

Pay Now, Buy Later

By Chiharu Hirabayashi

Cashless shopping. For most people, this means credit cards and other buy-now, pay-later schemes. But more and more Japanese are finding prepaid cards even more convenient than credit. As the name indicates, these are cards saying that the person has already paid for the product. With no waiting, no credit examinations and no hassle—and the fact that you typically get credit for more than the actual purchase price—prepaid cards are being used for a wide range of shopping and services.

The first company to commercialize prepaid cards in Japan was Nippon Telegraph and Telephone Corp. (NTT). Even before it went private, NTT started issuing telephone cards. At first, NTT saw this as a way of eliminating the need to collect all of those ¥10 coins from the ubiquitous pay phones liberally sprinkled throughout Japan, but it soon saw the cards' market potential as gifts and collector's items. In just five years, NTT sold a mind-boggling 500 million of its telephone cards.

Next in line was the nationwide JR railway network (at the time the state-run Japanese National Railways), which came out with an Orange Card for buying train tickets from automatic ticket dispensers. The private rail lines and subways were not far behind.

Massive market

Although not money in strictly legal terms, these prepaid cards can be used the same as money for the purchase of specific goods and services. In effect, they are the equivalent not of money but of gift certificates, with the difference that they can be used little by little until their total value is exhausted.

At first, most of these prepaid cards were for telephones, trains and similar purchases, but alert marketers quickly realized that almost anything comes in segments and that it is better to sell



Telephone cards, the first prepaid cards introduced in Japan, are now used widely.

them in lots than one at a time. Soon there were prepaid cards for use in vending machines, at video game centers and the local gasoline station. If you wanted, you could also buy prepaid cards for the dry cleaning, for the video rental shop, and even for the lift and other resort facilities when you went skiing.

Yet this very popularity led to problems. For one, people keen on prepaid cards ended up with one for seemingly every use—a pocketful of cards bulkier than the money they were meant to replace. Not only did they have several telephone cards, they also had the Orange Card for the train, the Metro Card for the subway, a card for the Coke machine, and several for other things. Because the market is still small—meaning that the cardholders are few and cards are applicable for only a limited range of products—these problems have not become widespread yet; but the more companies and industries that issue prepaid cards, the more problems customers will have sorting all this out.

The problem is obvious, and it is not surprising that work has been started on designing a single card that people can use for train tickets, telephone calls and other consumer needs. But despite the

prospect of future proliferation problems, the prepaid card industry is booming today with use-specific cards. Led by the front-running telephone cards and Orange Cards, this market is expected to hit an annual ¥3 trillion (\$24 billion at the rate of ¥125/\$) soon and eventually to top ¥50 trillion. Those little prepaid cards are clearly big business.

One for all

Everybody wants a piece of the action. Prepaid cards are bursting out all over. Nor is this limited to specific industries or products any more. For example, the retailers in Tokyo's Kasumigaseki Building have banded together to issue their own prepaid card—the U-Card. Although there are a few places where it cannot be used—such as the bank or the travel agents—it is honored by 37 shops and restaurants, five vending machines and the exit-checker at the underground parking lot. A single card serves all.

Each outlet has its own card reader so that card-holders can make their purchases and do their business without any money. And all of the card readers are linked to computers at Nippon Card System to give an accounting of how much

card use there was at each shop and to deposit the receipts into the shop's bank account twice monthly. This is the first place where a single card can be used for a number of different purposes, and it is viewed by many as a test run for the multi-use card.

At present, however, the growth is still in single-use cards. In transportation, cards are already available for the JR, subways and toll expressways, and cards were issued for taxi cabs in some areas last fall. If this taxi card spreads, it may soon be possible to catch a cab anywhere in the country and pay for it with your prepaid card.

The trick here is the use of the IC card to record usage data and the fact that, when the card is inserted into the company's terminal at the end of the driver's day, it automatically bills the computer center for the fares. And because the system is computerized, the center is able to instruct the bank or other financial institution to pay the taxi company the same day. It is a very safe system, since it provides for computer tracking of each individual card, and the taxi company does not have the bother of issuing coupons, making change or other administrative details.

Pachinko parlors, video game centers and other coin-operated amusement arcades are another very promising area for prepaid cards. Some of these places have started using prepaid cards, but the cards are good only where issued. The *pachinko* industry was very interested in prepaid cards when they were first developed, but commercialization slowed when the police suggested that the cards be good only where issued and that the maximum card value be set at ¥1,000.

Despite the slow start, there is still a strong yearning to develop a single card that can be used to play *pachinko* anywhere, and the police and Ministry of Finance seem to be behind the idea this time around. Given the size of the *pachinko* market (sales estimated at ¥10 trillion [\$80 billion] a year) and the fact that there are nearly 15,000 *pachinko* parlors serving a total of 30 million players nationwide, the *pachinko* card would rank right alongside the telephone card and the Orange Card.

Increasing numbers of retailers are also starting to use prepaid cards. There is one supermarket in Osaka that is selling a ¥100,000 card. While it is typical in selling at less than face value, this card differs from most other prepaid cards in also car-

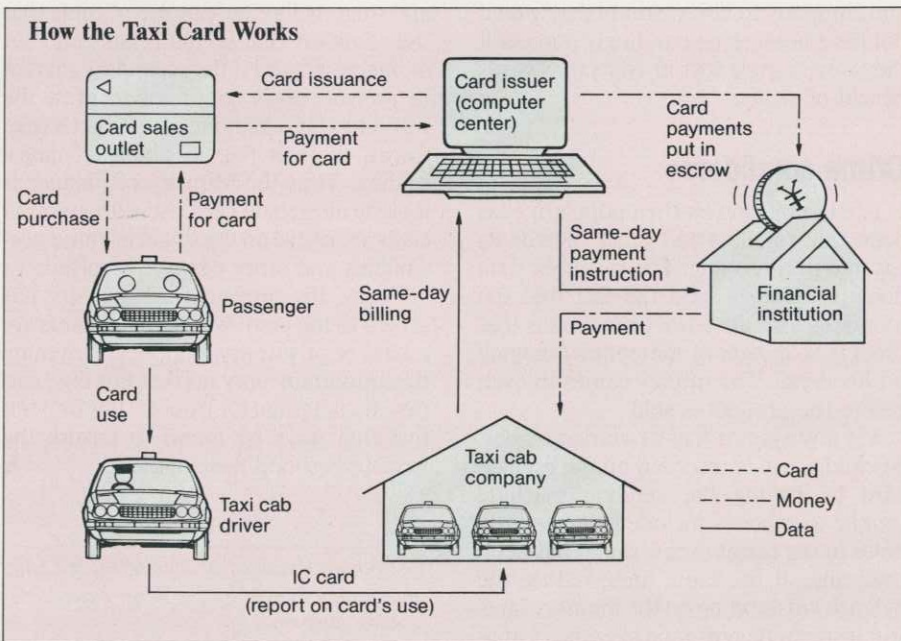
rying customer identification and thus helping the store track purchasing trends. There are also many restaurants that are issuing prepaid cards—including sushi shops, ice cream parlors and *sake* bars.

Looking to the future

Information is encoded on the prepaid cards with the same magnetic technology that is used on bank cards. Normally, these magnetic cards can only hold about 72 characters worth of information. Because the prepaid cards only need to count the information that is already there, 72 characters worth is sufficient information. Yet this information paucity will be a definite constraint when the cards start being multipurpose. Of course, it may be that the card does not have to have much information and that everything can be updated with terminals, but it would still be better to have a card with greater capacity for multipurpose use. Recently magnetic cards have been developed that will hold 273 characters worth of information—more than 3.5 times as much as the standard cards—and this is just part of the trend toward bigger-memory cards.

For example, the electric power companies are considering issuing prepaid cards that will let them sell electricity through special outlets. This is complicated because different appliances use different amounts of electricity in the same amount of time, but Tohoku Electric Power plans to start tests later this year. Just as a large-memory card would have the advantage of allowing multipurpose use, it might be possible to combine this with a liquid crystal display to automatically show how much is left on the card.

When cards start being multi-use, some way will have to be found to keep track of everything and to do the calculations. This program will probably be put in the terminals, and work will also have to be done on program standardization. And unless customers keep track of when, where and how much they use their cards, they will have no way of knowing if the computer has made a mistake or not. Today, card usage is shown by punching small holes in the card itself,





Retailers in Tokyo's Kasumigaseki Building issue the U-Card, which can be used in shops and restaurants in the building, and even in vending machines.



and the person using the card does not have an accurate count. It seems imperative that some way be found to indicate to the card-holder how much he has used and how much is left on the card.

While there are still problems remaining in the technology for thin, paper-like liquid crystal displays, it might be possible to print out a slip of paper with each use indicating the value of the transaction and how much is left on the card. This would do much to alleviate user anxiety. Yet including this information in the card itself inevitably means increasing the card's memory.

One of the private rail lines in the Kansai area is working on a prepaid card that people can use in the automatic turnstiles, but this will also have to make provision for telling the passenger how much he has used already and how much is left on the card. And when the card runs out, some way has to be found to make up the difference.

As a result, a number of companies are working on "intelligent prepaid cards" that will have more memory and will be able to do some basic calculations. If such a card can be developed, it will probably have approximately the same capabilities as the highly touted IC card.

One of the advantages of the prepaid cards is that they make excellent gifts and are also collector's items. The future lies

with cards that are able to take full advantage of these strengths and to combine them with memory, calculation and display capability.

Among the factors that have propelled the prepaid cards to their present popularity are that they are easy to use and easy to process (including printing).

And since the magnetic data does not change, people trust them. Thus they have been snapped up as personal gifts and company freebies. Surely they would not have been so resoundingly popular if they were simple toys or collector's cards devoid of utility.

Crime candidates

Another reason for their popularity has been that retailers and other merchants assume they are safe. The magnetic data does not change, and the fact that the money is paid ahead of time means that there is no danger of someone's renegeing on his debts. The money comes in even before the product is sold.

Yet any system has its vulnerabilities. Normally, use is recorded on the prepaid card by having the vending machine (public telephones included) punch little holes in the card to show that it has been used and, at the same time, reduce the balance outstanding on the memory tape. But if someone puts tape over the card or

otherwise blocks the punch, the card will look as though it is unused even though the magnetic data will show it as used.

Today, prepaid cards are hot collector's items, and unused cards often sell at a premium. So if someone can use the card and sell it to a card shop at the unused premium, he stands to make a handsome profit. Some of the more popular telephone cards and Orange Cards sell for considerable premiums, and these cards are prime candidates for card fraud. Unable to put every card in a terminal to check whether or not it has been used, the card shops are the usual victims of this scam.

Happily, this is about the only kind of crime reported with prepaid cards so far, but it is probably just a matter of time until we see card forgery, privacy invasion and a host of other card-related crimes. The Ministry of International Trade and Industry has recently established a special panel (chaired by Hitotsubashi University Professor Koichi Tauchi) to look at how card use will develop in Japan, including ways to ensure that prepaid cards are not abused.

The Ministry of Finance is also studying the legal implications of prepaid cards. For example, what is to be done about the person who buys a prepaid card and then, before he can use it, finds that the company that issued it has gone out of business? And if the secondary market in prepaid cards continues to grow the way it has for telephone cards and Orange Cards, there is the possibility of illegal trading. Thus the Ministry of Finance is looking at prepaid card use with an especially sharp eye on the financial fraud possibilities and other dangers involved.

Today, the prepaid card industry has grown to the point where many cards are a kind of private-issue money. Anything this important—any market this big—carries the potential for trouble. It is imperative that ways be found to ensure the industry's sound development.

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