Keio Business School

Tr@box Inc.

— In search of an on-line physical distribution network that will take Taking IT-oriented freight transportation into the next generation —

In late January 2001, Tadashi Tashiro, Vice President of Tr@box Inc., an Internet-based free truck-freight information supply company operating from a one-room office in a building located in the Nezu area, Bunkyo Ward, Tokyo, was pondering over the future direction of the operation of their site with his business partner, President Yasunori Fujikura, as a briefing session on their new proxy payment service scheduled for the following month drew closer.

Tr@box Inc.'s service boils down to mediating trucking service users looking for trucks and trucking businesses looking for freight by supplying them truck-freight information via the Internet. As the service supports NTT DoCoMo's i-mode mobile Internet service, it is accessible from i-mode compatible mobile phones. This, for example, allows a truck driver who has just delivered some freight to check truck-freight information for his return journey using a mobile phone. At present, member registration and information use are free, although there are plans to introduce a ¥1000 monthly membership fee from April 2001. The service was launched in November 1999, and the business was incorporated as a joint-stock company in March 2000. As of January 2001, the membership stood at more than 1400 businesses, with a growth rate of 100 per month.

However, competing truck-freight information services, including some with large capital backing, had been springing up, eager to capture a lion's share of the e-market catering for the trucking industry, which comprised 50,000 businesses (approx. 1 million employees) nationwide, most of them small or medium-sized. In the face of intensifying

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competition, Tashiro was feeling a little uneasy about moving to a fee-based format, as he could not help asking himself this question: 'Would I use the service myself if I was asked to pay a fee?' At the time, the home page banner ad placement fees were their only major source of revenue, and the business was hardly producing any profit. This brings us back to the beginning of this paper. Indeed, Tashiro and Fujikura were thrashing over other possible revenue sources for Tr@box Inc.

Trucking Industry

An industry dominated by micro, small and medium-sized businesses

According to FY 1998 data, Japan's annual domestic freight transport volume stands at 6.4 billion tons on a weight basis and 551.6 billion ton-km on a transport turnover basis, where transport turnover is the product of weight and transportation distance. The truck share of domestic freight transport is 91.0% on a weight basis and 54.4% on a transport turnover basis. Of this, the trucking industry accounts for 90%. There are four types of trucking businesses: special mixed-cargo freight transport business, general trucking business, specified trucking business and funeral transport business. A special mixed-cargo freight transport business operates scheduled freight transport services, possibly between terminals along arterial routes, involving vehicles loaded with a mixture of cargoes from any number of nonspecific clients. A courier service is included in this category. A general trucking business normally operates chartered freight transport services in which each job has one client who charters a truck or trucks to have his cargoes transported exclusively, although it can also engage in a mixed cargo freight transport service. A specified trucking business provides specific transport services aimed at, for example, specific clients for a specific item.

The Small and Medium Enterprise Basic Law as amended classifies 'enterprises capitalized at ¥300 million or less and employing 300 or less people' as small and medium-sized enterprises. According to this criterion, 72% of all special mixed-cargo freight transport businesses and 99% of all general trucking businesses are small to medium-sized enterprises. (See Appendix 1.)

Partly due to the rise of courier and other small-lot freight transport services, many trucking businesses are micro to small businesses operating up to ten trucks, including

sole traders with a light truck only. Difficulty finding clients on their own is their common problem, and this forces them to work primarily as subcontractors to medium to large-scale operators. Another scenario they commonly encounter is being asked to do a transport job that is beyond their capacities and having to approach fellow operators for help.

The trucking industry is a typical labor-intensive industry in which personnel costs account for about half of all costs, with the ratio of personnel costs to the total cost standing at 50% in FY 1998. Ironically, the physical distribution system streamlining process has resulted in an increase in the demand for manpower in the trucking industry, particularly drivers. Moreover, the industry is plagued by a low loading efficiency, as many trucks having dropped off their loads at their destinations have no cargo to carry on their return journeys. The actual loading ratio is said to be below 50%, which means that every other truck traveling on the road is empty.

Traditional trucking industry information networks

The trucking industry has had truck-freight information networks aimed at supporting small to medium-sized operators for some time. There are two leading ones, which will be explained below.

The first is 'Network KIT: Kyodo Information of Transport' (http://www.nikka-net.or.jp/kit/kit.html), which was launched in October 1991. Developed by the Japan Trucking Association (JTA) and operated by the United Association of Japan Freight Transport, Network KIT is a truck-freight information exchange system accessible from a PC, and has approximately 150 cooperative associations (15,000 trucking businesses) as its members. The system uses an NTTPC communications network with 129 access points set up in major cities across the country, and the server supports Windows PCs. At present, membership is restricted to freight transport cooperative associations, and cargo owners are not allowed to join in directly. These restrictions stem from a concern that 'the admission of cargo owners could depress prices by sparking excessive competition among operators' (a senior JTA official). Namely, the sole purpose of the service is to enable members to share their transport capacities. Cooperative association-based membership is the most salient feature of Network KIT, and cooperative associations provide a clearing-house service for individual trucking businesses, as well as assuming warranty liability for cargoes. This is claimed to be what makes very reliable system operation possible.

KIT membership incurs a ¥5000 initial setup fee and a ¥5000 monthly fee. A 5% commission applies to a successful match-up. With its cost kept reasonably low, the service is quite accessible to businesses.

However, the number of all-important PC terminals is still around 800, of which 138 have been installed at cooperative associations, with the remaining 667 set up by cooperative members, i.e. individual businesses (as of the end of May 2000). Namely, their take-up rate among individual businesses is only one in 25.

The other leading service is the 'Local Net '(http://www.jln.or.jp/system/jl_system.html), which is operated by the Japan Local Network System (JLNS).

The Local Net is a PC-based truck-freight information system launched in 1990 by the 'Butsuryu Network Systems Kenkyuka (Research Institute for Physical Distribution Network Systems),' which was jointly set up in June 1989 by freight transport companies in Hyogo and Osaka prefectures and a computer software company. Since then, the Local Net has grown into a nationwide service used by 1600 businesses (123 cooperative associations), and is now one of the largest in the country. The Local Net used to be a 'batch processing' proprietary PC-network system, which required intervention from the cooperative administration center. As a result, there were inevitable time delays in information flow. However, it was upgraded to an intranet/Internet environment based on Fujitsu Limited's FENICS network and virtual private office (VPO) feature in May 2000. Built around a UNIX server installed at the Local Net headquarters, the new system allows all tasks to be carried out from PCs installed at individual trucking businesses (cooperative members) by running Java applets through a browser. On the heels of the launch of the new system, the JLNS plans to expand its membership and embark on new projects, such as the development of a cargo owner client base.

Any cooperative association wishing to use the Local Net must pay a monthly fee of ¥35,000 to the JLNS, in addition to a joining fee of ¥50,000 and a system usage fee of ¥19,700. Like KIT, the Local Net is designed to facilitate individual operators in sharing their workloads and capacities, and the JLNS is keen to prevent it from becoming a convenient tool to get cheap deals for cargo owners. This is clear from the following

remark of Chairman Fukunaga of the JLNS: 'Our sole focus is to help cooperative members work together to get their transport jobs done. We are not interested in becoming a transport broker as such, so we will never deal with cargo owners directly.'

Mushrooming truck-freight matching services

In the year 2000, similar Internet-based services mushroomed. Logilink Japan Co., Ltd. (http://www.j-logilink.com/), for one, was established in September with a capitalization of ¥300 million. Apart from main players in the physical distribution industry, such as Nippon Express Co., Ltd. and Toshiba Logistics Corporation, the investors include the three leading general trading companies of Mitsui & Co., Ltd., Mitsubishi Corporation and Sumitomo Corporation. The service is scheduled for launch in April 2001, with revenue and membership forecasts for the initial fiscal year being ¥400 million and 450 businesses, respectively. In addition to the supply of freight information, truck availability information and warehouse availability information, the service encompasses logistics contract support, insurance arrangement, proxy payment, freight tracking, and the like. The cost of the service includes a ¥200,000 joining fee and a monthly information usage fee charged on the basis of access frequency — ranging from ¥30,000 for up to 100 times to ¥95,000 for 500 or more times according to forecasts. Successful matching does not incur a fee.

Another example is e-TReX (http://www.e-trex.co.jp/) set up by Global Logistics Research Institute, Inc. (GLRI), Daiichi Freight System Inc., Dynaware Corporation, Footwork Express Co., Ltd. and Microsoft Corporation with a capitalization of ¥200 million. The company runs a 'logistics e-marketplace' aimed at bringing together trucking service providers and users via the Internet. This service is unique in that it nominates truck space as the quantitative basis of transactions through the use of a system called the 'Space Trader,' rather than a whole truck as is the case with most other truck-freight matching systems. There are also plans to provide other services such as proxy payment (payment of freight to the trucking company on behalf of the cargo owner), insurance arrangement and the supply of trucking service market price information. The cost to the user is 10% of the value of the transport job for each successful matching.

As can be seen from these examples, "a move towards electronic vertical integration has begun in the physical distribution sector as well. In this process, the key to success is

to collect as much information on freight and available truck space as possible as it will lead to further growth in membership. Given the rapid rise and fall of B2C (business to consumer) e-businesses and the resulting hangover, the importance of being able to constantly attract an abundance of freight and flexibly allocate logistics resources cannot be overemphasized." (from http:// http://www.nittsu.co.jp/news /butsuryu_news/butsuryu200004/butsuryu200004_1.htm)

Notably, electronic vertical integration does not involve traditional company groups or real assets such as logistics resources. For this reason, some information service companies have joined physical distribution companies in launching e-marketplace services targeting physical distribution, particularly trucking.

KRS Corporation (http://www.krs.co.jp/tis/index.htm), which launched its service, called "QTIS," in 1998, boasts annual transactions worth ¥9 billion and a match-up success rate of 95%. The membership includes about 150 trucking operators and 300 users. Centering on food freight, it achieves a high match-up rate by having 15 or so vehicle allocation staff, stationed at the headquarters and nationwide branch offices, sift through 15,000 items of truck-freight information per month. A commission equivalent to 1.5% of the freight is payable.

Bridgestone Loginet (http://www.bsb-net.gr.jp/), which was launched in July 2000 by Bridgestone Logistics Co., Ltd., a 100% logistics subsidiary of Bridgestone Corporation, also uses manual matching at a matching center to ensure high service reliability. In addition to truck-freight information, the company plans to incorporate warehouse information concerning warehouse availability. The membership consists of about 200 businesses, including some 70 Bridgestone group companies. There is no joining fee, and this applies to both cargo owners and physical distribution operators, although physical distribution companies must pay a ¥2000 monthly usage fee, as well as a commission equivalent to 1.5% of the freight.

There are at least ten other services run by small to medium-sized e-market operators, including STI Corporation's Ecologicom (http://www.sti-corp.co.jp/), which boasts the largest membership in Osaka.

Tr@box Inc.

Company profile

The founders of Tr@box Inc. (http://www.trabox.com/) (Appendix 2), President Yasunori Fujikura (32 years of age at the time of founding) and Vice President Tadashi Tashiro (29) are both second-generation entrepreneurs who joined their respective family freight transport businesses after working for large corporations.

Fujikura Unyu is a trucking company located in Tokyo's Adachi Ward which employs 25 people and operates 21 vehicles. It was founded in November 1969 by the late Mr. Yoshio Fujikura, the father of Mr. Yasunori Fujikura. Starting out with the transportation of cardboard products, a large order for chemically-processed products was received in 1983, and the transport volume shot up. However, Fujikura senior passed away in the following year, so his wife, Mieko, took over as president, with the couple's eldest son, Yasunori, President of Tr@box Inc., joining the company to support his mother.

Saihoku Jidosha (President: Mamoru Tamori) is another trucking company located in Adachi Ward which employs 91 people (including part-timers) and operates 52 vehicles. Since its founding in 1971, the company has been transporting newspapers published by Asahi Shimbun Publishing Company, and has established itself as an expert in newspaper transportation through its accurate and reliable operation. In recent years, it has been exploring new business opportunities in areas such as physical distribution management, physical distribution system planning and physical distribution networking under the leadership of the president's eldest son, Tadashi, Vice President of Tr@box Inc., who is a qualified logistics administrator.

It was through the Junior Division of the Tokyo Trucking Association Adachi Branch that the two young entrepreneurs met. Mr. Fujikura was the President, while Mr. Tashiro was the Vice President and the Chairman of the Personal Computer Working Group. With similar family backgrounds, they became instant friends. Keenly aware of the huge gap between large corporations and small to medium-sized operators, both men had been thinking of introducing a reform process for some time, but the organization did not seem to change. So, they decided to go it alone. Their plan was to launch an on-line service geared towards organizing small to medium-sized trucking businesses.

President Fujikura explained how they actually did it:

'Initially, we thought about using radio, but Tadashi (Tashiro) came up with the idea of using i-mode mobile Internet, instead. Sending e-mails to PCs and mobile phones seemed to be an efficient way of broadcasting information, and would also leave communication records. In May 1999, we set up a home page and compiled a mailing list. That seemed to be good enough for starters. It was relatively cheap too. Starting out with the simple concept of finding an alternative means of communication to facsimile and telephone, the system was gradually refined to suit our own needs. Prior to launching the service in November 1999, we decided to keep it 'open' to be true to the spirit of the Internet age. Predictably, response from our older colleagues was less than flattering. Some even said we had opened a Pandora's box. Initially, we only had ourselves to run the service, and paid for it out of our own pockets to keep it free. Fortunately, the system was developed in-house so it did not actually cost money. Soon membership grew, and the service became the subject of newspaper reports. A management consultant from a foreign affiliated firm who read one of these articles told us that an nonincorporated business structure would be disadvantageous. A week after this advice, we incorporated our business. It was March 2000.'

With the capitalization requirement of incorporation met with our personal financial contributions, the site has been operated with the support of volunteers. A graduate-student friend from Tokyo University has developed our home page virtually free of charge, while an elite businessman with an MBA from the Massachusetts Institute of Technology racks his brains to come up with ideas.

As of January 2001, membership exceeds 1400 businesses with more than 50,000 trucks, thanks to the free service and publicity gained through media exposure. (See Appendix 3.)

Normal, gold and platinum members

To win the trust of cargo owners by signing on quality drivers, Tr@box Inc. asks its members to rate each other into five grades in a similar manner to e-bay (http://www.ebay.com), a leading Internet auctioneer, and classifies them into 'normal' and 'gold' categories. Normal members are subject to the registration/disclosure of the name of the

company/individual, address, contact information, specialty areas, number of vehicles and service scope, while gold members are subject to the registration/disclosure of the name of the representative, date of establishment, capitalization, number of employees, credit-line banks, date of book closure, date of payment and payment methods, in addition to all the information applicable to normal members. At present gold members outnumber normal members by 6 to 4, and Tr@box Inc. offers the function of sending order information to gold members only to accommodate those members who give priority to reliability.

Tr@box Inc. plans to introduce a proxy payment service in collaboration with Aiful by the end of the year, charging 7% of the amount handled as commission. This service will only be available to a new category of members called 'platinum' members.

Supplied information

Tr@box Inc. supplies information on members who have too much freight to handle by themselves and those who have uncommitted trucks to help them find each other, and the service is free. The idea is to utilize the capacity of trucks which have no freight to carry on their return journeys after delivering their cargoes at their destinations, and this is believed to be 20 to 30% cheaper than approaching large companies. All general trucking businesses and cargo owners from the manufacturing industry, etc. are eligible for membership, and there is no screening. As of January 2001, the service offers all the functions listed below. Notably, a bidding function was added in November 2000 to improve on the previous first-come first-served system, which was inflexible because it left everything to direct negotiations, typically via telephone, between the cargo owner and the first available trucking company without any room for alternative offers.

◆'Benri' (Handy) Box (accessible to anybody visiting the site)
Handy information, links, employment opportunities, etc.

◆ Members Only Page
Classified into three categories, all features are available free of charge at present.

★ Truck-freight information
Information is sent, received and searched from the home page. It can also be received via e-mail. The feature is compatible with i-mode.

◆ Transmission of truck-freight information

◆ Display of truck-freight information

Information items selected at the time of registration are automatically displayed. (Information can be sorted by area of origin or destination. To take part in bidding, the user just clicks on the vehicle or freight number.)

◆ Search of truck-freight information

Truck-freight information can be freely searched on an area by area basis.

◆ Display of bidding status

Alongside the truck-freight information submitted by the user, the current bidding status is displayed. E-mail messages for the notification of bid acceptance or refusal are sent from here as well.

◆ Display of successful match-up information

The conclusion of a truck allocation contract and that of a freight acceptance contract are indicated with '+' and '– 'signs, respectively. In addition to the current month, the displayed information covers the two previous months. From this page, it is also possible to register the rating of the other party to the contract.

★ Search for member businesses

★ Members only bulletin boards (five types)

◆ Normal bulletin board Tr@Board

(Free-format messages ranging from simple questions to company advertisements and workplace gripes)

◆ Want-to-sell want-to-buy bulletin board

(From personal ads to company product ads)

◆ Employment information bulletin board Q-Tr@Board

(Employment information can be published here as in a newspaper flier or employment magazine entry)

◆ Hobby/friendship bulletin board

◆ Light truck bulletin board K-Tr@Board

(Forum for information exchange on light trucks)

As of September 2000, 150 to 200 items are posted on the bulletin boards every day, with 30 to 40% of them leading to a match-up. The average value of a contract is said to be ¥50,000. This means that out of the 5000 contracts signed every month (¥250 million), about 1800 (¥90 million) are traced to the Internet.

Mr. Fujikura says: 'Trucking accounts for 90% of all freight transport, and 90% of trucking operators are small to medium-sized businesses, which are estimated to total 50,000 nationwide. The trucking industry has been slow to introduce information technology, but this also means that there is considerable room for improvement. Namely, networking trucking operators and providing them with truck-freight information can expand the distribution system and slash costs. At our site, we have educated drivers and trucking companies by providing them with a variety of information and community-like support, and succeeded in attracting many cargo owners by demonstrating that we have signed up quality drivers.' Mr. Tashiro, on the other hand, says: 'Our ultimate goal is to achieve B2B2D (business to business to driver). By offering our service free of charge, we try to keep the barrier low. The most important thing is to attract as many members as possible. As this site builds a track record of quality service, I hope, we will someday get orders from major companies and consumers.' He is convinced that the Internet will become a new marketing tool for small to medium-sized companies.

Alliance strategy

Tr@box Inc.'s system differs from traditional networks in that it allows participation by cargo owners. While overabundant 'freight-wanted' information and scarce 'truck-wanted' information has been identified as a major weakness of these networks, Tr@box Inc. enjoys abundant 'truck-wanted' information because of the participation of cargo owners. Building on this success, Tr@box Inc. forged an alliance with NC Network Co., Ltd. (http://www.nc-net.or.jp), a company located in Chiyoda Ward, Tokyo, which runs a site catering to small to medium-sized manufacturers called the 'NC Network,' with mutual site linking started in October 2000. The company was set up by nine companies from various branches of the manufacturing industry, centering on those run by a young second-generation entrepreneur based in Katsushika Ward, Tokyo. Initially launched as a CAD/CAM data exchange network among manufacturing companies and venture businesses, the NC Network has signed up about 6100 businesses (December 2000) as its members, with 15 to 20 new businesses joining each day. The combined sales of these businesses exceeds ¥2 trillion, with ¥6 trillion said to be a more accurate figure given the fact that some of them have not made their turnover public. This alliance has dramatically increased the number of our cargo owners from about 200 to more than 6000.

President Fujikura explains the significance of his company's alliance with manufacturing industry as follows: 'Small to medium-sized manufacturers must ship their products as soon as they are made, even in the middle of the night after working frantically with their hands full of grease. Major freight transport companies may not be so keen to cater for this need, but Tr@box Inc. is ready to help out. This is an area where the flexibility of small to medium sized trucking companies has an advantage.' So far, Tr@box Inc. has limited its operation to information supply via its site, and has never involved itself in individual transactions. However, a number of requests for the introduction of a proxy payment function even if it incurs a fee have been received from users, and the company has decided to provide a proxy payment service in collaboration with Aiful. (See Appendix 4.)

As the exchange of sensitive information such as payment may raise security concerns among users, Tr@box Inc. plans to outsource data management to Exodus Communications, K.K., the Japanese subsidiary of Exodus Communications, Inc., which operates a worldwide network of Internet Data Centers, to protect the security of its data and site. In addition, Tr@box Inc. changed its catchphrase from 'a comprehensive portal site for IT-minded drivers in the trucking industry' to 'an on-line physical distribution network that will take IT-oriented freight transportation into the next generation' in November to express its desire to actively recruit cargo owners, as well as trucking companies, through an alliance with other network operators.

Development of Revenue Model

Almost a year has passed since the incorporation of the e-market business started by Mr. Fujikura and Mr. Tashiro to put into practice their idea of a convenient service. Since then, the number of members has increased dramatically, and the provision of the service with the help of volunteers no longer seems feasible. So, they have decided to look into possible revenue sources.

Membership fee

Earlier, they hoped to introduce a monthly fee of ¥1000 from April. However, a number of competing services sprang up in the year 2000, including the Planet Online Service

(http://www.plajion.co.jp), which launched a similar information-exchange bulletin board service in January that year. Against a background of intensifying competition, therefore, they were a little worried that the introduction of a fee might drive some members away. Nevertheless, as far as cash flow was concerned, a fee-based service was a very attractive option, as can be seen from the example of Rakuten, Inc., which charged ¥50,000 as a monthly membership fee. Fujikura wanted to expand its trucking business membership base to 20,000 out of a total of 50,000.

Given the current membership growth rate of 100 businesses per month, the present approach of solely relying on publicity seemed rather inadequate. However, promotion would cost money. As is shown in the table below in terms of the ratio to sales, selling, general and administrative (SGA) costs, including promotion costs, of leading American sites are by no means small.

Company	1996	1997	1998
EBAY INC.	20.7%	46.7%	61.1%
LYCOS, INC.	94.1%	98.1%	72.5%
YAHOO! INC.	96.2%	74.8%	51.0%

Proxy payment service fee

A proxy payment service through a tie-up with Aiful will benefit trucking companies as it will guarantee them payment, while it will be welcomed by cargo owners as it will give them peace of mind. For example, a 7% fee could be charged for the use of truck-freight information leading to the signing of a contract worth ¥50,000. The money moved through the proxy payment service is expected to quickly reach the ¥1–2 billion level, with fee revenue projected to be around 3% of this. They hope to be able to lower the fee as turnover increases. With the bolstering of cargo owner membership through the alliance with NC Network Co., Ltd., etc., they estimate the number of monthly transactions to be around 4000.

In concrete terms, the proxy payment service will be provided in the following manner: upon completion of delivery, Tr@box Inc. sends payment information to Aiful; Aiful then collects the payment from the cargo owner, and forwards it to Tr@box Inc. after subtracting

an amount equal to the fee; and Tr@box Inc. pays the freight to the trucking company. The fee is borne by the trucking company.

Prior to launching the proxy payment service, Tr@box Inc. plans to outsource the administration of its server to the Internet Data Center of Exodus Communications, K.K., which provides a much securer environment than the current in-house administration, at a cost of about ¥500,000 a month.

Transaction commission

Under the current system, transactions take place after members sift through information posted on bulletin boards, find a match and make a bid. As a result, the matching rate stands at only 30 to 40%, which is low compared to more than 90% for competing services with truck allocation staff. At present, Fuji Logitech's ACTION III (http://www.fujilogi.co.jp) and KRS Corporation's QTIS (http://www.krs.co.jp) use manual matching by truck allocation staff.

The cost of using ACTION III includes a 3% commission, an annual fee of ¥30,000 (¥50,000 for cargo owners) and a monthly fee of ¥10,000 (¥15,000 for cargo owners). The service handles 5000 to 6000 requests per month using a total of 20 truck allocation staff stationed at nationwide five allocation centers.

QTIS charges 1.5% of the freight as a commission. It manually matches up as many as 15,000 items of truck-freight information per month using 15 staff.

In the case of Tr@box Inc., the increase in personal costs as a consequence of the use of truck allocation staff would be a concern, although the commission could be kept low depending on the matching rate. Judging from the examples of the two rivals which are ahead in this area, Tr@box Inc. would need 5 to 10 staff to process the amount of information currently posted on bulletin boards — 4000 items per month.

Member introduction fee

The biggest advantage of Tr@box Inc. is its cargo owner and trucking company membership, which is among the largest in Japan. In recent years, a number of Internet-

based marketplaces have sprung up in various fields, but all of them are finding it tough to attract members. In e-commerce, how to physically move goods is a key issue, and it is almost impossible for an e-marketplace operator to build a totally self-sufficient system in-house. Therefore, it might be feasible to connect Tr@box Inc.'s system to e-marketplaces, and charge a member introduction fee. This idea is advantageous in that it would basically be free of additional expenses. The most important thing is to have more and better members than other sites. The member introduction fee could consist of two components: a fixed amount charged for each inquiry (bidding) similar to an entry fee for an Internet auction, and a transaction fee of a few percent charged for each successful match-up. However, this revenue model is difficult to quantify as the revenue would vary widely from one tie-up partner to another depending on their size and the frequency of their need for trucks.

Advertising revenue

At present, advertising is the only major source of revenue. Therefore, the most important factor to consider in designing and operating the site is how people can be persuaded to visit it. The current advertising rates are as shown below.

• Large banner ad (displayed page not specified)	
Advertising rate [fixed] (monthly):	¥50,000
Guaranteed display frequency (monthly):	5000 times
Unit rate (per display):	¥10
Discount for long-term contract (at least 3 months):	10%
• Mini banner ad (displayed page not specified)	
Advertising rate [fixed] (monthly):	¥30,000
Guaranteed display frequency (monthly):	5000 times
Unit rate (per display):	¥6
Discount for long-term contract (at least 3 months):	10%
• Mail news ad (broadcast to all members)	
Advertising rate (per broadcast):	¥20,000
Number of destination addresses:	approx. 1400 (as of January 25, 2001)
Day of transmission:	each Wednesday
Discount for volume contract (at least 3 broadcasts):	10%

At present, the number of monthly page views stands at about 200,000. Targeting members, it might also be possible to run an auction shopping mall handling truck-related goods, stationery, etc. At any rate, the current heavy reliance on advertising revenue no longer seems sustainable, given the demise of a string of American sites operated on advertising revenue amid a downward spiral in their share prices.

Leasing of system on application service provider (ASP) basis

Tr@box Inc. is ahead of its competition in the area of an i-mode compatible truck-freight information system. As its system has been developed in-house, it is not subject to license fee payment to a software vendor — a factor which is often cited as a drawback of an ASP revenue model because of the pressure it would put on the revenue structure. In addition, the system is easy to deliver through an ASP arrangement as all of its features are accessible via the Web. This raises the possibility of building an ASP revenue model based on the supply of the system to operators of e-marketplaces and others. The fee level could be similar to shopping mall operator Rakuten, Inc., i.e. a monthly fee of ¥50,000 — or ¥100,000 with i-mode support as an added feature — with 150 orders targeted. However, this revenue model would require system supervision and maintenance, so specialized technical personnel would need to be hired in-house. In recent years, the demand for technical personnel with skills in this area has been high, pushing up their salaries. It would also necessitate some additional capital investment on the system. Alternatively, server maintenance and system administration could be outsourced to the Internet Data Center. Although this would eliminate additional personnel and capital investment costs, a monthly data center usage fee would arise.

Decision Making

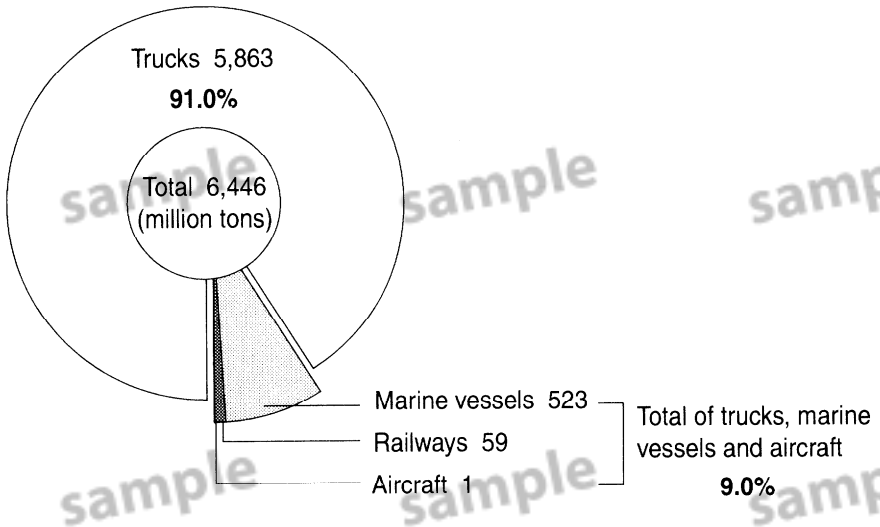
Having examined these revenue sources, Fujikura and Tashiro have decided to proceed with a proxy payment service for which there has been a substantial demand among members. With a briefing on the new service scheduled for next month, Tashiro is busy preparing for it. He feels that even with revenues expected from the proxy payment service, it would be difficult to fund further growth in the future. Although the introduction of a joining fee of ¥1000 is planned for April 2001, he is not totally sure if it is the right move. Despite the confidence he has in the quality of their system based on ease of use and feedback from users, a nagging uneasiness remains.

Would most services offered on the Internet eventually become free? Amid intensifying competition, would we be able to hold on to our early lead and survive in the long run?

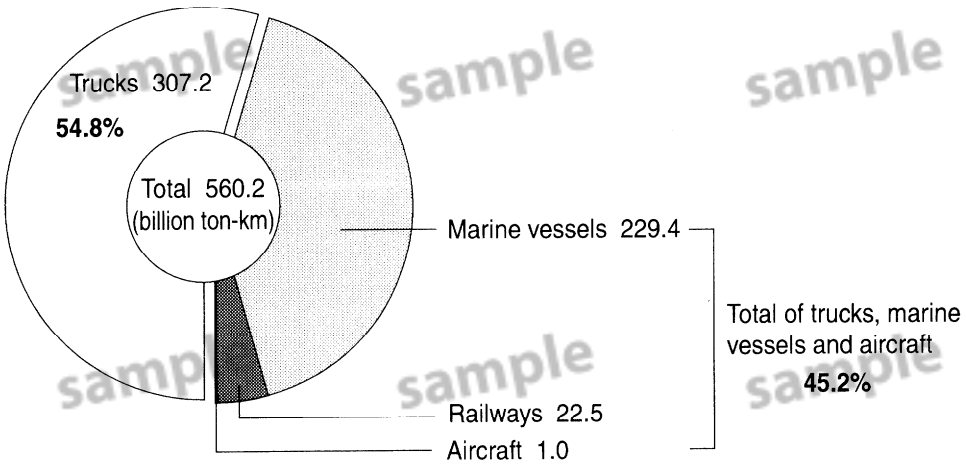
To see their service fail because of too much emphasis on profit would the last thing Fujikura and Tashiro would want. This sentiment stems from their strong determination not to let the network, which they have worked so hard to establish, just dissolve away, as is evident from the company's mission of 'advancing the status of small to medium-sized trucking companies as the backbone of physical distribution and their revitalization by improving their efficiency' and their remark 'the expansion of the network will not only make it easier for trucks to find cargoes for their return journeys but also lead to an improvement in the loading ratio and transport efficiency and a reduction in exhaust gas emissions, thus contributing to the protection of the global environment.' Dawn was breaking outside his office window. Holding a cup of coffee he made to shake off his sleepiness, Tashiro was racking his brains as he pored over the notes he had made when he discussed a follow-up strategy to i-mode with Fujikura to explore other possible revenue sources.

Appendix 1 Trucking Industry

• Breakdown of Freight Transport Volume by Means of Transport (FY 1999, in million tons)

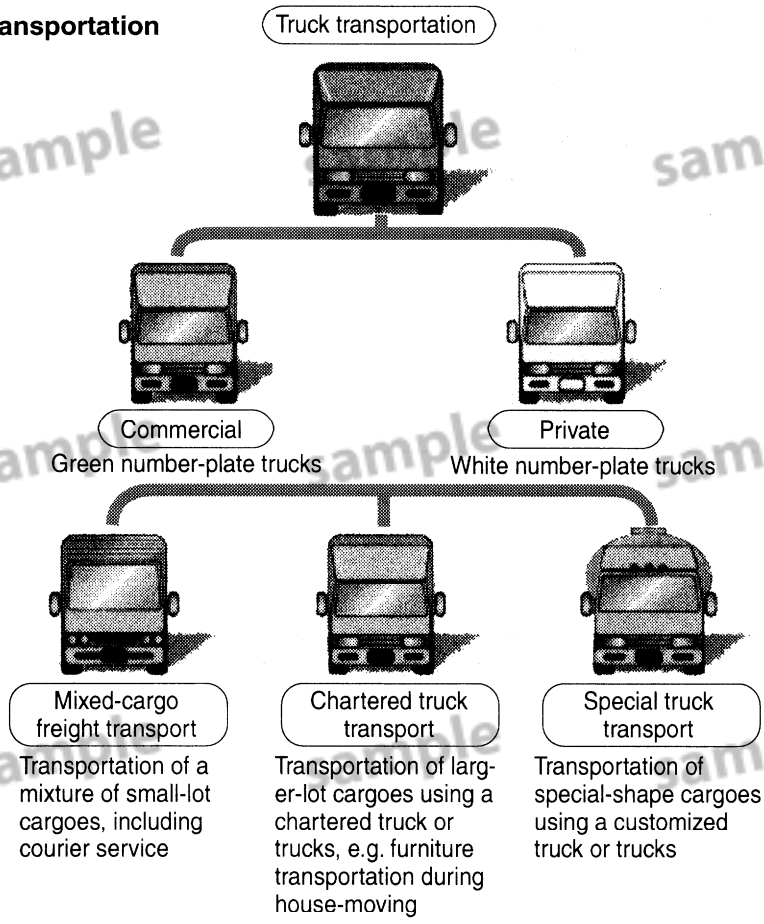


• Breakdown of Freight Transport Turnover by Means of Transport (FY 1999, in billion ton-km)



Extracted from Japan Trucking Association, Inc. home page data
http://www.jta.or.jp/user/industry/domestic/record.html

Modes of Truck Transportation

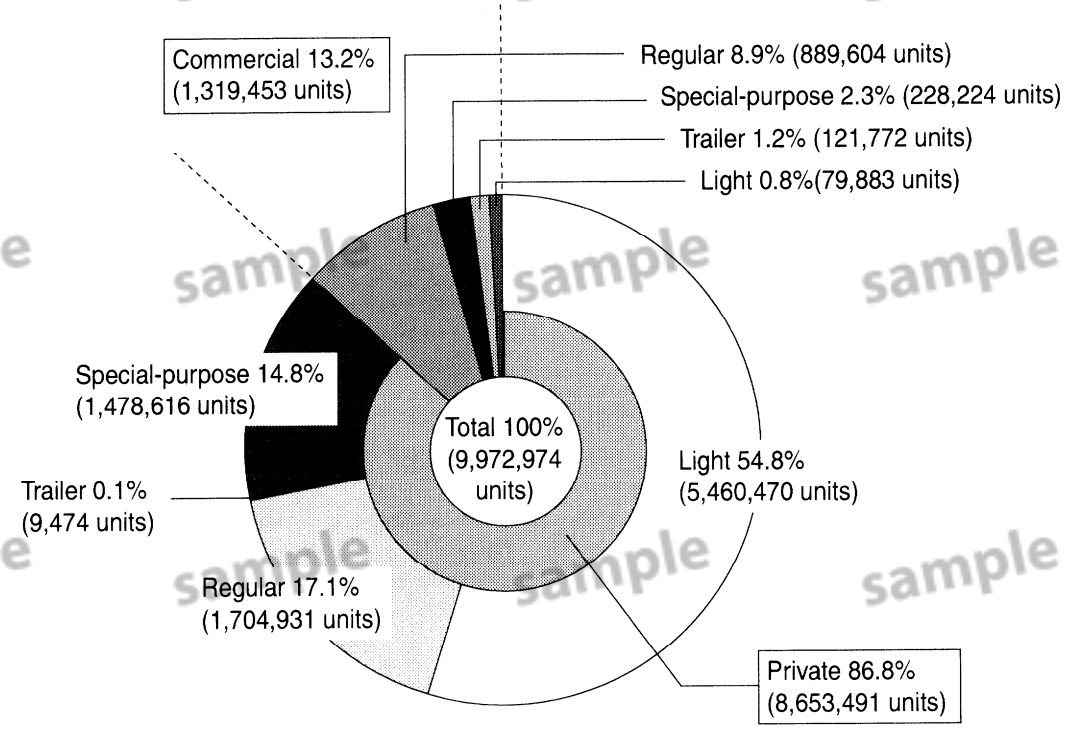


Trends in Trucking Business Numbers

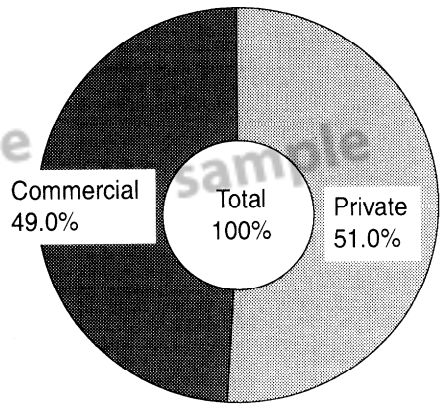
End of fiscal year	Trucking business					
	Special mixed-cargo	General	Light truck	Specified	Funeral	Total
1965	489	10,725	8,643	1,094	781	21,732
1970	425	14,028	8,532	1,101	1,157	25,243
1975	379	28,253		1,127	1,387	31,146
1980	356	31,334		1,365	1,578	34,633
1985	337	33,201		1,342	1,714	36,594
1989	325	35,888		1,405	1,937	39,555
1990	297	36,485		1,434	1,856	40,072
1991	292	37,387		1,465	1,909	41,053
1992	290	38,569		1,414	2,035	42,308
1993	287	39,627		1,369	2,167	43,450
1994	286	41,047		1,312	2,370	45,015
1995	285	42,501		1,246	2,606	46,638
1996	279	44,299		1,191	2,860	48,629
1997	279	45,959		1,162	3,081	50,481
1998	276	47,437		1,114	3,292	52,119
1999	275	49,148		1,106	3,490	54,019

Source: Ministry of Land Infrastructure and Transport

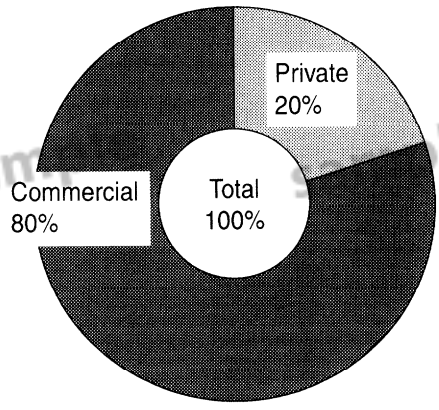
Breakdown of Trucks by Type (FY 1999)



Truck Transport Weight Shares (FY 1999)



Truck TKM Transport Turnover Shares (FY 1999)



Extracted from Japan Trucking Association, Inc. home page data
http://www.jta.or.jp/user/industry/domestic/record.html

Breakdown of Operating Revenue of Physical Distribution Industry by Type of Operation (FY 1998, in billion yen)

Trucking	11,772.8	
JR freight	166.4	FY 1999
Domestic marine transport	1,746.7	Estimate
International marine transport	2,941.8	Valid survey responses from 194 businesses
Port transport	1,117.4	
Air freight transport	302.5	
Indirect rail freight transport	305.3	553 businesses having filed a report (nonincorporated)
Indirect international marine transport	181.5	200 businesses having filed a report (incorporated)
Indirect air freight transport	687.0	92 businesses having filed a report (incorporated)
Warehousing	1,730.6	Estimate
Trucking terminal operation	35.9	Including auxiliary service revenues

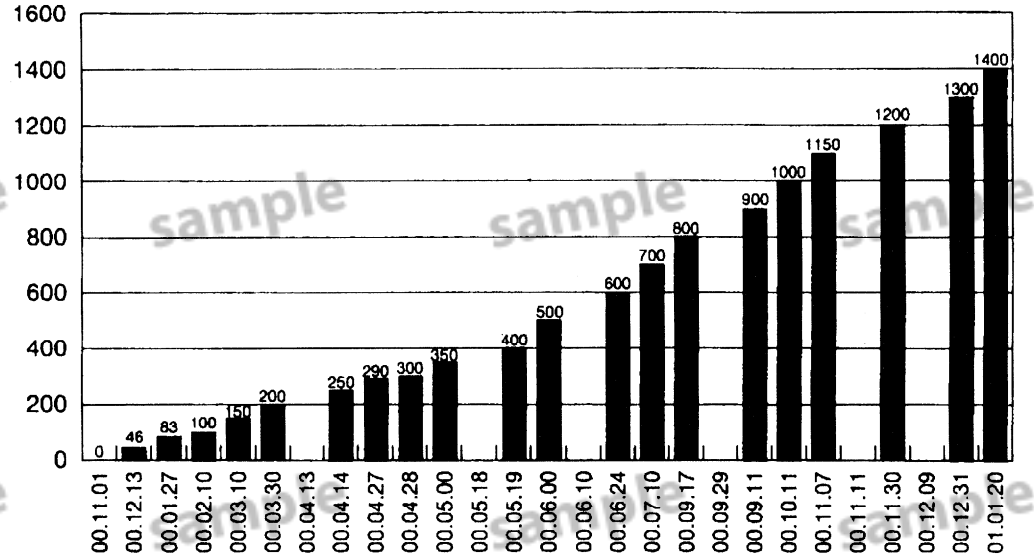
Source: Minister of Land Infrastructure and Transport
Extracted from Japan Trucking Association, Inc. home page data
http://www.jta.or.jp/user/industry/domestic/record.html

Appendix 2　Tr@box Inc. Home Page

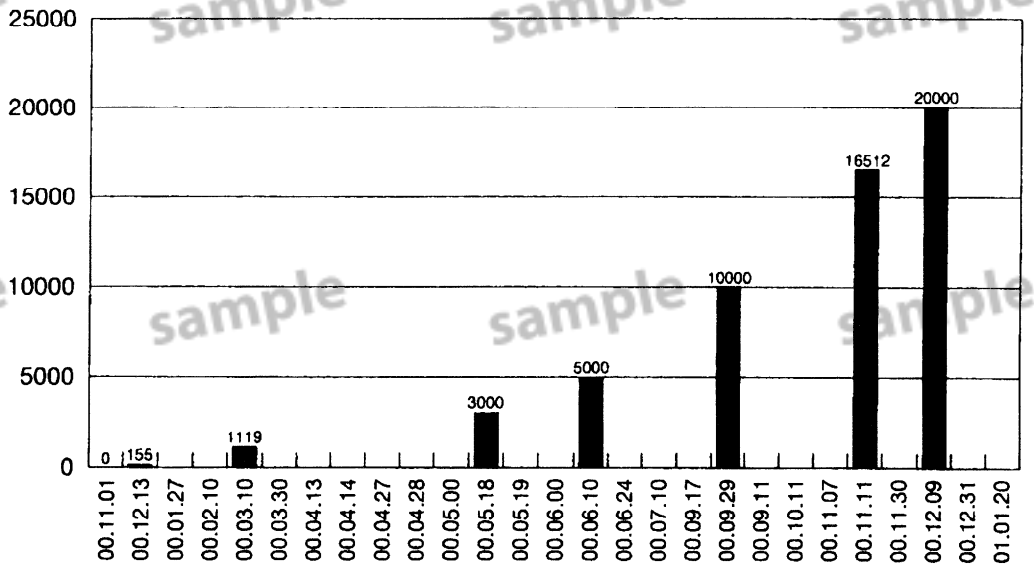
Capitalization:	¥26 million (¥10 million at the time of establishment)
Establishment:	March 3, 2000
Commencement of service:	November 1, 1999
Representatives:	Yasunori Fujikura, President Tadashi Tashiro, Vice President
Number of employees:	10 (including part-time workers)

Appendix 3 Trends in Membership and Cumulative Information Transmission Volume

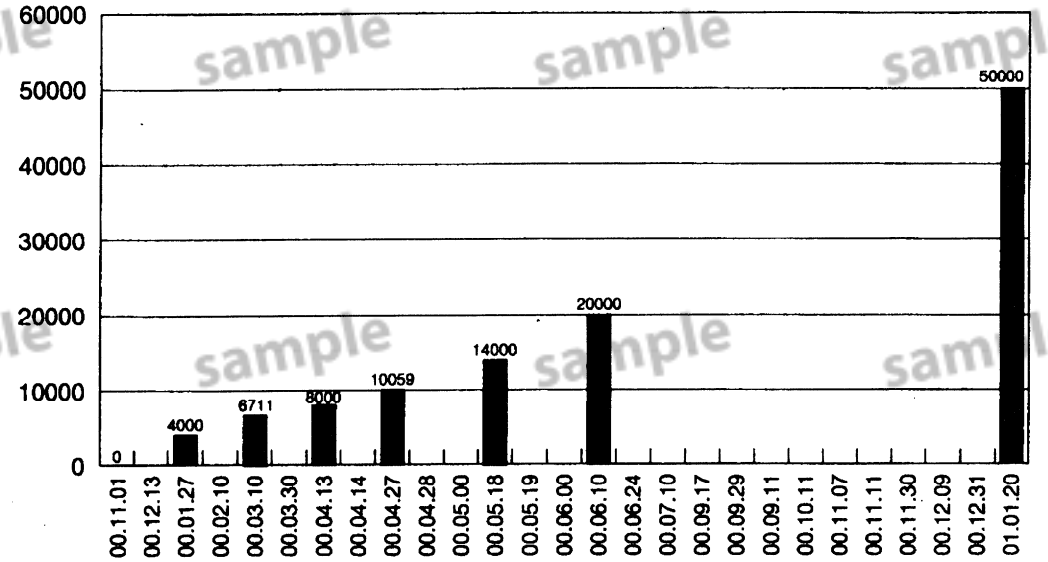
Membership size



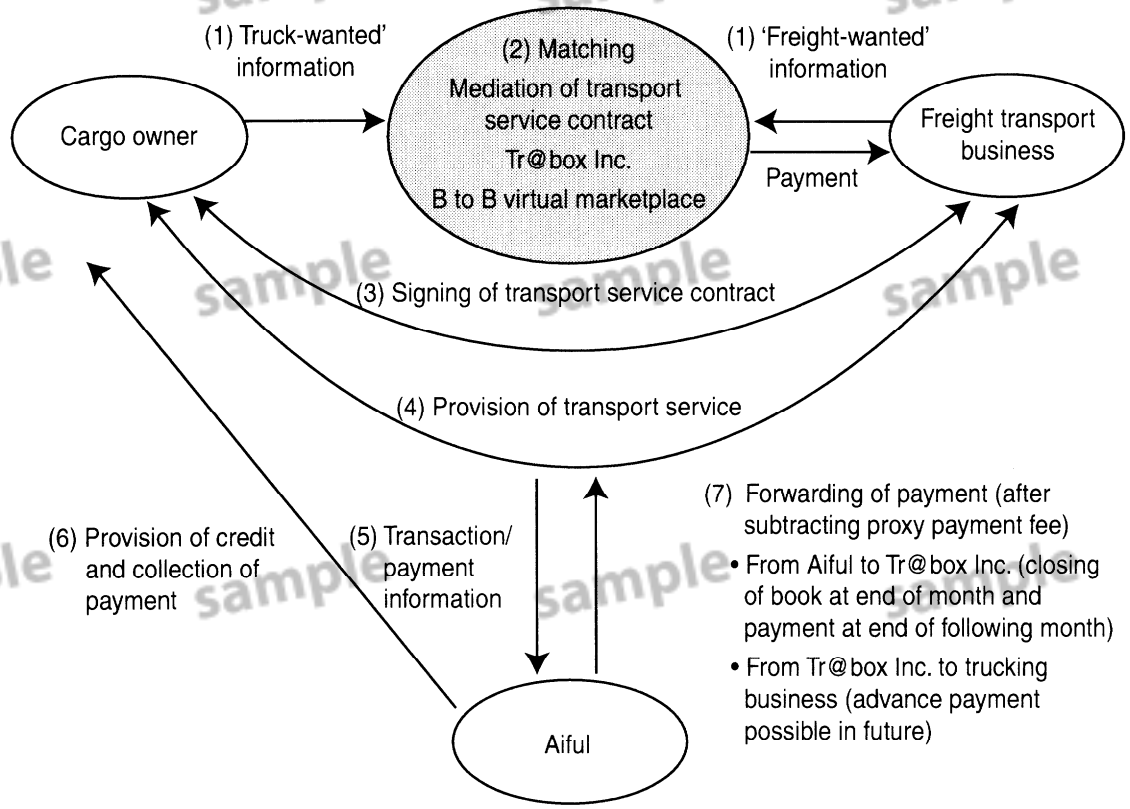
Cumulative number of information items transmitted



Cumulative number of information items transmitted



Appendix 4 Process Flow of Proxy Payment Service provided in Conjunction with Aiful



Keio Business School

Contents Works Inc.