was the second to introduce mobile Internet services in April 1999, called EZweb. It is Japan's second largest telecommunication carrier and was formed from Japan's former main international telecom carrier KDD Corp., and the mobile carriers DDI Corp., and IDO Corp.

Japan Telecom entered the mobile Internet market with its mobile phone unit J-Phone. Launching mobile Internet services in December 1999, J-Phone's Internet-enabled

mobile phone service, "J-Sky" is proving highly popular with a subscriber base very close to KDDI's.

The characteristics common to all three carriers is their similar pricing and service structure and the underlying packet switched network technology. However, in manifold respects, EZweb and J-Sky services are superior to I-mode: both have higher transmission capacity of double-byte characters, both have higher e-mail storage, both have the capacity to send e-mail attachments with melody or image, while EZweb even offers an access speed of up to 64 kbps compared to I-mode's 9.6 kbps. Yet, NTT DoCoMo holds by far the biggest market share in the mobile Internet market and it is the dominant market leader in the mobile telephone market (Figures 9 and 10). Given the fact that I-mode services are not cheaper than EZweb or J-Sky services and that both services are technologically superior in certain respects, it begs the question why DoCoMo is so successful.

3.1.2.2 Mark-up language

In order to implement Internet access on a wireless platform, a mobile network protocol is necessary. The underlying network protocol of the PC-based Internet, the TCP/IP Protocol, is designed for a fixed line network. To build a mobile network protocol, one can either slightly modify the TCP/IP protocol or design a different protocol. Whereas I-mode went for the first solution, KDDI and J-Phone implemented the second.

Table

Characteristics of main mobile services in Japan

	NTT DoCoMo	KDDI-Au	J-Phone
Brand name	I-mode	Ezweb	J-Sky
Mark-up language	cHTML	HDML (WAP	MML
Mobile Internet fee	300 yen monthly basic fee + 0.3 yen per packet	200 yen monthly basic fee + 0.27 yen per packet	2 yen per request, no monthly basic fee
Sending e-mail	max. 250 double-byte characters (500 single-byte characters)	max. 255 double-byte characters (210 single-byte characters)	max. 300 double-byte characters (6,000 single-byte characters)
Receiving e-mail	max. 250 double-byte characters (500 single-byte characters)	max. 2,000 double-byte characters (4,000 single-byte characters)	max. 3,000 double-byte characters (6,000 single-byte characters)
E-mail storage on server	50 messages for 30 days	200 messages for 7 days (inbox), 100 messages (archive)	192 messages for 72 hours
Network technology	digital packet switched	digital packet switched cdmaOne	circuit switched PDC
Speed	9.6 kbps	up to 64 kbps	9.6 kbps
Initial targeted users	universal	business	women in their 20s and 30s
Initial international roaming	Korea	Korea, Hong Kong, USA, Australia	none

Source: www.mobilemediajapan.com (modified).

Figure 9

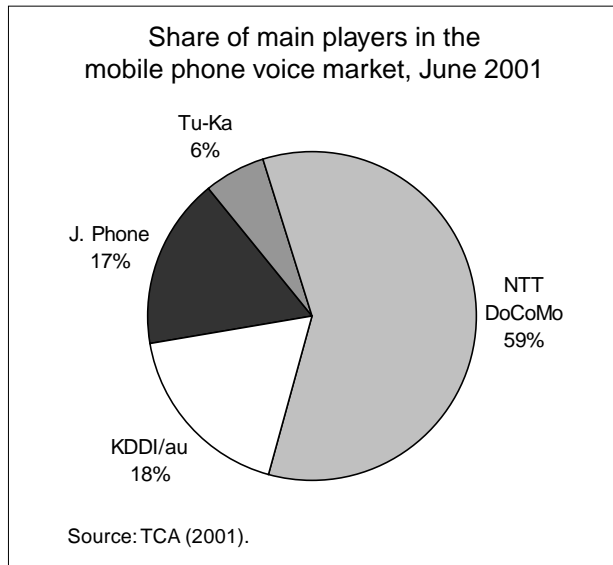
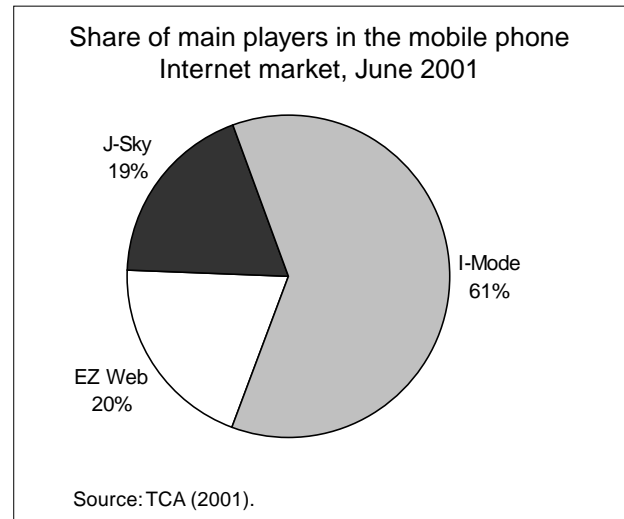


Figure 10



The mark-up language of I-mode is compact HTML (cHTML), which is a subset of standard HTML. The most common mark-up language worldwide for building conventional Internet sites that are accessed by PCs is standard HTML. Content providers and end-users who are experienced in creating websites for PC based Internet are able to create I-mode sites without learning a new mark-up language. Through this feature companies that already have a conventional Internet presence are greatly motivated to join I-mode since their site needs hardly any modifications.

The mark-up language of KDDI is HDML (Handheld Device Mark-up Language), which is completely different from HTML and very similar to WAP (Wireless Application Protocol), the common mark-up language in Europe. J-Sky uses yet another mark-up language similar to HTML, called MML (Mobile Mark-up Language). In order to get listed on the selection menu of EZweb or J-Sky, companies with conventional Internet presence have to overcome the hurdle of redesigning their website, resulting in a lower attractiveness of WAP-services in comparison with cHTML services. Still, WAP services in Japan are more successful than those in Europe, which implies that the underlying network is a more important factor of success than the protocol.

In the designing of WAP a main target was to create a mark-up language which would enable operators to control the contents of their network by means of the WAP gateway. By contrast, NTT DoCoMo has little control over the contents of the websites it hosts, since traditional websites can be easily transferred into I-mode websites. The decisive question at this point is whether the operator actually wants to have complete control over his network.

For the operator this also involves the complete responsibility of providing sufficient content. Realising the limits of developing its own content, NTT DoCoMo chose cHTML to encourage voluntary websites for its mobile Internet service.

The mark-up language proved to be a decisive success factor for mobile Internet services in Japan. Yet, it is questionable whether NTT DoCoMo will also take the lead in the European mobile Internet market. A compelling argument against NTT DoCoMo's success in Europe is the fact that WAP is the most common mark-up language worldwide. Whereas cHTML is supported by NTT DoCoMo and its alliance partner, hundreds of the world's biggest companies in the global mobile phone business are on WAP, hoping to make it the world standard. At the end, the side with the closer relationship to the mobile phone manufacturers might be the determining factor in the race for the global standard.

3.1.2.3 I-Mode

Business model

The business model of I-mode and other Japanese service providers differs very much from the US and European business models. The initial target group of European operators and manufacturers were businessmen. Accordingly, their mobile services focused on business applications. The European approach to creating a mobile Internet is rather technical, attempting to transfer the fixed-line Internet content onto the small screens of mobile phones. Advertising slogans promised the consumer a mobile In-

ternet, creating the misconception that mobile Internet experience will be similar to the fixed-line Internet experience. Early users familiar with the conventional Internet had high expectations when trying WAP services, but were disappointed by the slow transmission speed, small displays, insufficient content and high costs.

By contrast, NTT DoCoMo did not promote itself as a wireless Internet service provider. Instead, marketing slogans emphasized consumer-oriented services that are easy to access and user-friendly. The target group of I-Mode is defined by its very nature: since it is a mobile Internet, it is accessed mostly by people who spend a lot of time outdoors. Considering that travel time to work, universities or shopping centres and back home is relatively long in Japan, a large part of the Japanese population spends a lot of time commuting. These are not necessarily businessmen, but especially people in their 20s and 30s. Consequently, services that inform or entertain the young user while waiting are the most popular, accounting for more than 60% of total visitor traffic (Figure 11). However, the main reason for users to subscribe to I-mode is not access to entertainment services, but I-mode's e-mail function (82.4%), followed by the voice communication function (77.4%) (Figure 12).

NTT DoCoMo is partnering with strictly selected content providers, categorized in eight groups (Figure 12).

Every category provides official and unofficial I-mode sites, over 1,700 and 40,000, respectively (Mobile Media Japan, 2001). Official sites are listed on the I-Mode selection menu and can be viewed with a simple click on the touch pad. By contrast, unofficial sites are posted by individuals or organizations that do not have contractual agreements with NTT DoCoMo. In order to view these I-mode sites, one needs to type in the full I-mode web address, which is rather inconvenient considering the length of the addresses and the small touch pad.

Thanks to an innovative billing system the share of Japan's data revenue in the domestic market mobile phone communication is the highest in the world, accounting for about 10-15% in comparison to Europe's 5-7%, whereas the data revenue share in the US is below 1% (Macklin, 2001). I-mode users are charged for the amount of data they send or receive without having to worry about the clock ticking. Due to its affordable pricing structure more than 50% of NTT DoCoMo's customers subscribe to I-mode services (NUA, 2001a; Iba, 2000, 86). Aside from the basic mobile service fee of 300-yen per month, users pay 0.3 yen for the transmission of a 128-bit packet (previous table). 30% of NTT DoCoMo's official content providers charge users to access their site (NUA, 2001b). At the same time, service providers do not need to put in credit card protection measures since all charges are collected

Figure 11

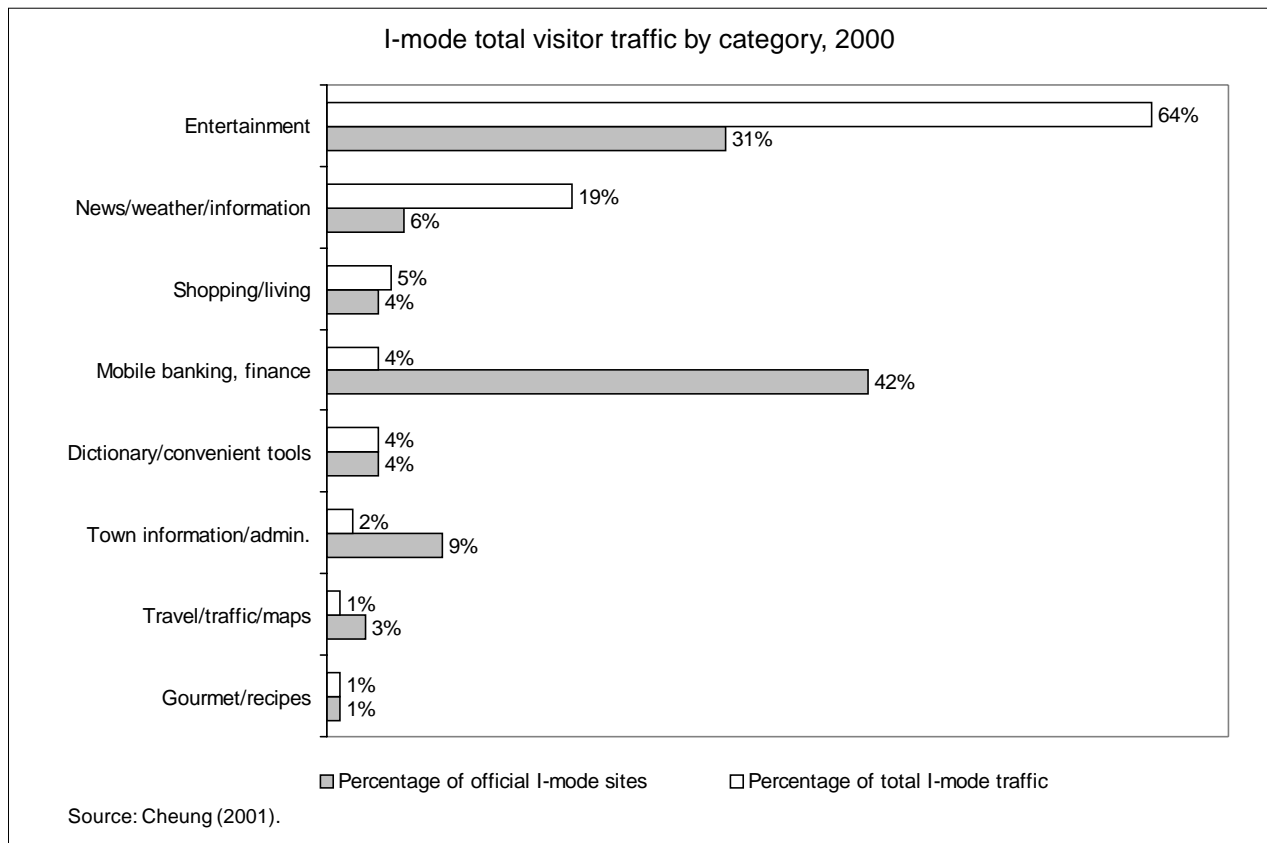
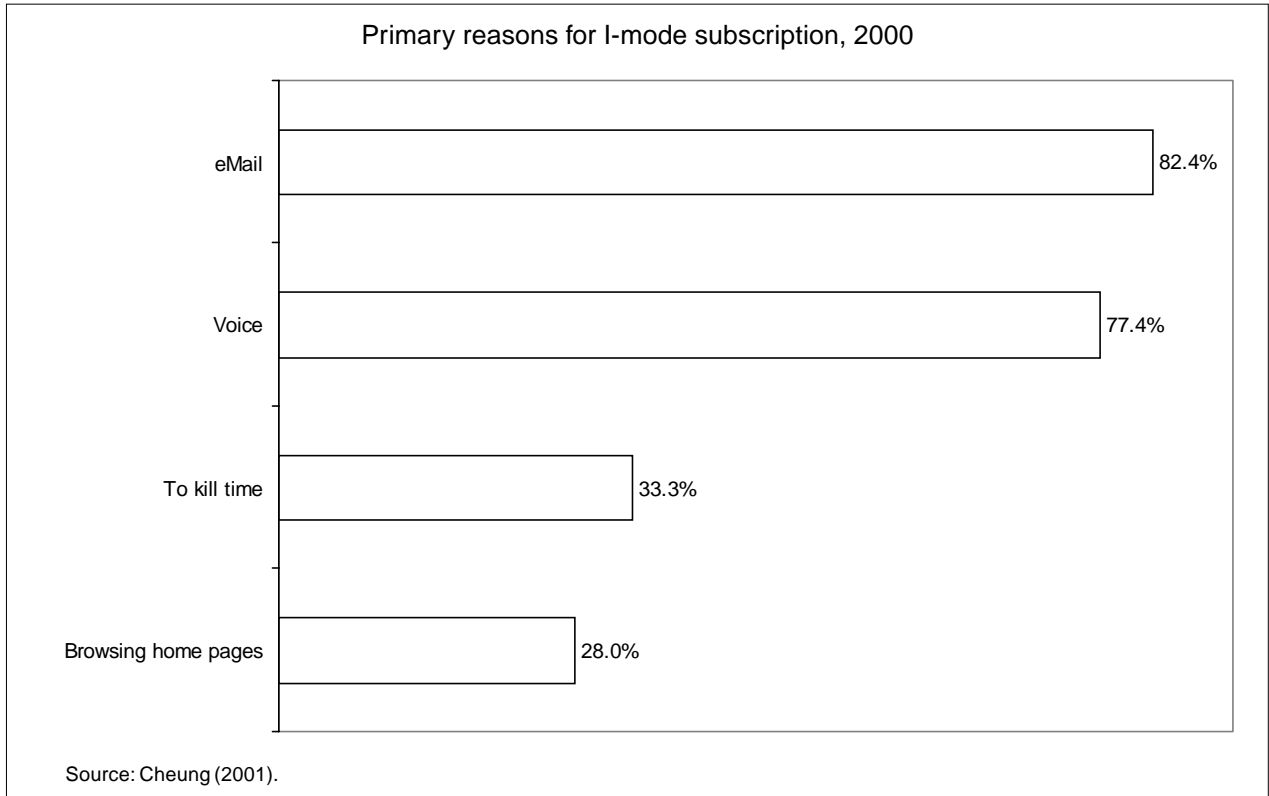


Figure 12



for them by NTT DoCoMo, which takes a 9% commission. The remaining 91% are passed along to the content aggregators, of which Cybird is the market leader in Japan. Cybird pockets 70% of the fees received, i.e. the content provider gets 21% of the original total of the service fee (Figure 13).

I-mode's unofficial content providers do not have use of NTT DoCoMo's billing facilities. NTT DoCoMo earns an additional 2000 yen (\$18.20) on average per I-mode subscriber per month, the majority of which is from the packet transmission fees (Funk, 2001). Since I-mode revenue from official content partners accounts for only a minor

Figure 13

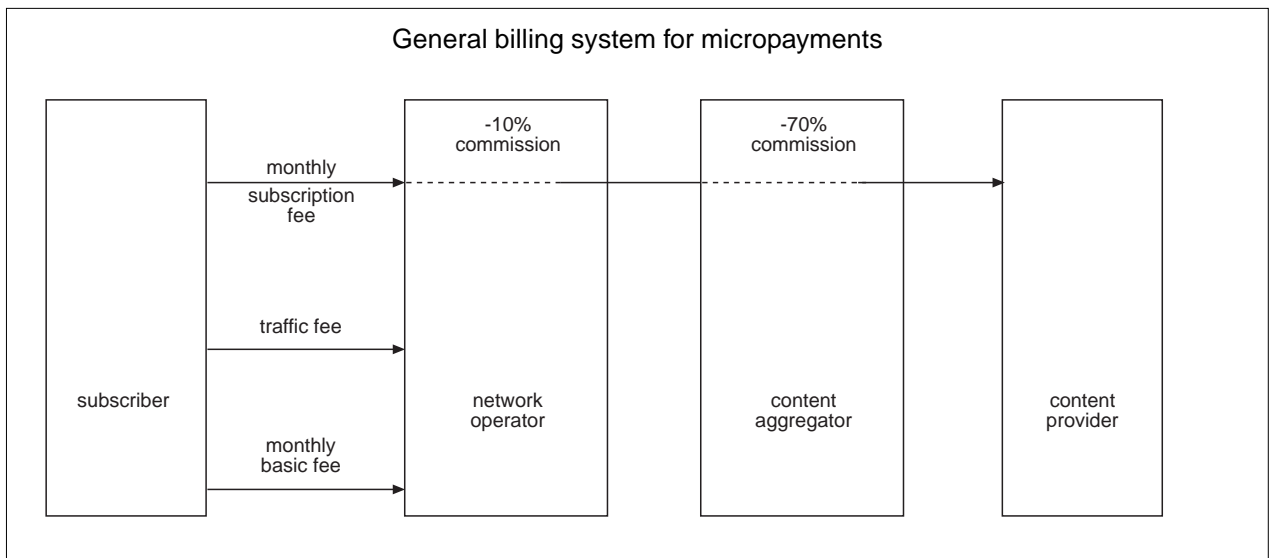
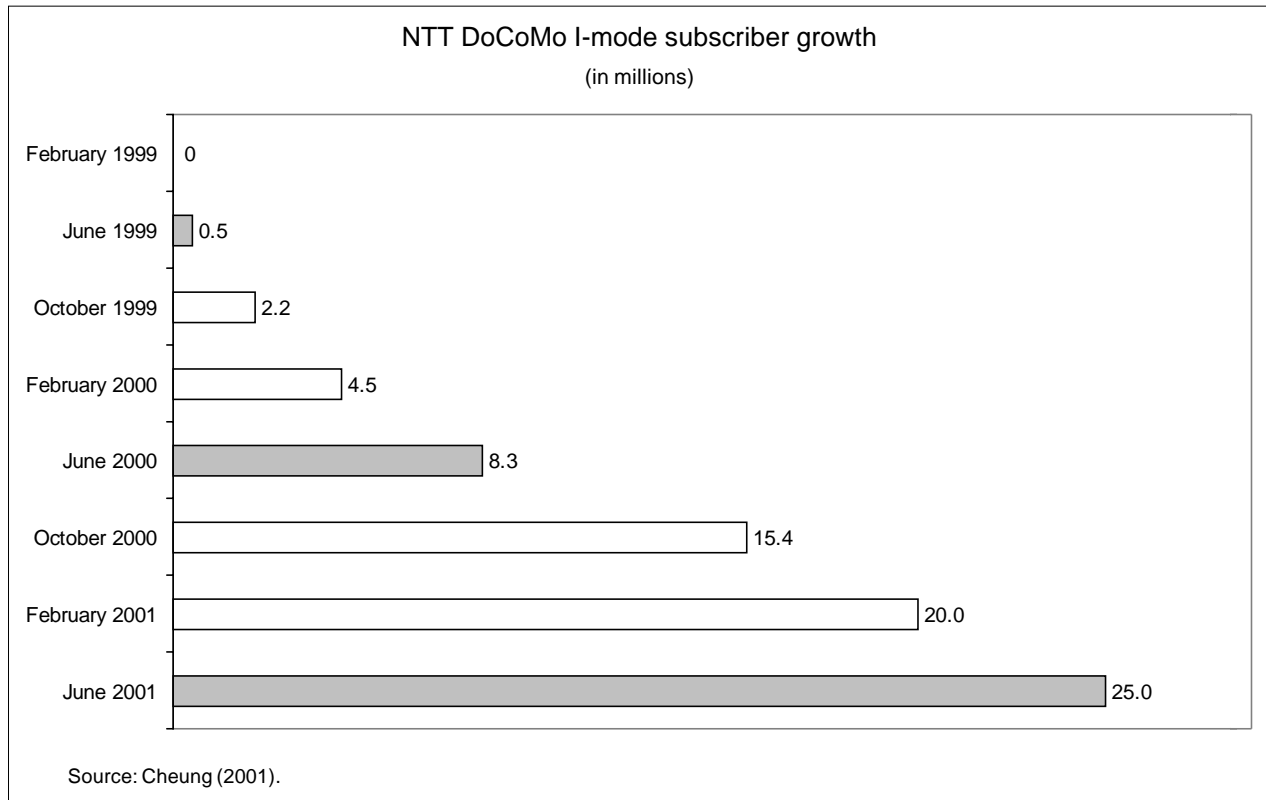


Figure 14



part of the potential revenue, NTT DoCoMo plans to charge content providers for inclusion on the I-mode portal (NUA, 2001a).

Harmful market effects of I-mode's dominance

Since the number of I-mode subscribers has grown exponentially (Figure 14), critical voices have been urging the Ministry of Post and Telecommunications (MPT) to restrict NTT DoCoMo's power in the telecommunications market.

Content providers object to NTT DoCoMo's selection process of official partners, complaining about the lack of transparency (Japan Telecom Report, 2001). NTT DoCoMo continues to argue that prospective official partners are required to comply with four basic criteria: (1) freshness of information, (2) continuity, (3) depth of contents and (4) user benefits. Additional details, such as decency and singularity of contents are subject to further screening.

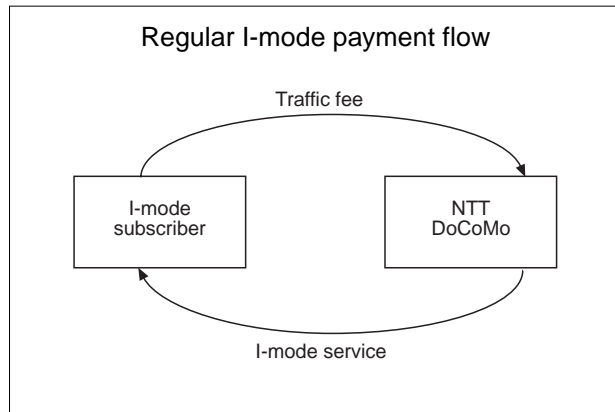
Content providers also claim that their application as official I-mode partners is discriminated against if they are already included in EZweb or J-Sky services or are in the process of applying to get in (JTR, 2001). Since content is the determining factor of success in the mobile Internet

business, NTT DoCoMo tries to offer exclusive services by obliging content providers to work only with NTT DoCoMo. This is not only discriminating from the viewpoint of information providers, but also from that of network operators. When service providers are forced to decide between I-mode on the one hand and EZweb or J-Sky on the other, they opt for listing with I-mode, because NTT DoCoMo provides access to a huge subscriber base that no other operators can match. As a result, NTT DoCoMo's market position is continually expanding. Hence, KDDI and J-Phone accuse NTT DoCoMo of monopolizing Japan's mobile service business (Nikkei Business, 2000). The Ministry of Post and Telecommunication (MPT) is currently examining whether, and how, it should intervene.

Tactics against NTT DoCoMo

The NCCs are calling for the MPT to intervene in the mobile Internet market and to correct the market bias caused by NTT DoCoMo. As long as the government does not undertake concrete political and legal measures against the current configuration of the competition, NCCs have to find ways around the problem, i.e. applying new technical tactics. KDDI and J-Sky enable their subscribers to browse unofficial I-mode sites. This means that NCCs earn packet fees from their own subscribers for

Figure 15



downloading I-mode sites, while NTT DoCoMo does not receive any packet revenue at all (Figures 15 and 16).

Until now, the content conversion software allows NCC subscribers to browse only those unofficial sites, without images. While NCCs commonly use png-formatted images, NTT DoCoMo uses gif-image format. Since July this year KDDI subscribers can now also view gif-formatted I-mode sites. This means that KDDI's content converter, though introduced somewhat later, is slightly more efficient than J-Phone's converter. Yet, KDDI mobile phones are not 100% I-mode compatible, since they cannot access I-appli sites, that is to say I-mode sites with Java applications. Nor can they convert official I-mode sites, which may only be accessed through NTT DoCoMo's I-mode gateway. Still, this new converter is considered to be a strategic competition tool, since images from unofficial I-mode sites proved to be the most frequently downloaded contents and, thus, form NTT DoCoMo's strongest selling point.

Another innovation being brought out by KDDI is its third-party billing service, which will be opened to all content providers. This will mean that unofficial I-mode content providers will be given the possibility to earn content service fees from KDDI subscribers via the EZweb billing system.

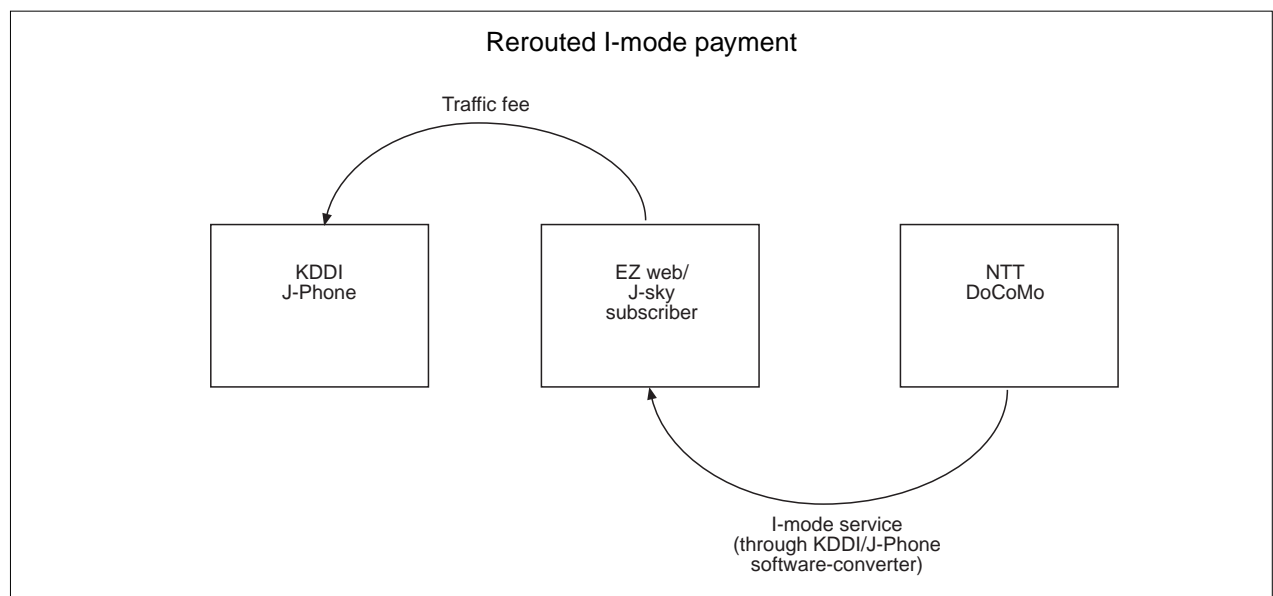
The fundamental problem in the NCC-NTT DoCoMo conflict has resulted from the fact that the mobile Internet was supposed to be a complementary network to the fixed-line Internet, which has an open structure. I-mode, on the other hand, is a closed world, managed and controlled by NTT DoCoMo. Whether or not the Japanese government decides to intervene in the mobile Internet market, cross-platform competition is expected to accelerate through content converter engines and new billing systems. Finally, technological innovations enable NCCs to tackle NTT DoCoMo's dominant position.

Apart from criticism against NTT DoCoMo's leadership there is an undeniable fact: during the last two years that NTT DoCoMo has gained in-depth experience in m-commerce and, therefore, holds a strategic position in the shaping of the emerging m-commerce markets around the world.

3.2 Convenience stores

Though originally imported from the U.S., convenience stores (C-stores) rapidly adapted to the demands of Japanese consumers and are now a distinctive feature of Japan's retailing landscape. Konbini, the Japanese word for C-store, are small supermarkets characterized by their ubiquity, prime locations and long business hours (90% of them are open 24 hours a day) (Tachino, 2000). They were introduced into the Japanese retail market in the 70s, and

Figure 16



experienced exponential growth in the decades following. In the 1980s the C-store chain Lawson opened between 100 and 200 stores a year, in the next decade between 300 and 500 (Russell, 2000, 86). Japan's largest C-store chain 7-Eleven expanded even faster. As a result, Japan's urban areas offer their citizens at least one convenience store, often two or three, within easy walking distance. C-stores have become an indispensable part of the young urban lifestyle in Japan. So what are the reasons for their conspicuous growth? Why did they not develop in other countries with similar success? And why involve C-stores in e-commerce?

3.2.1 Emergence of a convenience store infrastructure

In order to strengthen the post-war retail trade sector, the Large Scale Retail Store Law (LSRSL) was enacted in 1956 (JETRO, 1995). According to this law, department stores were required to apply for permission at the Ministry of International Trade and Industry (MITI) to open or expand premises, if they wished to establish a new branch with a sales area greater than 1,500 square meters (3,000 square meters in major cities). The process of acquiring permission was restrictive and lengthy; in this way the government gradually succeeded in strengthening the country's small and medium-sized enterprises (SME) sector.

As another result of the LSRSL, competition in the retail sector was limited: small-scale retailers were able to charge high prices since the market entry of large retailers was strictly regulated. Large retailers, as well, could keep their prices high as there was no need to fear that other large retailers would be permitted to establish a branch in their neighbourhood. Such a distribution system virtually impeded any kind of new market entry and competition, hence, Japan's retailing structure became a major issue in the Japanese-American SII-Talks (Structural Impediment Initiative, *Nichi Bei Kôzô Kaigi*) in 1990. The US reproached Japan for protectionism and called for the abolition of the LSRSL and a general expansion of Japanese retail stores. The aim was to achieve a higher sales potential for U.S. merchandise. After several years of negotiation with gradual improvement in competition, the law was abolished in June 2000.²

3.2.2 Main players

Faced with enforced restrictions on opening large stores, the large-scale retailer Itô-Yôkadô sought new business opportunities at the beginning of the 1970s. The U.S. large-scale retailer Southland drew Itô-Yôkadô's attention to its business concept, centring on C-stores. At this time, around 19,000 C-stores were operating in the US with a growth rate of 2,500 per year (Jung, 2000, 8–9).

Both retailers entered into negotiations, Itô Yôkadô's wound up with the exclusive right to introduce 7-Eleven to Japan.³ The first 7-Eleven store was established in 1974 and, as we know today, Itô Yôkadô performed so well developing 7-Eleven Japan, that it bought out Southland from 7-Eleven, Inc. in 1991 (JETRO, 1995; Takeuchi, 2000, 68).

With Itô Yôkadô paving the way, other major retailers such as Daiei, Saison, Kokubun, Yuni and the bakery Yamazaki Pan soon followed with the opening of their own C-store chains, Lawson (in 1975), Family Mart (1977), Community station (1978), Circle K (1980) and Sun Shop⁴ (1977), respectively. The fact that the large retailers were already well-established household names helped C-stores to gain a foothold in Japan's retailing (Jung, 2000, 9–10).

One of 7-Eleven and other C-stores' most difficult problems at the beginning was to provide a wide-ranging selection of products within a small sales area. Manufacturers prefer to sell in large quantities, but C-stores, having hardly any stock space, want to purchase in small volumes (Russell, 2000, 84). Itô Yôkadô reconciled these conflicting interests by applying the so-called dominance strategy. 7-Eleven branch stores open in the vicinity of other 7-Elevens, creating "7-Eleven clusters". Franchising and clustering give 7-Eleven C-stores the purchasing power of large-scale retailers while reducing distribution costs. This solution also helps to keep out rivals.

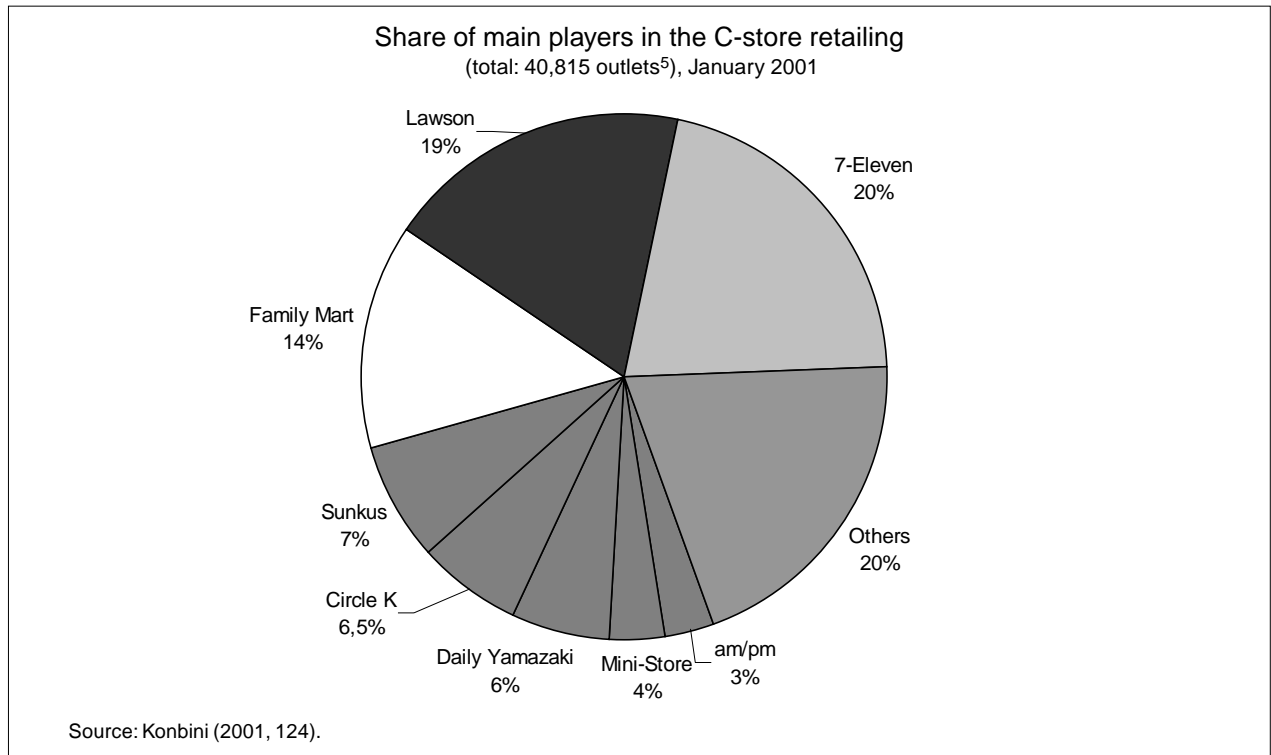
Other C-stores have also tried to utilize the dominance strategy as far as possible, but no other chain has been as systematic in clustering as 7-Eleven has. A quick glance at its network reveals that 7-Eleven prefers geographical shop concentration rather than countrywide shop diffusion. The network covers 26 prefectures while leaving 21 prefectures without any 7-Eleven presence (7-Eleven, 2000, 15). By contrast, Lawson, though having less shops (7,683) than 7-Eleven (8,662), is the only C-store chain with shops in every one of Japan's 47 prefectures (Russell, 2000, 89). Together with the third biggest chain Family Mart, 7-Eleven and Lawson own more than 50% of the outlets with a total of over 5000 stores each (Figure 17).

² JETRO (2000). The Large-Scale Retail Store Law was replaced by the Large-Scale Retail Store Location Law. The new law does not aim at restricting business operations, but imposes restrictions to ensure the quality of the living environment near retail stores facilities to be larger than 1,000 square meters. These restrictions follow international environmental standards and apply to, for example, regulation of noise, traffic, parking, etc.

³ Russell (2000, 83). 7-Eleven was not the first franchised convenience store to open in Japan. The Seibu group, which entered the C-store retailing sector in 1978 with Family Mart, opened a pilot C-store in 1973. According to the Japan Franchise Association, the very first franchised convenience shop opened in Nagoya in 1971. 7-Eleven, on the other hand, did not fail like earlier C-stores.

⁴ Russell (2000, 86). Sun-Shop merged with Lawson in 1989. After the merger Lawson became Japan's second largest C-store chain.

Figure 17



3.2.3 Convenience store business strategies

3.2.3.1 IT-based order and inventory management

As a result of the C-store chains' cluster strategy, fierce competition developed. In order to optimise operations, 7-Eleven became the first company in Japan to introduce a point-of-sales (POS) system in 1982 (JETRO, 1995; Sutherland, 1991), collecting information from POS cash registers⁶ and terminal control equipment.⁷ Information about consumer age, gender, time of purchase, weather conditions, etc. were systematically gathered and analysed. By finding out which articles (e.g. fast food, fresh food) are bought at which time (e.g. morning, evening) and by which customers (e.g. housewives, students), the strategy aims at eliminating missed sales opportunities caused by items being temporarily out of stock.

In 1991, the analogue network was replaced by an ISDN network, linking more than 5000 stores. It was the world's largest ISDN system at the time.⁸ Sales data gathered from all the shops was processed at even faster rates and ready for analysis within a few hours' time (Chopra, 1991, 8). 7-Eleven gradually developed the ability to spot new trends. Item-by-item analyses help to identify slow and non-moving articles, so that they can be replaced by more sought-after articles. Such an ability is a decisive competition factor, considering that 70% of C-store merchandise is replaced by new articles within a year

(JETRO, 1995). The capability to develop a range of merchandise that precisely reflects consumer needs, improved 7-Eleven's customer pulling power. While almost 40% of the customers in 1984 were teenagers, the share of customers in their 40s and 50s was almost twice as high in 1999 (28%) as in 1984 (15%).

During 1999 7-Eleven introduced a new POS-system which emphasizes information rather than settlement functions. Using video and graphics, computer monitors display information on consumer trends, shelf-stocking and weather etc. in an easy to understand format. By this means, individual stores handle ordering and inventory

⁵ The figure 40,815 may contain a bias. MITI states that there were 39,627 C-stores in 1999 (Asahi Shimbun, 2001, 193). Assuming a growth rate of 3% the total number would be 40,815 outlets in the year 2000.

⁶ Chopra (1995, 6). POS-registers provide special keys for certain information. In order to input, for example, the age of the customer, the cashier chooses between five register keys: under 13, 13-19, 20-29, 30-49, 50+.

⁷ Chopra (2000, 5). The first implementation of advanced information technology in 7-Eleven shops was in 1978, linking the head office, stores and gross retailers to an online network.

⁸ Chopra (1991, 5). ISDN is a digital standard for the transmission of voice, data and graphic information. It uses a single optical fibre line instead of the copper cable of the analogue system. By this means, it can increase the speed and capacity of the transmitted data. The 64-kilobit ISDN System is 30 times faster than the analogue network, meaning that it can transmit 4,000 Chinese characters per second.

Figure 18



more accurately and have fewer out-of-stock items and missed-sales opportunities.

3.2.3.2 Product and service diversification

Compared to regular supermarkets, C-stores have the disadvantage of having a smaller merchandise range and higher prices. Offering additional services outside the main lines of food and beverages gave C-stores an edge in the retailing sector and enabled them to hold a strong position against supermarkets. In the 1980s, C-store services expanded, diversified and added in-store fax and parcel delivery services, photocopiers, telephone cards sales, photo development service, postage stamp sales, advance movie and concert ticket sales and ATMs (Uchino, 2001, 65; Tsukasawa, 2000, 66; Kurasawa, 2000, 24).

7-Eleven was the first to accept payments for electricity and gas in 1987 (Kunii, 2000, 38), against a commission fee of 30 yen per transaction (Sutherland, 1991). Payments for water and telephone bills were added later. Since this service was processed through the existing network, 7-Eleven Japan had minimal incremental cost for implementing the appropriate service software. In 1998, for the first time, konbinis collected more payments for electric bills than banks (excluding bill payments automat-

ically deducted from consumers' accounts) (Tachino, 2000). Fifteen years on in the service business for bill payments, 7-Eleven has gained a market share of 3% in the area of utility bill payments which had traditionally been dominated by banks and post offices (The Economist, 2001; Matsuyama, 2000, 71; Nagata, 2000, 74).

C-stores are new competitors to the financial institutions, as well as restaurants and fast-food outlets (Minami, 2000, 78). Inexpensive cooked rice items, such as *onigiri* (rice balls) and *bentô* (ready-to-eat lunches which may be heated up in the store's microwaves) rank among the most popular product categories in 7-Eleven's and Lawson's (Figures 19 and 20). Some chains have recently started competing with pizza delivery services by offering home delivery as well.

3.2.3.3 E-Commerce — analysis and comparative valuation of 7-Eleven's and Lawson's business models

E-commerce is a new trend among C-stores, since they provide customer-friendly solutions for typical B2C e-commerce problems: (1) Third-party billing services of mobile telephone operators, for example, are suitable for the collection of small sums of money; however, they are not

Figure 19

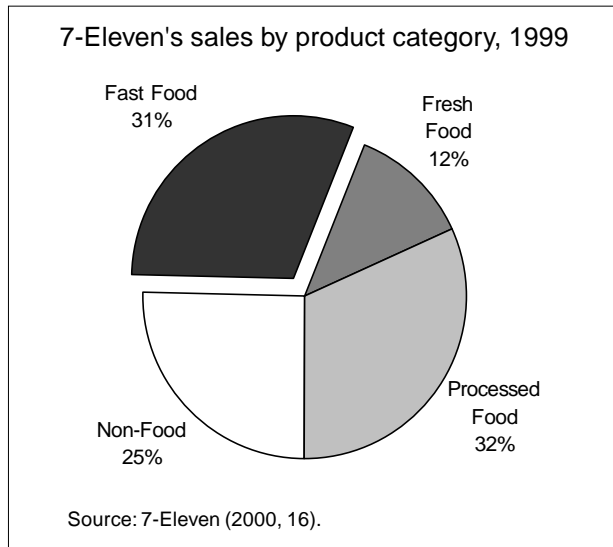
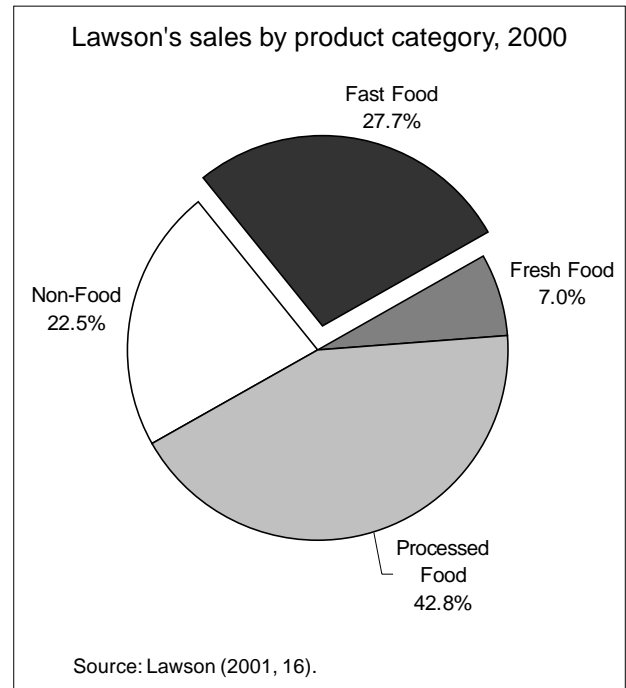


Figure 20



adequate as a method of billing for such things as theatre tickets or books. (2) Another shortcoming of mobile phones is the display screen whose size does not allow the product or service's full details to be viewed. (3) Mobile and fixed-line Internet access users are more likely to order products or services online, only if the subordinate link in the value chain of e-commerce, namely, the delivery is inexpensive and convenient. (4) Moreover, Japanese consumers are sophisticated and usually expect after-sales service, as well as the possibility to return purchased goods within a certain period of time. These sales elements help to win customer trust, even though the electronic customer-retailer relationship is rather impersonal and anonymous, thereby making it appear to be a less reliable shopping alternative compared to traditional shopping.

One solution to all of these problems is the use of convenience stores, offering appropriate solutions for problems such as those mentioned above:

Payment: Not only can customers pay the way they are used to, but also the under-18 generation, which does not have credit cards, can participate in e-commerce.

Point-of-return: Making customers pay and pick up the merchandise in a familiar surrounding helps electronic shops to built up a trustworthy reputation. The customer who places his order in a virtual shop can turn to a brick-and-mortar address, in case he wishes to return the purchased merchandise.

Distribution: Online-retailers try to avoid costly door-to-door delivery. For the customer this also involves the inconvenience of being tied to his or her apartment until the delivery arrives. With C-stores being interconnected, the online retailer needs only to focus on one central distribu-

tion point for its many customers. The customer, on the other hand, can pick up the merchandise around the clock without being restricted to the supplier's opening hours.

Big-display presentation: The lack of merchandising space and the cost of holding inventory hampered the growth of C-store sales. By installing in-shop multimedia terminals with large displays, merchandise can be presented rather realistically, attracting especially those customers who do not have Internet access with big screen devices at home.

7-Eleven's Business Model

Launched in July 2000, 7dream.com is one of the largest e-commerce businesses in Japan, offering an online assortment of 100,000 products. The initial vision of 7-Eleven reflects very well the idea behind 7-Eleven's e-commerce strategy: 7-Eleven intends to offer a low-priced "always-on" Internet connection between C-stores and neighbourhood households. All 8,700 outlets are to be connected to the Internet via high-speed access lines, while households are supposed to be provided with wireless Internet links. These plans have been shelved for the time being, since it is not known when 7-Eleven's intended internet service provider, SpeedNet Inc., will start its wireless Internet service. This vision makes it apparent that 7-Eleven's Internet-Strategy places particular emphasis on infrastructure-building activities (Nikkei Business, 2000a).

7-Eleven proceeds from the assumption that the majority of its currently eight million customers are Internet newcomers. If this is the case, an Internet infrastructure has to be set up first, so as to be able to offer contents to a broad public. Soon after the release of 7dream.com, 7-Eleven teamed up with NEC and marketed a "PC Debut Program" (limited to 20,000 customers), which includes a PC, printer, home installation and 100 hours of Internet access a month, for a monthly fee of 4,000 yen. A user-friendly PC for seniors and disabled people is also planned (Whipple, 2000).

7dream.com is a joint venture between 7-Eleven and its seven partners, each of whom is a top leader in its industry (the numbers in brackets show the capital participation) (NRI, 2000):

1. 7-Eleven (51%) provides the EC platform by linking stores and networks.
2. NEC (13%) develops the software for the 7dream.com site and the hardware for the multimedia terminals.
3. NRI (13%) is responsible for the framework, research and consultancy services.
4. Sony (6.5%) and Sony Marketing (6.5%) will contribute to the technical infrastructure and to an entertaining site-structure.
5. Mitsui and Co. (6.5%), as a global general trading company, provides the resources for worldwide information gathering and merchandising.
6. JTB (2%) is the supplier for travel services.
7. Kinotrope (2%) is an e-commerce consulting agency and is in charge of system design and development.

7dream.com offers services in the area of travel, music and game downloads, digital photo printout, tickets, car-related information, information on education courses, comprehensive information, books, mobile phones and shopping (Hamajō, 2000, 63).

7meal.services is a further e-business of 7-Eleven. With this service, 7-Eleven enters the meal delivery market, targeting senior citizens, caregivers, people living alone and highly health-conscious people. Considering that one person in six in Japan is a senior citizen, 7-Eleven plans to offer nursing care, as well.

Lawson's business model

Lawson started online-services in March 1998 with the Loppi Multimedia terminal. Around 1000 items are for sale. Customers select a product at the easy-to-use terminals, confirm and receive a paper receipt, which is subsequently taken to the register and paid. A few days later, the purchased small-sized items, such as books, can be picked up in the C-store, while bulkier items, such as PCs, are delivered to the customer's home. When using travel

services, the customer inputs information about dates and location and receives a call right away from a JTB agent on the Loppi telephone attached. The agent confirms the travel details and the customer pays for the travel either by credit card at the Loppi terminal or in cash at the cash register. A few days later, he receives the travel documents at his home. Furthermore, Loppi terminals provide services for booking tickets at cultural and leisure events, as well as for downloading game software for the Nintendo Game Boy hand consoles.

In November 1999 Lawson launched its homepage @Lawson, a comprehensive entertainment site, which provides direct access to the entertainment content of Loppi. @Lawson aims to grow to become the top site for entertainment services.

Lawson's Internet business eContext can be regarded as a counterweight to 7-Eleven's e-commerce site 7dream.com. eContext was established in May 2001 as a joint-venture, operated by Lawson (with a stake of 46%), Digital Garage (34%), Mitsubishi Corp. (10%) and Toyo Information System (10%). eContext enables companies to sell products and services on the Internet for a fee. It aims to be the leading e-commerce retail network for payment and pick-up service. Aiming to outstrip the number of 7-Eleven outlets, the eContext retail network provides more than 23,000 outlets, including the C-store chains Lawson (around 7,700 outlets), Daily Yamazaki (2,400) and Seico Markt (1,000) and Nippon Mitsubishi Oil Corp.'s gasoline service stations (13,000) (Sima Future Development Co., Ltd., 2000; Hamajō, 2000a).

I-convenience is another e-commerce joint venture of Lawson's. Since March 2001, I-Mode users have been able to order entertainment products and services available through the in-shop terminal Loppi, its website @Lawson or the shop catalogue Lawson Ticket. I-convenience was established by Lawson (holding a stake of 51%) together with Matsushita Electric Industrial Co. (18%), Mitsubishi Corp. (18%) and NTT DoCoMo (13%) (Nikkei Business, 2000b).

Comparative valuation of 7-Eleven's and Lawson's business models

C-stores have hardly any further geographic room to expand and have to adapt to the intensifying competition (Nakata, 2000, 74). In the face of such severe conditions, C-stores are adding new virtual services, thereby differentiating their strategies:

1. 7-Eleven aims to induce its customers, who are newcomers to the Internet, to become regular Internet users. Aiming to increase PC-diffusion among his customers, 7-Eleven's initial e-commerce strategy was rather infrastructure-oriented. In contrast, from the beginning Lawson's online-services, i.e. Loppi, @Law-

Figure 21

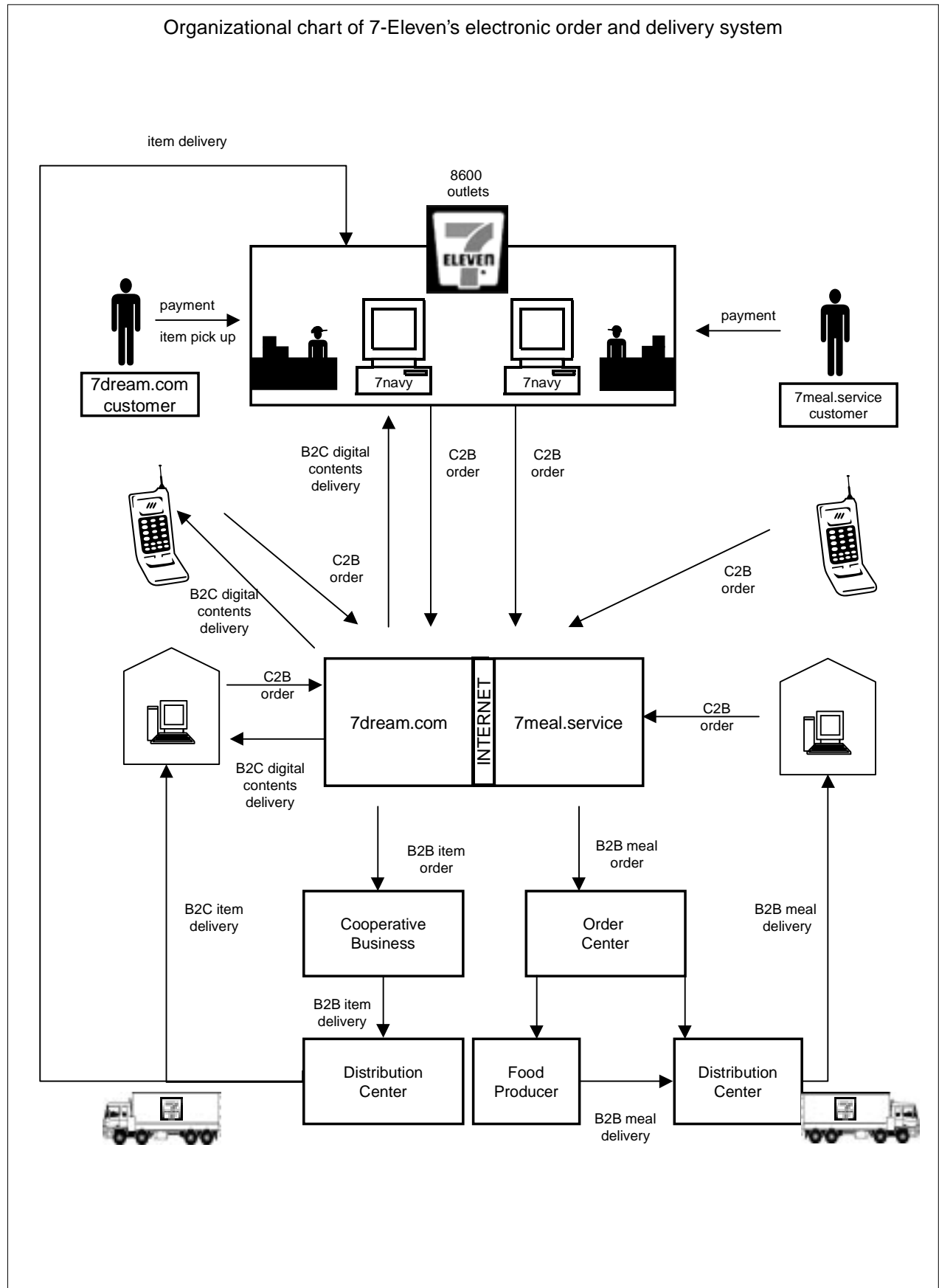
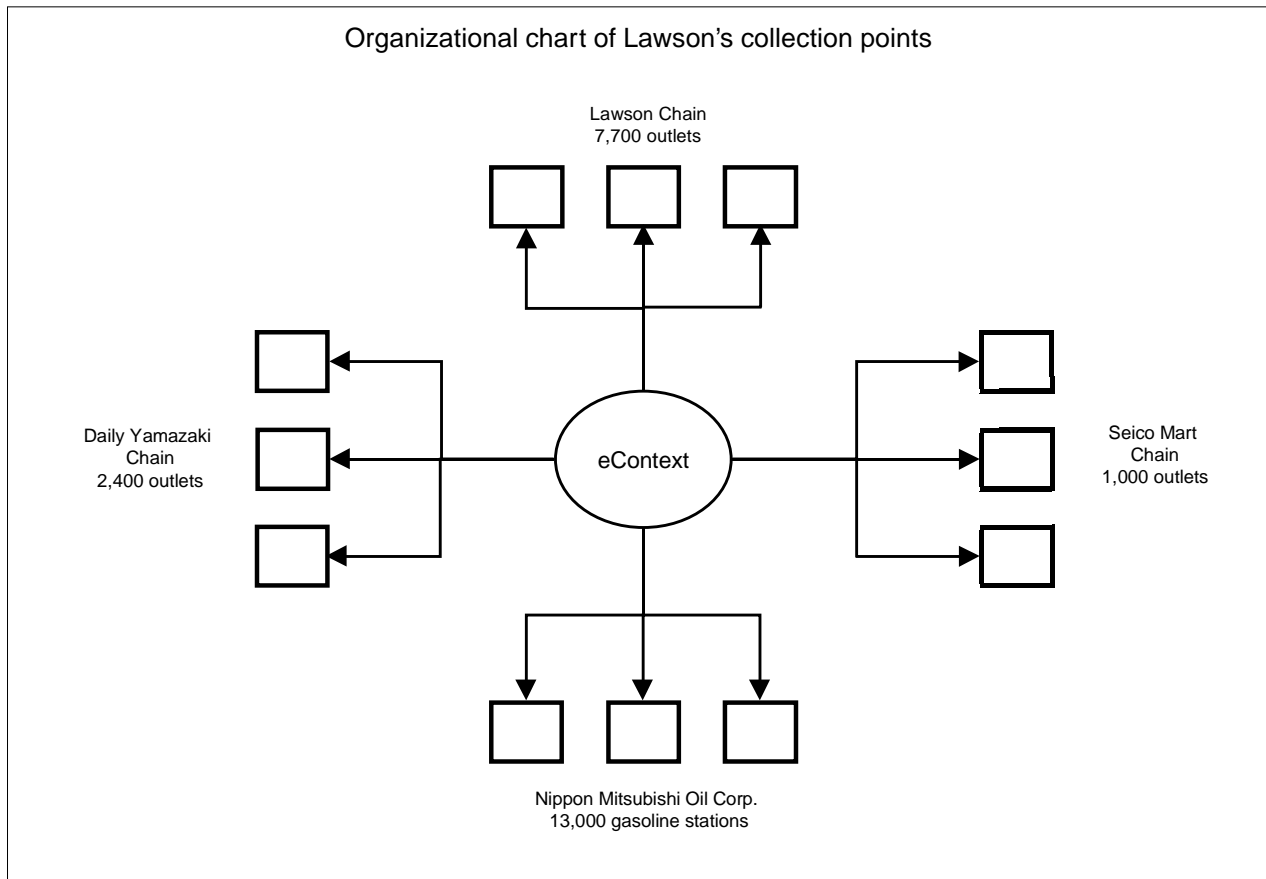


Figure 22



son, eContext and I-convenience have been content-oriented with emphasis on entertainment services.

2. "7dream" and "7meal" are websites belonging to the country's leading retailer "7eleven". The names of these services strengthen 7-Eleven's corporate identity and thereby increase brand recognition among C-store customers. By contrast, names such as eContext and I-convenience are not derivatives of the name "Lawson" and, therefore, at first sight do not automatically by association build a link to Lawson. On the contrary, it appears that Lawson is trying to profit from I-mode's brand popularity, since I-convenience immediately reminds the consumer of I-mode and its success story.
3. 7-Eleven's e-business approach is rather defensive, while Lawson's is challenge-oriented. The former accentuates lifestyle enhancing services, offering 7dream's various information services and 7meal's meal delivery and shopping services. 7-Eleven does not plan to further expand the number of collection points, but aims at preserving its existent customer bases and at tying them to 7-Eleven. Lawson pursues a challenging strategy, aiming at tackling 7-Eleven's leadership. Lawson has established more than 23,000 outlets with access to its Web site and aims at signing on new customers, who have not yet been reached.

A common point in both e-commerce offerings, both in information and health oriented service and in entertain-

ment-oriented service, is the fact that both services can be delivered without claiming geographical space for storage. Facing a broad product range, maximum efficiency in use of space is critical to the success of C-stores. Because of the lack of storage capacities, C-stores are not likely to become the core centre of goods-oriented e-commerce in the B2C mass business.

4. Expanding Japanese E-Commerce Initiatives to East-Asia

4.1 Mobile phone market

Having succeeded in building a sustained domestic mobile Internet market, Japanese operators are keen to export their competitive models to international markets. NTT DoCoMo, for example, has been largely investing in international partnerships since last year, teaming up with American AT&T mobile, Dutch KPN, British mobile services venture Hutchison 3G UK Holdings Ltd., Telecom Italia Mobile, AOL and Taiwan's KG Telecommunications. NTT DoCoMo's negotiations with South Korea's SK Telecom Co. concerning a possible strategic alliance are soon expected to be completed (China Daily, 2001).

A striking fact is that NTT DoCoMo's financial involvements in Asian partnerships are much smaller than in

American and European partnerships. The main reason for this can be seen in state-controlled markets with regulations on foreign investments and the exchange of capital, and also telecom regulations. In opening up their economies, countries must carefully consider how ready they are for the challenges of globalisation in terms of competition capability, productivity level, human resources development etc. The lesser developed Asian countries will preserve a certain degree of protectionism so as to give their domestic industries more time to grow into the competition with regional and international players. However, in June 2001 NTT DoCoMo announced that it is planning to boost investments in Asia and to take them to the same level as in the US or Europe.⁹

KDDI's recent operational tie-up with China's second-largest telecom company, China Unicom, is designed to tackle NTT DoCoMo's aggressive expansion in Asia. With this alliance KDDI has outstripped NTT DoCoMo with regard to Japanese presence in the Chinese mobile phone market, since NTT DoCoMo has yet to sign a deal with a mainland operator. KDDI is about to launch an upgraded CDMA service that rivals NTT DoCoMo's 3G service. With this alliance KDDI attempts to be the first to spread the use of its 3G service with the aim of making its 3G technology the standard in China. The collaboration between KDDI and China Unicom will chiefly focus on Internet access services and technology for next generation mobile phones (People Daily, 2001).

Having the world's fastest growth rate of cell phones, China is a strategic market in Asia. At the end of 2000 there were approximately 60 million cellular phones in use. Every month there is an addition of 2.8 million new customers. In the near future the monthly growth rate will rise to five million customers. In 2004 approximately 250 million cellular phones will be in operation in China, thus, every fifth cellular phone user in the world will be Chinese (Handelsblatt, 20 November 2000, N3).

Despite China's dynamic development in the cell phone market, it is still one of those countries with a low cell-phone density, that is to say, with seven mobile phones per 100 inhabitants. Countries with high mobile phone penetration are Taiwan (80), Singapore (68), Hong Kong (64), South Korea (57) and Japan (53). This comparison elucidates the enormous business potential of China and other Asian markets with a low cell phone penetration.

High-density population, traffic congestions and long commuting in the large metropolises of Asia favour the use of mobile phones, as well as the relatively young population of the Asian economies and their enthusiasm to incorporate new technologies into their everyday life. Given these circumstances the I-mode's success is likely to be repeated throughout Asia, once restrictive telecommunication regulations are loosened and foreign investments flow into the telecom infrastructure. As soon as competi-

tion in Asia can focus on technology and business models, it will be easier to predict whether I-mode or WAP services will grow to become the world standard.

4.2 Convenience store retail market

After decades of geographical expansion, C-store chains in Japan are approaching market saturation and seeking new business opportunities. Japan's top five C-store chains, namely 7-Eleven, Lawson, Family Mart, Sunkus and Circle K either have already or are about to launch operations in East-Asia, specifically in China. Growth forecasts for C-stores in China are outstanding, since franchising businesses will no longer be restricted three years after China's accession to the WTO (Rungfapaisarn, 2000).

The second largest and, as well, second most-sophisticated 7-Eleven chain in Asia, after Japan's, is Taiwan's. It is at the same time the island's leading retailer, with more than 2,500 stores. Each year about 300 stores are added (Dumlao, 2000). These numbers do not come anywhere near Japan's 8,600 outlets. Still, in terms of store-to-population density, Taiwan has the world's best ratio, providing every 10,000 people with one 7-Eleven outlet. The Taiwanese chain adopted the Japanese mode of payment services for utility payments in the year 2000 and further developed the payment model. It sells "play hours" in a "stored-value" card priced NT-\$ 150 (US-\$ 4.60). The card can be redeemed on the website of an entertainment company (Gamania Digital Entertainment Co.), which also operates in South Korea. Requiring the use of a PIN, the value card functions like a pre-paid telephone card.

Thailand's 7-Eleven chain provides about 1500 outlets, and grows at a rate of 200 a year. Stores in Thailand differ greatly from the 7-Eleven stores in other countries, and for hygienic reasons half of the merchandise is non-food items. 7-Eleven in Thailand pursues a new strategy and plans to leverage 7-Eleven's image as a convenience-food store through a new, clean look (Rungfapaisarn, 2000a).

7-Eleven's low C-store penetration in the Philippines is due to previous government regulations of foreign ownership in retail industries. After liberalizing the retail trade sector last year, foreigners are now allowed to own up to 60% and 100% from 2002 on. To date, there are about 150 stores, whereas 500 more stores are to open by 2004.

Having 123 stores in Hong Kong, Circle K as well is extending its operations into China. At the beginning of this year it launched its first Chinese C-store outlet. By the end of 2003 about 100 stores are scheduled to be opened,

⁹ Reuters (2001). NTT DoCoMo invested 1.15 trillion yen in U.S. Partnerships; 580 billion yen in European Partnerships with KPN Mobile; and 100 billion yen in Asian Partnerships.

with 100 stores added on by the end of 2005. All of them will be located in Guangzhou, Shanghai and Beijing and their surroundings. Circle K plans further business expansions into the Philippines, Thailand, Malaysia and Singapore (Fan, 2001).

Lawson stores in China are operated only in Shanghai. Shanghai Hualian Lawson Co.Ltd. is a joint venture between the Shanghai Hualian Corp. and Lawson Co. Ltd. of Japan. According to the Shanghai Chain Business Association nearly 1,150 convenience stores were operating in the city at the end of 2000. Most of them belong to chains such as Lianhu, Kedi, Langyon and Lawson. The number of C-stores in Shanghai is likely to reach 2,000 at the end of 2000, whereas the city's capacity is estimated to be up to 4,000 outlets (Yu, 2001).

24-hour C-stores are expected to spread throughout Asian metropolises. Once a relatively dense network of IT-equipped C-stores is established, they are very likely to develop in the "Japanese" way, i.e. to become focal points for utility bill payment and for the payment and distribution of electronically ordered merchandise, especially considering the low use of credit cards in Asia.

5. Concluding Remarks

Japan is well known for its ability to import ideas and technologies, improve on them and export them to other markets. Mobile phones and C-stores, both originally from the US, are among such "imports". The success of mobile wireless Internet has had positive spill-over effects on the overall infrastructure. It has encouraged research and in-

vestment for third Generation (3G) mobile phone technology and made Japan the world's first country to introduce 3G networks in autumn 2001. This, in turn, had spill-over effects on the self-confidence of crisis-shaken Japan. In January of this year, the Japanese government enacted the Basic IT Law with the aim of making Japan the world's most advanced IT nation within the next five years.

International discussions concerning emerging trends through e-Commerce, often involve questions such as whether SMEs can compete with virtual shops, and whether virtual shopping ultimately has to result in anonymity and isolation for the customer. Japan has proven that there can be a partnership between "brick-and-mortar" stores and e-commerce through the involvement of C-stores. Accessing e-commerce through in-shop multimedia terminals makes the issue of unequal access, often referred to as "digital divide", obsolete. By this means, C-stores can expand their customer base for e-commerce, making electronic transactions less dependent on the customers' PC-ownership or technological knowledge. For those not possessing a PC or a car, a well developed C-store network improves the quality of life. Furthermore, face-to face retailing preserves existing urban life. Under this model, fears of anonymity and isolation are unfounded.

Japanese B2C e-commerce models are about to rapidly gain foothold in various East Asian markets. Yet it is undeniable that the emerging e-commerce infrastructure in Japan is not a model with universal applicability. However, its efficiency, consumer friendliness and affordability should provide food for thought to e-commerce related business executives and policy-makers in Europe and the US.

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Zusammenfassung

Japanische Geschäftsmodelle für E-Commerce — Implementierung eines allgegenwärtigen Netzwerkes mit Mobiltelefonen und Convenience Stores

Das Internet war über das letzte Jahrzehnt von einer ausgesprochenen US-Führerschaft geprägt. Als Folge ist der Umgang mit dem Internet in vielen Teilen der Welt PC-zentriert. Dies ist in Japan anders: Internet-Anwendungen und E-Commerce im Business-to-Consumer-Märkten verbreiten sich vor allem über Mobiltelefone und 24-Stunden-Läden („Convenience Stores“). Japanische E-Commerce-Modelle sind Produkte der urbanen Strukturen und Lebensgewohnheiten vor Ort. Charakteristika urbaner Gegenden Japans, die den Gebrauch vom mobilen Internet begünstigen, sind z.B. Verkehrsstaus und lange Fahrzeiten für Pendler. Auf diese Charakteristika ist zurückzuführen, dass Unterhaltungsdienste zu den beliebtesten Inhalten bei mobilen Internetdiensten zählen. Sie eignen sich scheinbar am besten, um Wartezeiten auf eine unterhaltsame Weise zu überbrücken. Eine anderes typisches Kennzeichen japanischer Städte sind Convenience Stores. Sie haben sich zu Brennpunkten im B2C E-Commerce entwickelt und dienen als Zahlungs- und Distributionszentren, bieten aber auch Zugang zum Internet durch öffentlich zugängliche Multimedia-Terminals. Japanische E-Commerce-Modelle sind dabei, sich in anderen südostasiatischen Ländern mit ähnlichen urbanen Strukturen durchzusetzen. Es lässt sich daher schlussfolgern, dass E-Commerce in verschiedenen Ländern je nach lokaler Kultur und Sitte sich unterschiedlich entwickelt. Bei der Konzeption globaler E-Commerce-Modelle ist es daher erforderlich, lokale und regionale Besonderheiten zu verstehen und zu respektieren.