

Internet Companies in Japan after the Collapse of the Internet Bubble
- An Analysis of Internet Companies and their Cluster -

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【Abstract】

1. In the late 1990s, media reports spotted Internet companies in Japan as the coming lead-players in the IT industry. But soon after the collapse of Internet bubble in 2000, this positive news was replaced by persistent negative images - both with little understanding of their actual status and development. Similarly, areas in Tokyo that attracted attention as Japan's "Silicon Valley" for Internet companies are today considered as locations of little substance.
2. In contrast to such popular views, this study shows that the Internet companies that survived the collapse of the bubble still have high growth potential. The profitability of these companies has been improving, with many companies posting growth in both sales and profits for two years in a row in 2000-2002. Pure Internet players, such as intermediary and electronic commerce companies, have even begun to register positive profit numbers.
3. The largest degree of concentration of Internet companies is found to be in Minato ward, followed by Shibuya. In these two wards, more than 40% of all Internet companies in Tokyo are located. Specifically, nearly 30% are concentrated in the area covering Akasaka and Shibuya, forming the largest concentration in Tokyo. Another Internet company concentration is seen in the Kanda area, which includes the major electronics retail center Akihabara. The study could not identify, however, distinctive features of each region in terms of business categories, dates of foundation, or business performance.
4. It is highly probable that the negative image of Tokyo's Internet companies after the collapse of the Internet bubble has been built up in large part by false impressions about them. Continued governmental support for the nascent Internet industry therefore seems to be promising beyond the general backing of Japan's IT industry because the companies have already started to provide for improving information technology utilization, consumer convenience and corporate infrastructures.

Contents

I. Introduction.....	1
II. Present Situation of Internet Companies	2
1 Profiles of Internet Companies.....	3
2 Internet Companies and Existing Information-Related Companies	6
3 Internet Companies after the Collapse of the Internet Bubble.....	10
III. Current concentration status of Internet companies in Tokyo.....	18
1 Concentration of Internet Companies	18
2 Process of formation of the company concentration	20
3 Characteristics of Concentration Areas	21
IV. Policy Implication.....	23
1 Promotion of the Internet Industry	23
2 To Utilize Clusters	25
V. Future Research Subjects	28
1 Strategies of Internet Company	29
2 Network Analysis Related to Cluster Functions	29
(Supplement) Regarding the Analysis of Internet Companies.....	30
1 Review of Existing Study.....	30
2 Research Methods	33
3 Data Supplementation.....	43
4 Significance of this Study	43
(Bibliography)	45

I. Introduction

Almost ten years have passed since the Internet began spreading widely. Since then, its rapid proliferation has exerted immeasurable influence on the world of business. One of the most notable phenomena is the birth of companies of completely new types, such as Yahoo! Inc. and Amazon.com Inc. Without the proliferation of the Internet, these companies would not have existed.

With the Internet facilitating changes in the business environment, the number of companies specializing in businesses that utilize it has sharply increased, including companies constructing new business models on the Internet and those proposing new ways of using it. In the United States, most of such companies are startups established in and after the second half of the 1990s.

Meanwhile, Internet-related business in Japan is in most cases created when large companies or existing firms shift their core operations from existing business areas to Internet-related area. In other words, large companies or existing smaller firms are increasingly becoming major players in Internet industries by transforming themselves into Internet-related companies. This indicates that the changes brought about by the Internet in the business world are very likely to lead to a change in the industrial structure, led by large companies and existing smaller firms in Japan. This is very similar to past changes in the industrial structure in Japanese.

However, it has been pointed out that innovations are often brought about by burgeoning companies, rather than large corporations or existing firms.¹ Considering that the Internet is still stimulating various innovations, it is necessary to focus attention on young Internet related companies even in Japan. In addition, it is also necessary to grasp their real status and the trends among them in order to take appropriate policy measure to foster the new industry. Because they are expected to become major players in the Japanese Internet industry in the future

In the late 1990s, Internet companies were reported in various media as leading players in IT Industry. After the collapse of Internet bubble in Japan and the United States in 2000, however, Internet companies have been considered synonymous with insubstantial Internet trading. Thus, only negative images of Internet companies have persisted without any real understanding of the actual state of their businesses.

¹ Christensen (1997), and others.

Similarly, a couple of areas in Tokyo once attracted attention as concentration of Internet companies are viewed as if such places have no substance at present, just as with the Internet companies themselves.

Do these widely held views regarding Internet companies and their clusters reflect the real situation? To verify this, it is necessary to accurately analyze the realities of companies that are recognized as Internet companies in Japan, and the present situation of those companies that survive the collapse of Internet bubble. It is also necessary to look at the state of concentrations of Internet companies in Tokyo, and analyze whether such concentrations are functioning as clusters.

This study is based on the understanding that Internet companies are important for the future of Japan's IT industry and essential in constructing a knowledgecreating society on the basis of IT. To be more specific, this study ascertains the common perception of Internet companies, and defines the Internet companies to be analyzed in this study. Subsequently, this study analyzes Internet companies in Tokyo to clarify the following matters: 1) the present situation from various points of view of Internet companies after the collapse of the Internet bubble, including their growth potential and profitability; and 2) the concentration status of Internet companies in Tokyo. And thus, the aim of this study is to provide a proper perspective on Internet companies in Japan for the appropriate policy planning for Internet companies.

II. Present Situation of Internet Companies

There were 1,442 Internet companies in Tokyo's 23 wards as of July 31, 2003. Of these companies, 43 were publicly traded companies. In this study, Internet companies are defined as "companies established in or after 1994 that are mainly engaged either in infrastructure, applications, intermediary, or electronic commerce operations".²

This chapter reveals the present situation of these companies by 1) establishing their profiles, 2) comparing them with existing smaller enterprises engaged in information-related business, and 3) analyzing their business performance after the collapse of the Internet bubble.

² About the definition and business categories of Internet companies or the data of Internet companies applied in this study, please see (Supplement) Regarding the Analysis of Internet Companies

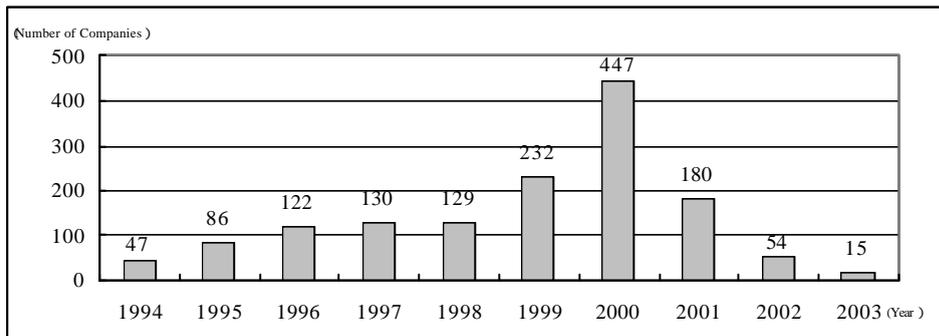
1 Profiles of Internet Companies

To provide an overview of Internet companies in Tokyo, their profiles are analyzed below from the aspects of the year of foundation, the category of business, capital, and number of employees.

1-1 Year of foundation

Chart 1 shows the number of Internet companies by year of foundation. Nearly half of them were established in 1999 and 2000, in the midst of the Internet Bubble period, evidencing entrepreneurs' high expectations of Internet-related business at that time. Even in 2001, after the bursting of the Internet Bubble, 180 companies were founded, exceeding 1997 and 1998's levels, while the number of firms established in 2002 fell to a level comparable to 1994. This shows that the bursting of the Internet Bubble began to have real impact on entrepreneurs after 2002.

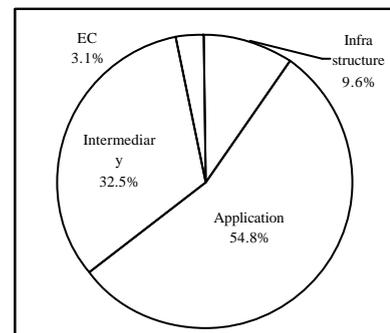
Chart 1 Year of Foundation



1-2 Business categories of Internet companies

Chart 2 shows the classification of 1,442 Internet companies into the four business categories given above. The chart shows that a little more than half of the companies are engaged in application business, while one-third conduct intermediary operations. Electronic commerce companies form only a small proportion in the chart. This is because, in this study, marketplaces are classified as intermediary business and also because retailers and wholesalers are excluded from the survey, though it is highly probable that they

Chart 2 Business Categories



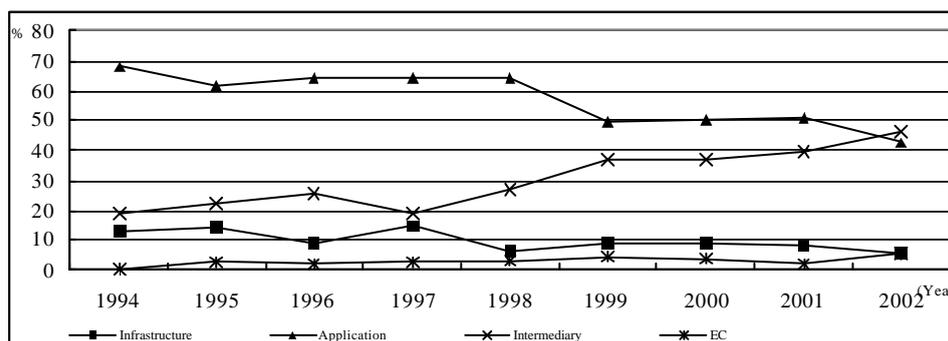
are involved in electronic commerce. In addition, it is quite natural that most companies are engaged in more than one type of business. This study however, chose a single category for each company's main business, judging from information provided on the company's website.

A more detailed analysis was made for the two dominant business categories, applications and intermediary operations. In the application sector, companies engaged in the development of Internet-related systems, software, databases and contents account for 58.4%, while firms conducting website design and relevant consulting based on the ways of use of website make up 38.9%. Companies engaged in the development of Internet-related systems make up about a third of the whole, forming the largest group among our subcategories of the Internet companies in this study.

In the intermediary sector, the largest proportion consisted of content providers (45.6%), followed by Internet advertising (18.1%), online brokers and other Internet intermediaries (17.9%), marketplaces (10.2%), and community site and other site operations (8.1%).

Chart 3 shows the trends in Internet companies' business categories based on their year of foundation since 1994. Application companies have continued to constitute a large proportion throughout the period. Of companies founded after the collapse of the Internet bubble in 2000, however, the proportion of intermediary companies has remained at a high level, in 2002 exceeding that of application companies. Intermediary companies are the most purely Internet-based players, but they are notorious as typical of business models lacking in reality.

Chart 3 Business Categories by Year of Foundation

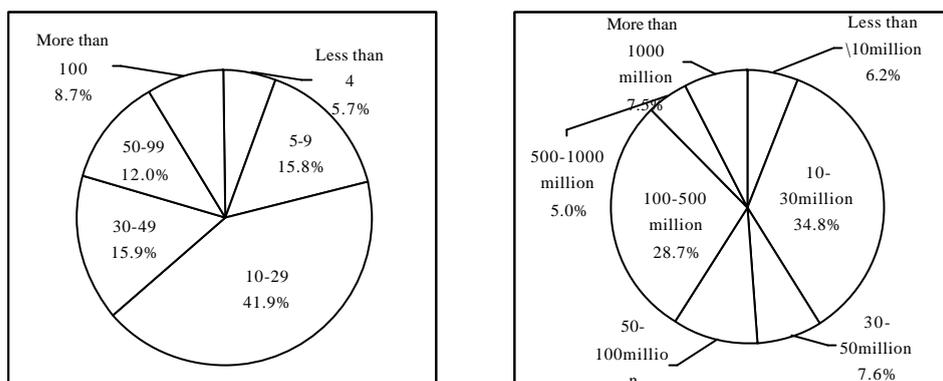


1-3 Size of Companies

Chart 4 illustrates the size of Internet companies in terms of the number of

employees and the amount of capital. Although there is a wide variation in the number of employees, companies with 10 to 29 employees form the largest proportion (41.9%). More than 60% of the companies surveyed have less than 30 employees. This shows that relatively small companies are dominant in Internet companies.

Chart 4 Number of Employees and Amount of Capital



On the capital front, companies capitalized at between ¥100 million and ¥500 million constitute the largest percentage (28.7%), followed by those capitalized at between ¥10 million and ¥30 million (34.8%), of which 60% are capitalized at just ¥10 million. Meanwhile, 6.2% of companies are capitalized at less than ¥10 million, the minimum capital requirement for joint-stock companies.³ Consequently, Japanese Internet companies are being polarized between relatively large companies that are capitalized at ¥100 million or more and small firms that narrowly satisfy the requirements for joint-stock companies.

1-4 Intention to go public and time taken until IPOs

As mentioned earlier, of 1,442 Internet companies, 43 companies are publicly traded companies. This section reviews the time for IPO from establishment and examines the intention of companies to go public.

For the 43 listed companies, it took on average 3 years and 4 months from establishment to go public, with nearly half of them attaining IPO within 2 years from the establishment. Meanwhile, according to the “Interim Report of the IT Venture Study Group”, released in July 2003 by the Ministry of Public Management, Home Affairs, Posts and Telecommunications, about 40% of “IT venture” companies and over

³ This study does not cover companies that have been granted special treatment associated with minimum capital and other regulations according to the Commercial Code in the so-called “Small Company Challenge Support Law” enforced on February 1, 2003.

60% of non-IT venture companies took more than 10 years to attain IPO. Although it is not appropriate to directly compare these data with this study results as there are differences in the companies surveyed and the number of samples, it is reasonable to suppose that Internet companies are growing at an amazingly fast pace even among other rapidly growing IT venture businesses.

To reveal unlisted companies' intentions of going public, this study look at what percentage of such companies have received financing from venture capital firms (VCs). About 10% of these companies have obtained financing from VCs, which usually acquire capital gains when shares in companies in which they have invested are boosted by IPOs or other events. Thus, it can be deduced that the companies financed from VCs have the intention to go public. According to the findings from our questionnaire survey of Internet companies conducted in 2001, about 36% of the companies surveyed responded that they plan to attain IPO.⁴

Thus, it appears that many Internet companies in fact intend to go public and, among such companies, those who actually attain eligible business results will fulfill that goal in a very short period of time. Therefore, it is possible that Internet companies will lead the entire IT venture business sector in terms of in terms of number of IPOs in the coming period.

2 Internet Companies and Existing Information-Related Companies

Various debates have taken place regarding the growth potential and profitability of Internet companies. However, the differences between Internet companies and existing information-related small firms or information service companies have not been clarified due to difficulty in grasping the real state of Internet companies. This section shows comparisons from several points of view between the Internet companies as defined in this report and existing information-related small firms and information service companies. A comparison with existing information-related small firms was made using data from the "White Paper on Small and Medium-Sized Businesses in Tokyo (Service Industries)" compiled based on the survey done in August 2001 by the Bureau of Industrial and Labor Affairs of the Tokyo Metropolitan Government. Specifically, a comparison with companies in the information and contents area is made, because the operations of such companies are relatively close to Internet companies'

⁴ Fujitsu Research Institute and the Ministry of Economy, Trade and Industry (2001).

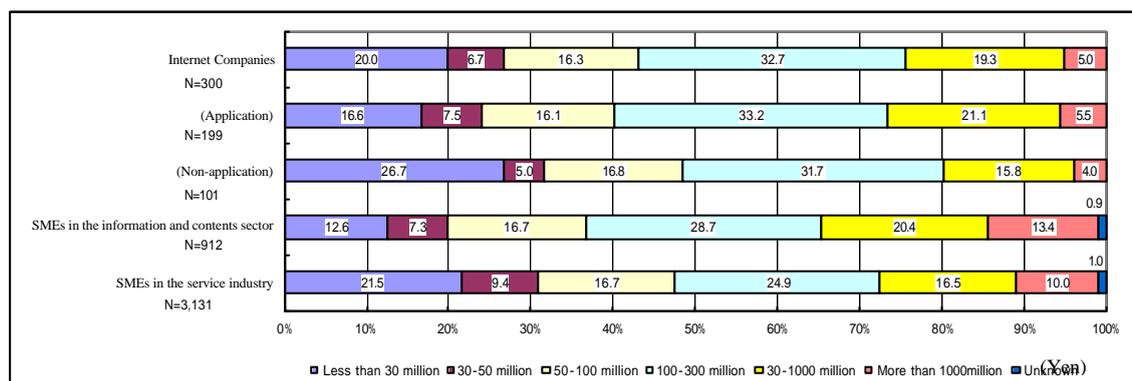
operations.⁵ For a comparison with information service companies, data from the “Survey of Selected Service Industries – Information Service Industry”, compiled based on a survey conducted in November 2001 was analyzed.⁶

It is probable that application companies have been included in the data on small companies in the information and contents sector and the information service industry. Therefore, this study separated them from other Internet companies (infrastructure, intermediary, and electronic commerce companies) to make comparisons between the respective groups.

2-1 Comparison of sales

Chart 5 shows an overall comparison of sales between Tokyo-based Internet companies, small and medium sized companies (SMEs) in the information and contents sector, and SMEs in the service industry.⁷

Chart 5 Comparison of Sales between Internet companies and SMEs



⁵ Industries in the information and contents sector are defined as those engaged in film and video making, software development, information processing, information provider services, advertising, market research, and services incidental to telecommunications. Definitions of small companies are based on those provided by the Small and Medium Enterprise Agency and the definitions vary from industry to industry. In this report, to ensure our comparisons are as accurate as possible, data are used only for companies that are capitalized at ¥300 million or less, or those with 300 or less employees, this being the definition of small companies in the software industry and the information processing service industry.

⁶ Only data of companies in Tokyo's 23 wards were used.

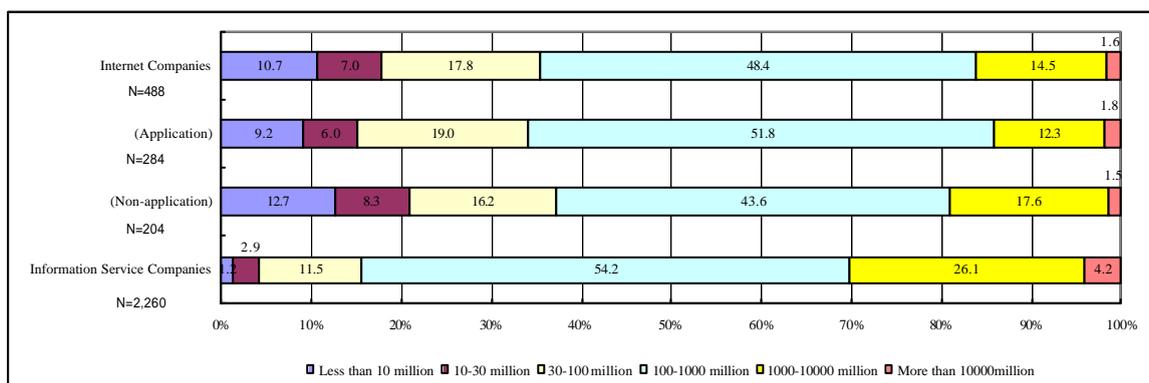
⁷ Data on Internet companies that closed their books in June 2001 or earlier were handled as data for the fiscal year 2000. This rule of the book-closing month and the fiscal year is applicable to this study given hereafter, i.e. data on companies that closed their books in June or earlier are deemed to be data for the preceding year.

A comparison between Internet companies and the SMEs in the service industry overall shows that there is no significant difference. In 2000, most Internet companies achieved sales at levels similar to firms in general service industries. Compared with companies in the information and contents sector, however, a higher percentage of Internet companies posted smaller sales. The percentages of companies that reported sales between ¥100 million and ¥300 million are highest for both Internet companies and companies in the information and contents sector, at 32.7% and 28.7%, respectively. However, the percentage of Internet companies that posted sales of less than ¥50 million is 5.8% higher than that of firms in the information and contents sector, while the percentage of Internet companies that attained sales of ¥300 million or more is 9.5% lower than that of their counterparts. Companies that marked sales of ¥100 million or more account for 62.5% of small companies in the information and contents sector and 57% of Internet companies.

When dividing data on Internet companies into that for application and non-application companies, there is little difference in sales trends between application companies and small firms in the information and contents sector. On the other hand, among non-application companies, the percentage of those that posted sales of less than ¥50 million exceeded 30%. Thus, it can be assumed that many non-application companies, the mainstay of which are intermediary companies, were unable to post significant sales in comparison with those of small companies in the information and contents sector.

These trends are more obvious when comparing sales distribution between Internet companies and information service companies (Chart 6)

Chart 6 Comparison of Sales between Internet and Information Service Companies



In the information service industry, companies with sales of less than ¥100 million account for only 15.6%, while such companies form 35.5% of Internet companies.

Furthermore, 32.3% of information service companies posted sales of ¥1 billion or more, while the percentage of Internet companies attained that level is only 16.1%.

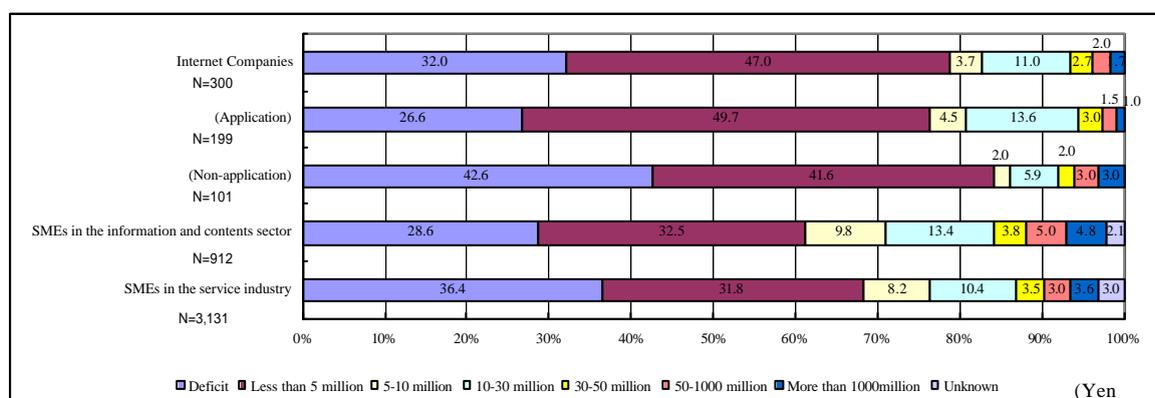
Considering that the year 2000 was at the peak of the Internet bubble, it can be assumed that many Internet companies adopted unrealistic business models which were unable to produce practical sales to the same degree as information service companies. Meanwhile, sales distribution for Internet companies is more analogous to that for small companies in the information and contents sector, including film and video making and advertising, than that for information service companies. This suggests that the nature of Internet companies as of 2000 was substantially different from companies in the information service industry, a business sector according to conventional industrial classification.

2-2 Comparison of profits

Chart 7 shows a comparison between the after-tax net income of Internet companies and the ordinary profits of SMEs in the information and contents sector during 2000. Needless to say, it is not reasonable to make a sweeping analysis on the basis of the comparison between net income and ordinary profit.

Nevertheless, the percentage of loss-making companies among Internet companies is 3.4% higher than that among small companies in the information and contents sector. When the data for Internet companies are broken down into figures for application companies and non-application companies, the percentage of loss-making application companies is lower, but the percentage of loss-making non-application companies is 10.4% higher than that of the smaller information and contents companies. This indicates that Internet companies in some sectors were unable to post profits.

Chart 7 Comparison of Profit between Internet Companies and SMEs



However, compared with the service industry overall, the percentage of loss-making Internet companies is small. Thus, it cannot be said that the percentage of unprofitable companies is especially high among Internet companies. If anything, in 2000, in the heyday of the Internet bubble, application companies that were engaged in construction of systems for Internet-related business and website production attained fairly good results among the service-related small businesses in Tokyo.

Meanwhile, new stock markets started operating around 2000 – Nasdaq Japan was inaugurated in June 2000 and TSE Mothers in December 1999 – enabling companies with growth potential to go public even if they were in debt. Thus, markets began attaching more importance to such factors as growth potential, liquidity of shares, quarterly financial statements, and other corporate information, rather than profitability. Consequently, a good environment for Internet companies intending to attain IPO began developing at that time. As a result, although there is a general impression that many Internet companies were in debt in 2000, this study shows that the percentage of loss-making companies among Internet companies was not particularly large compared with other information-related companies.⁸

3 Internet Companies after the Collapse of the Internet Bubble

After the collapse of the Internet bubble in Japan and the United States in 2000, the public's perception of Internet companies changed dramatically, though those companies had previously been highly rated. Then, what was the real performance of Internet companies after the collapse of the Internet bubble? In this section, we look at the business results of 262 companies (43 listed companies and 219 unlisted companies) for which data on sales and net income for 2000-2002 are known, to clarify their business situations in the post-bubble period.

3-1 Growth potential

Looking at Internet companies from the viewpoint of sales growth, they are very likely to have great potential. The average rate of sales growth for all the Internet companies surveyed reached 267% from 2000 to 2001 and 64% from 2001 to 2002. Thus, their sales have grown rapidly, though the pace of growth has slowed.

⁸ However, some Internet companies that posted a loss in 2000 may not be covered by this study due to bankruptcies or for other reasons.

It is quite natural that, when a new industry is emerging, companies in that sector are growing at a fast pace. Even so, Internet companies have been growing at a particularly unprecedented rate since 2000. For instance, Microsoft marked its highest growth of sales as a publicly traded company in the period from 1986 to 1987, at 75%.⁹ This period coincided with the beginning of full-scale proliferation of personal computers. Needless to say, it is not reasonable to make a simple comparison between the data of Internet companies and Microsoft's figure. In fact, however, the growth potential of Internet companies in Tokyo from 2000 to 2001 far exceeded that of Microsoft at the time of rapid PC diffusion.

Chart 8 Distribution of Sales Growth Rate

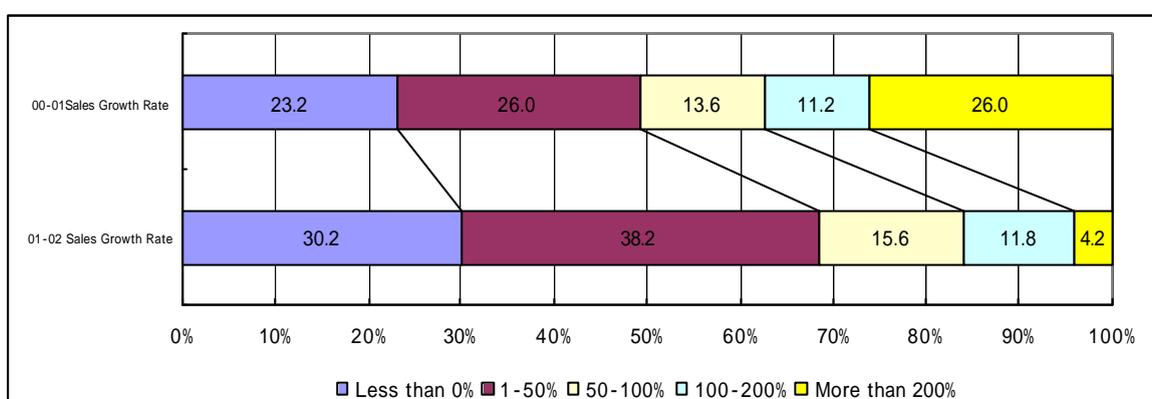


Chart 8 shows the distribution of sales growth rate of companies for the periods from 2000 to 2001 and from 2001 to 2002. In 2001 more than a quarter of companies marked a more than three-fold increase in sales over the previous year. Compared with the 2000-2001 period, the proportion of companies that posted large sales growth diminished in the following year, but sales doubled at more than 15% of companies.

Furthermore, about 53% of Internet companies increased sales by over ¥100 million in 2000-2001 and 42% increased sales by over ¥100 million in 2001-2002. This is providing evidence that Internet companies still grew at a rapid pace even after the collapse of the Internet bubble.

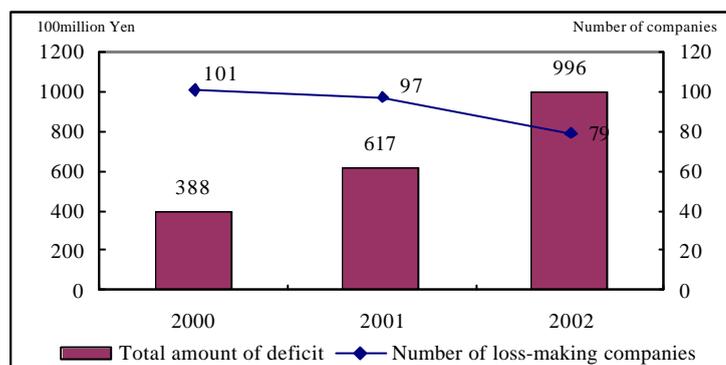
3-2 Profitability

The total amount of deficit posted by Internet companies in this study has risen year by year. However, it is possible that companies that have improved profitability are on the increase. Total net loss for 262 Internet companies was ¥38.8 billion in 2000, rising

⁹ This figure has been calculated on the basis of Microsoft's fiscal year financial history (<http://www.microsoft.com/msft/download/financialhistoryFY.xls>).

to ¥61.7 billion in 2001 and to ¥99.6 billion in 2002. On the other hand, the number of loss-making companies dropped from 101 (39%) in 2000 to 97 (37%) in 2001 and to 79 (30%) in 2002 (Chart 9). This means that the growing loss is attributable to just a few unprofitable companies.

Chart 9 Transition of Total Amount of Deficit and Loss-making Companies



Notably, a number of infrastructure companies, which have supported the proliferation of ADSL and other broadband business in recent years, posted considerable amounts of losses. For instance, SOFTBANK BB Corp. reported a net loss of ¥75,700 million in 2002. Similarly, in the intermediary sector, several listed companies increased losses from 2000 to 2001, including E*TRADE¹⁰ Japan (from ¥2,400 million in 2000 to ¥4,100 million in 2001), Monex Inc. (from ¥1,400 million to ¥2,000 million) and DoubleClick Japan Inc. (¥400 million to ¥600 million). Rakuten Inc. posted net income of ¥900 million in 2000 but it turned to a net loss of ¥500 million in 2001.¹¹ Among non-listed companies, eBANK Corp., which is engaged in retail settlement operations, such as payments for on-line shopping and net auctions, increased its net loss from about ¥3,800 million in 2001 to some ¥4,300 million in 2002.

In addition, among companies whose losses have grown, many increased sales at the same time. This suggests that a growing number of Internet companies have improved their profitability. In fact, the average sales profit ratio improved dramatically, from minus 173% in 2000 to minus 49% in 2001 and to minus 14% in 2002.

3-3 Trends in sales and profits

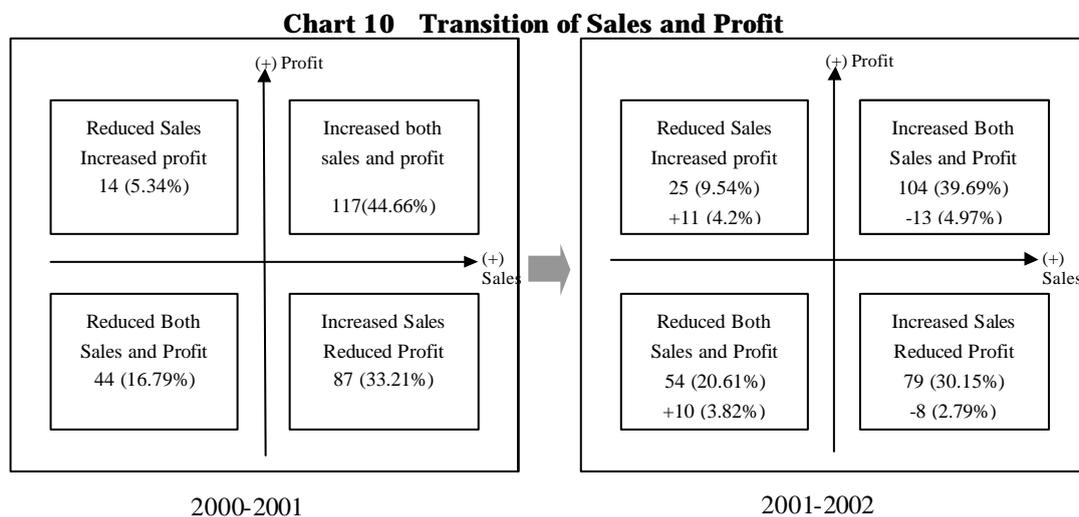
Chart 10 shows trends in sales and profits of 262 companies for which data on sales

¹⁰ E*TRADE Japan merged with SOFTBANK INVESTMENT CORP. on June 2, 2003.

¹¹ Net losses expanded at some Internet companies because their expenses increased due to mergers or acquisitions.

and net income for 2000-2002 are known. In this chart, companies are categorized into four sectors – companies that increased both sales and profit, companies that increased sales but with reduced profit, companies that reduced sales but increased profit, and companies that reduced both sales and profit – to observe the changes of the business performance from 2000-2001 to 2001-2002.

As opposed to the widely held view, the chart indicates that many Internet companies increased both sales and profits even after the collapse of the Internet bubble period. Comparing the changes from 2000-2001 to 2001-2002, the number of companies that posted gains in both sales and profit diminished, while the number of companies that recorded drops in both sales and profit increased. However, even in 2002, companies that increased both sales and profit form the largest proportion, at almost 40%.



As far as these two years are concerned, “winner” companies, which increased both sales and profit, were becoming obvious. At the same time, however, “loser” companies, which reduced both sales and profit, did not become so apparent.¹² Companies that increased both sales and profit for the second consecutive year numbered 55, and about half of the companies that increased both sales and profit in 2001 increased both sales and profit in 2002 again. On the other hand, 13 companies

¹² It is not appropriate to deem a particular company a “winner” on the grounds that it posted sales and profit growth. This is because even some of the companies that are included among winner companies have posted net losses. For instance, Rakuten Inc. returned a net loss in 2002 due to the cost of mergers with such companies as Lycos Japan and infoseek. This section, therefore, focus analysis on corporate performance during the three years.

reduced both sales and profit for the second consecutive year, representing about 30% of companies that reduced both sales and profit in 2001. However, a similar proportion of those companies, 14 of them increased both sales and profit in 2002.

Meanwhile, the proportion of companies that moved from one sector to another in the chart far exceeds the proportion of companies that stayed in the same sector.

The number of companies that remained in the same sector for the second consecutive year was 100, or 38% of the total, of which 55 companies are the companies that increased both sales and profit for the second straight year as mentioned above. The remaining 62% of companies moved to other sectors.

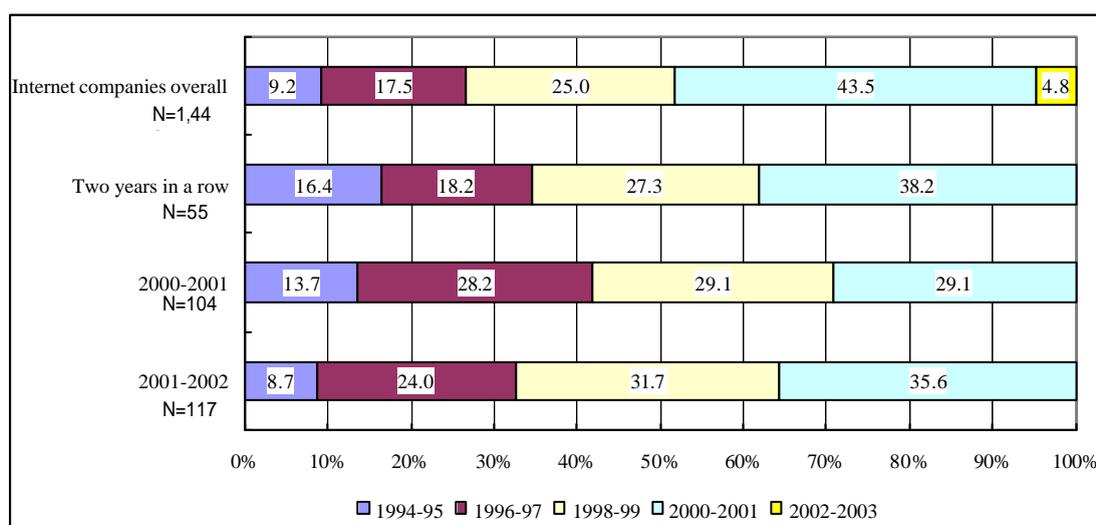
Thus, it can be assumed that some companies are in the process of establishing stable positions in the industry, while others have adopted trial and error in order to improve their sales growth and profitability.

3-4 Characteristics of companies that increased both sales and profit

Of the 55 companies that that increased both sales and profit for two years in a row, 10 companies are still in debt, while 38 companies, or nearly 70% of 55 companies, increased sales by over ¥300 million in the two years. This section analyzes these companies to reveal the characteristics of Internet companies on their way to success.

Chart 11 shows a comparison, by year of foundation, of the number of companies that increased both sales and profit in 2000-2001 and 2001-2002 and of those that increased both sales and profit for the second consecutive year. The distribution of years of foundation for companies that posted sales and profit growth is similar to that for Internet companies overall, with no special difference seen in this respect.

Chart 11 Year of Foundation of the Companies that Increased Both Sales and Profit

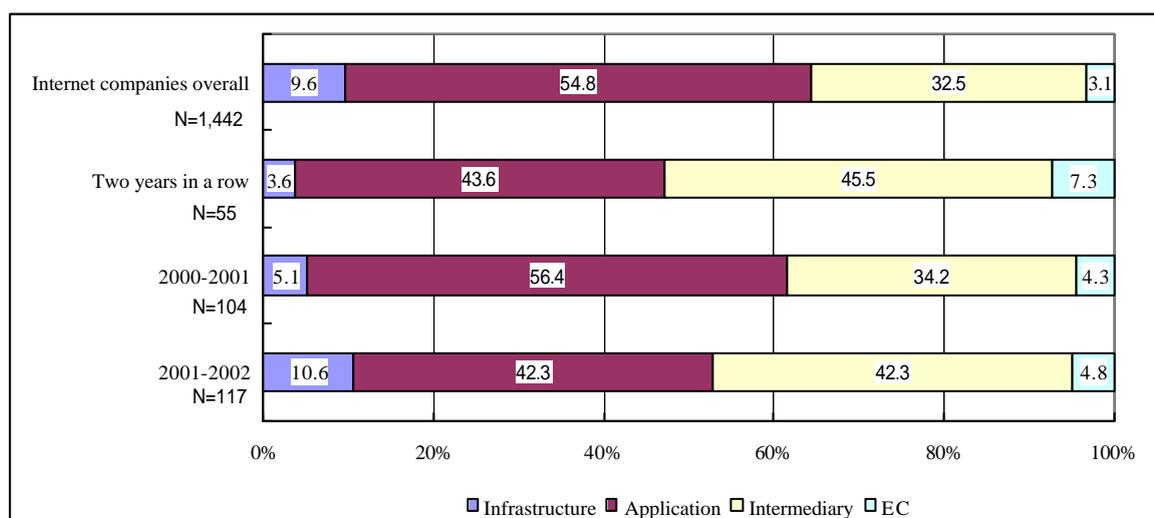


The view has been the widely held that Internet companies that started business earlier than others have, for various reasons, a head start over latecomers. For instance, a pioneer company can advantageously differentiate its website from competitors' sites by establishing its brand name ahead of others. This will lead to an expansion in its customer base, bringing about networking effects. Furthermore, switching to latecomers' services involves costs. But the findings of this study show results that differ from such a view of first-mover's advantage.

Of Internet companies that increased both sales and profit for the second straight year, 21 companies (38.2%) were established in 2000, the peak of the Internet bubble, and are thus not companies that have existed since the dawn of the Internet business in Japan.

Chart 12, like the preceding chart, shows a comparison by type of business of companies that increased both sales and profit in 2000-2001 and 2001-2002 and of those that increased both sales and profit for the second consecutive year. There is no significant disparity in the distribution by type of business between companies that attained sales and profit growth and Internet companies overall. However, from the data on companies that attained sales and profit growth for two years in a row, it is obvious that the pure Internet players, such as intermediary and electronic commerce companies, form a large percentage, while the proportion of infrastructure and application companies is small.

Chart 12 Business Categories of the Companies that Increased Both Sales and Profit



The analysis given above has reached a conclusion that is quite opposite to the common understanding of Internet companies after the collapse of the Internet bubble. It has been said that the first-mover's advantage of Internet business is important and that the growth potential and profitability of purely Internet-based players, such as intermediary and electronic commerce companies, are doubtful. However, there is no evidence of any advantage derived from early foundation. Furthermore, it appears that Internet companies have high growth potential and that their profitability has been improving at a rapid pace.

What do these findings suggest? Infrastructure and application companies provide bases that enable consumers and corporate users to use the Internet in an effective manner. In Japan, such bases for starting a business utilizing the Internet only began to be provided in 2000, after the collapse of the Internet bubble. It might be thought, therefore, that there was enough room for startups to become first-movers in this area, even in 2000. In fact, according to the Ministry of Public Management, Home Affairs, Posts and Telecommunications, the penetration rate of the Internet did not exceed 50% of the total population until 2002, being only 37.1% in 2000.

On a household basis, the penetration rate of the Internet to all households was 34.0% in 2000, reaching 81.4% in 2002 (including access to the Internet using mobile phones). Thus, it was not until 2002 that the Internet penetrated into most Japanese households.¹³

It was only recently that the diffusion of broadband Internet connection services facilitated fixed-rate connection, allowing individual users to browse the Internet without worrying about connection time. Judging from the findings of this study, it is highly probable that it was not until 2000 that a fully-fledged Internet infrastructure began to be provided.

In fact, the proportion of application companies whose sales and profit rose for the second straight year is smaller than the proportion in this respect of Internet companies overall, and the proportion of application companies that posted sales and profit growth dropped from 2001 to 2002. This means that the basis of use of the Internet is completeing in these years. With such basis completed, pure Internet players, such as intermediary and electronic commerce businesses, carrying out economic activity on that basis and began earning profits.

¹³ The Ministry of Public Management, Home Affairs, Posts and Telecommunications (2003).

Taking the obvious examples of Amazon, Yahoo! and eBay in the United States, first-mover's advantage has been important for Internet companies. For this very reason, though their efforts have not necessarily brought about successful results, many Internet companies have made efforts to gain larger market shares by offering considerable discounts and carrying out large-scale advertising activities, even if such measures have sacrificed their profits. Taking these fact and the above analysis into account, it would be reasonable to assume that Internet companies in Japan were still able to enjoy the substantial first-movers advantages even in 2000.

It was not until 2000 that people were able to use the Internet for research or shopping as normal, rather than extraordinary, activity. In other words, it was only after 2000 Internet became standard channel of information alongside off-line sources. Thus it would be reasonable that pure Internet players began earning profits only after individual users began to widely use the Internet.

3-5 Business strategy of companies that increased both sales and profit

The companies that increased both sales and profit for two years in a row, not to mention provide services unique to the Internet. In addition, these many companies have added value to such services, taking users' convenience into account. Among listed companies, these include For-side.com Inc., a mobile phone portal site operator, and en-japan inc., which offers job information and consulting services. Non-listed companies include J-Yado.com, which operates an on-line hotel reservation website and offers comprehensive information on rental car agencies, Giftken.com Co., Ltd., which is engaged in the planning and operation of a website for the sale of gift certificates, and Tr@Box Inc., which has established a nationwide network linking consigners and trucking companies (all of these companies are intermediary firms founded in 2000).

As a matter of course, it is necessary to compare the in-depth data, such as balance sheet and P/L statement, with their competitors. However, it is certain that these successful Internet companies have some common characteristics, including offering information intermediary services unique to the Internet, entering niche markets, and adding value to their services to differentiate them from others.

The most conspicuous common characteristics of these successful Internet companies are that they are making effective use of the information intermediary function that can be used only on the Internet.

According to Evans and Wurster (1999), the utilization of the Internet solved the trade-off between the richness of information (the degree of density of information) and

reach of information (the extent to which the company's information is accessible), a problem that could not be addressed by existing information channels. Richness means the depth of detail of the information that the company provides. .Reach means the ability of the company to make contact with customers and how many products it can provide.¹⁴

In other words, to convey rich information the company needs supply chain, special channels that are in close contact with customers (such as a dedicated information network and the company's sales network). However, the number of customers for the companies to access is limited due to physical limitations and high costs of supply chain. Thus, the reach of the company was limited.

But the proliferation of Internet, combined with advancing information technology, enables companies to offer very rich information while extending their reach. The intermediary companies that increased both sales and profit have utilized the Internet to solve the problem of the trade-off between richness and reach and, as a result, they are offering products or services that contribute to increased user convenience.

III. Current concentration status of Internet companies in Tokyo

It was observed in the preceding chapter that Internet companies have rapidly grown and that, contrary to the widely held view, they have been transforming themselves into profitable companies during the past few years. Next question of this study concerns where they are located in Tokyo.

According to the survey report of the Ministry of Land, Infrastructure and Transport which was released in March 2003, the number of software-based IT companies has increased in Tokyo and that the companies that created the growth were not those located around Shibuya Station, an area called Bit Valley, but companies in the Akihabara, Kanda and Kudanshita areas.¹⁵ This chapter scrutinizes the current concentration status of Internet companies in Tokyo's 23 wards.

1 Concentration of Internet Companies

Chart 13 shows the locations of 1,442 Internet companies in Tokyo's 23 wards by ward and by area. 1,096 companies, or more than three quarters of all Net companies in Tokyo's 23 wards, are concentrated in five wards in central Tokyo. Of the five wards,

¹⁴ Evans and Wurster (2000).

¹⁵ Fact Finding Survey on Software-based IT Companies
(http://www.mlit.go.jp/kisha/kisha03/02/020303_.html)

the ward with the highest concentration of Internet companies is Minato ward, followed by Shibuya ward, these two accommodating about 40% of all the Internet companies in Tokyo.

Comparing these data with the results of above mentioned survey on software-based IT companies conducted by the Ministry of Land, Infrastructure and Transport, the degree of concentration of Internet companies in the five wards is larger than that of software-based IT companies, and the concentration of Internet companies in Minato ward and Shibuya ward is particularly visible. According to the Ministry's survey, there were 9,933 software-based IT companies in Tokyo as of March 2003. Of these companies, 5,909 companies, or about 59% of the total, were located in the five wards in the midtown area. The ward with the largest number of software-based IT companies was Chiyoda ward, in which 1,368 companies were located, followed by Minato ward with 1,292 companies and Shibuya ward with 1,185 companies. Thus, the combined number of software-based IT companies in Minato and Shibuya wards accounts for only about 25% of the total.

As shown by the findings of the Ministry's survey, it appears that information service companies in existing sectors have concentrated in Chiyoda ward. On the other hand, newer Internet companies have continued to concentrate in the Minato and Shibuya wards. Indeed, the so-called Bit Valley area around Akasaka and Shibuya remains the largest area of Internet company concentration in Tokyo.

In the Minato and Shibuya wards, 418 Net companies, or nearly 30% of the total, are located in a specific area close to the boundary between the two wards, an area covering Akasaka, Roppongi, Aoyama, Ebisu, Hiroo, Shibuya, Harajuku and Yoyogi, forming the largest concentration in Tokyo. Another concentration is observed in and around the Kanda area, in which Akihabara is included.

Chart 15 shows the number of relocated Internet companies that are known on the basis of information released on their websites as of July 2003. The former location indicates the place of foundation.¹⁶ Basically, companies tended to move within the same ward, while the largest number of companies changing wards moved to Minato ward, followed by Shibuya ward and Chiyoda ward. Despite relatively high location costs, Minato and Shibuya wards have attracted Internet companies. Several factors can be supposed behind this, including abundant social amenities for young people in these wards.¹⁷

Chart 15 Relocation of Internet Companies

Place of foundation Place of Relocation	Total: Foundation	Minato	Shibuya	Chiyoda	Shinjyuku	Chuo	Other
Minato	56	20	11	8	5	5	7
Shibuya	53	9	30	3	5	0	6
Chiyoda	42	7	8	12	4	1	10
Shinjyuku	24	4	4	6	8	1	1
Chuo	17	2	2	2	3	6	2
Other	65	9	13	2	5	2	34
Total: Relocation	257	51	68	33	30	15	60

3 Characteristics of Concentration Areas

The preceding section found that there are some regional distinctions in the concentrations of Internet companies and their formation process. Then, are there any outstanding features in the business categories or performances in each region? This section examines this question.

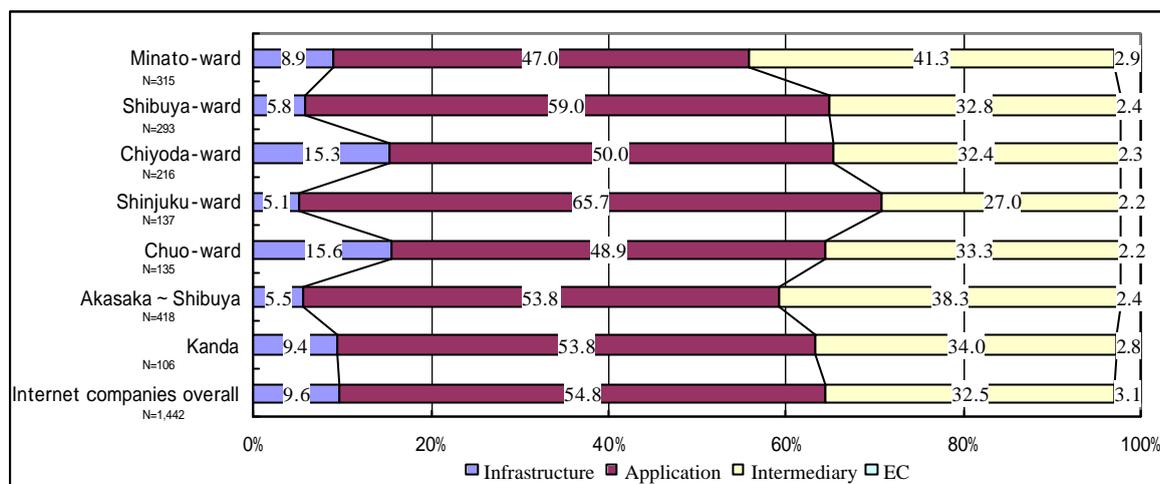
3-1 Business categories of Internet companies by region

In Chart 16, the top five bars indicate the proportions per business category of Internet companies in central five wards of Tokyo and the sixth and seventh bars show those in the Akasaka-Shibuya area and the Kanda area, in which distinguished concentrations of Internet companies are observed. The bar at the bottom shows the proportions per category of business of all Internet companies, which was given earlier.

¹⁶ When a company has moved more than once, its present location is deemed to be its new location.

¹⁷ For details about factors behind the concentration of Internet companies in Minato ward and Shibuya ward, please refer to the report compiled by Kinukawa and Yukawa (2000).

Chart 16 Proportion of Business Categories by Region



There is no conspicuous characteristic in the proportions within business categories in each ward or in the Shibuya-Akasaka and Kanda areas. Proportions are slightly high of intermediary companies in Minato ward, infrastructure companies in Chiyoda ward and Chuo ward, and application companies in Shinjuku ward. Other than these, there are no significant disparities between all Internet companies. The proportions of business categories in the Akasaka-Shibuya area and the Kanda area are quite similar to those for the Internet companies overall.

3-2 Business performance of Internet companies by region

According to the analysis of business performance by region, the companies located in a specific region is not necessarily attaining better business performance than companies in other regions. Chart 17 shows the posted sales and profit growth given earlier for those companies located in the central five wards in Tokyo, by ward and on a year-to-year basis.

The percentage of companies that increased sales and profit second consecutive year is high in Shibuya ward, while the rate is low in Minato ward. No characteristic point can be observed for any specific ward in the proportions of companies that posted sales and profit growth in 2000-2001 and 2001-2002. After the collapse of the Internet bubble, various skeptical views were expressed about Internet companies located in and around the Shibuya area, or what is called Bit Valley. However, it is unlikely that there is any special relationship between business performance and location.

Chart 17 Distribution of Companies that Increased Both Sales and Profit

	2000 - 2001 (%)	2001 - 2002 (%)	Two year in a row (%)	Total (100%)
Minato	30 (50.00%)	21 (35.00%)	10 (16.67%)	60
Shibuya	26 (52.00%)	23 (46.00%)	15 (30.00%)	50
Chiyoda	15 (32.61%)	14 (30.43%)	6 (13.04%)	46
Shinjyuku	11 (45.83%)	13 (54.17%)	7 (29.17%)	24
Chuo	15 (55.56%)	11 (40.74%)	7 (25.93%)	27
Other	20 (36.36%)	22 (40.00%)	10 (18.18%)	55
Total	117 (44.66%)	104 (39.69%)	55 (20.99%)	267

These findings suggest that the concentration of companies has so far made no special contribution to corporate performance. Michael E. Porter (1998) states that a cluster helps strengthen the competitiveness of companies located in a specific region by 1) improving productivity, 2) encouraging innovations, and 3) creating new companies. If Porter's theory is applicable in Internet companies in Tokyo, the concentrations of Internet companies in the five wards might not be functioning as a cluster as defined by Porter yet.

However, these factors will not necessarily lead to immediate improvement in the business performance of companies within the cluster. Moreover, it may be somewhat unreasonable to assume that there is disparity in corporate performance in an area such as Tokyo in which public transportation systems are highly developed.

Originally a cluster is geographical concentration of companies in which mutual relationship of companies and organizations in a specific area of business are existed and it includes various management resources, such as suppliers, universities and industry associations. It is conceivable that these elements of a cluster have already been incorporated into the areas of Tokyo in which Internet companies are concentrated, but it is doubtful whether individual Internet companies in Tokyo are making full use of their advantageous locations close to these management resources

IV. Policy Implication

This chapter derives possible policy options for the promotion of the Internet industry based on the analyses given above.

1 Promotion of the Internet Industry

After the collapse of the Internet bubble an undifferentiated negative perception of the entire industry evolved in Japan - without taking accurate analysis of Internet

companies under consideration.¹⁸ This situation developed although no dot-com crash and not even a sudden shakeout of Internet companies as in the United States occurred in Japan. In contrast, distrust of Internet companies simply built up on basis of the negative impression caused by a rapid slump in existing IT companies' share prices and the falling profitability of these companies. Thus, the distrust was completely unrelated to the nature of Internet businesses and Internet company's potentialities. Furthermore, poor impressions of Internet companies are largely attributable to some companies that have continued to accumulate losses without increasing sales or companies that made an unrealistic dazzling debut in the earlier boom market.¹⁹ In short, people's distrust of Internet companies was basically due to information deficits.

In contrast to the public's perception, this study proves that Internet companies, which were established in or after 1994 and survived through the Internet bubble, improved their profitability and have high growth potential. It needs to be noted, however, that the analyses given above are based on data of surviving Internet companies, and no data on companies that went bankrupt, dissolved themselves, or merged into other companies have been included.

It is therefore important to promote the Internet industry, a sector with high growth potential. This is vital not only for Japan's IT industries but also for improving consumer convenience and corporate infrastructures through the use of IT. For instance, the government set a target of "realizing a lively, safe, exciting and convenient society by utilizing IT" in its "e-Japan Strategy II" of July 2003. This indicates that the focus of government policy relating to IT is shifting from the expansion of infrastructure to its effective use. To attain this goal, the promotion of the Internet industry is essential.

¹⁸ IT Slump, published by the Ministry of Public Management, Home Affairs, Posts and Telecommunications, states that the collapse of the Internet bubble caused dot-com companies in Japan to suffer poor profitability over a long period.
http://www.soumu.go.jp/joho_tsusin/policyreports/chousa/keizai/1101b.pdf

¹⁹ For instance, Liquid Audio Japan, the first company that listed its stock on TSE's Mothers market in 1999, experienced a number of mishaps, such as the arrest of the former president and the bankruptcy of the parent company. The company is now doing business as a completely different entity.

At present, infrastructure and application development is moving in the right direction although various policy issues remain regarding their further improvement. This could be achieved by facilitating activities of intermediary and electronic commerce companies because these companies are likely to have high growth potential and profitability. Greater weight should be given to this aspect than to the development of basis-use of the Internet.

In other words, policy measures should be investigated by which companies engaged in business on the Internet will be able to carry out their transactions as smoothly as existing companies that engage in off-line business. Such measures should include the development of legal systems associated with the distribution of contents and relevant copyrights, information security, and other diverse matters. In order to plan such policy measures, it is important to target user convenience that is unique to the Internet, without adhering to conventional business practice.

Fortunately, several measures have already been adopted to facilitate smooth commercial transactions on the Internet. They include the Law Concerning Electronic Signature and Authentication Operations (2000, No. 102)²⁰, which aims to facilitate the use and distribution of electronic signatures, the Law Concerning Exceptions to the Commercial Code Associated with Electronic Consumer Contracts and Electronic Approval Notice (June 2001), which prescribes rules on electronic commerce, and the Standing Rules Concerning Electronic Commerce (June 2003), which stipulate how the Commercial Code and other relevant laws are to be applied to various legal problems associated with electronic commerce.

But these measures took years of planning before they finally became adopted in 2000. Many intermediary and electronic commerce companies therefore had to wait several years after starting business before these legal systems were established. In the future, the government should therefore put greater weight on the improvement of legal systems and should pay careful attention to emerging intermediary and electronic commerce companies' new Internet operations so that supporting measures could be implemented without delay.

2 To Utilize Clusters

Since the government advocated the "Technopolis" policy in the 1980s, many local governments have tried to promote local industry by attracting IT-related industries

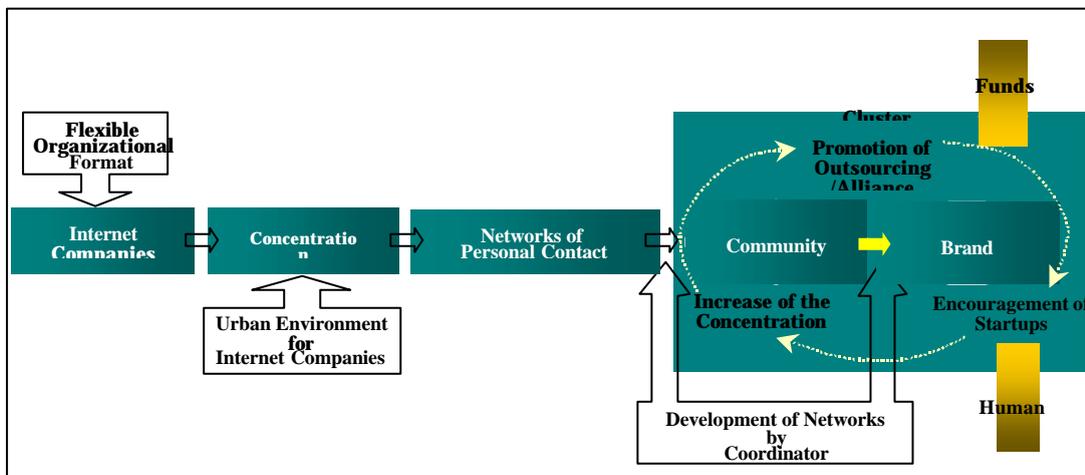
²⁰ Laws concerning information security are detailed on the website of the Ministry of Economy, Trade and Industry: <http://www.meti.go.jp/policy/netsecurity/digitalsign.htm>

and forming industrial clusters – and most of such measures ended in failure.

Because of the characteristics of the Internet industry, it is difficult to carry out measures to prepare suitable locations that attract Internet companies. Also, the effects of such policies cannot easily be obtained in the short run. Because the development of a suitable location takes years, the environment of city or region should be improved not only for attracting Internet companies but also for increasing the total attractiveness of the location. It is the general attractiveness of a city or region magnetizes (Internet) companies. It is therefore important for local communities to adopt a long-term view in developing an urban environment that will help to attract workers not only in the Internet industry but also in the knowledge-intensive industry as a whole.²¹

To promote the Internet industry by utilizing clusters it is more important to find and recognize corporate concentrations that have already been formed spontaneously, and to put emphasis on fostering such a group as a local industry. Thus, it is necessary to understand the process of formation of a cluster. As an example, Chart 18 shows the formation process of Internet companies' clusters in the United States.²²

Chart 18 Clustering Process of Internet Companies



Once Internet companies with a flexible organizational format are lured to a specific urban environment and become concentrated, an informal network of personal contacts

²¹ For more details about the urban environment, Florida's paper of 2002 is helpful. It discusses the development of regional industries from the standpoint of the "creative class," a new intellectual class.

²² Yukawa (2002)

between specialists is formed by their geographic proximity. This network will evolve into a community, in which outsourcing and alliances among companies and specialists takes place frequently. Such activities will encourage startups and further increase the concentration of companies. If successful companies continuously evolve from the community not only the companies but also the community will gain recognition and become a kind of a brand. This will ultimately induce the inflow of more funds and more talented individuals, generate more new businesses, and promote the progress of the cluster as a whole. Silicon Valley, for example, is not just a geographic name of a part of California. It is a brand name for a community of specialists. Thus, when a community accomplishes a brand name, it induces the inflow of human resources and funds from those who wish to become a member of that community.

In other words, for a cluster of Internet companies to function properly it is not sufficient that the companies are concentrated in a certain area, but the community also needs to yield real benefits to the companies. In the process, coordinators, like nonprofit organizations (NPOs) and universities, who aim to develop networks of personal contacts often play an important role.

Based on the cluster formation process given above, it would be effective to provide support to regional coordinators to facilitate the development of a corporate concentration into a community, which is acting as a human network hub in areas where companies have already concentrated, such as the Shibuya and Akihabara areas.

In the United States, industry-university cooperation has become important and venture capital investment is common among start-up companies. Universities and venture capital firms act as hubs of human networks, and thus contribute to the development of clusters. This cluster development process in the US shows the importance of encouraging industry-university cooperation, and the development of risk money supply system focused on the “area” in which Internet companies have already concentrated spontaneously in the initial stage of cluster formation. The government’s role in such a process could be to support the diffusion of Internet-related technologies through industry-university cooperation, the shifting of fundraising methods to direct financing, and the encouragement of startups.

When the cluster has evolved into a more advanced stage of formation, in which a hub-organization or company already exists, support should rather aim at the “spot” than the entire “area”. To be more precise, intensive support should be extended to the hub organization or company by placing orders for government procurement or helping

to find management experts. In other words, support in this stage should be given to the hub organization or company by supplying work and aiding further expansion of the human network – in contrast to uniformly supporting all companies in the area through such means as subsidies, tax reductions or exemption. At this stage, policymakers should avoid taking the traditional stance that it would be partial to extend support to specific organizations or companies.

According to the Ministry of Economy, Trade and Industry's "Industrial Cluster Plan" and the Ministry of Education, Culture, Sports, Science and Technology's "Intellectual Cluster Creation Project" during and after 2001 various support programs have been carried out nationwide on the basis of huge budgets. A distinctive feature common to these programs is that they aim to construct networks of companies on the government's initiative. In fact, when implementing its industrial cluster policy, the Ministry of Economy, Trade and Industry stated, "the Regional Bureau of Economy, Trade and Industry in each region will act as a node to facilitate the formation of an industry-academy-government network."²³ Meanwhile, the Ministry of Education, Culture, Sports, Science and Technology considers as the center of its network "core organizations designated by the local government (including science and technology-related foundations)".

As stated above, when implementing such cluster-related measures, it would be much more effective to provide support to a community in which companies have already concentrated - with a view to helping the cluster to work properly. Furthermore, it would be desirable to support an organization that has already become the hub of a human network. In an area in which corporate concentration has already been formed, it is probable that a private organization is filling this role. Thus, governments should find such organizations and extend support to them, instead of trying to become a network hub by itself.

V. Future Research Subjects

The analyses in this study focused solely on clarifying the current situation of Internet companies and their cluster in Japan after the collapse of Internet bubble. However, because it is difficult to track Internet companies with existing industrial

²³ The Industrial Cluster Plan (Regional Reconstruction and Industrial Concentration Plan) (Ministry of Economy, Trade and Industry) can be seen on the following website: <http://www.meti.go.jp/topic/data/e20308aj.html>

classifications, there has been a lack of progress in applying existing management theory to them. For clusters as well, which are not simply geographic concentrations of companies, analyses have not been conducted on the relationships among the factors that give rise to them, including relationships among companies, universities and related organizations. Given this state of affairs, the following aspects are future research subjects.

1 Strategies of Internet Company

Considering the analysis of this study on companies with rising sales and profits, the possibility is high that theory conventionally discussed in relation to corporate strategy can also be applied to intermediary, e-commerce and other pure Internet companies. In fact, Porter (2001) points out that existing strategy to bring about a competitive advantage have been important at Internet companies as well. However, as of the present, there are not any analytical studies in Japan that apply existing theory on corporate strategy to Internet companies. In the future it will be necessary to verify, based on Internet companies' financial and other data, Porter's theory on corporate strategy, which highlights the importance of market positioning, and Barney (2001)'s theory of strategy, which places the source of competitive advantage within the company.

2 Network Analysis Related to Cluster Functions

As described in this study, concentrations of Internet companies can clearly be seen in certain areas of Tokyo. It is necessary to analyze as precisely as possible how such company concentrations are functioning as clusters, what factors are preventing these functions, and what methods are available for improving them. By applying a network analysis, it is possible to clarify which organizations or groups are functioning as hubs of human networks in the areas of Tokyo where Internet companies are concentrated. Also, based on the results of this analysis, it will be necessary to consider in detail how companies are taking advantage of the benefits of geographic proximity.

(Supplement) Regarding the Analysis of Internet Companies

This chapter identifies problems in analyzing Internet companies with existing statistics, describes the research methods used to solve this problem, and discusses the significance of this study.

1 Review of Existing Study

Because it is difficult for a private company to comprehend the situation of specific industries and companies, government statistics and government research were generally used for describing the situation of industry. The following section identifies the limits of existing government statistics for comprehension of Internet companies and points out problems with the Japan Standard Industrial Classification, which constitutes the basis of government statistics.

1-1 Existing Government Statistics

Chart 19 organizes government statistics that cover industries thought to be most closely related to Internet companies in terms of the agency coordinating the survey, the survey frequency, and the latest date of publication.

Chart 19 Internet-Related Companies as Assessed by Government Statistics

Survey	Agency	Frequency	Latest Date	Industrial Categories
Establishment and Enterprise Census	Ministry of Internal Affairs and Communications	Every 5 years	2001	Computer programming and other software services; Data processing and information services; Miscellaneous information services; News syndicates; Detective agencies and credit bureaus
Basic Survey of Japanese Business Structure and Activities	Ministry of Economy, Trade and Industry	Yearly	2001	Computer programming and other software services; Data processing and information services; Motion picture and video production; Newspaper industries; Publishing industries
Survey on Selected Service Industries	Ministry of Economy, Trade and Industry	Yearly	2001	Computer programming and other software services; Data processing and information services
Survey on Software-Based IT Companies	Ministry of Land, Infrastructure and Transport	Every 6 months	2003	Internet Services (NTT Townpage classification)

The most comprehensive survey data currently available related to numbers of

companies and other indicators is the Establishment and Enterprise Census, which is conducted once every five years by the Ministry of Internal Affairs and Communications. This basic and large-scale survey tracks industries, number of employees, head office and branch office distinctions, date of establishment, and other items for all business establishments in Japan. It shows numbers of companies and other basic characteristics of Japanese business establishments. The survey, however, only takes place once every five years, which makes it difficult to ascertain the situation with companies belonging to industries like IT in which the pace of change is rapid.

The Ministry of Economy, Trade and Industry's Basic Survey of Japanese Business Structure and Activities is conducted every year. The survey allows characteristics to be grasped at the company level in greater detail than the Establishment and Enterprise Census. It covers enterprises with employees of 50 or more and capitalization of ¥30 million or more, which means it does not necessarily comprehend the state of small and medium-sized businesses, including start-ups. The Ministry of Economy, Trade and Industry's Survey on Selected Service Industries is also conducted yearly. This survey provides detailed information at the business establishment level on basic characteristics as well as sales, operating expenses, fixed assets and other financial categories.

The Survey on Software-Based Companies conducted every six months by the Ministry of Land, Infrastructure and Transport is a government survey that makes it possible to accurately assess the situation of Internet-related companies because it is conducted at a greater frequency. This survey, however, collects data based only on the software-based companies (Internet, software and data processing services) registered in NTT Townpage, a telephone directory. Unlike the other surveys, a survey form is not filled out by a representative of the company or business establishment. It only provides information on the location of companies registered in NTT Townpage as of a certain date; it does not provide any other company attributes. That is to say, while this survey allows a researcher to ascertain the number of companies in particular regions for those that are included in NTT Townpage as of a certain date, there is no detailed information on date of establishment for these companies, how many employees work there, and other such characteristics. For example, the rates of company establishment and closure calculated in this survey are the differences in companies listed in NTT Townpage over two different points in time.

1-2 Japan Standard Industrial Classification and Internet Companies

The government statistics and surveys reviewed thus far allow characteristics of companies in various industries that include Internet companies. In order to comprehend the situation of Internet companies in a timely manner, however, there is a major problem in these surveys due to Japan Standard Industrial Classification. As can be seen from Table 19 above, with the Establishment and Enterprise Census, the Basic Survey of Japanese Business Structure and Activities, and the Survey on Selected Service Industries, the Japan Standard Industrial Classification's groups "computer programming and other software services" and "data processing and information services" or combinations of industry categories (details) have to be used to track Internet companies. There has been no way to identify only the Internet companies normally recognized as such. With the Survey on Software-Based Internet Companies, there is an "Internet" industry heading listing in NTT Townpage itself, which more or less makes it possible to accurately identify a portion of existing Internet companies, but it suffers from the problem of a paucity of information on company characteristics.

In other words, the reason that Internet companies cannot be accurately assessed in a timely manner by these surveys is due to the lack of a corresponding category in the current Japan Standard Industrial Classification. White papers, reports and much existing research assemble and analyze data rooted in survey results conducted based on the Japan Standard Industrial Classification, so it is only natural that there has been little progress in research related to Internet companies in the social sciences.

Because of this and other factors the Japan Standard Industrial Classification was revised in March 2002 for the first time in nine years, and the revised classification has been applied to surveys since October of this year²⁴. ²⁴ The revised classification created the new division "H – Information and Communications" and the new major group "40 – Internet Based Services." (A new group 401 and industry 4011 named "Internet Based Services" were also established.)

Internet Based Services are defined as "establishments engaged via the Internet in businesses related to communication and information services, which are not elsewhere

²⁴ For details refer to "Regarding Revisions to the Japan Standard Industrial Classification (Statistics Council Report)." (The report identifies the advance of information technology as one factor behind the revisions.) <http://www.stat.go.jp/info/singikai/2-268b.htm>

classified.”²⁵. The major group specifically includes server housing services, application service providers, electronic verification services, data network security services, and portal management services. It is clear that Internet advertising and Internet banking are not included in the new classification of Internet Based Services²⁶.

As a result, there is a strong likelihood that companies which adopted a new business format and have evolved their existing intermediary businesses through effective utilization of the Internet are still classified in advertising, financial services, other services or elsewhere even in the revised classifications.

This classification is effective for accurate understanding of advertising or financial services, but it diverges from the normal image of Internet companies cultivated by the mass media. Although a concrete consideration of what businesses should be classified in the category of “Internet Based Services” will be the subject of a future discussion, it is still difficult to assess the present state of Internet companies even with the current revised classification system.

2 Research Methods

As discussed up to this point, it is not possible to accurately assess the companies normally thought of as Internet companies with existing government statistics and surveys based on the Japan Standard Industrial Classification.

Thus, firstly this study devise a definition of Internet company after organizing the concepts related to Internet companies based on existing sources. Secondly, based on the definition, Internet companies located in Tokyo were identified with an original survey in order to construct a database of Internet companies. The following section discusses this study’s definition of Internet companies and the survey methods it used.

2-1 Conceptual Organization for Internet Companies

Many books and articles have been authored since the 1990’s with titles that include “Internet-related companies,” “Net companies,” “dot-coms” and other such synonyms. These words have also been widely used in a variety of media. However, almost all such words do not precisely define a type of company, rather, all companies that utilize the medium of the Internet are treated as Internet companies. In addition, these books and

²⁵ See <http://www.stat.go.jp/info/seido/sangyo/pdf/san3h.pdf> for the category names, explanation and content for “Division H – Information and Communications.”

²⁶ For example, Internet advertising services are classified as “8999 Advertising services, n.e.c.” together with traditional Japanese sandwich board advertisers and product sample distribution services.

articles are confined to case studies of individual companies or analyses of companies classified into information services, etc. in government statistics. Because of this there has yet to develop in Japan a commonly shared conception of Internet-related companies²⁷.

An attempt to assess Internet companies using an original definition and without depending on case studies of individual companies or government statistics has not appeared in Japan as of the present, but it was done in two places in the U.S. with concentrations of such companies, San Francisco and New York. The Internet-related industry as referred to in this study is called the “interactive media industry” in the San Francisco survey and the “new media industry” in the New York survey²⁸. There are slight differences in the definitions of companies in the two cities’ surveys, but to summarize, both surveys define these companies as a new type of company in the information services industry which provides products and services to third-parties that are used interactively. The state of these companies is ascertained based on the registries of industry associations and other sources. The surveys also more specifically identifies companies that design, develop, market and distribute content, and produce the tools necessary to create content, and it focuses on website production companies, companies that provide Internet content, and companies that provide services that utilize such content. The definition itself is rather vague, but considering the situation in the latter half of the nineties when the surveys were conducted, the definition was appropriate given its purpose of tracking such an extremely young industry.

The Internet has proliferated by leaps and bounds since the time when these surveys were conducted and the Internet business has sophisticated since then. But even now there are various problems attending the definition of Internet company. This is chiefly because companies that provide a variety of new products and services still continue to emerge. As a result it remains difficult to devise a definition that encompasses all of them.

However, while the businesses that utilize the Internet have increased, some companies that have succeeded have emerged like Yahoo! and Amazon. These succeeded companies have made it easier to construct and comprehend images of

²⁷ For example, the editions from fiscal 2000 to 2003 of both the Encyclopedia of Contemporary Words and imidas do not have entries for Internet company, net company or net venture. They are also not defined on the relatively well-established websites, ASCII Digital Dictionary (<http://yugo.ascii24.com>) and e-Words IT Dictionary (<http://e-words.jp>).

²⁸ Coopers & Lybrand et al. (1996, 1997, 1998) 、PricewaterhouseCoopers et al. (2000)

various Internet related businesses. As a result, more progress has been made in organizing the concepts related to individual Internet businesses.

With the segmentation of this Internet-related business and formation of more concrete conceptions, there have been surveys conducted for this purpose that classify Internet-related businesses. *Measuring the Internet Economy*, which was conducted every year between 1999 and 2001 by Cisco Systems and the University of Texas, is representative of these surveys. It comprehensively organizes concepts related to Internet-related business as a whole and provides a concrete image of the domain²⁹. The purpose of the survey is to measure the economic scale of companies posting sales from Internet-related products and services. It does not define the Internet economy as a whole from the outset. Rather, the survey starts with four industry categories, "Infrastructure," "Application," "Intermediary," and "Internet Commerce," and builds a framework for the Internet economy as a whole based on a conceptual scheme related to the relationships between these industries. After the categorization of Internet business, it selects companies belonging to each industry category (layer) without using U.S. government statistics, then surveys individual companies belonging to each layer in order to ascertain net sales, number of employees and other attributes. Finally, the survey measures the Internet economy as a whole. In addition, each layer is further subdivided and representative companies belonging to each category are identified, which results in the formation of a concrete image of each layer.

In the process of measuring the economic scale of Internet companies, the survey uses an original definition and identifies individual examples of such companies. On this point, it is informative as progressive research. In addition, the industry categories used in it are extremely concrete and its framework is suitable for tracking Internet-related businesses, which continue to grow in complexity.

For these reasons, this study applies the industry categories, definitions and framework used in *Measuring the Internet Economy*. In other words, Internet companies are defined by applying the four industry categories and constructing conceptions of the businesses they conduct.

Chart 20 shows the business content of companies defined as Internet companies. It lists the four industry categories, which are based on the concepts of basic infrastructure needed to utilize the Internet (Infrastructure, Application) and economic activities conducted on that infrastructure (Intermediary, Electronic Commerce). The

²⁹ Cisco Systems, University of Texas (1999, 2000, 2001)

table also includes representative listed companies for each category along with further subdivisions of the categories. The following section provides definitions for the business content of the four categories and discusses differences in category definitions between *Measuring the Internet Economy* and this study.

Chart 20 Classifications of Internet Companies

1) Infrastructure (Ex: Internet Research Institute)
Network-related technologies
Internet service providers (ISPs)
Rental servers/hosting/registries/domain acquisition
Internet data centers
2) Application (Ex: Edge, Softbank Technology)
Consulting (website design, planning, production)
Internet systems/software/databases/content development
Application service providers (ASPs)
3) Intermediary (Ex: Yahoo!, Rakuten)
Content providers/aggregators
Intermediary services (online brokers/travel agencies/car dealers/employment sites etc.)
Internet advertising/marketing/research
Community site management
Marketplaces/malls
4) Electronic Commerce (Ex: J-Stream)
Information good distribution/online shopping overall

2-1-1 Infrastructure

Companies in the infrastructure category provide services that constitute the foundation for the proliferation of the Internet and for businesses utilizing the Internet. The category includes companies that develop network-related technologies as well as Internet service providers (ISPs).

In *Measuring the Internet Economy*, companies that manufacture servers and client-side hardware like Dell and Hewlett-Packard and companies that manufacture network devices like Cisco Systems are classified in the infrastructure category. However, including all the companies that handle this hardware or the parts would lead to a very broad range of companies being considered Internet companies, which would make it difficult to clarify an actual situation of Internet companies. This study therefore excludes companies involved in manufacturing from the scope of its survey.

2-1-2 Application

Companies in the application category develop the software applications necessary to smooth transactions that use the Internet or provide services to that end. Companies involved in website design and consulting are categorized in the application category.

Measuring the Internet Economy places companies like SAPs that develop

commercial software for enterprises in the application category. It is true that ERP and CRM related software and other commercial software developed on the presumption of Internet utilization is increasing from year to year. It is difficult, however, to differentiate companies that develop software for various business processes that are not necessarily related to Internet utilization, so this study excludes from its survey companies involved in the development of this kind of software.

2-1-3 Intermediary

Companies in the intermediary category serve as intermediaries for information on the Internet. Content aggregators—seen most often in the form of portal sites—travel agencies, online brokers, and companies like online travel agencies that conduct an existing intermediary business over the Internet are included in this category. Companies that provide Internet advertising are of course part of the intermediary industry. This study also classifies companies that provide marketplaces, which manage sites on the Internet where multiple sellers and multiple buyers meet, in the intermediary category. This means that Internet-based shopping malls are considered marketplaces.

Companies in the intermediary category are the most pure Internet players. Most of the so-called dot-coms are categorized as intermediaries.

2-1-4 E-Commerce³⁰

Companies in the electronic commerce category are in principle those that supply their own products and services without a brick-and-mortar presence or those that have their own inventory and conduct transactions solely over the Internet. This definition is not necessarily the same as standard definitions of ecommerce. For example, the Electronic Commerce Promotion Council of Japan, an auxiliary organization of the Ministry of Economy, Trade and Industry with a mission to promote the spread of e-commerce in Japan, defines it as conducting all or a portion of the flow of transactions over networks, from electronic trading market entry to settlement and transaction completion. This definition does not refer to sales channels or the existence of brick-and-mortar stores.

Measuring the Internet Economy classifies mail order companies that use catalogs and existing small retailers that sell products using the Internet as “Internet

³⁰ *Measuring the Internet Economy* uses “Internet Commerce” as its category, but the term “e-commerce” has become more prevalent, so it is used in this study.

Commerce,” but this study does not include such companies in its e-commerce category. The companies classified as e-commerce in this study primarily include companies that distribute and handle payment via the Internet for digitized information goods such as software and music.

2-2 Definition of Internet Company

It is possible to define Internet companies as those involved in the businesses outlined above. But in order to accurately grasp the companies normally recognized as Internet companies, it is necessary to consider the period of Internet proliferation. This is because unlike other information companies it is difficult to conceive of Internet companies before the Internet came into use. This study therefore supposes Internet companies to be those that have appeared since the popularization of the Internet. Specifically, the Internet emerged on a larger scale in Japan in 1994, so Internet companies have to have been established since that year. 1994 was the year Netscape Communications was established in the U.S. and Netscape Navigator 1.0 was launched, which made normal browsing of the Internet possible. It was also the year in which the number of small-scale providers in Japan rapidly increased³¹. In addition, almost all current companies in Japan considered Internet companies have been established since 1994.

Based on the purpose of this study, which is to accurately analyze companies normally recognized as Internet companies, the necessity of securing definitional objectivity, and the limits of the survey method used, which is explained below, this study defines Internet companies as “companies established since 1994 whose principal business belongs to any of the above-defined four categories of infrastructure, application, intermediary and e-commerce”. Also, given the limits of the survey discussed below, it is assumed that Internet companies have their own corporate website.

³¹ The development of Mosaic took place in 1993 along with the launch of commercial Internet services by Internet Initiative Japan (IJ) and others, but it was 1994 when NEC and Fujitsu (InfoWeb) successively entered the market from the VAN business as commercial providers. Other than VAN providers, new communications providers such as Rimnet and Bekkoame Internet and PC communications providers such as NTT PC Communications and Asahi-Net also entered the market in succession. A large number of small-scale providers with limited numbers of customers that commenced services by connecting a commercially available modem to a dedicated line leased from an ISP like IJ also appeared on the scene because it was possible to conduct business from the room of an apartment.

2-3 Survey Methods

According to the definition of the Internet company, this study constructed an original database by collecting company data after visiting corporate website of each company with the help of existing databases. Thus, this study ascertained basic company characteristics such as date of establishment, capitalization, and number of employees based on this database. It also assembled information on number of companies by region and other characteristics. This section reviews the method by which the database was constructed.

2-3-1 Survey via NTT Townpage

NTT Townpage's database formed the foundation for construction of this study's original database. It was assumed that Internet companies would be listed under the seven headings of NTT Townpage's database shown in Chart 21. The chart also shows the number of companies registered in each heading of the database as of March 2003 after eliminating multiple listings. The study then searched for all 12,407 companies based on their name and address, researched the items that could be confirmed on the company websites and identified the relevant companies.

Chart 21 NTT Industry Headings

Heading	Number of Companies
Provider (ISP)	70
Internet Advertising	105
Internet	1,913
Data Processing Services	3,071
Information Services	1,244
Software	5,899
PC Communication Services	105
Total	12,407

2-3-2 Existing Database and Directory Research

The study also surveyed databases and directories of private corporations and industry associations thought to be attempting to identify Internet companies or venture companies that were relevant to the study. Additional companies were identified using these databases as reference. The primarily databases used in this regard were Nikkei Annual Corporation Reports of Venture Business 2003 and Nikkei Almanac of IT Companies 2003³².

³² These databases identify unlisted companies whose primary business is the manufacture of IT-related hardware or software or the provision of IT-related technologies or services. The companies are mainly those that have been included in the Nikkei Keizai Shimbun's newspapers, magazines and books.

In addition, reference was made to directories of the Mobile Content Forum³³, which enjoys the participation of many companies conducting Internet businesses in the mobile content environment, an area of recent development, and the Japan Internet Providers Association³⁴, an industry association of Internet service providers.

2-3-3 Literature Review (Magazine Articles)

As mentioned above, there are many print and online periodicals that cover Internet-related companies, Net companies, and Net businesses. The study worked to ensure it did not overlook any new companies by making reference to Internet Magazine³⁵, which was established in 1994, and Venture Now³⁶, an email newsletter that is sent out twice a day with information on start-up companies involved in Internet businesses, as well as other relevant magazines and email newsletters.

2-3-4 Database Integration

There have been other studies that have constructed an original database and performed analyses for the purpose of assessing Internet companies (Yukawa 2000), but company definitions provided in the past do not necessarily match the definition of Internet companies used in this study. For this reason, companies corresponding to the above definition of Internet companies were reselected out from among companies registered in databases collected on the basis of past definitions. These companies were then newly added to this study's database.

2-3-5 Regarding Database Construction

The following illuminates the concrete methods used to construct the database as well as the merits and drawbacks of the survey.

(1) Database Construction Method

For all of the information sources stated above, including NTT Townpage and existing databases, companies were selected in accordance with the study's definition of Internet companies after searching for and confirming each and every company's website. That is, the database was constructed by identifying relevant data through evaluating each company's website and the content of the companies' principal

³³ <http://www.mcf.to/>

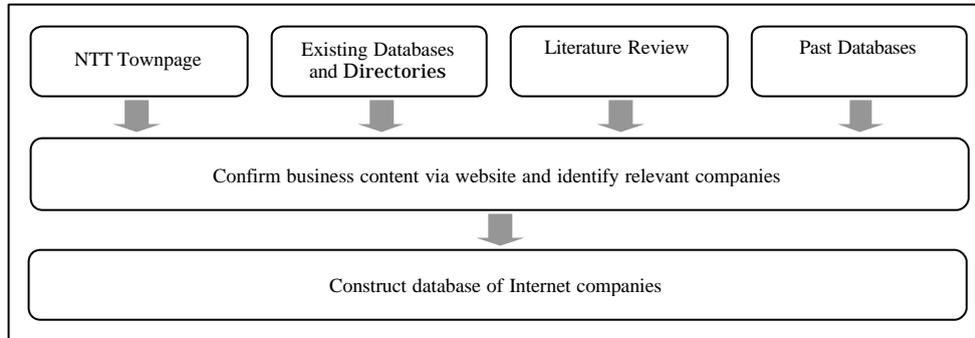
³⁴ <http://www.jaipa.or.jp/>

³⁵ <http://internet.impress.co.jp/im/>

³⁶ <http://www.venturenow.tv/>

businesses as expressed in the company information, businesses, development achievements, products, services and history sections of their websites (Chart 22).

Chart 22 Database Construction Method



Specifically, it was first confirmed that the company under review was an Internet company as described above. That is to say, as the determining criteria, the company was researched to find out whether it conducted, as its core business, activities included in the categories of infrastructure, application, intermediary or ecommerce. Companies that were also involved in businesses clearly unrelated to the Internet were not considered Internet companies. For instance, companies listing home remodeling and website design as businesses were not deemed Internet companies. A company which planned and managed a hotel that also accepted commissions from other hotels related to Internet reservation systems was not included.

The purpose of constructing the database was to accurately assess Internet companies, but because the information available on the companies' websites does not generally include sales breakdowns by business, it is difficult to determine which companies are Internet companies. Because of this the study excludes companies involved in other businesses completely unrelated to the Internet. Also, companies that may actually be involved in business activities related to the Internet but do not have a website were not identified as Internet companies nor were those without any information on their business content included on their website.

Next, the company website was checked to see if it was established since 1994, it was then classified according to business content based on its core business activities, and information on its date of establishment, number of employees, capitalization and other attributes was added to the database. The category of the company's business was judged and assigned as objectively as possible from the description on its website and based on the business categories discussed above. For example, there were companies

that undertook corporate website construction but whose business content was found to be content distribution on its website. This study classified such companies in the consulting category. Given such cases, the business category assigned did not always match the business content listed on the company's website.

In addition, the business category assigned was not necessarily based on the company's business model or revenue streams, but only on the Internet-related activities in which the company was involved. For example, it is difficult for companies managing community sites to maintain their business with revenue only from site management, so many of these companies utilize the expertise they cultivate in site management in consulting activities. However, this study classified such companies in the Intermediary category (management of community sites, etc.). For these judgments regarding business classification as well, categories were basically assigned that were more or less considered standard based on the information available on the companies' websites.

(2) Advantage and Drawbacks of Survey Methods

The biggest advantage of the research method described thus far, is that it is easy to obtain data on individual companies. This survey method regards the Internet itself as a powerful database. Searching for and identifying companies on the Internet made it possible to acquire detailed, up-to-date data on individual companies. Conversely, it is extremely difficult to collect the same kind of data from information sources other than the Internet.

One problem, on the other hand, is the subjectivity of the data. The study ascertains Internet companies overall by classifying companies into business categories, so whether to classify a specific company into a specific category affects the accuracy of the survey as whole. However there is the possibility that researcher's subjectivity is reflected in the selection. Also, since most of the companies are unlisted companies, common sense says that there is a possibility that these companies only disclose information that shows them in a good light. This study gave consideration to these drawbacks of its survey method, and attempted to secure objectivity by assigning the correct business category through collecting as much information as possible from each individual company.

3 Data Supplementation

Building a database made accurate identification and analysis of Internet companies possible. However, it is difficult to obtain data on sales, profit and other management indicators with only the information supplied on the companies' websites. In order to obtain this kind of data, the study extracted as much data as possible on the companies registered from the company database compiled by Tokyo Shoko Research (TSR) which contains about two million companies.

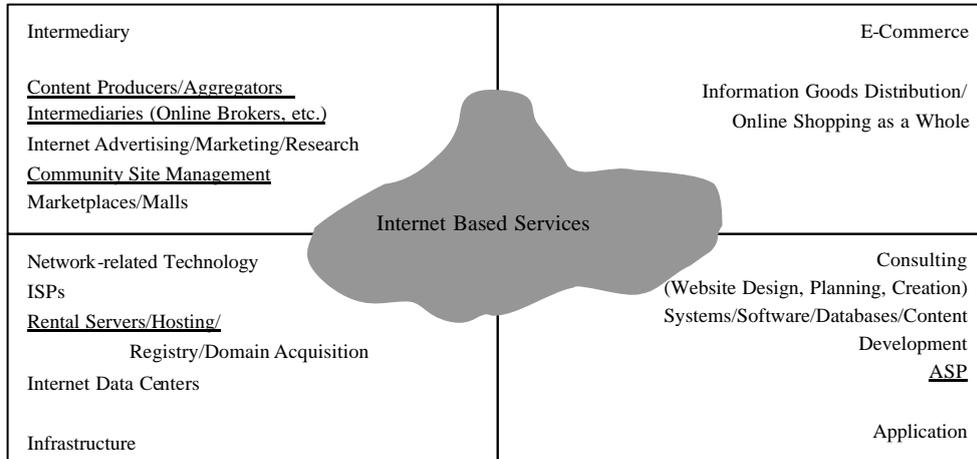
4 Significance of this Study

The following three observations can be made regarding the significance of the survey described above. Firstly, the Internet companies, which are difficult to ascertain with governmental surveys, can be accurately grasped in a fair amount of detail. The governmental surveys such as Survey on Selected Service Industries, encompass some Internet companies, but the proportion of non-Internet companies is high.

Additionally, even with surveys based on the revised Japan Standard Industrial Classification, it is difficult to assess Internet companies as defined by this study. Chart 23 is arranged to show the relationships between the types of business activities in the four categories of Internet companies defined in this study—infrastructure, application, intermediary and e-commerce—and the revised industrial classification category “Internet Based Services.”

With the post-revision industrial categories, only the underlined business activities are classified as Internet Based Services; the other businesses are classified in other categories such as advertising, retail, financial services and information services. That is to say, the categories of Internet companies used by this study include a wider range of business activities than Internet Based Services. Also, network-related technology and Internet system development is categorized as “Computer programming and other software services,” or “Data processing and information services,” but this study regards those companies that match the relevant category definition as infrastructure companies or application companies.

Chart 23 Differences with Internet Based Services



Because this study externally defined Internet companies and conducted an original survey after forming a conception of the business activities, the survey was able to overcome the complex problems that arise when classifying Internet companies.

Secondly this study makes it possible to track company trends in a timely manner. The pace of change in Internet business is so fast that it is often compared to “dog years”. For this reason it is desirable to always use the latest data when analyzing Internet companies. However, the Survey on Selected Service Industries was conducted in November 2001 and published publicly on the Ministry of Economy, Trade and Industry’s website in December 2002. It means that there is about one year time difference between the date of actual survey and the date of publication. In consequence, the applicability to the analysis of Internet companies is less than ideal.

Thirdly, this study enables company-level analysis based on data of each company obtained through the original survey. On the other hand, because government surveys do not release the name of individual data, it is difficult to make detailed firm analyses by using government surveys. For this reason, there have not been any attempts to assess Internet companies in Japan on a company basis. This study’s original database facilitates cross-sectional analyses, for example, by region or by number of employees, which makes it possible to make observations based on more subtle analyses.

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