

Working Paper Series

The Frontiers of e-Business: US and Japanese Visions of the Future

Edited By
Professor Larry Isaacson, Babson College
MIT Japan Program, Program Associate

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Proceedings
MIT Japan Program Meeting

***The Frontiers of e-Business:
US and Japanese Visions of the Future***

Edited By
Professor Larry Isaacson, Babson College
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Edited by Larry Isaacson, DBA

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Proceedings: MIT Japan Program Meeting:
The Frontiers of e-Business:
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Executive Summary
Professor Larry Isaacson, Babson College
Program Associate, MIT Japan Program

News about e-business has dominated the global business press for the last several years. Much of this reporting has focused on the veritable gold rush of start-up dot-coms, new e-business departments of existing “old economy” firms, stock options, patents, IPOs and other e-business “new economy” stories. Thousands of stock-option millionaires have been created – in the US and around the world – even as the new era of e-business has just begun.

In the US some of this is already accepted as part of the “normal” business fabric. It is assumed that the dot-coms are here to stay and that change is going to continue apace. If anything, it will increase in velocity as the impacts of applied e-business technology multiply through the economy and society. In Japan, with its more structured economy, e-business is developing in different ways, but the impacts are also permeating business and society. The locus of change is different, however, as traditional large firms are playing a relatively greater role. So incorporation and evolution – rather than revolution – may well turn out to be more common. These different approaches reflect the realities of each country, culture and society, as well as the different business opportunities that characterize these economies. It is already clear that these changes will play out differently in each of these leading global economies.

The purpose of this meeting was therefore to bring together US and Japanese academics, economists, business leaders, VCs, investment bankers, and dot-com entrepreneurs to compare and contrast US and Japanese experience in this unique early period of investment frenzy and rapid change. In doing so, the focus was on seeking to build on the insights of these very diverse participants to better understand what is happening in e-business in the US and Japan. Based on this insight, to then reason together about why and how each will progress, in its own way, in building e-businesses, using e-business advantages, and incorporating these impacts into US and Japanese society in the immediate future and longer term.

Key Themes

The meeting began with a session dedicated to examining the macro-economic setting – and the potential macro-economic impacts – of the explosive growth of IT, the Internet and e-business. Many observers hope that these forces will drive the rapid development – particularly in Japan – of a “New Economy” so powerful that it will overcome the forces of recession threatening that country. The potential for that scenario were discussed as part of the larger macro issues surrounding e-business development – among large firms and smaller and medium enterprises – in the US and Japan.

The second session moved to modeling and exploring success potential in various sectors of the e-commerce world of today and tomorrow. As e-business creates a full-blown “parallel business universe”, it creates very different potential in various sectors and presents different challenges for new and old business models, including the virtual business systems – VBS – that are now emerging throughout the e-business world. A particularly striking example of the potential of such systems to alter the micro-economic landscape is provided by the automobile industry example explored in depth by Mr. Nawa in this session.

The Keynote luncheon speaker, Professor Siu of MIT, provided an in-depth introduction to the powerful new business models that will be developing as wireless technology improves and becomes

ubiquitous. We will use wireless technology and low cost chips to make every object a source of information about itself, and we will use this information to improve and automate performance in many aspects of our society, from the household, to the inventory system and retail channel, to the entire supply chain. This potential is particularly interesting for Japan in light of its advanced standing in the use of wireless technology and its mastery of JIT supply chain systems that may be the first big gainers from this new technology.

In the afternoon, three panels of practitioners provided focused insight into how these concepts are today influencing management attention and corporate action in the B2C, B2B and financial services sectors and how these advances are being funded in the capital markets. In each case, it is clear that while there are similarities in developments in the US and Japan, each has often taken its own path and it is likely that each – reflecting its culture, economy, and capabilities – will continue to do so in the future. In reaction to these new potentials, managers have to learn to manage in new ways, and a number of the speakers provided insight into how this is playing out in their “old economy” firms – as they become “Internet Entrepreneurs” in at least some aspects of their operations.

Taken together, these sessions provided considerable insight into the still rapidly changing, emerging field of e-business. While it is still too early to predict just how far, how fast, or how profitably particular e-businesses will develop, it is already clear that the world of business has been altered, for the good, forever. These sessions defined and explored a number of the models that are shaping this change and provided important insights for managing it. In the course of the meeting several key themes emerged:

- Differences and similarities between the paths that the US and Japan are taking as they develop e-business capabilities – internal to existing firms and in today’s new dot-com, VBS universe.
- Whether Japan is taking paths similar to those taken in the US – with a lag – or whether it is developing a unique set of paths of its own.
- How great the overall economic and social impact of e-business expansion will really be, and whether Japan can expect to receive the same boosts to its economy that appear to have taken place in the US.
- What sorts of e-businesses – internal and external – will develop and thrive in Japan, in contrast with the US.
- How the next-generation e-business technology will expand these possibilities, in Japan and the US, as well as globally.
- How Japanese e-businesses can take advantage of Japan’s unique leadership positions in wireless technology and supply chain management.
- How best to effectively develop these e-businesses to meet the needs of consumers, business customers and users in each society.
- How to finance/fund these businesses in the very different venture capital, IPO, and other funding environments of these countries, taking into account the vicissitudes of stock markets around the world.
- How to effectively manage these new businesses – internally or externally – for maximum success in the unique managerial environments of Japan and the US.
- The need for continuing dialogue and research about the developments and impacts of e-business in the US, Japanese and global contexts.

This document reports on the key contributions of the meeting, provides a synopsis of the sessions, and provides background information on the speakers. Thus, it provides the basis for those who were at the meeting, as well as those who could not be there, to interact with these emerging ideas. It also creates the opportunity to reflect on the critical changes being introduced in our world by the rapid development of e-business in the US, Japan, and around the globe, and to plan for the successful application and integration of these changes everywhere in the economy.

“E-Business Changes Everything”

In his opening presentation, Dr. Feldman said, “E-business changes everything”. This statement summarizes well the variety and impact of the Internet and e-business in economies around the world as it creates new business opportunities and supports change in existing businesses. That theme inspired this meeting and is central to understanding and projecting the e-business future in the US and Japan, domestically and in the global operations of US and Japanese businesses as they participate in the world economy.

Dr. Isaacson, in his presentation, expanded on this concept as he referred to e-business development as, “A true parallel universe – offering many if not all the options of traditional business systems and adding many new ones.” But, this new parallel world is not just a replication of the old. Rather, it operates by the new rules of nearly-free, ubiquitous networked connectivity and it generates a new, open attitude toward change. Thus it permits and encourages the rapid development and implementation of new VBS that can be more efficient and more effective than their predecessors in many aspects of the economy. These new VBS create opportunity for unprecedented economic gain – in certain applications. Finding and capitalizing on these opportunities is at the heart of the e-business revolution and requires new skills and new approaches to partnering and building virtual business relationships. Mr. Negi continued the exploration of this theme by relating it to the SMEs – small and medium enterprises – that contribute the most important growth potential to each economy. As they move into e-business, and catch up with their larger rivals, the impact on the Japanese economy will be very significant.

High Hopes for E-Business

In the case of the US, it is evident that Internet based e-businesses have become an increasingly critical aspect of sustained, rapid economic growth. They have already had profound effects on the overall business system, business plans, investment, wealth, and expectations. It has even been proposed that Americans now live in a “New Economy” complete with new economic “laws” significantly at odds with more traditional economics. In this new era, the champions of the new economy anticipate that relatively modest e-business investment will provide the base for perpetual growth and rising profits, even as the economy remains essentially inflation-free and standards of living rise. In short – a nirvana.

In the strong recent economy of the US, the attitude toward e-business is generally up-beat and hopeful. But it is also a very anxious nirvana – concerned by the gyrations of stock market values of dot-coms, shaken by the plummeting value of some stock options, and concerned that all the impacts of change may not work to everyone’s advantage. Cost-cutting means job-cutting and that strikes fear in many. So, even as it is clear that e-business effects in the US will be increasingly profound, it is less certain what all of them will be.

For Japan, the optimistic scenario is rather different. The Japanese economy has not recovered well from the long-term downtrend that commenced over a decade ago and many forecasts predict continued difficulty in coming out of this weakness – despite some excellent progress in developing and deploying e-business investments. E-business is seen as an especially promising route to investment that will pay large dividends – in cost reduction and sales improvement – thereby playing a key role – perhaps a disproportionate role – in helping lift the whole Japanese economy back onto a trajectory of faster and more profitable growth.

While Japan has not experienced the same levels of e-business mania as the US – it is still a major factor in public thinking and expectations. We have seen phenomena like the Oracle Japan stock soar to a market capitalization several times that of its US parent company. E-business investments, profits, and disappointments and expectations have so far been lower than in the US. Yet many in Japan see the global rise of dot-coms as a harbinger of the future and continue to look to e-business as a kind of magic elixir that will pull Japan back to much higher levels of growth if only e-business investments rise enough to make this happen. Too little reliance on this eventuality may reduce such efforts. Too much reliance on it may lead to significant disappointments. How this scenario plays out may be a major factor in Japan's near-term recovery of its economic health.

In their presentations, several of the speakers provided insight into these possibilities. Muhammad Hiraj, of the Morgan Stanley Dean Witter Technology Group provided data comparing recent trends in US and Japanese e-business investment and stock market trends, showing significant differences in each of these areas. While recent stock market vicissitudes have shattered some of the rhetoric that surrounded such pronouncements, hopes are still high. Given the publicity and apparent early success that has been accorded to some e-businesses, it is not surprising that many observers expect that e-business will make a major contribution to stimulating the world economy. There is some evidence that, at least in the US, it is doing so in a variety of ways. But it is also true that investment in these e-businesses may not be large enough to overcome cutbacks in capital expenditures in other sectors of many economies – particularly in Japan where capital investment in other sectors is already too high. It is a lot to ask of just one small new sector to pull along all the resistant forces that characterize many aspects of such existing capital intensive economies. But the need for economic stimulus is clear in many parts of the world, so the potential for this hope must be considered and evaluated.

In Japan, in particular, technological savvy is high and some very advanced use is already made of wireless technology. Many expect – or at least hope – that such new investment in IT and e-business technology will be the key to re-igniting economic growth. But, as Dr. Feldman analyzed the situation in Japan, it became clear that this may be too much to ask of a sector that, by traditional measures, accounts for only about one fourth of capital expenditures today – and not all of this expenditure is dedicated to “new economy” projects.

As Mr. Negi pointed out in his presentation, SMEs in Japan have been significantly slower than larger firms to move into e-business activities. They have made fewer IT investments, use fewer PCs, maintain fewer Web-sites, and make less use of EDI and other e-technologies. While this has prevented them from getting as much benefit from such activities, it now represents a significant opportunity for the Japanese economy as they move to catch up. Clearly the actions of SMEs, as well as larger traditional firms and new dot-coms, must be considered to get the full picture. In fact, if they do increase their capital expenditures for IT and e-business to levels approaching those of larger firms, that will make a significant contribution to spurring the Japanese economy. The arrival of a variety of more accessible IT and e-business tools may help make this transition more likely and more effective.

Overall, as Dr. Feldman concluded, it appears that IT investment, broadly defined, will continue to greatly outstrip trends in other forms of capital investment in Japan – both in large firms and SMEs – and this will make a significant difference in Japan's recovery. But it is probably unfair to ask these investments alone to do the whole job.

Economic Analysis Issues

In assessing the economic impacts of e-business investment, it is important to consider the extent to which it is possible – in fact, likely – that traditional economic analysis, conducted on a sector-by-sector basis, may not capture the full effects of e-business investments for a variety of reasons. In the presentation by Mr. Naruto, we heard a great deal about how much effort and investment Fujitsu, Canon and other Japanese firms are putting into e-business systems. These efforts may well be missed as sectoral investments in IT as they may be largely characterized as operating expenditures rather than

capital expenditures. If so, they are treated as reductions to current profitability rather than as additions to capital stock, significantly deflating their apparent potential for impact on the economy. This is even more likely to be the case with the treatment of the costs of implementation of new IT-based systems, where the costs occur largely outside the IT department.

In addition, many of the benefits of these investments – particularly B2B systems investments – may be difficult to identify or track as relating to the IT/e-business investments. For example, when firms install EDI or purchasing systems that result in lower costs of purchasing operations as well as lower costs of goods, it may be very difficult to identify and track these savings and still more difficult to credit them to the IT/e-business investments.

As seen in the FreeMarkets presentation made by Mr. Talley, purchasing systems, for example, can sometimes save dramatically on the costs of components, supplies and services. In the US it is frequently asserted that some B2B systems pay for themselves in as little as 4 months. Payback periods of 12 to 24 months are often treated as cut-offs for such investment. To the extent that these “norms” are realized, it seems likely that usual accounting approaches may well fail to fully attribute the savings to capital investment in IT/e-business systems.

Moreover, in many cases, firms may not need to make large capital investments to use e-business tools. Rather, a supplier of these systems may invest to build a system once, and then re-sell it many times over to user firms. It may also act as an on-line ASP – application service provider. Thus, for example, users of the FreeMarkets system pay a percentage of their purchases for the use of this system, but they do not make sizeable capital investments in developing or installing it. This too may distort the traditional economic analysis of the impacts of such systems as the provider – in this case FreeMarkets – may well treat many of its development, installation and start-up costs for each new client as marketing and operating expenses rather than as capital investment. Thus, again, investment is understated and returns are probably not attributed to these systems either in the accounts of the IT/ASP supplier or the user firm. This is probably leading to substantial underestimation of the investment and the returns being created in all economies as the use of such systems spreads.

A similar argument can be made with regard to certain other aspects of the investments and savings associated with B2B as well as B2C e-commerce. One of the most important impacts of e-business investment, according to Professor Isaacson, is the “merger of sales and service”. As firms place information on-line for their suppliers or potential customers to use, they incur a cost. And, as this information is used, they receive the benefit in the form of increased sales, reduced sales force costs, reduced errors, reduced customer service costs, etc. At Federal Express, for example, it has been asserted that each time a customer does its own package tracking, it saves the company over \$5. Firms as diverse as IBM, Millipore, Air Products and Cisco Systems, as well as firms like Dell and Gateway, push traffic to their Web-sites to cut costs. At Cisco Systems it is claimed that e-business operations save the company over \$500 million annually. Very likely, few of the investments and savings are directly debited or credited to e-business or find their way into traditional economic analysis of these investments, even though there is awareness of the need for such calculations.

Similarly, to the extent that B2B e-businesses act as ASPs, providing services such as on-line shopping, e-mail, or access to links, the investment in such sites is probably understated, and the gains and losses that arise from this investment are difficult to estimate. This is a particularly troubling issue for B2C new business. As Mr. Shaoul noted, many times e-business are replicated or modified for transfer to new markets. His firm has acted as a catalyst in creating some of these businesses in Japan, and this has been economically viable because it has built on investment already made in the first market, in the US. The investment required to bring them to Japan is therefore lower and – once well adapted to the Japanese market – the chances for success are higher – greatly improving potential return on such investments.

For many B2C “pure plays” the problem of properly allocating investments and returns is particularly difficult. Most of them seek to raise large initial capital in their early funding efforts, and then invest heavily in marketing and promotion – as well as the technical development of their sites – to drive enough traffic soon enough, to begin to make profits before they exhaust their cash. It is difficult if not impossible to define and to track their actual investments – much of which may take the form of advertising in traditional media or swapping banner ads with other new on-line media. Often it is their policy/strategy to engage in over-investment in marketing, in the hope of creating large audiences that can then be merged/acquired by other e-business at significant premiums. These strategies may well defy normal accounting approaches and may not provide the kinds of economic data that can be used in making traditional economic analyses of these businesses. Economists are well aware of these issues and understand the challenge of coping with them as we proceed into this new era.

Internal and External E-businesses

In both the US and Japan the search for e-business opportunity is taking two very different vectors: As free-standing “pure-play” dot-coms; and as internal developments, aimed principally at profit improvement through more efficient and more effective operations. These two vectors meet where outside suppliers provide the tools or platforms for improved internal operations – often as “arms merchants” – selling the “tools of war” required to reap the benefits of new e-business methods.

In both the US and Japan these two vectors are continuing to develop rapidly. B2B systems are not just the object of today’s intense press interest. They are in fact the major locus of all e-business investment and activity. Much of this investment is going into large and complex systems that take time to build and implement and will pay-off in cost savings, improved decisions, shorter time to market, and inventory reductions over time. In contrast with this, many of the early pure-play dot-coms had relatively simple and direct business models. Some were simply copies of traditional businesses transplanted to the Web. Others represented improvements on traditional business models made possible by the reach and electronic capabilities of the Web. Still others – like search-engine based portals – reflected the need to bring order and accessibility to this new “market-space”. In most cases they were implemented fast by small teams of inventive newcomers – creating solutions as rapidly as they uncovered the problems inherent in operating in this new parallel universe. These firms became the first wave of big winners in the e-business world.

It was their success that, in turn, played a major role in developing management awareness of the potential of e-business and created some of today’s eagerness to invest in e-business systems. Thus the most important lasting impact of early B2C success may well have been its role in giving birth to the worldwide recognition that a new world of e-business had been created. Creative developers everywhere – on their own or within businesses – were electrified. They realized that they could develop new business systems – free-standing, as ASPs, or as improvements to the operations of their businesses – by using the advantages of the Web to enhance trends already underway and to create new e-business options. In many cases they developed prototypes for their existing businesses – and these businesses then spun them out as free-standing dot-coms. These firms went public at very appealing capitalization. They now serve the public as retailers, storefronts, malls, information sources, search engines, e-mail providers, e-markets, and other widely-desired services. Thus, early success was widely seen as proving the enormous potential inherent in successful exploitation of broad-based consumer opportunity. This sense of opportunity – particularly in the US – where a very wide range of opportunities has been successfully exploited – played a major role in creating the environment for greater openness to B2B investment as well. Thus it became a key factor as the full-scale, worldwide e-business mania was born.

In Japan, much more of the early activity was focused within existing businesses. Industrial firms, retailers, banks, advertising agencies and associations expanded their existing activities to include e-business offerings. A recent analysis of leading Japanese e-businesses shows that more than three-

fourths of the top 25 e-businesses in Japan are majority-owned by large, traditional Japanese firms – precisely the opposite of what one finds in the US.

This reflects a number of continuing realities about the Japanese economy and society in relation to e-business. In the US, early Web researchers often worked in university laboratories and were more likely to seek venture funding for their efforts. A few apparent early successes – like Netscape and OpenMarkets – rapidly created an environment in which such moves came to be seen as natural. Funding was increasingly available and young teams of innovators formed to take advantage of this opportunity. As they did so, their actions created patterns and norms for others to follow.

In contrast, in Japan, most of the “best and brightest” young, innovative engineers and entrepreneurs have continued to seek their roles within the leading corporations. In these companies they find both barriers and opportunities – barriers in the form of the traditional practices of these firms. Opportunities in the fact that these same firms are also often acting as the e-business entrepreneurs of the Japanese economy and have the economic resources and the political connections to move rapidly ahead once they make the decision to do so. And they have the US model to copy and refine – often with the assistance of US firms willing – even eager – to serve as partners in the development of similar sites in Japan.

So Japanese B2B entrepreneurs have the potential advantage that, being “insiders”, they may have ready access to the most interesting e-business opportunities facing these traditional firms. Negotiating the politics of such access is often difficult and time-consuming, but if it can be accomplished in many Japanese firms, it will turn out to be a long-term advantage for them. In this setting, they will be unusually able to develop internal cost savings, inventory reductions and profit improvement systems. The systems described by Mr. Naruto and Mr. Sakamoto reflect this potential for rapid implementation.

Relationship to other Trends

E-business is important, but it is not “the only game in town”. A number of the presentations, including those by Mr. Naruto, Mr. Itoh, Mr. Watson and Dr. Isaacson reminded us that B2B e-business developments are often closely linked to – and highly dependent on – other trends already underway in the US and Japanese economies. In all large US and Japanese businesses – prior to e-commerce – there were already major IT efforts focusing on EDI, purchasing, customer tracking and customer management, customer service, etc. In many firms there were also large, advanced efforts to install internal proprietary ERP, ERM, and JIT systems. Many firms were already turning to outside suppliers to provide the cores of such systems and then working closely with suppliers such as SAP, BAAN, etc, to successfully install these systems. This has been particularly the case for larger global firms, expanding in part through acquisition and partnership, that needed to find ways to integrate control of their global operations. In addition, a much smaller number of firms were already making efforts – some since the 1980s – to make good use of AI – artificial intelligence – systems to implement rule-based business practices to guide workers, customer service personnel and salespeople in doing their jobs.

All of these efforts, combined, meant that in larger US and Japanese firms, there were significant numbers of IT-savvy managers and specialists who had a good understanding of many of the issues that would have to be resolved to make e-business efforts successful. The importance of this kind of resource was well highlighted by Mr. Naruto as he described the development of Fujitsu’s earlier EDI and procurement efforts and the similar efforts of Canon. Similarly, in Mr. Sakamoto’s description of the lengthy path required to move from simpler ATM systems to advanced e-business systems at BOT-Mitsubishi and Mr. Itoh’s recounting of SYNEX’s development path. Without the experience gained from such earlier efforts, it would have been much more difficult, if not impossible, to have so rapidly developed the e-business systems being put in place today. In Japan in particular, much more of the talent and experience required to build and implement these systems was lodged in larger businesses

and it is therefore not at all surprising that more of the innovation in Japan has been generated from this sector.

B2C Opportunity

In Japan, as in the US, the press has created tremendous public awareness and interest in B2C e-business. New sites, numbers of Web users, on-line transactions and interesting e-business gossip are widely covered in the press. Each early B2C move has been the subject of major press coverage and high public expectations have been created. Nonetheless, the reality is that in both Japan and the US, despite rapid increases in Internet usage, retail sales over the Internet have been quite modest and most retail e-businesses have experienced modest sales and large losses.

While there are major similarities between these patterns in the US and Japan, the US case is far more striking. In the US, each of the above trends started earlier, was more over-hyped, reached a higher crescendo, was more often conducted by a highly visible "pure-play" dot-com, led to a highly touted IPO, and has more recently suffered a greater fall off in stock price and more disappointment.

B2C Retail

Many pure-play B2C IPOs have been sinking fast – after their ups and downs of the last two years – and it is generally realized that most – including some recently valued at multiple billions of dollars – will probably not survive on their own. Examples include Dr. Koop, PetsMart, Toysmart and CDNow. Many others are still wildly over-priced, considering that they are in low gross margin, commodity businesses. As Mr. Hiraj pointed out, such commodity distribution businesses can expect to earn 1% on sales in the long run – and that earnings stream cannot support even a fraction of today's already reduced market caps.

The fall-off in value of B2C trans-active businesses should not be too surprising in light of many decades of experience with other new forms of retailing. In the early post World War II period, it was feared that the mass-market discounters and catalogers would take over retail trade. More recently, there was rampant hope/fear that QVC and HSN would move large blocks of sales volume to TV. But the reality is that retail shopping – as much as some people may complain about it – is one of the preferred forms of recreation and entertainment in the US today and that most people do not want to buy most things on-line.

Media Metrix data cited by Professor Isaacson clearly show that most of the B2C consumer sites that have so far attracted large numbers of shoppers offer primarily "commodity" standardized products such as books, CDs, consumer electronics and PCs. On-line sales of most other items have been modest indeed. All the popular on-line items are products with low margins, making it difficult to ever make substantial profits by selling them on-line. This is not to say that there will be no winners in B2C retail. There will be numerous smaller on-line B2C firms that keep their costs down – particularly their site-building costs and their customer acquisition costs – and make modest profits on their B2C activities. And there will be numerous "brick 'n' click" operators who use the Web effectively to leverage their investments in bricks and mortar by driving more volume to their stores in Japan as in the US. In addition, a few dot-com "on-line brands" of consumer merchandise may eventually emerge, but there are no examples of this happening to date. So most retail "pure-plays" will not become "Big League" players in the dot-com world. This is very important as the stock market accords high multiples to those it deems "Big League" and low multiples to those that are seen as "Little League" – to use a baseball analogy.

Among the most vulnerable of today's B2C dot-coms are the malls and broad line retailers. Few of them are likely – based on current trends – to build the sales volumes needed to overcome high site costs and high customer acquisition costs, while offering necessarily competitive prices. Of particular interest in this regard is the slow progress of dot-com supermarket shopping. In most US cities today, several firms offer various approaches to cheap home delivery of supermarket products. But none of

these firms is experiencing super-rapid growth and it now appears unlikely that any of them will achieve the levels of success touted for them just a few months ago. Most will fail.

Nonetheless, there is persistent hope in both countries that there will eventually be some significant successes in B2C retail, and there probably will be – mainly in what Professor Isaacson referred to as the “B2C mass-media sector” rather than in e-tailing.

B2C Mass-Media Sector

Consumers require certain services as they use the Internet: Access, search engines, e-mail, news, and other services. Portals and specialty sites that provide high quality versions of these services – usually free – will continue to attract large numbers of users. It will then be very difficult to dislodge these users from their initial or early portal/service choices, just as it is very difficult to induce customers to change banks, or insurance providers, or doctors, or a variety of other services providers – even when they are not entirely satisfied. This is likely to continue to be the case with Internet services, as users feel “locked in” by the emotional or real “switching costs” of moving to new providers or portals.

This phenomenon helps explain, as Mr. Shaoul reported, the major success of AOL, which provides a user friendly, good-enough service and walls off its customers from full exposure to many aspects of the Internet experience appreciated – or dreaded – by the users of many other more sophisticated ISP services. The stock market highly rewards this success.

The basis for such a high market capitalization is of course, the belief that in the long run, there will be just a few major Internet portal services. These few survivors are expected to enjoy a great deal of income and power, which can be used to attract ever larger audiences and to capitalize principally on the sale of advertising to their audiences. In addition, they will collect fees for referrals to other sites and profits on transactions. Today’s large portals have moved a long way toward the full implementation of this type of business model. But much more opportunity remains for them as Web use increases. Even so, it may be difficult to find a real value of over \$100 Billion in AOL's business model over the longer term.

B2C Advertising Income

We have seen that advertising income tends to flow disproportionately to the sites with the largest audiences. So they continue to gain disproportionately from this increased traffic. As other sites fail, the “Big League” winners enjoy the opportunity to use their relatively highly valued equities to acquire other audiences – including lesser portals – permitting them to continue to build audiences at reasonable cost. At the same time, using their market capitalization to their advantage, they may well be able to exchange their “over-priced” shares for valuable equity positions – at very favorable prices. AOL, for example, is said to have already done this with Gateway Computers and certain content providers such as FEN – Family Education Network – thereby creating earnings streams that may justify significant market caps. A close examination of some recent “deals” made by other leading portals suggests that they too have already learned how to do so. As they continue to use their market power to barter exposure of advertising on their networks – at little or no cost to them, since they have inventories of unsold ads – they may well gain potentially valuable equity in firms with actual or potential positive cash flows. But even with these earnings streams, it seems hard to justify some of the very high market values seen in the recent period of US and Japanese market mania and supply shortage described by Mr. Hiraj.

B2C Mass-Media Success

The proposed combination of Time Life Warner and AOL provides the clearest indication of the potential “clout” of highly-visited portals in reshaping the world’s media structure. This is an area of enormous potential and will be the primary area of B2C interest over the next few years as this restructuring of the media sector comes to reflect the new media habits of consumers and the new

reality of the need for ever larger audiences to support the costs of content creation and distribution. Media firms with multiple channels will have significant advantage – particularly as broadband makes the Internet a full capability medium. Ted Turner saw this very early, and it is interesting to see him, still, at the center of driving new, ever more powerful, media combinations.

In Japan, the mass-media e-business trend has not developed as rapidly as in the US. To date, there are few indications as to whether the US pattern will be replicated. But it does appear likely that this situation could be rapidly reversed as Japan moves well ahead of the rest of the world in making practical use of I-mode devices and wireless services. This may be an opportunity for Japan to capitalize on some of the wireless opportunities defined by Professor Siu in his keynote luncheon address.

Other B2C Opportunities

There are also major B2C opportunities in two other key areas that are discussed below: Auctions and other market-making approaches and financial/brokerage services. On-line services are clearly well-suited to take over many aspects of these businesses – everywhere in the world – and it is only a matter of time before they will do so. Because the same factors drive these important tendencies for both B2C and B2B applications, they are discussed together below.

B2B Opportunity

B2B is the most important area of e-business impact and opportunity. Firms all over the world are preparing themselves – even restructuring themselves – to prepare for it. Over the recent past, most favorable media attention has moved substantially from B2C to B2B. Initially press coverage of B2B focused principally on moves to create corporate or brand brochureware. Then attention moved to transactional sites and to good uses of e-business tools to deliver information. Now the business press has caught up with B2B progress and is very actively reporting on the cost saving moves, the EEM – extended enterprise management – systems, market-making, and the breadth of business system re-engineering that is actually occurring.

B2B is Different

As we look at B2B, it is critical to begin by understanding how different it is from B2C. Most B2B firms deal with limited numbers of informed customers or suppliers who make up their established base of business "partners". Thus, while many B2B sites offer information and transaction capabilities, they do so principally to facilitate transactions with firms they already know and to facilitate transactions that would have occurred in any event, rather than to generate entirely new business connections. Thus these sites reduce friction and costs. They do not incur the same high levels of customer acquisition costs as B2C sites and they provide immediate, recognizable benefits to buyers and sellers.

Not surprisingly, many firms are recouping the apparent costs of these B2B sites in record time – often six months or less – and earning returns on investment of over 100% annually on their B2B investments. Moreover, since offering such sites is essential, why not get there early? Most large firms have understood this and are already working on their second or third generation information and/or transaction sites. In the US, many of these third generation sites are, over time, becoming as much or more orientated to building brand/corporate images, through fuller presentation of the company as a caring and resourceful business partner, rather than just to implement transactions.

As firms move to these more evolved sites, they are more and more frequently using them in more creative ways to provide JIT information, offer services, or merge sales and service activity, thereby generating substantial cost savings and perhaps some modest increases in sales volume. In many cases, their highly evolved sites offer unprecedented levels of information and service, at very low cost per transaction. While implementation of these systems is complex, it is proceeding at a very rapid pace as firms take the IT effort that went in Y2K issues and re-direct it to e-business re-engineering projects.

This is particularly true for Web-based SCM – supply chain management – and is rapidly extending as well to full-scale EEM systems that create new potentials even as they raise the levels of site costs and complexity. But, as Mr. Naruto, Mr. Itoh, and Mr. Watson reported, firms as diverse as Fujitsu, SYNEX, and AETNA are moving rapidly in this direction.

At the highest level, some firms are going even further to re-engineer not just themselves, but also their industries. AETNA is going this route and Mr. Nawa reported on the key role that McKinsey & Company is taking to assist its clients, in a wide variety of industries, to capitalize on this opportunity. In light of the importance of these developments, let us look in more detail at each key level of major opportunity in B2B:

- Profit Improvement
- EEM – Extended Enterprise Management
- Business/Industry Process Re-Engineering

Profit Improvement

At the profit improvement level virtually all large firms and most SMEs have already created some form of “Web-presence” in order to provide information and transaction capability at low cost. This pattern started early in the US and appears to be re-creating itself in Japan, with a lag. These Web-presences take three essential forms, as Professor Isaacson indicated: Promotion/information sites, transaction sites, and transaction/service sites that essentially “turn internal systems outward” and/or “merge sales and service” to provide better information and more service, at lower cost, to current and prospective customers.

The wide use of answers to “FAQs” is a very good example of this. As firms receive questions, they monitor them and post standardized “good answers” – thereby greatly reducing demand on call centers with referrals to an FAQ site where questions will often be answered more accurately than ever before. This technique is particularly important in mid-high tech industries where it is critically important to provide fast, useful, comprehensible information – often including graphics – to help customers assemble and use products or processes. The cost savings and service quality improvements inherent in this approach are very striking.

Many companies begin their e-business investment by offering on-line information, at various levels of generality, about the company, its brands and products, its policies, its locations, and ways to make contact with particular departments or individuals. The success of these sites in providing core information and persuasion at low unit variable cost per inquiry has played a significant role in encouraging firms to place ever more information, in ever more elegant formats, on these sites. The rapid surge in availability of software tools, programmers, and templates for such sites has greatly facilitated this rapid expansion in numbers and depth of sites in Japan, with a lag, as in the US.

Some firms have opted – for good reasons – to stay at this “information” stage. Each of these firms has a story to tell – about themselves, their branches, their products, and their channels. But their products and/or services may not be suitable for on-line transactions. In many cases, members of their channels of distribution would interpret on-line product or service transactions as unwanted competition. So these firms determine to limit themselves to providing information and referrals.

Over time, many more B2B firms in the US have determined that, in today’s fast changing environment, it is important to further leverage their brands and products and channels by offering on-line transactional services. The breadth and depth of goods and services directly available on their sites has become quite astounding. Firms selling simple and complex industrial components and services offer opportunities to buy huge varieties of SKUs over the Internet. Distributors too have moved strongly in this direction, offering numerous brands as well as great variety within brands. Where this

causes channels conflicts, manufacturers and distributors are seeking ways to resolve them. The result is that the Web is rapidly becoming an on-line cornucopia for B2B businesses!

In general it is nonetheless doubtful that many of these sites are attracting significant numbers of new customers or selling significant amounts of products or services that would not have been booked by the companies' sales forces, catalogs, tele-marketing, or distribution networks. But these orders are transforming channels of distribution by taking orders at a fraction of the transaction cost. As they do so, firms can re-allocate sales and service personnel efforts to more productive tasks than routine question-answering or order-taking. Firms that lag in offering these e-business services may well find themselves losing business to those who do offer them well.

The success of this new "channel" is based on the simple fact that, in the Internet/e-business world, often "the best service is self-service." This is true because, as firms take their old, internal sales/services systems and "turn them to face out" to the customer, they make these systems continuously available, very accurate and up to date, very easy to use, and very reliable. Thus, designers seeking parts, purchasing agents seeking product information, and end-users needing specifications or order-tracking information, often find it quicker, easier, and more effective to interrogate a Web-site than it would be to call a salesperson or an order desk or a customer services department or to search a catalog. The net result is that, increasingly, customers are relying on transactional sales and services systems for common, rule-based tasks rather than doing the research and tracking via traditional means. Mr. Naruto's presentation indicated that Fujitsu and other Japanese firms will not lag far behind their US counterparts in these applications.

In addition to handling transactions better and faster, 24x7, and at lower cost, there is an equally important secondary impact on roles that is becoming increasingly important. Web-based systems are dramatically changing the roles of various participants in the sales process. As routine information and purchase actions switch to on-line systems, sales, services and distributor resources are freed up – to be eliminated, or to be used for more intensive marketing and service efforts. On the "sell" side, salespeople can spend much more time prospecting for new accounts, introducing new products or product features, and solving problems. It remains to be seen – on a sector-by-sector basis – how these resources will, in fact, be re-deployed. Every sales force or customer service unit believes it has more work than it can finish. So, possibly, these personnel will be kept in places providing more sales and services effort. More likely, in today's cost-sensitive environment, there will be significant reductions in staffing in these departments to reflect reduced workloads.

Similarly, on the "buy" side, designers, purchasing agents, and logistics personnel are finding it much easier to use on-line sources to get the specifications, answers and shipment data they need to do their jobs well. This was already true of the many effective EDI systems in use a few years ago. But the scope of system availability, the range of information available, and ease of use have all multiplied – and will soon multiply again – creating very significant opportunity for cost-reduction and performance improvement in each of these functions.

Extended Enterprise Management

As firms work their way up the ladder of profit improvement opportunities from information and transaction to systematic interaction with their suppliers and customers, they increasingly seek opportunities to make these linkages more solid and more extensive. Some firms begin with their existing EDI systems and integrate "backward" into full-scale SCM – supply chain management – systems. Others begin from SFA – sales force automation – and integrate forward into better systems for managing sales/services information and transactions, including full-blown CRM – customer relationship/retention systems.

But a "forward" integration move for the seller is simultaneously a "backward" integration move for the buyer. So as these systems evolve, all become linked in what Professor Marty Anderson of Babson

College has labeled EEM – extended enterprise management – systems. This term encompasses all the different linkages that constitute the long chain that runs from raw material suppliers through to components and services, to manufacturers, through channels, to the final end-user. Often there are many, many steps in this process – and many branch systems to consider. As these systems are identified and linked – via Web-based systems – we are witnessing the explosion of opportunity to improve the efficiency and effectiveness with which firms manage their businesses. Businesses all over the globe are responding rapidly to this challenge. As Mr. Naruto described, this is the case at Fujitsu.

The Role of “Open” Systems

One key to the success of these B2B systems is information-sharing. By opening information to suppliers, partners, customers, and service organizations, firms are able to integrate actions, adopt least-cost solutions, reduce delays and leverage talent and inventory. All this is made possible by two key changes: Ubiquitous, nearly-free communications and the rapid development and deployment of relatively “open” systems for sharing information. These systems are open in two key senses. On the one-hand, they are technically “open.” That is, they use open architectures and are designed to inter-operate. But even more important is the second sense. These systems are often designed around a real willingness to move towards full cooperation, partnership and transparency. This is far removed from the common practice in recent periods, of treating even minor “secrets” as key sources of competitive advantage. Today many firms, in many industries – in the US in particular – are recognizing that the value of transparency is often more immediate and larger than the value of many trade secrets.

This shift represents a very major change in the locus of company activity. It – coupled with the last decade of “flattening” organizations – has pushed more decision-making further down into many organizations. More managers see the relationship between their daily activities and the overall business processes and profitability of their firms. They see opportunities to improve their processes by changing their own actions. What new Web-based e-business systems can often do – especially at the lower levels – is to provide these managers and technical staff personnel with the opportunity to improve not just their own processes, but also related, external processes. They do this by joining with supplier and customer “partners” – before them and after them in the business system – to create EEM systems that dramatically improve performance. In many businesses, this is rapidly taking place.

At the same time, many businesses are undertaking much more thorough-going re-engineering. Some are doing this internally. Many are turning – as they have for more than a decade – to the major systems integrators, EDS, SAP, BAAN, Arthur Anderson, Cambridge Technology Partners, PeopleSoft and others – to create better integrated business systems. But as they do so, in this new e-business climate, these firms are able to respond faster and more effectively by initiating Web-based, more open systems than was possible a few years ago. So, while re-engineering continues to be deeply traumatic for many organizations, it does appear that better, more open Web-based e-business systems – whether internally built or provided by consultants – are making a more positive impact at lower total cost.

The Role of Rule-Based Management

Equally critical to success in this new environment is reliance on what Professor Isaacson referred to as “rule-based management systems.” For at least the last two decades, major US firms and academic business institutions have been working hard to identify business rules and use them to specify actions. In the 1980s, for example, DEC was a pioneer in developing configuration software and management decision systems for a variety of industries. Work in AI – artificial intelligence – has been slowly but surely integrated into many decision tools and re-engineering projects. In the late 1990s many firms used Y2K projects as “umbrellas” for the re-engineering of many core systems and emergent Web-based management systems. These systems often incorporate much more in the way of business rules than had previously been the case.

Today, as firms move decisively into SCM, CRM and EEM systems, the cores of these systems are "rules-engines" – a term one did not generally hear until the late 1990s. These rules tell the system what actions to take. To do so, they must be built on precise study and formulation of the best rules that managers employ in making these everyday critical decisions. So designers and developers of B2B systems have greatly enlarged their roles in specifying the business processes and business systems of their firms. In many instances this change of role is relatively superficial, as the rules may be simple or obvious. But as firms move up into higher-level supply chain management, customer management and extended enterprise management systems, this change becomes pervasive, critical and revolutionary. This revolution will become even more complete as firms move ahead to expand beyond EEM to reliance on e-business market-making systems – designed in large part by e-business technicians and consultants.

From EEM to Market-Making

It is still far too early to predict with any certainty the forms that EEM will take and how it will evolve. But it is clear that major manufacturers – including the auto-industry giants – are pushing ahead rapidly to streamline their purchasing systems and improve and control their supply chain management capabilities. Equally, they are seeking greater control, better service and lower costs in their sales and service operations through proprietary CRM systems. To the extent that these large firms can impose their will on suppliers and customers, they will do so.

As EEM systems proliferate, sellers are already being asked to participate in more than one – possibly several – B2B exchanges – just as they may once have been asked to be part of multiple EDI systems with different rules and processes. Industries have worked to develop standards and norms that make participation in multiple EDI exchanges relatively simple. Today industries face the issue of having to find ways to similarly standardize and simplify participation in B2B systems and exchanges – or progress will be severely retarded. Unless such standardization is achieved, full participation will be painfully difficult, particularly for smaller suppliers or customers.

It is not surprising that, in many if not most markets, attempts are being made to create a single industry-wide, multi seller/multi-buyer electronic marketplace. A single large purchaser who opens its system to cooperating buyers may drive these efforts. Or the effort may be managed by a coalition of buyers or sellers that aggregate themselves to create a frictionless, more efficient industry. Or it may be lead by a third-party market maker, seeking to serve the industry and take a small transaction fee or commission for this service. Regardless of the point of origin, B2B marketplaces have developed very rapidly in the US and are developing in many industries in Japan.

The main classifications of B2B marketplaces to date have been "vertical" markets for industry-specific goods and services; horizontal markets for relatively generic goods and services; and "horizontal" markets for MRO – maintenance, repair and operations – supplies and for back office supplies and services. Both types have grown rapidly – but other models exist as well and they are having major impacts on how business is conducted. The needs of businesses in various sectors – and different countries – will shape this evolution. As Mr. Negi indicated, such B2B sites are attracting large numbers of SMEs in Japan. Over 70,000 have become members of the "Hits One World" site and over 600,000 have formed the Askul B2B Mart. These are just early indicators of future developments in B2B in Japan.

B2B Legal Issues

The rapid development of B2B exchanges has raised serious questions about whether the information they share has the potential to create anti-trust violations by permitting competitors to collude in setting prices – on the "buy" side or on the "sell" side. Anti-trust review of these exchanges is likely to lead to rules for their operation that meet the test of US anti-trust policy – and may create some tensions if the rules adopted for B2B exchanges based in other countries are governed by different rules. This is an

interesting first test of the ability of on-line exchanges to meet the political demands of global competition. The outcome will play a significant role in shaping the future for global e-business. Similar concern about such issues as on-line security and on-line taxation will also have to be resolved on a global basis to ensure the growth of these marketplaces.

Market-Making Issues

There are at least four other major sets of market-making issues that will be resolved by experience in the near future. These include impacts on suppliers, customers, prices and competition itself. Initial results appear to indicate that as these new EEM systems are introduced, and particularly as electronic marketplaces are established, purchase costs and logistics cost are significantly reduced, service is improved, and inventories are reduced and better managed. In fact, there are those who believe that these operational improvements are critical to recent US success in the simultaneously increasing GNP, reducing unemployment, and keeping inflation under control.

But it is not yet clear what their systems do to the profits of suppliers. If, as has been seen in some well-publicized cases, costs for key materials, components and services, can be reduced as much as 20% – or even more – through these systems, one must ask where these reductions are coming from. In his presentation, Talley Goodson showed examples of such savings and noted that FreeMarkets auctions had already saved purchasers over \$1 billion on purchases of some \$5 billion. So savings of 20% appears common.

Other data show that the typical supplier in the US or Japan has a net profit on sales of less than 10%, often less than 5%. While there may well be some savings in “selling into” an EEM/market-making system, it is doubtful that this saving aggregates 20%-plus. So clearly bidders are accepting lower margins and hoping to make it up on expanded – or retained – volume and by, in turn, squeezing out weaker suppliers and their overheads. To the extent that this occurs, supplier margins will certainly be lower, and they will have to engage in an ever-tougher battle to control their supply-chains and costs and to build market shares, forcing out the weakest. On a global scale, this could lead to significant profit reductions, particularly among weaker competitors, at least until the number of competitors is reduced to the point where the power balance shifts in their direction. There is fear that many suppliers may be hurt in this process.

Similarly, as EEM systems of large manufacturers and the industry market-making systems take hold on the “sell” side, customers may well find themselves with more offers and more choice than in the past. Sellers may well find that these systems have the potential to put pressure on them, in turn, to cut prices. They will, of course, have some savings on sales and service costs to help defray price reductions. But as pressure mounts, they too may find themselves needing to cut margins, increase volumes, and push weaker competitors over the brink. As this process reverberates through the entire business system, it is possible to visualize a very difficult future, particularly for firms that lag in seeing these trends, fail to build good EEM systems and participate in the best B2B marketplaces, and fail to get their costs down or find other sources of competitive advantage.

Competing In A B2B Market-Making World

In this new world of B2B exchanges, competition will take new forms, many of them IT/e-business system-based. To keep total costs down, firms will have to cut sales and service activities and substitute more efficient Web-based, transparent solutions. Ability to do so will become a new key factor for success in many industries.

In addition, firms will have to learn to “sell to systems” rather than people. As rule-based purchasing systems result in the setting of more and more precise specifications and to more transparent buying decisions, it may become ever more difficult for a seller to gain “credit” – in the form of extra margin or loyalty – for a better product or extra feature. To the extent that standardization increases, “switching costs” may come down and sellers may have fewer tools for holding on to even their best customers. On

the “buy” side, there is fear that over-reliance on standard inputs may well result in overly standardized outputs with too little product differentiation.

From the point of view of classical economic theory, all of these results may appear rather positive. Prices come down, waste is squeezed out, and assets are re-allocated to better, more profitable investments. But the path to these benefits may be a very difficult one. Moreover, it flies in the face of the longer term reality that, in advanced economies like the US and Japan, there has been major longer term movement toward taking advantage of improved relations with a smaller number of customers. By doing so, firms create improvements in JIT processes, customized production, and better logistics, and expand variety, even at the expense of giving up some cost reduction potential. So it challenges significant trends, in the US and Japan, towards working ever more closely with an ever smaller number of key suppliers to pro-actively produce better, more customized end-products. To the extent that an EEM system reduces friction and increases cooperation, it will fit this pattern well. But to the extent that it creates a more highly price-competitive B2B marketplace, cooperation could be endangered, as could the basic notion of the customer-supplier relationship as a key business asset.

Conflict Among E-marketplaces

As B2B marketplaces develop, they are also coming into increasing conflict with each other as well as with traditional channels. Management of these channels conflicts will be a major management challenge in the decade ahead. For example, on the “buy” side, a manufacturer with its own proprietary EEM system – SCM to CRM – may also seek to purchase through FreeMarkets, Vertical Net, Plastics Net and or any of several other exchanges. And its expert purchasing agents may have special, human, personal relationships with some sellers. How these will be coordinated is not yet at all clear.

Similarly, on the “sell” side, this manufacturer may have its own expert sales and services forces, experienced and effective distributors, a proprietary on-line customer-specific transaction system, and it may be a supplier to several on-line B2B marketplaces. So a single customer could seek a bid and a delivery date on a product through any – or all – of several distinct channels. How this manufacturer will ensure that each customer gets the right information and prices – no matter where or how they come into the system – is a major challenge.

It is easy to propose that each buyer will quickly learn to gravitate to the appropriate channel. But in a world of “blind” transparent B2B electronic marketplaces, that may not be a stable answer. To achieve large savings, purchasers may want to try all avenues – and see where they get the best deals – even if that risks stable relationships that are the base for trust. Without trust, markets could become rather frightening global free-for-all, with fluctuating prices and cutthroat business norms rather than the cooperative “c-business” systems some proponents have projected as the future outcome of B2B exchange participation.

In Japan, in particular, where close organizational relationships have been so important to business practice, it is particularly unclear how this set of issues will be resolved. In his presentation, Mr. Naruto described how Fujitsu, Canon and others are moving ahead with their EEM systems. These systems are playing a significant role in increasing the ranges of suppliers and customers that do business with each other – speeding the breakdown of the *keiretsu* system – a result that some say the *keiretsu* themselves may not any longer entirely oppose. Still, this will mean a major discontinuity in Japanese business practice and may take much longer than is currently anticipated, if it occurs altogether.

Financial Services

Financial Services appears to be the other most promising area for rapid expansion of both B2B and B2C activity. By nature these services are data intensive and many of the transactions themselves are easy to make via electronic media. In fact, most of the transactions are already made electronically – so what we are really talking about is “turning internal systems outward” for use by the public or for B2B transactions. To the extent that these services can be reduced to commodity operations – and it appears

that many will be seen that way by sizeable buyer segments – they are ideal candidates for transparent marketplace exchange.

The enormous success of on-line stock trading in generating incremental stock market transaction volume is a clear indicator of this potential. While the costs of creating early entry positions in these sectors can be significant, there appears to be the value potential to offset these costs – at least for market leaders – unless prices decline so far that there is no margin left, at any volume level. There is a credible threat that this may be the case, particularly as new firms entering these markets are incurring large cash flow losses to attract customer bases. These early losses may become so astronomic that they cannot be overcome. This is of particular concern as laggard traditional sellers are finally taking their existing client bases and moving them into the electronic, low-fee segment. As they do so – given the immense reluctance of consumers, if not businesses, to change their service providers – these traditional brokers may well control so much volume that most newcomers are left significantly short of their volume goals.

This possibility becomes ever more likely as new firms, or software suppliers with proven e-business systems, make these systems available at prices well below the cost of building custom operations. In fact, it is already apparent that for some early entrants, their potential for profit will lie more surely in their roles as ASPs – application service providers – than as proprietary systems. This pattern is even more likely to prevail in Japan than the US, as the high cost of building too many competing systems is more evident there than in the larger US market and more evident today than in the past. Moreover, many more e-business providers and US software firms are now willing to make their systems available for translation and customization. This option will make a lot of sense where the business rules that lie at the core of these systems are sufficiently similar to permit the re-use of basic architectures across geographic boundaries.

Extent of the Opportunity

To date, the largest share of on-line financial service transactions have been in the stock-trading sector. But there are many other fast-growing applications providing access to near-commodity services such as home mortgages, smaller commercial real estate loans, credit card applications, term life insurance issuance, auto insurance and other property and casualty coverage. Beyond these, the most obvious targets for disintermediation are retail banking as a whole, investment management, ticket issuance, travel, and bill presentment/payment. The entire health insurance industry – both the purchase of plans and the administration of the entire system – including payments and reimbursements as well as the maintenance of health information records – is clearly worth the strong attention it is receiving.

Each of these markets is very large, near commodity, and operates with known, already electronically encoded business rules. In each case, there is plenty of incentive for firms to lead the charge, and others in the industry will have to respond. In fact, in many instances, incumbents are training the public – B2B as well as B2C – for this electronic future by implementing electronic ATMs, on-line account updates, electronic bill-paying, and other similar services. E-business Web-sites are great “training machines.” The public has absorbed a great deal of confidence in electronic transactions from its use to ATMs. Most people have had some experience with automatic deposit of paychecks, on-line tax-filing and the ability to access and transact at many bank accounts, credit card accounts, retailer credit accounts, and frequent flier programs. As the public learns to use these accounts as a standard way to do business, it becomes increasingly easier to teach them the few incremental skills required to make modestly more complex “compare-and-purchase” on-line transactions.

Several additional forces are also teaching these skills. E-bay, Amazon.com, Yahoo, AOL and many other already ubiquitous on-line sites have created a very large cadre of Web-savvy consumers – and managers. Over time, they become increasingly less reluctant to learn to use new Web-based services that offer significant ease-of-use, time or cost savings, and freedom from concern about either system failure or security. As this trend swells, it is in fact already becoming difficult, in some sectors at least,

to get as good service off-line as on. Firms – even government offices – are already cutting back services and hours and referring users to on-line information or services, as Web-based transactions reduce customer flow to their traditional, office-based operations. This trend appears to be significantly more advanced in the US than elsewhere, but the favorable economics of electronic self-service in information rich transactions is so compelling that it is sure to extend rapidly to Japan and globally.

As Mr. Sakamoto detailed in his presentation, Bank of Tokyo-Mitsubishi, is wasting no time in leapfrogging over various approaches and technologies to implement an on-line banking system that is every bit as advanced and broad-based as anything available in the US. In fact, in terms of modes of access, it is probably considerably ahead of US practice, reflecting Japan's lead in cell-phone utilization and technology. It seems highly likely that Japan will lead in other applications and – with its proven distribution systems skills – may prove an innovator, particularly in wireless applications.

Re-Engineering Business/Industry Processes

As Mr. Nawa described in his presentation, the Tokyo office of McKinsey & Company has taken a significant role in shaping that firm's strategic practice in e-business. Mr. Nawa focused on how – in addition to advising its clients on how best to compete at the firm level in the current environment – it is also advising them on the potential for moving their sights up to the level of industry. In this way they can take advantage of major new e-business potential. Across many industries, the McKinsey team defined similar, but different, e-business opportunities in each industry studied. This finding is very much in line with the AETNA Insurance Company experience reported by Mr. Watson and Mr. Sakamoto's report on the Bank of Tokyo-Mitsubishi experience, as well as Mr. Itoh's description of how SYNEX is competing to hold share in its new competitive environment. In every case, changing how the industry operates revealed significant opportunities to capture more value-added services and "change the game."

Dr. Isaacson similarly reported on how a US firm, PTC, has taken this approach to move up from being just a CAD equipment supplier to becoming an SCM/Strategy provider. To make these approaches work, firms must study their markets, taking an expanded "life-cycle" view of customer needs. In this process, at the business re-engineering level, these may be opportunity to completely re-invent manufacturing processes and/or sales/service processes to eliminate unnecessary labor, inventory and channels. This can involve selling directly on-line or providing means for distributors, retailers, or new channels to make use of shared processes in any part of the value chain. Dell and Gateway, for example, have proven that it can be cheaper, faster, better to "produce" computers to order than to hold assembled machines in stock where they depreciate daily and risk becoming un-sellable altogether within a few weeks.

Rule-Based Systems

Bigger gains from re-engineering come from still bolder moves that define the business. Dell, Gateway and others do much more than provide computers. They also act as their customers' agents for managing their PC logistics. In this agent role, they provide "proprietary" Web-pages to inform customers and employees about the PC choices selected for them by their firms, and offer guidance in configuring these machines. They provide information on any required accessories or features such as Ethernet cards or special modems and deliver PCs pre-loaded with the precise collection of software – ready-to-use – selected by the employer.

Obviously, such strategic leaps are not easy or quick to make. And they incur costs and risks. But one of the great advantages of e-business re-engineering is that it can put in place rule-based tools to deliver results much cheaper, faster, and more effectively than was previously conceivable. In this way, Dell and Gateway gain access to the incremental cash flow available from these management tasks. Using rule-based systems, they can carry out these tasks more efficiently than their customers, and make a profit, while reducing total cost and improving service for these customers.

In the AELAN case cited by Mr. Watson, AETNA will eventually serve not only the insurance needs of its clients, but may also provide a wide variety of other brokerage activities – becoming their full-scale financial advisor and financial services "consultant". By working through employers – B2E – AELAN hopes to gain rapid access, at low acquisition cost, to very large numbers of employee-customers and to provide them with financial services that mesh tightly with the pension and savings plans of their employers. In this way, they will be providing a potentially very efficient means of serving these needs, benefiting both employee and employer, and earning a good profit for AELAN.

The "life-cycle" approach that drives these moves requires a real change of attitude and perspective on the part of most firms. But this change of attitude is much easier to implement in this new world of e-business – where new management entities like dot-com subsidiaries and VBS are feasible and natural. To get maximum benefit from re-engineering it may be useful or even necessary to take an industry approach, rather than a firm-based approach – as described by Mr. Nawa in his presentation of McKinsey's work for the automobile industry. To the extent that the auto industry can extend its scope to include finance, services, re-sale, and related travel services, it will access many new profit opportunities.

Effective industry level change may well require agreement – or at least parallel efforts – among the major players, to effectively re-define this industry. Possibly one firm could go it alone – and see whether others follow. But the task of educating consumers – as well as business partners – to view their automobiles as "life-cycle" goods may be a difficult one if just one firm must generate all the effort. If several firms take parallel or concerted actions, change – if consumers want it – may come much more rapidly and at lower total cost. It remains to be seen how successfully – and how swiftly – these "Industry Process Re-Engineering" efforts will be implemented. But where they are successful, they will make major differences in how competition will be carried on in the future, as GM, Ford, Toyota and others become life-cycle suppliers of household and fleet transportation for families and businesses. As Mr. Nawa indicated, the same logic may well be equally applicable to re-defining several other industries.

The Power of VBS Partnerships

As noted above, VBSs provide a tremendous set of advantages in building e-business systems. When a firm such as AETNA determines that, for strategic reasons, it should create a new entity like AELAN in order to move up to a broader industry definition of its potential, it is able to move more rapidly than ever before to do so. This reflects the fact that it can take advantage of the VBS approach to draw on the e-business tools – the pieces and parts – provided by dozens of e-business systems suppliers. Very likely AETNA will use such "pieces and parts" of existing "product delivery systems" created by firms that have invested in building such systems for their own use, or by a specialized software provider.

To be sure, a great deal of customization will be required to make the whole system "look and feel" like an AELAN product or services. But AELAN does not have to do the whole job alone. In fact, as Mr. Watson pointed out, AETNA is partnering with a software systems integration firm, in this case a division of Intel, to create this integration. Relying on open-standards and open interfaces, developers can create large complex, effective, stable systems simply by joining "pieces and parts" from many suppliers.

This process is well illustrated by much simpler consumer applications. As Professor Isaacson described, anyone can utilize the "toolbox" provided by an ISP to rapidly develop an on-line retail store. Hundreds of thousands of Yahoo users have done so, and some of these stores are quite sophisticated. As sellers grow beyond these basic "toolkits," they can integrate into their sites more complex feature sets from other suppliers. Thus, a new firm wishing to do business on-line very fast can turn to any one of several Web-site creation tools and back it up with various on-line back-end logistics and front-end customer management tools such as WebOnTap. Or the firm can develop its own on-line "front-end" and turn to firms like OrderTrust for back-end fulfillment, billing and related

services. OrderTrust can also offer to supply products from an on-line collection of more than 400 suppliers with over 500,000 SKUs. Using such specialized VBS resources, virtual retail e-business can be up and running very quickly.

Other tools serve a wide variety of new e-businesses – permitting them to move on-line fast and effectively. Site usage statistics packages, e-mail marketing packages and shopping cart packages are just a few of the available virtual tools that any site developer can “plug and play” to rapidly create a highly featured new site. In the same way, a site can readily “affiliate” with other sites and derive income from referral fees simply by filing on-line applications with those sites' affiliate programs. If a site aggregates enough user traffic, these referral fees can become significant sources of revenue. BizRate.com for example, has taken a potentially profitable approach to earning such fees by rating sites and driving customers to them in ingenious ways. Similarly TrailBreaker.com offers free, expert Web-shopping advice and earns affiliate fees for driving traffic to the recommended sites. While such programs risk losing visitors too quickly to other sites, even this problem is being solved as referral software evolves to display the visited site within a frame – keeping the customer and earning referral fees at the same time. For many new dot-coms, joining and offering such affiliate programs is the fastest and cheapest way to build visitor volume and income.

Standards-setting bodies are advancing rapidly in creating XML and wireless XML standards – like the e-PC standard for electronic barcodes that Professor Siu described. As these standards are adopted, they will define the evolving playing field – and will shape the development of its utilization. Firms compete hard to play a role in setting standards that favor their hardware and/or software. They then compete to take early advantage of these new standards to build traffic and lock-in users. Skill in playing these games is a pre-requisite to on-line success and is an important factor in making experienced teams so valuable. In this VBS environment, inventors can – and do – avidly seek the kinds of “Big League” winners that Mr. Marra defined in his presentation. VCs appreciate the experienced teams that can implement in this challenging VBS environment.

Opportunity for the "Arms Merchants"

Because VBS systems rely on relatively few, agreed, open standards, to create rapid integration, toolmakers that provide early, workable products can become "Big League" players. With open interfaces, it becomes possible to design systems to rely on other systems and sub-systems, and to leverage the potential of these combinations. As a result, the market is giving very high valuations to leading "arms merchants" – the major suppliers of the tools that make Web-based VBSs work.

Professor Isaacson cited a number of specialized suppliers of e-business tools – hardware, software and services. In many cases it is these businesses – rather than the firms that use their tools – that are turning out to be the most profitable early “winners” in the e-business sector, as the capital markets place very high values on leaders in certain emerging sectors. These include large ISPs – Internet service providers – makers of Internet components and hardware, Internet system software innovators, Web-site builders, and more recently ASPs. The high valuations accorded leaders in these businesses reflect at least two compelling logic streams. First, the Internet *per se* is certain to continue to grow apace, demanding geometrically more capacity. So firms that play a major role in meeting this need have tremendous growth potential – particularly firms that have innovative, proprietary tools that speed or improve the quality of Internet/Intranet services. Second, the need for Web-site building tools and services expands apace. So "Big League" firms in both of these sectors will continue to do very well. The NTT purchase of VERIO – a US Web-hosting firm – for \$6 billion was the first major acquisition of this kind by a Japanese firm and is an indicator of the global nature of this “Big League” market. In recent months, we have also seen a number of instances where firms with Web-enhancing technologies have been capitalized at billions of dollars before making the first significant sales of their products.

On the Web-site building side, it is clear that businesses and other organizations will continue to geometrically expand their e-business sites in terms of numbers, functionality, and depth of content. As

they do so, their need for even more highly featured, user-friendly, high-speed software and services also builds apace. So firms like Vignette, offering such products or such services, can do very well indeed in the marketplace – and the stock market. Among site-builders, firms with high capitalizations include a number of specialized consulting firms such as Razorfish and Sapient. These firms leverage their experience to provide clients with strategic advice as well as technical follow-through in both the design and the implementation of their Web-based systems, often using VBS techniques. Traditionally capital markets have been reluctant to place high market caps on consulting firms because “all the assets go home at night.” But the stock market appears to be making an exception for these firms. This is the case even though these firms’ best people are often held in place by stock option plans that – when these options vest – may make it very lucrative for key personnel to “cash in their chips” and move on to other pursuits.

One reason for positive stock market reaction to these firms is that they appear to have proprietary approaches to site-building and they have proven their ability to expand rapidly by acquiring – generally for equity – smaller firms that can rapidly adopt their approaches. The stock market is highly rewarding this acquisition and integration capability – as it did a couple of years ago for systems integrators when they were in favor. But the more recent decline in value of systems integrators serves as a warning as to just how fickle the stock market can be.

As for the software and hardware providers, the “Big League” candidates have excellent technologies and high margins on incremental sales. They are growing fast and the market is fully rewarding their potential. Good examples include Oracle, SUN and EMC on the hardware side, some of the large and/or better-managed ISPs, DoubleClick, Vignette, and other information managers/distributors, and B2B sellers like Ariba. The “big winner” potential seen by capital markets in each of these sectors is a direct reflection of the expected rapid continuing growth of e-business open standards, and the VBS environment. When all these factors come together right, an e-business tool or service that becomes a “standard” can look forward to potentially very large income streams – particularly if it can price based on volume or make numerous “generic” sales and charge a significant fee to each user firm – over the long term. A few of these firms will probably justify these expectations.

The Issue of Patents

Some of these firms are also highly valued because they hold patents on some very basic Web processes – such as Amazon's much-publicized patent on “one-click” shopping. These patents could extract significant royalty income and are therefore one source of high potential value for these firms. Some tool suppliers – particularly in the US – have applied for patents on many aspects of e-business processes that could become such “standards.” If they do, these broad patents could become immense revenue generators. But collecting significant royalty income from such patents also flies in the face of the “open” attitude of the Internet.

It remains to be seen whether US courts in particular will uphold such patents and whether e-business firms respond by paying significant licensing fees – or whether they find ways to circumvent such patents by inventing around them – and whether courts in other places cooperate in creating global patent monopolies. In any event, it is the hope for such monopoly or “first mover” power that has excited capital markets to value some tool and services providers at very high multiples. To date, there has been less e-business patent origination in Japan, although this may change as wireless and other areas of Japanese leadership develop.

Potential for US Hegemony

One of the fears that have been expressed concerns the early US lead in e-business VBS development. Given this lead, there is fear that US firms may gain an impregnable position in global e-business. This fear reflects a number of realities besides the early start of many e-business formats in the US market.

US e-commerce entrepreneurs – young and experienced – are living every day in communities that are at the vortex of e-business activity. Whether in Palo Alto, Boston, New York, San Francisco, Chicago, or Washington DC, these entrepreneurs find it easy to encounter large numbers of like-minded collaborators, with similar backgrounds, and broad knowledge of the e-business landscape in their specialty. Be it portal development, B2C retailing, B2B systems, market-making, financial services, or Web-enhancing tools, they can readily come together to create teams that share enough background in common to become rapidly effective in developing new Web-based systems that will work well to get a task done. In addition, the US specialized press is full of reports on the software products, new e-business teams and firms, financing and regulatory issues that could be useful to these teams. So they live in a “hot-house” atmosphere in which all the elements of the environment are fine-tuned to provide super-rapid progress from concept to program to angel/VC financing to IPO.

While there are, of course, also isolated US teams and individuals in other communities that can create e-business systems without this intensive face-to-face contact or immersion, it should be noted that, to a certain extent, any US team or individual is today readily part of the “hot-house” effect. They come from the same schools and programming/business environments, read the same press, see the same successes and failures and share many business concepts and values.

The Impact of Distance

It is not yet clear to what extent distance from this “hot-house” environment slows down or limits e-business opportunity elsewhere. A very large share of Web-related software – and hardware – originates in the US. Most of the early leading e-business success models were US in origin. And US businesses have played a very large – if not controlling – role in virtually all the electronic technologies and standards that have contributed to rapid Web development.

To be sure, enormous numbers of Japanese, European and other software engineers and business people have “kept up to date” with US developments – and contributed to them. Many have studied and worked in the US and maintain close ties to US friends, collaborators and firms. Still, there has been concern expressed that it will be very difficult – even in markets as large and as important as Japan – to find individuals and form teams that are as fully knowledgeable, experienced and adept as teams one can form in the US. Once formed, there is equally concern that these teams will not have the easy access to up-to-the-minute developments that characterizes the relatively open US e-business community. Firms in other markets have to make up for this environmental issue in other ways – building on their local strengths where this is possible.

The Issue of Entrepreneurship

Based on what were heard from Mr. Marra and Mr. Shaoul, it is much harder to assemble a good team, and especially an experienced good team, in Japan than in the US today. If this does not continue to change, it may well become a significant barrier to Japan taking its full role as a source of e-business innovation. In assessing the likelihood of this change occurring, it is important to take account of both the risks and rewards available to e-business entrepreneurs in Japan and the US. In the US, as discussed below, it is much easier for start-up teams to find venture financing, and risks to careers are much lower. Thus, even as we see some e-businesses beginning to fail, we also see the huge demand for recycling “experienced” e-business managers. So, up to now at least, being part of a US team that has made a good try for success, but failed, is seen as a positive achievement and the next-to-best credential for becoming a key team member for the next related e-business start-up. “Practice makes perfect!” So long as VCs and teams hold that belief, the real risks associated with e-business failure in the US appear to be quite low – while the value of success – becoming a young multi-millionaire – is very high.

E-business Stress

None-the-less, there is already talk in the US and around the world about the high stress, and the hard work, that characterize even the most successful e-business start-up. There are increasing numbers of

articles about “burn-out” of managers not yet 30 years old. In today’s climate of stock market pullback, with stock options sometimes falling precipitously in value or to no value at all, not surprisingly, even in the US, it may not be as possible to recruit great, experienced teams as it has been. At the same time, demand for team members continues to grow fast. Even in the US, it is not easy – or cheap – to find the team members required to get angel or VC finance. If they are available, the “experienced” team members, in particular, expect very high salaries and large option packages to attract them.

E-Business as a “Training Machine”

This problem is partially offset to the extent that E-business itself can be viewed as a significant “training machine” for e-business technologists and entrepreneurs – as well as for users. For knowledgeable software engineers and e-business entrepreneurs, much about the operation and technology of an e-business site is essentially “transparent” and obvious. In addition, software and hardware vendors offer elaborate on-line tutorials for the use of many of their products. Many e-commerce sites, for example, offer elaborate tutorials on how to use them effectively. Thus, to an unprecedented extent, e-business has developed norms that make it a huge “open” training machine for educating users – and potential competitors. This helps offset any advantage US firms may hold based on early entry.

Naturally an “outsider” look will not divulge everything. In particular, it will not necessarily divulge much about many of the critical “business rules” embodied in the site. These rules can contain deep business knowledge and give the incumbent an important business edge – and that is only fair. But a similar firm in another market – like Japan – that could otherwise be at a major disadvantage, can substitute its own business rules and its own experience – applied to the core software concept – to catch up fast. Moreover many of the tool providers serving the e-business market have done part or all of the development work for current market leaders and now make available generic or custom software that also permits rapidly catching up with leaders.

Moreover, a few consulting firms in Japan now include US as well as Japanese team members. In his presentation, Mr. Shaoul – an MIT trained US software engineer who learned Japanese and participated in the MIT Japan Program – explained how Digital Garage – founded by such a team – bridges the inter-country gap. As a result, that firm was ideally positional to bring US/Western software and e-business approaches to Japan and to work effectively with Japanese businesses. Today it has grown to employ mainly a Japanese workforce. But it is an interesting example of how Japanese firms will increasingly become trans-national as they learn to work effectively to bridge global markets.

So, even if a US competitor has certain advantages, the cards are not all stacked against firms in other markets including Japan. Moreover, in businesses where local knowledge, local relationships, and local business rules are more important than technology, there is no reason why local firms should not “win.” This hypothesis is being tested in Japan now, as local, partner, and foreign e-businesses compete in key sectors of emerging e-businesses.

Funding E-businesses

Many of the earliest e-businesses were started with very limited capitalization. But with the development of today's complex e-business world, the cost of building successful e-ventures has gone up immensely. There are still occasional successful “low budget” e-launches, but they are far less common. The US and Japan have taken essentially opposite approaches to funding these start-ups, reflecting core differences between these economies and cultures.

US-Japan Differences

In the US – which prides itself on “entrepreneurialism” – most of the early development was “self-funded” by the entrepreneur, the team, family and friends. VCs – venture capital/investment banking firms – then provided the cash needed for growth once the business had a proven concept and a track

record of sales growth. As e-business mania took hold, these VCs came in earlier and with larger fundings – taking what for them was an unprecedented level of risk in supporting these nascent firms and growing with them.

As Mr. Riordan pointed out in his presentation, by 1999, US VCs were placing upwards of \$20 billion annually into IT-related ventures – more, in fact, than such firms raised in IPOs. While this represented just a small fraction of the US \$800 billion market for merger and acquisition activity, it was a sum unprecedented in US VC investment history.

In Japan, by way of contrast, just \$600 million was raised as IT-related VC investment – and \$2.7 billion for IPOs. Again, small compared to \$42 billion of Japan's 1999 M&A activity, and just about 3% of the US VC sum. So Japan appears to lag the US about 30 to 1 in VC funding of IT-related investments. These figures reflect several factors that differentiate the US and Japanese funding approaches. As noted above, in Japan the large, traditional companies have entered the e-business space earlier and have tended to be the initiators of many types of e-businesses. Thus there has not been the same need for VC financing as these firms have ready access to debt and equity at low Japanese market rates.

The tendency for traditional Japanese firms to take leading roles in this market reflects their relatively large positions in virtually all aspects of Japanese business activity. Moreover, once an e-business model had been developed elsewhere, its originators looked to traditional firms as the best potential partners for entering the Japanese market. Traditionally outsiders had entered the Japanese market this way and e-business presented no particular reason for looking elsewhere. So the VC role in Japan has not really had full opportunity to flourish as so few uniquely Japanese new e-business models have as yet been developed and funded.

Now, however, as Japan opens its doors to outside investment firms – and as they seek to swarm into Japan – their efforts, in competition with Japanese investment firms, may well create a new set of future Japanese norms. Mr. Marra reported, for example, that his fledgling global e-business – BOOOK.com – had successfully arranged \$8 million of VC funding in Japan. As Japan produces more local “Big League” winners in the e-commerce segment – like the Oracle Japan, Itochu Techno-Science and Rakuten examples cited by Mr. Hiraj – it might well become easier to get such funding in Japan. Despite the relatively low numbers of Japanese IPOs to date, Mr. Riordan presented a selected list of 33 such stocks that Broadview is tracking as the “BNEIT” – Broadview New Economy IT Index – a measure of performance that is up 278% over January 1999, despite recent fallbacks in some issues. So there is healthy IPO investment opportunity in Japan.

The VC Approach

In their presentations, our speakers agreed on the broad outlines of the approach Japanese VC players are taking to the market. As Mr. Riordan noted, until quite recently, Japanese VCs tended to take small “portfolio” positions in many ventures, focus on firms with track records, and take a “hands off” role in management. But these tendencies are now moving more toward the evolving US model of larger stakes in fewer deals and very active involvement in the selection of top management and in setting strategy. Thus, in many ways their approaches are no longer very different in Japan than in the US – even if the market is newer and less developed. But large traditional businesses do tend to be much more significant investors in VC funds in Japan than in the US.

Mr. Marra and Mr. Hiraj agreed that venture firms are now making ever larger “bets” and seeking ever larger numeric returns to justify this risk. In Japan, as in the US, they are seeking projects with very large potential. They want ventures that offer great concepts and the possibility of leadership – #1 or #2 positions – in very large markets, with high gross margins and the potential for high positive cash flow. They also insist on great teams – including experienced e-business managers – who they believe can

implement these plans – perhaps an even more critical element than the business concept, as Mr. Marra detailed.

If there are market-to-market differences in their approaches, they lie more in focus than approach. The US market has advanced so fast that many of the more obvious market positions are already taken. In Japan, some key potentials have not yet been spoken for, so the process of filling in these gaps is still underway. Beyond this effort, however, there appears to be confidence that Japan may play the leading role in the world in the next great opportunity – wireless. Here Japan has a distinct hardware, software and experience lead upon which it can capitalize to play a more important global role. As this extends to making full use of the "ePC" types of information systems Professor Siu described, Japan's ability to create tight supplier/customer integration and JIT systems may well place it in a unique position to become a global e-business leader. Such success would have major carry-over effects in related sectors and could influence Japan's role in the promising effort at IPR – industry process re-engineering – described by Mr. Nawa.

Organization for E-business

As Mr. Sakamoto pointed out, it is often important to create a special organization to implement e-business activities in a traditional firm. This organization may be a business unit, a professional staff unit, a division, an even a separate entity – depending upon the demands of the situation. In the case of BOT-Mitsubishi, this has meant creating a business unit reporting directly to top management – yet interacting horizontally with all the other business units. This arrangement is anticipated to provide both focus and attention and to permit it to exert influence on the other parts of the business as they develop e-business channels.

In the US, many firms are similarly finding that they cannot make progress on e-business until they create a dedicated unit responsible to top management and entirely focused on implementation. E-business is too new – and too threatening to existing channels and business units – to be treated merely as an add-on. Moreover, getting rapidly underway with e-commerce often requires bringing in experienced new people – who are very technologically oriented and sophisticated – but who may not know very much about the industry or its norms. So it makes sense to "marry" them with a few flexible industry experts for a time, let them develop industry know-how – rather than initially exposing them to the entire organization – until the e-business group becomes a real "team". Then it may be possible to re-integrate it, but in a more advanced state than would have been possible or appropriate initially.

The Role of Incubators

In Japan – as in the US – incubators are rapidly becoming a key means for developing new e-businesses. The earliest e-business incubators tended to be somewhat random collections of business concepts brought together by the availability of modest early-stage investment and the offer of common space and mentoring. SoftBank is reputed to have already invested in and mentored a very large number of e-businesses – over 100 – and has been the leading pioneer in that effort in Japan. But many other traditional Japanese businesses have made e-business investments and some have done so in an incubator-style setting – with funding, management assistance, and mentoring available to them.

In the US, most of the initial incubator-style mentoring was VC-based. CMGI is perhaps the leader in this regard. But now, in addition to the VCs, many traditional firms have created e-commerce incubators to grow in-house ideas of merit. Some have done so through venture capital subsidiaries – including pension plan-owned subsidiaries. Similarly a number of the e-commerce leaders themselves – Yahoo, Lycos, and others – have created their own e-commerce incubators, often to focus on bringing along concepts that will integrate well with their dominant business. Lycos, for example, explicitly states that it is only interested in incubating businesses that have the potential to become part of the "Lycos Network". So it is possible that over time, US pattern of investment in e-commerce will move

from the independence of the VCs to a pattern more similar to that of Japan, with more old-line firms among the major equity-holders in many major e-businesses.

Conclusions

The main purpose of this meeting was to share experiences and analyses as a first step toward learning from comparison of e-business experience to date in these two key markets. There was a great deal of sharing and agreement on fundamental patterns. Japan is building on what started in the US. But it is certainly not just copying US experience. Rather it is developing norms and expertise of its own.

In Japan, the entire business system is more rooted in traditional large businesses and more of the new developments tend to originate there. It may take longer, but when they do emerge, they have the support – in people and political linkages and in funding – to be very likely to succeed. This is turning out to be as true for e-business ventures as it has been for other forms of innovation.

Reflecting this, ownership and entrepreneurship patterns are also very different. As Mr. Marra pointed out, there is the issue of whether the “best and brightest” young Japanese will take the risk of becoming e-business pioneers and entrepreneurs. Or will the large majority of them continue to insist on moving into the traditional *keiretsu* dominated major companies, making it difficult to create enough great teams?

There are also a number of trends and issues that will take time to play out – and bear watching. The most prominent of these include:

- How, and to what extent, Japan will diverge from the US in its future development of e-business focus.
- How B2B channels conflicts will be resolved.
- How Japanese e-businesses will take advantage of Japan’s unique leadership position in wireless technology and customer relationship management.
- How large Japanese firms play out their roles in e-business – through investments, new divisions or subsidiaries, internal operations and organizations.
- How to effectively manage these new businesses – internal and “pure play” – for maximum success in the unique managerial environments of Japan and the US.
- Whether e-business investment continues at a fast enough pace – and realizes potential cost savings great enough – to make it a major factor in each country’s economic expansion.
- How Japanese and global VCs will provide the angel and VC finance needed to fund faster entrepreneurial growth in Japan and the US.

Answers to such questions will be critical to fulfilling the promise of e-business in the US and Japan. But only time – and continued dialogue – will produce them.

MIT JAPAN

Letter of Invitation, Richard E. Samuels, Ford International Professor of Political Science, MIT

June 8, 2000

Greetings. Welcome to the MIT Japan Program meeting, "The Frontiers of E-business: US and Japanese Visions of the Future".

Today e-business is a central concern of managers everywhere. It is the focus of much of what we read in the business and general press, it shakes the stock markets of the world, and it is revolutionizing communication and ultimately strategy. E-business is still too new for there to be established success models and we are all seeking answers to our web-strategy concerns.



The US and Japan are the two leading players in the global economy and in the development of global e-business concepts. Much is written about what is happening in the US, but far less is known about trends, developments and innovations in Japan. So it is fitting that this MIT event brings together Japanese and US experts to explore this global phenomenon.

In today's meeting, Japanese and American e-business leaders will present their views on the market and market opportunity, explain their success strategies, and explore the impact and role of venture capital on e-business and the entrepreneurial climate in Japan. A special presentation by Professor Siu of the MIT d'Arbeloff Lab for Information Systems and Technology will focus on emerging opportunities for US and Japanese innovators in the fast moving arena of wireless technology.

I hope you each will take away important information from this meeting that will enable you to visualize opportunities for the future.

I am delighted to welcome you to the conference.

Richard J. Samuels
Ford International Professor of Political Science
Director, MIT Japan Program
Massachusetts Institute of Technology

Welcome, Patricia E. Gercik, Managing Director, MIT Japan Program

As Managing Director of the MIT Japan Program and the MIT International Science and Technology Initiatives (MISTI), I want to welcome you today to this important meeting "The Frontiers of E-Commerce – US and Japanese Visions of the Future." I would like to thank Morgan Stanley for also helping to make this meeting possible.

The MIT Japan Program has created a generation of technologists, managers, and scientists who have been trained by MIT in Japanese studies – including two years of the language – prior to their internships in Japan. More than 500 interns have been through the Program and over half of them continue to work with Japan. Cyrus Shaoul, a former intern and founder of Digital Garage in Japan, will be a participant in today's meeting. Other MIT alumni, Robbie Feldman of Morgan Stanley Dean Witter and Koichi Sakamoto of Bank of Tokyo, will participate in today's program. We are pleased that MIT is certainly well represented here today.

In addition to preparing young MIT students in global careers, the Program also does in-house training on Japan, puts on meetings in Tokyo and at MIT on pertinent issues, and does research on US-Japan economic and business issues.

Today's meeting on e-business in Japan is of vital interest to the business community in Japan and the US. The promise of e-business to create new business paradigms and new competition in areas such as supplier relationships is critical in Japan, a country whose business is and has been determined through relationships. Today, Japanese speak of three revolutions: Meiji; 1945; and today – all revolutions that have come from the outside. E-business is certainly part of this current wave of changes and will play an enormous role in altering the Japanese business environment as Japan moves into the 21st Century. So I am delighted to welcome you today to this important meeting.

Introduction of E. Keith Henry, Patricia E. Gercik, Managing Director, MIT Japan Program

Keith Henry has been instrumental in creating this meeting. Mr. Henry is currently Program Associate at the MIT Japan Program and President and founder of Asian Strategy. He brings to this meeting an "e-depth" knowledge of Japan's business and government to both these roles. Mr. Henry has worked as a consultant at Gemini Consulting in Tokyo. He also has deep experience in the Japanese government and served as an intern to Osaka City government and was employed by the Japanese House of Representatives.

Mr. Henry's articles on Japan have appeared in *Foreign Affairs*, *The Asian Wall Street Journal*, *The Economist*, *The International Economy*, *the Nikkei Weekly* and others. He is also currently a lecturer on business strategy at Sophia University.

Introduction to the Meeting, E. Keith Henry, Program Associate, MIT Japan Program

I am delighted to welcome you to this program. Today we will talk about one of the most important changes – transformations – that have ever occurred in a modern economic system. E-business is rapidly changing virtually every aspect of business life and I am very pleased to have the opportunity to play a role in bringing you together to discuss the issues this raises.

As you know, the MIT Japan Program has sponsored a number of very important programs, dealing with the major economic, political, social and business issues facing our society. For a number of years we met to discuss the Japan-US security relationships and to assess the basis of Japan's economic miracle. Just last year we met here to talk about the implications of Japan's difficulty in regaining its economic momentum. Each of these meetings was important and useful.

But there is something different and very special about today's meeting – a kind of anticipation and variety of participation that I have not sensed before. As I called speakers to ask them to participate in this meeting, and as I spoke with many of you about attending this meeting, what I found was an immense sense of wanting to meet and to share ideas. In fact, this room sold out over a week ago – and we had to turn away almost as many people as are here today.

In this meeting we will be discussing a topic that effects everyone. Every business. Every individual. Local or global. Old line or start-up. So what this represents is a blurring – perhaps even a breaking – of old boundaries, and perhaps the start of the process of defining new patterns and new rules. In this meeting we have excellent speakers ready to "peel the onion" – layer-by-layer – to seek an understanding of important new trends in e-business. Beginning in the first session we will look at the economic impacts of e-business, on the economy as a whole and looking more deeply into the special role and position of SMEs as part of that impact. We will then move deeper into the onion to explore models of e-business success and ways that e-business technology is transforming markets.

Our luncheon speaker – Professor Siu – comes to us *en route* from MIT to Hong Kong – to speak with you about the exciting work going on at MIT in developing wireless technology for the future, working closely with many global firms including NTT-DoCoMo. In the afternoon, we will have three panels of industry experts who will explore the potentials – and realities – of B2C, B2B and VC finance of the e-business world. They will explore US-Japan similarities and differences and give us a picture of how the different visions of these economies are likely to develop. It's a very full, very exciting program. Those of you who are here with us today represent an even more diverse audience than we have had at previous meetings. I am delighted to see all of you here – Japanese and Americans, academics and practitioners, experienced managers and Internet entrepreneurs, old friends of our program and newcomers who we hope will become friends.

Before I complete this introduction, however, I would like to take this opportunity to thank our co-sponsor of this event: Morgan Stanley Dean Witter. They have been extremely helpful in introducing me to potential speakers, in giving of their own time and staff effort, and in financially supporting a portion of the cost of this meeting and the publication of a proceeding of the meeting. Each of you will be sent a copy of the proceeding as soon as it is available.

As always, the management and staff of International House of Japan have gone to great lengths to ensure that the program will go smoothly. We all greatly appreciate their wonderful support.

Most of all, I would like to express our appreciation to the speakers and session chairs who have put together the presentations that make up the bulk of this program. They are an unusually qualified group and I am very pleased to have the opportunity to present them to you – as we move ahead on our very full schedule for the day.

Synopsis of Presentations

Each of the 14 speakers provided insight into various aspects of Japanese, US and global e-business. In this section we have summarized the key ideas of each presentation and reproduced a few of the key supporting data or graphics used by the speakers. In some cases, speakers have graciously agreed to permit portions of their presentations to be made available through the MIT Japan Program Web-site, <http://web.mit.edu/mit-japan/index.html>. It is requested that the Program and the seminar, be credited for any use that may be made of these data and concepts.

Session 1. *Japan @ Internet Lift-off: New Rules for New Businesses*
Chair: Ken Okamura, Strategist, Dresdener, Kleinwort Benson

Robert Feldman, Chief Economist & Managing Director, Morgan Stanley Dean Witter

There is considerable interest today in the question of whether, or to what extent, the IT/e-business revolution will play a significant role in lifting the Japan economy back onto a path of faster growth. To shed light on this question, it is useful to focus on three key areas; evidence of micro impacts of IT/e-business, economic analysis of the potential macro impacts of IT/e-business, and consideration of the potential impacts of IT/e-business on the restructuring of Japanese enterprise that may be critical for renewed growth.

Evidence of Micro Impacts

It is useful to begin by looking at anecdotal and observed impacts such as:

- In the brokerage business, the cost of a \$1 million private equity trade has gone down from some 500,000 yen to as low as 20,000 yen – a rapid drop of over 90%.
- Job mobility is increasing. Suddenly Morgan Stanley – and other foreign firms in Japan – are finding that many more of the top graduates of Japan's leading universities are considering employment in such foreign firms. Other new graduates are forming, or seeking positions in, dot-coms.
- The NASDAQ Japan announcement attracted 3100 listing inquiries from Japanese and other Asian firms.
- The age/wage profile is changing as new technical graduates are attracting higher salaries and some older workers cannot keep up – endangering the lifetime employment system.
- Some investors in Japan are using I-Mode capabilities to trade through lower cost brokers in Australia or elsewhere in the world.
- Japanese fishermen use up to the minute reports of fish prices to determine which species of fish to pursue in real time.

These developments are just part of the evidence for the fact that the impacts of IT/e-business are very real. For Japan there are particular implications in light of Japan's evident leadership position in the application of wireless technology. Japan's prowess in inventory control and JIT management can also be a great advantage. IT also makes it easier to reverse the traditional flow of data/information from the producer to the consumer and to capitalize on Japanese firms' proven ability to listen to consumers and respond to their preferences. For Japan, these applications of IT can have greater than average effects as it is a crowded nation with the need to optimize the spatial use of inventories and other assets by substituting information for goods.

Economic Analysis of Macro Impacts

A key question for Japan is whether IT capital investment will be so strong as to offset other reductions in capital investment and to pull Japan along the road to restoring its economic health. Building on the work of Professor Shinozaki, we have determined that IT capital investment in Japan – very broadly defined – is about 25% of total capex. Thus a 20% rise in IT capex can offset a 5% decline in all other capex. That's a large number – but not overwhelming enough to overcome sharp reductions in all other sectors.

There have been some calculations of how much increase in IT capex – which is currently more productive than other aspects of the Japanese economy – is required for Japan to arrive at an optimal IT

capital stock. These calculations show that Japan's IT capex is about 30% deficient. So it needs to continue to increase rapidly to take advantage of this opportunity. Given the high rate of depreciation of IT capital stock, Japan needs about a 15% annual increase in IT capex for several years to move towards this balance. Current trends above this level are good – as they stimulate the economy – but they are hard to sustain. Thus, while many look to IT capex to save the Japanese economy, it is unlikely to be strong enough to do so.

Impacts on Restructuring

Economic analysis can also help allocate IT investment where it will do the most to contribute to effective restructuring. In Japan today, economic analysis shows that profits generally, since the early 1990s, have not been large enough to justify much more capital stock. Thus there is a need to move capital into the “right kinds” of investments. If one looks at high cost industries, which may help to determine which industries will gain the most from IT capex, and to allocate such investment towards industries in which, say, resulting labor cost reductions or other savings will be greatest. It remains to be seen whether these reallocations occur.

In the US, restructuring has been so important because it began so early. Some would date it back to the break-up of the telephone monopoly in the 1980s or even to carmakers losing control of their dealer networks in the 1950s. This has led to significant reallocation of resources in the US – the US “economic miracle”. In Japan, that has been delayed, but many see the emergence of competition for NTT as having this same impact in this and other sectors.

It is not always easy to identify e-business impacts in the economy. E-business – by its nature – is made up of connected virtual parts. So there is generally no such thing as an e-business “pure-play” or sector. Rather, the impacts are distributed across the entire virtual business system. But there are very big gains to be had – with one study indicating that in the US there could be auto industry savings of as much as \$2700 per car due to better supply chain and inventory control. Some of these savings may be smaller in Japan, where such systems integration is already more advanced, but they will be significant.

Mahendra Negi, COO & CFO, ipTrend
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I would like to talk with you today about the role of SMEs – small and medium enterprises – in the new world of e-business, and the important impact they will have on Japan's economy. At the micro level, it is critical to look at how the growth of IT/e-business will play out for small and medium-size enterprises, as these SMEs currently lag in such expenditures and therefore represent a particularly important potential source of increases in such capex. In fact, SMEs are currently somewhat less likely than larger firms to place a high percentage of their total capex in IT/e-business. This deficiency in IT capex by smaller firms represents a concurrence of several factors: Lack of cash flow to support such investments; perceived high cost of such investment; and experience with low returns on such investment in the past. But it is SMEs that will now gain the most from e-business investment, as they are the farthest behind.

SME Potential

So, looking to the future, the situation could be very different. The cost of IT/e-business installations is coming down fast and it is now becoming clear that the size of investments in Internet/e-business required to achieve above average returns is not so large as to be unaffordable by SMEs. Cost will not be as great a barrier to SME investment in IT and e-business as it was in the past when firms had to install costly hardware and software. Thus, there could be a new trend toward “Digital Democracy.”

On the Internet, small companies can become large very fast. Amazon, Yahoo, and others have grown from zero to very large size very rapidly – with limited numbers of employees. In this new situation it

will no longer be necessary for many SMEs to limit themselves to doing business principally with other members of their *Keiretsu*. Rather, they will buy and sell more widely through digital marketplaces.

This will lead to many smaller firms going well beyond EDI and joining, for example, in B2B exchanges – providing highly effective and efficient market-making – that a single small company could not provide on its own. As such exchanges develop, firms cooperating in them may well also find that they can join forces to bid on – and produce – more complex products or systems of products than any of the firms could have produced on their own. For example, we have seen a report of a small plastics firm joining with a metalworking firm to produce a wheelchair product that neither would have developed alone. This sort of activity can lead to the development of new virtual business systems that can help transform the Japanese economy.

The impact of these developments is particularly important in light of the declines in return on capital investment and labor productivity that have characterized the 1990s. Data from a recent MITI study show that SMEs that engage in joint marketing efforts with firms in their own industries – and especially those that market jointly with firms from other industries – record much faster sales growth than SMEs that market alone. Internet/e-business marketing systems can take advantage of this finding as these firms use the Internet to expand their marketing horizons to include new and more dispersed customers, and capitalize on improved electronic purchasing and outsourcing. Japanese SMEs have higher cost levels than their larger counterparts. These SMEs can use information to better target markets, improve sales and cut costs, thereby reducing this gap, particularly by better leveraging labor productivity.

Examples of Impacts

One example of the impact of B2B exchanges is the “Hit’s One World” site – with 70,000 SME members. For a low fee – about \$100 per month – this site permits member firms to receive a number of benefits. For example, they can receive discounts of as much as 30% to 40% on many office and office equipment items. They can also access information and assistance in setting up and managing their employee benefits – a task that is very difficult for SMEs. Members can also access such services as e-mail, IPO information, and various outsourcing services.

Another example is the ICHIBA/Rakuten shared “Mall” with over 2,500 very small retail sellers. This site attracts 95 million page views a month – over ½ million unique visitors – offering member sites access to much larger numbers of shoppers than they could attract on their own.

The Askul B2B Mart offers office supplies and equipment at advertised discounts of 40% and has built a membership of some 600,000 businesses. It can offer discounts because it aggregates enough demand from its members to gain access to a very broad array of catalogs of branded products at good prices. This in turn allows SMEs to purchase these products at prices more competitive with their larger rivals.

The SoftBank financial services site provides individual advice, delivered to SMEs by professionals. It offers the opportunity to purchase financial services advice for a fixed fee of as low as 500,000 yen per month (\$5,000), a much lower fee than most of them would be quoted otherwise. This advice includes use of financial planning tools, tax advice, and advice on employee benefits. This gives these firms better advice than they might otherwise receive, at lower cost, making them more competitive.

SME Internet Revolution

Based on such business models, the next revolution SME in Japan will be the Internet Revolution. As in the US – where more than 4 million businesses already have Web-sites – millions of smaller Japanese firms will set up Web-sites and will do business on the Internet. The impact of this development will be important as there are more than 5 million SMEs – defined as businesses with less than 300 employees – in Japan, including small office home office – SOHO – businesses. These firms represent some 153 trillion yen (\$1.5 trillion) of annual sales and over 10 trillion yen (\$100 million)

annually of capital expenditures. So a major increase in the IT/e-business portion of this capex would have a significant impact on the economy as a whole.

Based on 1999 data, SMEs lag behind larger businesses in the penetration of PCs (95% vs. 60%), e-mail use (80% vs. 60%) and Web-sites (70% to 25%). In fact, if SMEs were to bring their levels of IT/e-business capex up to the levels of larger firms, it would mean extra sales of over 9 million PCs (at 5 PCs per firm) and over 2.5 million home pages. One of the keys to this is the potential availability and ease of use of LINUX based appliances now coming on the scene.

Session 2. Models of Web success: Building New Business Systems
Chair: D. Eleanor Westney, Professor, MIT

Larry Isaacson, Professor, Babson College; Program Associate, MIT Japan Program

I am delighted to have the opportunity to talk with you today about one of my favorite topics – models of e-business success. E-business reminds me of the old story about the four blind men and the elephant. One approaches the elephant from the side and declares it to be like a wall. Another approaches from the rear, clasps the trunk, and declares it like a rope. Still another approaches from the front and finds it like a thick pipe. The last approaches the ear and declares it like a large leaf. All are right. Similarly, as we define e-business, there are good reasons why it seems very different depending upon how you approach it. What I would like to do today is to suggest some useful ways of looking at e-business success. As I do so, I will refer to – and show slides of – a lot of sites to illustrate some of my key points. I have posted a copy of these slides on the MIT Japan Program Web-site.

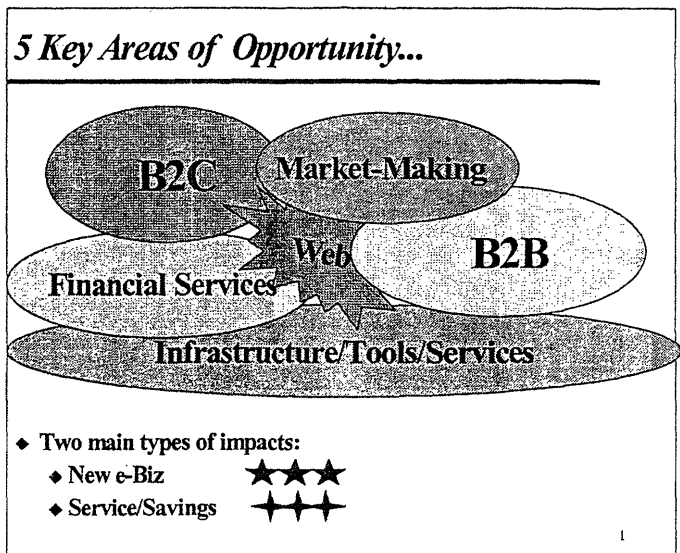
Parallel Universe

As Dr. Feldman said "The Internet re-creates every industry". It creates what I like to call "a new parallel universe" – a new business universe and a new social universe – with new rules for business success. In this new universe, many new things become instantly possible – often by taking old parts, old rules, and combining them, organizing them, virtually, in new ways. To understand these new rules for success, I find it useful to divide e-business into five parts and to look at what is happening in each of these very different areas. (See slide) When you look at the e-business world this way you find that there have been dramatic successes and failures in each of these areas, and our task today is to try to understand them and learn from them.

Recent Trends

There is no denying that e-business is hot! In fact, it may well be the hottest business news ever. But we have all been around long enough to see other hot trends – many of which have turned out to be just fads. Just after World War II there was fear that chain stores would put small retailers out of business. Then it was the mass-market discounters. Then catalog sellers. Then telemarketers. Then QVC and HSN selling over cable TV. Well, none of these trends

became dominant, but each found its place in the economy. E-business will go through this same process, but it will have enormously more impact because, I will argue, it is more basic to more



business processes than any other development since the Industrial Revolution. E-business is changing the world of business in a myriad of deep, irreversible ways that I will talk about today.

The first proof of this is the extent to which people are already using the Net. According to MediaMetrix research, in April this year, 80 million people in the US used the Internet at-home an average of 9 hours and 26 minutes each, a total of some .8 billion on-line hours. At work, 31 million users were on-line 20 hours and 6 minutes each, a total of over .6 billion on-line hours. In Japan, where MediaMetrix has just begun operations, there were more than 14 million at home users 6.5 million at-work users in April – about 1/5 the US levels. And it's just beginning. With broadband and wireless, the sky's the limit. This represents what is probably the largest change in human behavior, in such a short time, in the history of the world.

Stock Market Capitalization

So it's not surprising that the stock market has responded and over-responded – up and down – to every early piece of evidence of success or failure in e-business. Let me cite just a few recent examples: CMGI – which represents the market because it is a basket of dot-coms – has been as high as \$163.50 and as low as \$33.12 in just the past year. It was valued at a market cap of \$17.8 billion on May 16 when I began to put these final slides together. Ten days later it was down \$5 billion – and its now back up to \$15 billion just 10 days later. Similarly for many other e-business stocks. CommerceOne. EarthLink. Dr. Koop – down from \$45 to \$2 – an erosion in value probably unprecedented in stock market history.

There are a lot of good reasons for e-business stocks fluctuating so wildly. First, no one really knows what they are worth – in this new world. Second, there are very few publicly owned shares and too much demand. Third, this is a very big universe in which there are going to be a few very big winners. So the market divides these stocks into just two groups: "Big League" and "Little League". When investors move a stock up to "Big League" status, its value shoots up. And when they demote it, *vice versa*.

In addition, there are a handful of potential big acquirers – with highly over-valued stocks of their own – who can afford to pay top-dollar for a stock they want – particularly when it may add value on to their existing portal or other site. Last year AOL is said to have done this with Gateway – purchasing 5% of Gateway for \$125 million. Then Gateway spent this \$125 million for ads on AOL – unsold inventory. The result was that AOL got 5% of Gateway at no cost! – So no one dares to "short" a stock that could be an acquisition target and a stock market without "shorts" does not work very well. The result is that many e-business stocks are at least an order of magnitude over-priced – but no one knows yet which ones they are.

Real Values

Nonetheless e-business is creating real change – in its own right and as a catalyst for other changes long underway. So some of these stocks will have great value as they capitalize on earlier advances in EDI, ERM, ERP, CRM, SFA, re-engineering, etc. As e-businesses build on these earlier investments and standards, and create new business models, we will see some huge winners.

The most important key to many of these e-business successes is the fact that they realize a goal – a dream – that has guided much IT research and investment for more than two decades. That is the goal when firms implement more "rule-based management decision-making". We believe that we know how to make many business decisions in many aspects of our businesses. But we are hardly ever able to routinely implement these knowledge-based rules. That was the great hope in the AI – artificial intelligence – efforts of the 1980s and 1990s. But it was too little, too soon. We did not have the computing power or the communications systems to make it work. Now, with the Internet, we do. So what is happening now is that we are using the Internet and e-business systems to implement the most important set of advances in business practices since the Industrial Revolution. This has made every

manager, every staff person, and every “geek” in the back room, into a potential “Internet Entrepreneur.” They can improve the business – or to go out and start a competing business of their own or become an e-system supplier. So e-business has spawned a set of opportunities unprecedented in the history of the world.

Categories of Opportunity

I would like to look with you, today, at that array of opportunities and try to categorize it into five parts and to see where the best opportunities lie. Let's start with the two sectors that are talked about most: B2C and B2B. Then I would like to split out two parts that deserve special attention: Market-making; and financial/brokerage services. Finally I will look at the infrastructure and tools providers – the “arms merchants” – that support all the others. And I will talk with you about the economic and cultural/social norms necessary to support these sectors.

B2C Opportunity

B2C is the space that usually receives the most attention from the press, but in many ways it is the least interesting in terms of opportunity. In my view, B2C consists of three key parts: Use of the Internet for information and promotion; for transactions; and as a mass medium. (See slide) In this slide I set out some sub-sectors of B2C and rate the potential of each – using a system of up to three stars – in terms of cost-cutting potential and new sales potential. I will do this for each sector and sub-sector.

Despite all the press attention, only a very few firms are making any money delivering information alone – and few – except commodities like books – with very limited profit potential – are making many sales. So you may be surprised when I predict there is very little “Big League” potential here. There is just not a lot of profit in it. One indicator of this is the low market cap accorded to OnHealthNetwork.com. Health sites are among the “hottest” on the Web and MediaMetrix rates ONHN the “hottest”, most visited health site. But its stock has gone from \$18 to \$1.87 as the market assesses its real potential. The leading seller of CDs on the Web – CDNOW.com – is virtually dead. Reel.com is nearly dead.

B2C Conclusions...	★ New e-Biz † Service/Cost
<ul style="list-style-type: none"> ◆ Promotion/Information: <ul style="list-style-type: none"> ◆ More light than heat... ◆ Transactions: <ul style="list-style-type: none"> ◆ Bricks n' Clicks... ◆ New e-biz complex, expensive, already late, .. ◆ Zero GM helps... ◆ Media/Referral... <ul style="list-style-type: none"> ◆ “Big League” Metcalfe’s Law opportunity... <ul style="list-style-type: none"> ◆ Increasingly integrated, complex VBS/publishing models... ◆ Portal power/incubators... 	
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In contrast to this, B2C mass media plays are very much alive. AOL, Yahoo, and a few others are viewed by the market not just as portals, but as important aggregators and re-sellers of consumers. That’s why they have market caps of tens of billions of dollars – and over-priced stocks that provide the means to buy “anything that moves.” That’s true for Amazon.com too. As a retailer it might be worth \$1 to \$3 billion – but as a media outlet it has recently been valued at \$15 to \$20 billion. By combining with other sites, with their large audiences, media sites can transform them into valuable properties – and that is what the market is counting on when it makes a few such stocks “Big League” choices – a designation that can be lost at the smallest hint of bad news.

Bricks ‘n Clicks and Cost Cutting

To be sure, there are B2C information and transaction sites that have very different purposes – like the Sony interactive site for its PlayStation product line. Here the Web is being used to enhance the product itself – to download additional tools – and create customer involvement and future loyalty.

There are the bricks and mortar retailers like Toys 'R Us and Victoria's Secret who use their sites to drive business to their stores in addition to taking on-line orders. In Japan there are the 7-11 type arrangement whereby customers order on-line and then go to the stores to pay and pick up merchandise. Each of these may have a significant future – but most will not.

Initially there was speculation that on-line malls like FashionMall.com, Furniture.com, or HomePortfolio.com would sweep the world of retailing. But most of them have already shown that they are very unlikely to succeed on a "Big League" scale. Pets.com's stock has plummeted from \$11 to \$2.25 despite highest ratings on Gomez.com and other site-rating charts. The reality is that no one really wants to buy dog food on the Internet. The same may well be true for most of the products of HomeDepot.com or Walmart.com – but their sites may be excellent means of delivering product information and driving business to their stores. Meanwhile, the site-raters – like Gomez.com – may be seen as mass media – and one or more of which may well end up in the "Big League" category.

B2C Mass Media Potential

The huge potential of B2C mass media sites is not just their advertising sales. In addition, they earn referral fees and bonuses on the purchases they drive to other sites. In each case, sites with large numbers of visitors get the lion's share of the advertising and are the preferred affiliates of other sites. Thus income grows geometrically with site visitors – and the stock market recognizes this in valuing them – particularly if they can deliver high value customers. Highwired.com – a high school newspaper ASP site – has signed up 10,000 high schools in the US and some hundreds around the world. It recently raised \$30 million in first round finance. TrailBreaker.com – a site that guides viewers to expert shopping advice and then to retailers has also been successful in its early rounds. These are just a few of the sites competing to become the next "Big League" mass media darlings. A few will succeed. Some will be acquired at high sales multiples.

B2B Opportunity

In the B2B space, I see five key sectors. (See slide) For the first two – information/promotion and transaction – my conclusions are very much the same as for B2C. While nearly every significant B2B business already offers the opportunity to get information and make some sales or service transactions on-line, in general the sales impact of these limited actions will be very modest indeed. No "Big League" play despite all the publicity.

Cost-Cutting/Service Improvement

But the third category – cost-cutting-service improvement – is very, very important – and firms are moving rapidly to capitalize on it. Significant investments are being made to cut service and transaction costs by moving these services from sales forces and order desks to rule-based on-line systems. Firms report payback periods of six month or less for many of these systems even when the costs are large. To achieve these savings, businesses are basically taking their internal systems and "turning them inside-out" to make them available to customers. As they do so, service improves, FAQ's replace routine responses, customers track their own orders, and costs are eliminated.

B2B Conclusions...

★ New e-Biz
+ Service/Cost

*Promotion/Information...
Transaction...
Cost Reduction/Service Improvement
Extended Enterprise Management
New e-biz Strategies*

- ◆ Hierarchy of potentials...
 - ◆ Promotion/Information: More heat than light...
 - ◆ Transactions: Merge sales and service...
Threat to channels...
 - ◆ Cost Reduction//Service Improvement:
 - ◆ Key entry to new economy...
 - ◆ EEM: Next big win...
 - ◆ New e-biz Strategies: Powerful v-biz global opportunities...
 - ◆ For proficient collaborators/innovators...

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FedEx is often cited as an example of the potential for "self-service". Each time you track your own package, they save an estimated \$5.50 – at a cost of perhaps \$.01. Cisco Systems reports saving over \$550 million annually by using IT-based systems. So firms everywhere are leveraging their Y2K investments by replacing old systems with new, Web-based, cost-cutting, e-business solutions.

EEM Opportunity

The fourth B2B category – EEM – extended enterprise management – involves going beyond the confines of your business to integrate with your suppliers, your customers, or others in your business system to provide better service at lower cost – thereby creating a VBS – virtual business system. By doing so, firms are speeding the completion of their earlier EDI – electronic data interchange, SCM – supply chain management, and CRM – customer relationship/retention management systems and reaping very high returns.

To make this process cheaper and more feasible for more B2B firms, software suppliers and systems integrators are rapidly developing software products that speed this process and reduce its cost. These proven products – modules, whole systems, and implementation approaches – are one key to the rapid expansion of this sector. Through this process, firms are achieving significant re-engineering of their business processes and moving many of them on-line for 24X7 availability and lower cost. In fact, some firms are actually re-engineering their entire business systems to take full advantage of the power – and low cost – of the Internet. In the US there are many suppliers of these systems and some of them have extended their operations to other markets and to other languages. In Japan, there appear to be fewer supplier choices, but work is proceeding rapidly in virtually all application sectors.

The gains from these systems will come in the form of modestly increased sales, increased margins, better customer retention and lower service costs. Thus, they will improve the bottom lines of many existing firms – but these firms will not be seen as "Internet pure-plays" and they will probably not get huge stock valuation increases from this improvement. Thus, while these improvements are of critical importance to these firms – and to the economy – they will not be credited to e-business *per se* and they will not make these firms "Big League." Instead, much of the market valuation gain will go to the systems suppliers they choose, as I will describe in a moment.

Strategy

At a fifth level, a few firms will use the Internet to basically change their business systems. In doing so, they will become more important to their suppliers and/or customers and escape some of the intense competition being created by EEM and electronic market-making activities. We're going to hear a lot more about this sort of opportunity in a few minutes in Mr. Nara's presentation where he takes an in-depth look at potential for re-engineering the entire automobile industry.

At the business level, a good example is PTC – formerly Parametrics – a CAD company that has acquired a number of related businesses – including several CAD-based software firms – to re-make itself as a provider of integrated design/ERM – enterprise resource management – tools. By doing so, PTC seeks to "own" not just the CAD machine and software business, but also how its customers use these systems. So, for example, it acquired InPart – a company that has taken the parts catalogs of many industrial firms – aggregating some 600,000 parts – and converted them to standardized 3-D CAD formats and placed them on the Web. Designers using PTC systems and InPart software can just "click" on any part to "pop" it into a drawing. Each time they do so, they save perhaps 2 hours of design time. In addition, they get detailed specifications, supplier identification, an SKU, and possibly even a price. So as a designer creates a drawing, he or she is actually also producing a parts list and a cost analysis that can be further refined later. That – and its other acquisitions – puts PTC in a very different role than just being a CAD provider. Such a change is both promising and difficult – as evidenced by the fact that PTC's stock price dropped sharply when there was a lag in sales during this transition. Nonetheless, such strategic moves hold great promise for the future.

An e-business firm that has engineered itself to take full strategic advantage of the Internet is OrderTrust. This firm has invested heavily to build systems that permit it to process simple or complex orders – such as the SkyMall orders you place when in flight – for a large number of B2C companies. Orders go directly to OrderTrust, where they are split out to the various suppliers, checked for inventory availability at 400 participating warehouses, checked for credit, ordered, shipped by the warehouse, and billed to the consumer – all for pennies per line item of each order. By investing over \$50 million to build this system, OrderTrust has positioned itself to be a leader in back-end systems for e-business as well as catalogue and tele-marketing operations. Using these same systems, OrderTrust recently re-engineered its operations to provide an additional very promising service. It will now work with a B2C seller to create a catalog – on-line or print – utilizing the 400,000 SKUs available through its 400 partner warehouses. In this way, it too is moving further up the food chain to a more strategic position.

Another e-business that takes advantage of this strategic level is BizLand.com. This ISP provides free Web-sites to more than 400,000 companies and SOHO businesses – charging only for optional features. To attract sites, BizLand makes its customers members of a buying club or coop – and negotiates deals for them on near-commodity services such as telephone services, travel services and insurance. It also collects referral fees from a large number of affiliate sites. It is adding over 5,000 clients daily and expects to host more than 2,000,000 Web-sites in 2001. To serve these clients well, it has recently raised over \$13 million in first round finance – an example of the potential of taking a "media" oriented approach to the B2B marketplace.

Market-Making

Market-making is a natural for e-business. The Internet naturally aggregates buyers and sellers and permits them to interact, at low cost, in an infinite variety of combinations. The three most promising areas of market-making are the vertical exchanges mentioned above, the horizontal exchanges that permit purchasers in any industry buy the "generic" front-end and back-end products and services they need, and consumer exchanges. Let's take a quick look at each of them. (See slide)

Vertical Exchanges

The vertical exchanges are well exemplified by the auto-industry exchanges that have been so much in the news recently. CommerceOne – with a market cap of over \$6 billion – acts as manager of many such markets – including the auto-exchange in which it is partnering with GM, Ford and Daimler-Chrysler. But there are now hundreds of such exchanges – industry-by-industry – that are bringing together buyers and sellers of virtually everything that business buys. Chemdex, E-chemicals, e-steel, PlasticsNet, etc. VerticalNet.com operates in more than 50 distinct market segments and provides unique product and supplier information in each of them. The leaders in developing these exchanges can be the independent e-business exchange, the industry, or one or more market-leaders who elects to champion the exchange. In any event, to succeed it must operate efficiently, charge low fees, and offer a sense of security, fairness, and transparency.

In many industries, there are already several contenders for leadership and it remains to be seen how this "e-channels conflict" will be resolved. As noted above, many firms are building their own EEM systems. These systems have to be coordinated with the exchanges and other channels through which each firm buys and sells. Creating this integration turn out to be far more challenging than is

★ New/Web Biz
+ Service/Cost

Web Success 2000: Market-Making...

Market-Making...

Vertical...

Office/MRO...

Consumer...

- ◆ "Natural" web-function...
 - ◆ "Friction-free"/"zero-cost-of-goods"...
- ◆ "Big League" for "best-of-class"...
 - ◆ Neutral, trusted...
 - ◆ Supported by leaders...
- ◆ Risk of "over-competition"...
 - ◆ Multiple e-channels issues...

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immediately obvious. A customer may, for example, be served by your sales force, your e-mail marketing effort, your telemarketing effort, your media advertising, in addition to participating in your EDI network, your CRM system and one or more industry electronic exchanges. That customer must be identified – regardless of channel – and handled appropriately. Otherwise, that customer may receive different price quotes, different terms, different delivery promises, and so on. The potential for channels conflict are enormous. And, of course, quotas and reward systems must be adjusted to reflect all of these possibilities. This will be the most important challenge of making e-business systems effective.

Horizontal Exchanges

Exchanges are not limited to "vertical" markets. The same concept works equally well for supplies – front-office and back-end – sold through exchanges like ProcureNet and MRO.com. In real estate, there are already several exchanges including LoopNet, and PropertyOne. For electric power there is Altrade. For risk there is Catex. So e-businesses focusing on all kinds of products and services, for all parts of the supply chain, have developed rapidly.

FreeMarkets provides a somewhat different approach. It organizes bidding events for a firm – a process you will hear much more about from Mr. Goodson this afternoon. In all these various applications, it appears that the effect is to cut transaction costs, increase competition and lower prices. In many cases these cost reductions are significant – with FreeMarkets citing savings of 20% as normal. Savings this large, however, raise questions as to whether they are sustainable, or whether they will result in a significant tendency to put weaker competitors out of business and to speed the industry consolidation already underway in many parts of the economy.

To qualify as "Big League" opportunities, B2B exchanges need to find reliable sources of income – subscription fees or commissions on throughput. The cost of developing these exchanges can be very high, but if volume develops as expected, and if they are able to participate in that volume, some of these exchanges could become quite profitable. They may also earn some income from selling advertising and from referrals and e-tailing products – but these relatively minor side activities will not make them "Big League" candidates. The stock market for shares of leaders in this arena is highly volatile. But the leaders are now announcing partnerships at a very rapid pace and it is possible that a very few of them will turn this huge opportunity into an equally huge market capitalization over the long run despite recent setbacks.

Consumer Exchanges

eBay.com has created an industry sector. There are now many other auction sites and a whole host of virtual participants who provide tools and services to buyers and sellers in these auctions. With over 2.5 million items on sale at any one time, e-bay has radically changed the secondary market for consumer goods in the US at least. Many a forgotten attic treasure is now back in the marketplace. By its example, eBay has shown the extent to which e-business exchanges can transform consumer behavior. "Big League" at a market cap of over \$17 billion.

Financial/Brokerage Services

Financial services and brokerage services are equally well-suited for Web-based business. As we have seen in both the US and Japan, investors are flocking to electronic trading – vastly increasing daily transactions and changing the velocity of the market. (See slide) With new "free" trading services, one can hardly imagine the trading volumes – and trading manias – that are now possible.

For stockbrokers, this has already meant drastic reductions in commissions per trade – as well as lower costs per trade. But it is not yet at all clear how the final economics of this change will play out – particularly as some traders may well find that they need and want additional services. In any event, it is a new world.

Electronic sources are also working well for finding mortgages loans, personal loans, insurance quotes, tickets, travel and other services. Like the stockbrokers, each of these other businesses will have to adapt rapidly to this onslaught – as electronic providers achieve inherently lower costs and use them to develop ever-larger bases of operations. In fact, all of banking and health care are prime candidates for major dis-intermediation and deserve the attention they are receiving, despite very high costs. Bill presentment will be the next huge opportunity in this realm – but it may well be so split among providers that it will fail to produce a "Big League" opportunity for any of them – despite huge investments being made to get a prime-mover position.

Financial Services...

★ New Web Biz
 † Service/Cost

- ◆ E-biz model: "Provide competitive on-line VBS access to financial/brokerage services"...
- ◆ "Natural" Web-function...
 - ◆ JIT/24X7...
 - ◆ Low cost/Scalability...
- ◆ "Big League" opportunity...
 - ◆ "Zero cost of goods" for operator...
- ◆ Dis-intermediates whole industries...

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Tools

Providing the tools – and services – of e-commerce may well turn out to be the safest and most profitable way to build a major e-business.

Levi Strauss made more money from the California gold rush than most of the miners. So too with the Web. Every firm needs its ISP and many firms will elect to buy site-building tools, maintenance tools, packaged software, or other tools and services. Some "tools" firms set out to be "arms merchants" of the Web – providing these tools. Others began as e-tailers, service bureaus, ad agencies, or other specialists – and then saw the advantages of creating, packaging and repeatedly selling their tools and expertise. They can be profitable from early in the game – with some major exceptions – and they can do very well indeed if they can handle the volume of sales that can result from early success. Their opportunities tend to fall into five main categories. (See slide)

Supporting the Net

The Internet is a new, unfinished tool. It is being built as it is used and its "rules of the road" are in flux. As it is built, some technical firms are finding ways to enhance speed, quality, performance and cost – using software or hardware innovations – and these firms are finding the stock market extremely responsive to their successes and awarding them "Big League" capitalization. These include the major ISPs, the builders of servers and routers, and the makers of key Web software. Cisco is valued at over

Web Success 2000: ITS...

★ New/Web Biz
 † Service/Cost

- ◆ "Big League" profit opportunities as "arms provider"...
- ◆ Hot HW/SW...
- ◆ "Value investments" in VBS Tools/Development Services...
 - ◆ Sales/profits...
 - ◆ Hard/Continuing shortage of supply...
- ◆ Media key to audiences...

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\$400 billion. Some new makers of glass fiber products are selling for billions before they have any revenue at all. So this is a major opportunity area.

ASP Opportunities

It is becoming increasingly feasible to use "light client" approaches to computing and e-commerce. With more bandwidth, and very low – near-zero – communications costs, it is likely that many IT/e-business operations will be run on remote computers, using ASP – application service provider – software and sites. So many of us – and many firms – will increasingly "outsource" more of their IT infrastructure and use ASP services rather than building and/or hosting their own applications. SUN and Oracle are promising to challenge even a fortress firm like Microsoft on its home turf for this business. Firms that develop stable, secure, fast, and cheap services that meet basic needs, and learn to configure them for use by very large numbers of users, will be "Big League" winners.

Mass Media Impacts

The fifth and final opportunity area is not in e-business at all but in the mass media advertising and promotion used to build awareness and market-share for e-businesses. Some early e-businesses received so much press attention that a few actually grew rapidly at low promotion cost. In the next wave, it was believed that on-line banner ads – and good positions in search engines – would be enough to aggregate significant audiences. But that turned out to be illusory and B2C e-businesses in particular entered an arm race to spend the most in traditional media with the object of building impregnable first-mover positions in many industries. In 1998 and 1999 this spending became so intense that it drove traditional media to record advertising sales and profits. But e-business operators now understand that mass media advertising is seldom so powerful that it can rapidly drive enough e-business induced behavior-change to pay for itself. The "burn-rate" is just too high. Most B2C operators have exhausted their early extravagant media budgets and must now find less costly ways to grow. But the e-business world is now so large that its total mass media spending will continue to be important.

Conclusions

We live in a moment of unprecedented opportunity. It is all around us – yet not always easy to identify or capture. That is our challenge. As we go to do so – today, and after today – I hope that the basic business models I have suggested above will prove useful. In addition, as we forecast e-business success in the US and Japan we need to pay attention to a few broad economic and social factors that I believe bear notice.

Economic Impacts

As we have seen, there are a vast number of ways in which e-business is transforming US and Japanese business practice. To do so, firms – and e-business tools providers – are investing heavily in tool/system creation and in advertising and building audiences for their e-business systems. These investments may be the ticket of entry to a "new economy" of perpetual growth – so it is very important that we track and measure their impacts.

In this regard, it is interesting to speculate on how these investments are being recorded in traditional economic measures. It is possible that users or toolmakers are capitalizing some development expenses. But I suspect that the majority of these investments are being recorded as expenses – and used to reduce current taxes. If this is true, then the investments actually being made in e-business may well be severely understated in economic data.

Similarly, I suspect that most of the gains accrued from these investments by user companies are being treated as normal profits – offset against the expense of installing these systems. Most of these gains are not identifiable as resulting from e-business expenditures and are not credited to them. The result is probably to vastly understate both the investments and the profits on these investments. Sorting this out

will not be easy, but it is worth trying, as this information will be used to inform future investment decisions.

Economic, Social and Cultural Factors

Similarly, it is important to evaluate and learn from the impacts of cultural and social differences as they influence e-business development. There has been a tremendous surge of e-business activity in the US and around the world and it has already transformed business practices worldwide. This impact is only beginning to be felt.

As we examine this impact with regard to Japan and the US, today, I think it is essential that we ask ourselves some deep questions with regard to whether the trends seen in one market are necessarily appropriate for any other market. In the US, we have a culture of entrepreneurship and risk-taking. Venture capital is ever more plentiful. Risk-prone teams are relatively easy to assemble – even if they are not cheap to support. In Japan, the situation may well be very different. Companies – rather than individuals and teams – are leading the charge. *Keiretsu* participants largely own almost every major Japanese e-business. There is little proven availability of venture capital, and teams and individuals are relatively risk averse.

Then too there is the question of language. To a surprising extent, English appears to be "the language of the Web." But this may be more apparent than real. The US started first, and other places, other languages, may catch up. Still, that lead, and those cultural differences may well create a tendency to US domination of the e-business landscape that could end up being a detriment to all.

We need also to be concerned about the possibility that e-business – with its high-tech style and significant cost of entry – will widen gaps between rich and poor – nations and segments of each society. To do so would be to weaken the global economy in ways that we can ill-afford.

These are questions worth asking and worth seeking answers to as we assess progress in the US and Japan and seek to project the future. E-business is creating a true parallel universe, replete with opportunities in every sector, for those with the skills to develop them. We need to be sure that we shape this development in ways that produce lasting good.

Takashi Nawa, Principal, McKinsey & Company

Ten or so years ago, in the late 1980s, when I was "on the wrong side of the Charles River" at the Harvard Business school, people used to ask me to help them understand the Japanese miracle. Ten years later, two years ago, Japan was in deep recession, fewer people – even inside McKinsey – were paying attention to Japan. As a nation, we were losing promising young executives to foreign companies. Everyone – even MITI – was at a loss as to what to do.

The Potential of IPR

In an informal meeting with people in MITI we then began to think about how we could re-invigorate the economy. One of the topics was how to use the IT/e-business revolution to get the economy moving. But we did not want to just copy what was going on elsewhere – not just play catch-up. Rather, we wanted to look for deeper ways to invigorate the marketplace, open up the system and stimulate the market system.

As we worked on this issue, we came up with the idea of IPR – Industry Process Redesign. You are all familiar with BPR – Business Process Redesign – but that is limited to just one firm. With IPR we wanted to go much further – to actually redesign the business processes of entire industries and develop new value creation systems and really capitalize on the potential of IT in the most important ways. IT makes it happen because it lowers interaction costs and permits the development of heterogeneous

knowledge – combining information from many sources – to create value in new ways – as Schumpeter has suggested.

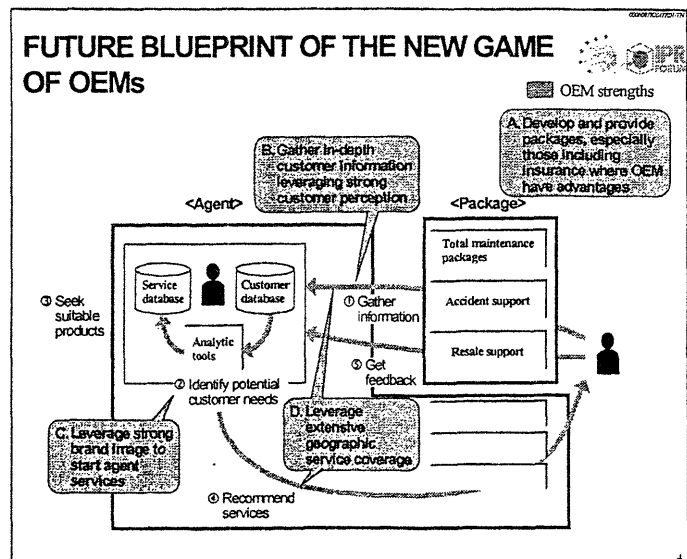
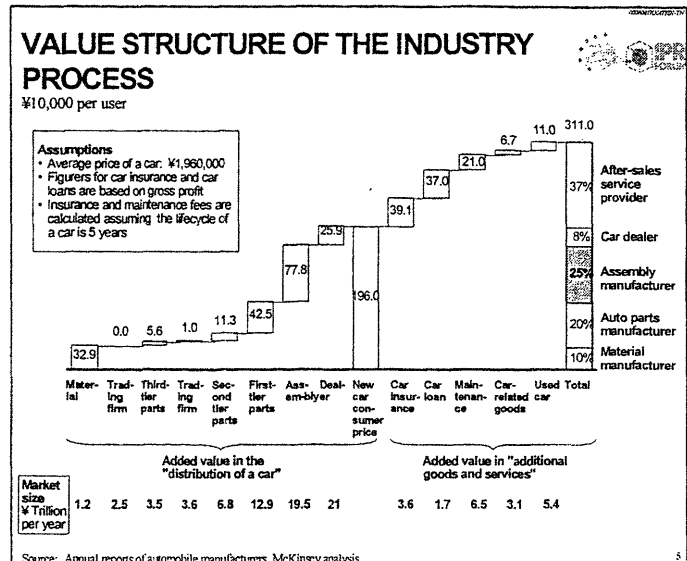
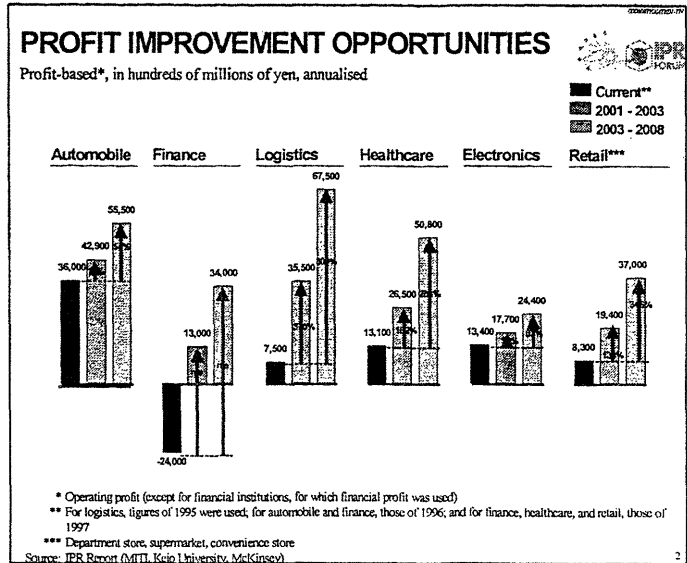
We selected six industries and made projections of what was going to happen over the next five to ten years. Then we went on to look at what could be done by injecting IT in new ways to improve the performance of these industries. We developed a methodology and applied it to all these industries. This study showed that there were huge opportunities to improve profits in each of these industries – even in the financial services sector that is currently showing huge losses – my apologies to those in this sector.

We reported these results and there was a great deal of interest in them because they showed that IT could be a positive tool for redesigning industries, not just a tool for cutting out jobs and laying off people. The potential gains in annual industry profitability – after 5 years – ranged from \$7 billion in the electronics industry to \$19 billion in the automobile industry and almost \$68 billion in the financial services industry. (See slide) People in several of these industries expressed interest in going further with these possibilities.

The Automobile Industry Example

We have continued to do work on some of these industries and one good example – which I will discuss with you today – is the automobile industry. To re-create this industry with much more value, we began by looking at the industry as it is today – to look at all parts of the existing system – not just the products delivered by automobile companies today – but including all the related systems. As we examined the total value added by all of these systems, we saw that only about 25% of this value chain is currently provided by the automobile companies themselves. (See slide)

Among the ideas we considered were to create such “products” as “total service packages” that would serve different sets of customers who want different service combinations, including insurance and



repair and used vehicle resale. This would create significant new-game opportunity for Honda or Toyota. (See slide) As we interviewed consumers about whether they would like to have such “bundled” services, we found that most consumers see the auto companies as experts that can be trusted with regard to auto services.

There were certain combinations of services to which they responded very positively. So auto firms should consider moving to offer different “packages” and playing various kinds of “customer agent” roles, rather than just producing traditional products or services.

In doing so, it is important to add some new services that may not be available today. (See slide) For example, in the auto industry, we see a company – ORIX – putting a monitoring device into cars and then offering a low-cost insurance package based on safe driving practices. In this way, the new product builds on IT potential to save consumers money and provide a new heterogeneous service package.

Another firm is considering offering a lease that permits using different cars on different days for different purposes – rather than the same car all the time. A dot-com company – JAC – has, for example, started to offer a

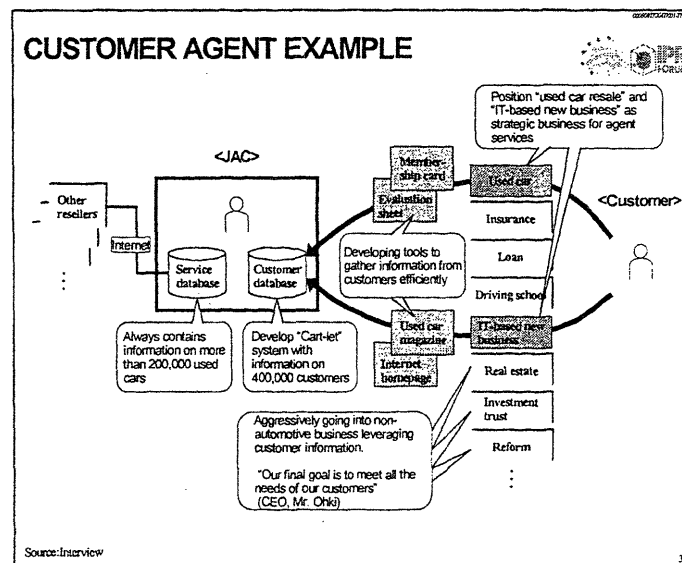
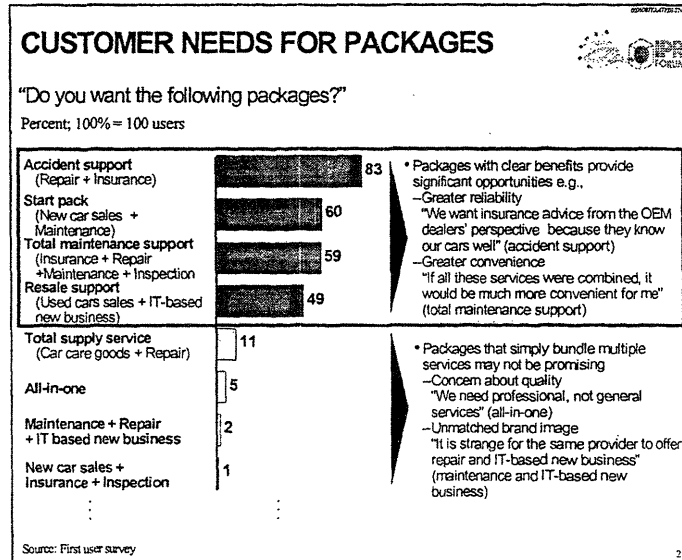
variety of auto-related services and has linked them to provide what will eventually be a full “Customer Agent” set of services. (See slide)

In Japan, car makers – “car guys” – would be very well accepted as such customer agents, at least for auto related services. They would have significantly more credibility than a Yahoo or other generalist dot-com. Sorry about that SoftBank. It is also important to realize that it will take time to develop such offerings and it will take time for them to grow to profitability. So they are not a quick-money play.

The Five E-solutions

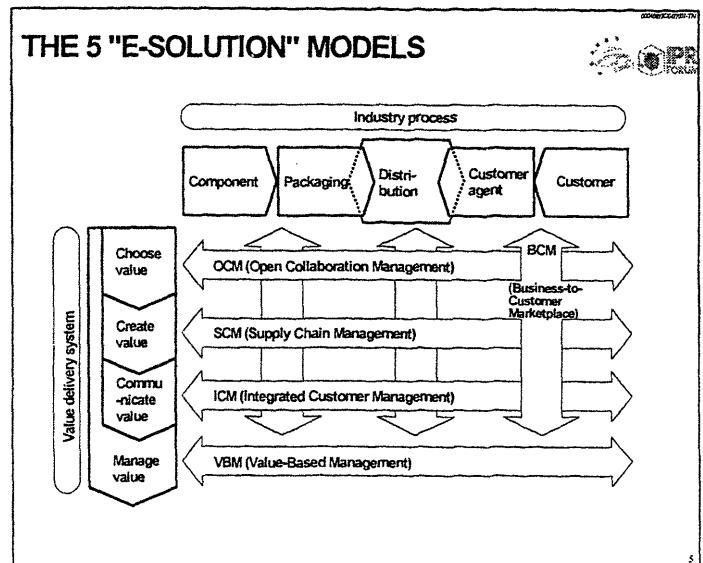
We carried out this same kind of analysis in several other industries and in every case we found the same kinds of opportunities. In every industry it was possible to package more related products and services and to build larger relationships with potential customers. Generalizing from this experience, and returning to the use of IT in creating and managing these new systems, we came up with five mutually exclusive and collectively exhaustive – MECE e-solution models that support this logic. (See slide)

Each of these attacks a different aspect of the problem. The OCM – Open Collaboration Management – model creates collaborative effort to come up with new values for the customer. This is the driver of innovation – identifying customer segments and serving them with new products. SCM – Supply Chain Management – produces value by extending traditional JIT further along the value chain – up and down



the chain. ICM – Integrated Customer Management – uses information to maximize value to customers and to do more business with them. VBM – Value Based Management – permits firms to create and manage larger, multi-player systems through IT. The vertical e-system – BCM – Business to Customer Marketplace – permits over-laying new systems over the four previous systems.

These five systems are now starting to be used to produce new business systems and increase profitability. Examples include new LSI chip design collaboration, and new supply chains – such as the Pan-Asian Supply Network plan that will link all major players in the region. Also the introduction of new IT-based services in convenience stores – to create new concepts of convenience, building on such new technologies as wireless and broadband communications. We are very excited by the potential of these approaches.



Keynote Address

New Frontiers in e-Business: Opportunities and Challenges in a New Wireless World

Introduction by Patricia E. Gercik, Managing Director, MIT Japan Program

I am delighted to introduce Professor Siu as our keynote speaker today. His talk is entitled, *New Frontiers in e-Business: Opportunities and Challenges in a New Wireless World*.

His presentation is of particular importance in understanding the potential for Japan in e-business in the future because, as other speakers have mentioned, Japan is widely acknowledged to be several years ahead of America in the use of wireless technology. So the question is, how does wireless interface with the great e-business networks Professor Isaacson and other speakers have described, and what new business paradigms will this lead to in Japan's economy and in the world economy. Professor Siu is unusually well equipped to talk on this subject because he understands the impact of wireless and its impact on business from both a research and business point-of-view.

Dr. Siu's research background is in computer science and electrical engineering. He received degrees in mathematics and computer science from New York University. His Masters from Cooper Union is in Electrical Engineering. He received Masters and PhD degrees from Stanford in 1988 and 1991 respectively. Dr. Siu joined the MIT faculty in 1996 after working at IBM and The University of California at Irvine. Currently, he is Director of the MIT Auto-ID Center, which develops next-generation identification systems with e-commerce applications. His research interests include Internet architectures and protocols, optical networking, and wireless communications.

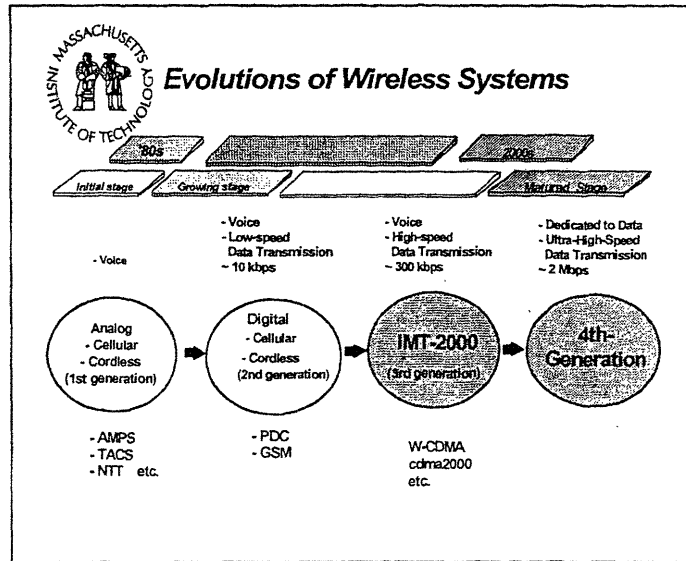
Dr. Siu is highly recognized. He received the National Science Foundation Young Investigator Award, the Irvine Distinguished Award and Numerous Awards for his papers. I am delighted that he could join us here today to talk on this critical subject.

Kai-Yeung (Sunny) Siu, Professor & Director of the Auto-ID Center, MIT

What I would like to talk with you about today is the impending impact of wireless on e-business. I have been doing research with a number of businesses – including NTT DoCoMo – a true leader in pushing the frontiers of the new generation technology.

Wireless evolution

Let me begin by talking generally about the evolution of wireless systems. Most of the wireless phones in use today are second generation digital phones – which are an improvement over the first generation analog phones but very limited in terms of ability to access the Internet. But we are rapidly moving toward third generation wireless, which will have thirty to forty times more bandwidth and fourth generation, which will have an order of magnitude more bandwidth than that. So they will have many times the capabilities of today's wireless phones. (See slide) It is these new third and fourth generation devices that are driving the excitement about wireless as a major force in the future of e-business.



The current client server technology is ok for some applications, but if you want to browse the Internet it is quite inefficient. So recently a number of key players in the industry – carriers, equipment makers, etc. – have gotten together and defined a new set of standards called WAP – Wireless Application Protocol. This standard changes some of the open standards to make the ISP gateway the proxy for requests from your cell phone. This enhances efficiency in accessing the Internet over the wireless medium, but makes it a captive of the gateway. In the third generation, this may no longer be necessary as there will be so much more available bandwidth.

As this occurs, we will move from today's heavy client mode to a thin client mode. Today's Internet is relatively low speed. We don't have broadband Internet yet. When it comes, we will be able to run applications in the remote server and just download the results to our devices. This will make it unnecessary to constantly upgrade the software in our computers to run the applications we want. It will appear that the applications are running on the local device, but they will actually be run on a remote server.

Just migrating existing applications to the wireless platform will involve a number of challenges. Unlike the optical fiber medium, wireless communication will always involve noise. To access the Internet using handheld devices, it is necessary to reformat messages (e.g. in WAP) – making it possible to get information on very small screens. One way to cut down on the amount of data to be displayed is to personalize it – to deliver only the data that is actually wanted.

Potential New Uses

The main reason that we need mobile technology is that we want to use time-sensitive information. For example, we want to trade stocks – and the price of a stock may change even before we can get back to our offices – so we want to do it over our mobile phone rather than over the phone or from our computers. With more personalization, it also becomes possible to do much more personalized one-to-one marketing over the Internet.

Although the sale of general information over the Internet may not have much profit potential, as Professor Isaacson indicated, the potential for specialized information may be very different. For example, with fast Internet personalization and automation it becomes possible to deliver a host of new services such as individual medical/health monitoring and the delivery of health/medical information on a JIT basis. There are many other types of limited, personalized information that will be sold this way.


There are also a number of technologies that can greatly improve supply chain management. For business, this will provide many benefits. XML – extensible markup language – is an emerging standard for the Internet. The W3 consortium at MIT is now creating a new XML standard that will permit all kinds of companies to have a standard for competing on the virtual trading floor created by the World Wide Web.

The traditional supply chain relied on information that was a “network of atoms” – loosely linked, with information moving step-by-step through the chain. Now, with today’s Internet, we have linked supply chain systems that deliver more information faster – but still of limited capacity. Tomorrow, however, we will be working with a new concept – a “network of things” in which we will embed the Internet in the physical world. (See slide) This will provide the opportunity to drastically improve efficiency, as the goods themselves will carry much of the information that is needed to track them. Systems like this will radically business systems. I teach undergraduate students and I see that they are more interested in learning about business systems that are based on the technology than about the technology itself. This is not so surprising in light of the fortunes that are being made by some young entrepreneurs in this environment.

e-Technology for Object Identification

To automatically identify objects, we will place a very low-cost battery-less micro ID tag – like an electronic bar code – on these objects. These tags will include tiny antennae that will, in turn, be “interrogated” by various types of readers – and the chip, powered by the reader, will respond with its identification information – which will be automatically relayed back to central sources to be processed and used. Unlike today’s bar codes, which are producing 5 billion scans a day – line of sight interrogation of the new e-tags will not be necessary. This will make them far easier and less costly to scan and more useful. By developing a standard for them, it will be possible to have a new “Internet of Objects” that can speak to the system. Today these chips cost 20 cents, with a 350-bit capacity. 350 bits is enough capacity to uniquely name every atom in the universe. We don’t need that much capacity. But the development goal for these new ID chips is to produce them with 128 bit capacity at prices tending to 1 cent or 2 cents per tag, with a 2 foot to 10 foot read range. In this new “network of things,” the key to getting cost down is that we will separate information identifying the object from information about the object. The product will carry a very small micro-tag that identifies it. Then, the Web will report other information content about the object. This will have important applications in automatic inventory control, factory automation, and even interactive advertising.

The barcode was co-developed about 30 years ago by scientists at MIT working with IBM and others. It is so important that on the 25th anniversary of the commercial use of the barcode there was a celebration of the event at the Smithsonian Museum of American History in Washington – called “25



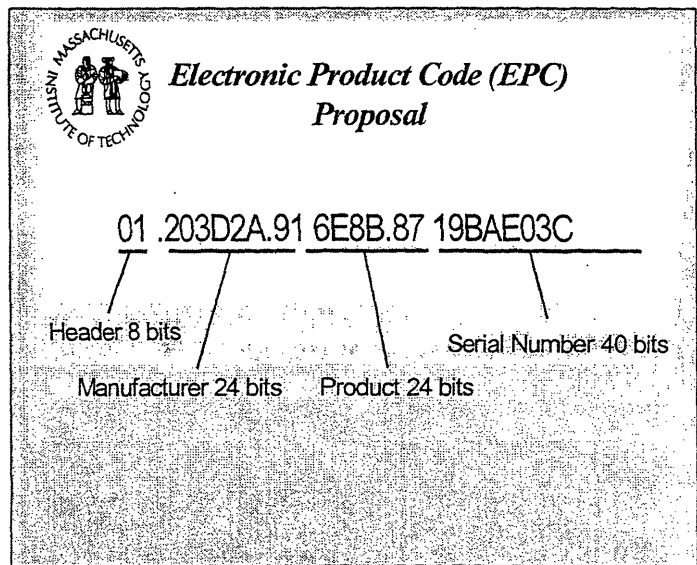
Embedding the Internet in the Physical World

- **Technology Trend:** New low-cost low-power, wireless sensor and tag technologies will enable the identification of almost all manufactured products at a distance and new automated, smart systems.
- **Key Idea:** Separation of object identification (wireless tag technology) and information about the object (web technology).
- **Applications:** Automatic inventory control, smart home appliance, factory system automation, interactive advertisement.

Years Behind Bars.” All of the talks at that event were about the new potential for e-commerce applications of the barcode. At that event, in November 1999, it was announced that a new consortium had been formed at MIT to advance work on the new “ePC” – electronic Product Code. Among the participants are P&G – which helped commercialize the original bar code – as well as Gillette, International Paper, and others – all companies from “the old economy”. The goal is to transform the old economy and make it more efficient and merge it with “the new economy”.

When the bar code was developed, it was intended to be used just once in its lifetime to signal when the item was scanned at the supermarket checkout. Now we want to use each chip many more times to track the object through the system. By making the e-tag as “dumb” and as cheap as possible, this becomes feasible. Based on a tag with 100 bits of information, it will be possible to produce it for 2 cents – with a goal of 1 cent – an order of magnitude cheaper than today’s chip, according to the engineers at our partner Motorola. To make this system work, we will need to build two additional systems that will make it useful.

The first of these is the development of an ONS – Object Naming Service – to point to a Web-site, which contains information about a tagged object and to keep track of these identifications – just as we must keep track of domain names on the Internet using URLs. (See slide) Our partner for this is the UCC – the Uniform Code Council – the same authority that issues and tracks bar codes today. This will permit going to the Web to get all the information that relates to each ePC.



The second need is for a structural language to permit making efficient use of these ePCs. To meet this need we are developing PML – product markup language – as a very efficient structural language based on XML syntax, as HTML is not structural enough to be efficient in this use. PML will permit looking up products very fast. The new PML should also be designed to be compatible with existing barcodes and that creates a number of issues that we are working to resolve.

Applications

Let’s now look at some applications. In a store, every time a consumer picks up a product – say a Gillette razor – sensors placed throughout the store – perhaps as part of the wallpaper – will sense that an object has been removed from the shelf and is moving through the store. The system can then go out to the Internet to determine that the object is a Gillette razor. As products are put into the shopping cart, they are sensed and registered on flat screen displays mounted on the carts. When a shopper is ready to check out, he can swipe his credit card through a reader to pay the bill, and the purchases can be bagged and carried away without further checkout delays.

A second example is the “Smart Microwave Oven.” As a consumer removes food from the refrigerator and places it in the microwave oven, the oven can sense the ePC embedded in the food package and get all the necessary information about this object – such as cooking information – from the Internet. At the same time, the same ePC information can be used to keep track of inventory in the home and to reorder whatever food has been consumed.

ePCs can also trigger interactive advertising. For example, a shopper taking an object off the shelf can trigger the delivery of product information via a screen display. Or, in another application, a system that tracks products in stores can also track items that are being stolen – and warn the staff of a “theft in progress” as an object is removed from the store without being paid for. In a health-care application, as a new prescription is being filled, it can be checked against a health database to determine whether it may produce adverse drug interactions for that particular patient.

There are issues that remain, such as privacy issues. We are working with the UCC on this, and receiving the benefit of their experience and that of the hundreds of thousands of worldwide members. At first we will apply the technology at the business level, not the personal level, and we will have to develop technologies to deal with issues like privacy.

Using these kinds of potentials, it will be possible to generate a wide range of new services – triggered by objects – that will provide unique, personalized services, at very low cost, to consumers and businesses. The potential is very, very large. In this environment, it is more true than ever that, “As technology changes the rules, those armed with the best technologies will win”.

Session 3. *The B2B Challenge: Creating New Business Systems*
Chair: E. Keith Henry, *Program Associate, MIT Japan Program*

Michio Naruto, *Special Representative & Board Member, Fujitsu Ltd*

I enjoyed the very interesting presentation of Professor Siu on the application of new technologies to e-business. As I listened, I thought about my three year old cat, who goes out at night and we never know where he is. How useful it would be to have one of those ePC chips that Professor Siu was describing attached to him, so that we would be able to find him.

B2B Opportunities and Trends

The theme that was given to me for today was the challenge of creating new B2B business systems. According to Japanese Government (MITI) statistics B2B is expected to grow as rapidly as it has in the US – projected to reach 19 trillion yen (\$190 billion) in 2000 and 68 trillion yen (\$680 billion) in 2003. In each case, these numbers are about 40% of the US figures projected for these years (50 trillion yen – \$500 billion – in 2000 and 165 trillion yen – \$1.65 trillion – by 2003). So Japan’s B2B Internet penetration is somewhat lower than in the US.

The US Market for B2C transactions is also ahead of Japan, reaching a penetration of about 0.4% of consumer purchases versus 0.02% by 1998 in Japan, so Japan is currently far behind. But there seems to be a trend now to faster growth in Japan and this growth could become explosive once it gets started. Companies in Japan are developing such products as new types of PDAs and new types of wireless CDMA phones – as well as merging these technologies – all of which will make the market grow much more rapidly, explosively, once it starts. In addition, there is talk of smart appliances and other trends that will speed this process. Because of these developments, B2C will really take off in Japan.

But today I will focus on B2B. There are two types of opportunities that are growing particularly fast: Cross-industry and cross-border. Just yesterday I was talking with the Chairman of Nestlé who is visiting Japan. He asked me about my views on e-business and I told him that he had to get more involved in SCM – supply chain management – and CRM – customer relationship management. Both are critical, as they will greatly reduce your costs, I told him. You have to do this because it is becoming easier for firms from other industries to enter your industry. So it is very important to make your supply chain as efficient as possible to reduce this threat. For example, we see how some utility firms will sell not just electricity services but also gas, water, telephone, and other services. In the auto industry, there will be the integration of financing and insurance. In Japan, with all the new

technologies, firms will have these capabilities. Similarly, in the finance sector, securities companies with a full range of financial products will do a better job than traditional banks with more limited ranges of products. So there will be firms from other industries entering your market. We are seeing this as a major change affecting all industries. But this is not necessarily the path we will take at Fujitsu.

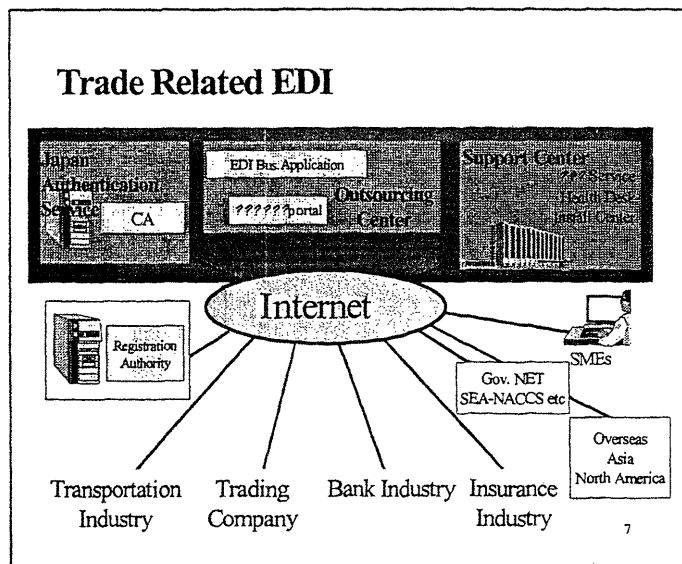
Regarding cross-border issues, large companies are considering procuring parts through global networks and this can be a major opportunity for SME suppliers. Reflecting this, there is a trend to change from vertical to horizontal partnerships in the US and in Japan. For the past 50 years, traditionally industries have developed vertically. But this is changing. In the auto industry, we see the development of the ANX – the Auto Network Exchange – in the US and, I think, Canada is also included – by GM, Ford, Chrysler as a B2B exchange that has already aggregated 5,000 suppliers. Its annual turnover is already over \$1 billion. The savings already attributed to this network are estimated at \$71 per car. As this network grows it will come to include dealers, repair shops, and insurers. It will include as many as 40,000 companies and it is anticipated that \$1200 per car will be saved. This will make the industry much more competitive. This will be difficult for Toyota as it occurs. In addition to cost, these networks will increase speed and that is very important in Web-based EDI.

Challenges of Fujitsu

Fujitsu is one of the three most important suppliers in the POS terminals industry – the other two are NCR and IBM. To compete globally, we are making major efforts to use EDI effectively, as part of our supply chain processes, to make these systems faster, distribute them globally and cut costs. (See slide) In our global operations, speed of response is of the

essence. So we are working to put all our operations on the system. When we have 30% of our operations on the network we will be able to make better use of local suppliers and we will be able to cut certain costs by 30%. With our network, we can also select the best site for the production of each of our products – in Japan or Spain or in the US. Today Fujitsu is focusing on trade related EDI. Trade today involves far too much paperwork. We must fill out 40 forms – with 200 pieces of information – for each product we want to send to another market. That takes about 13 days. At the same time, if we want to send something to Singapore, it takes only about 7 days to send the product, in containers, as Singapore is a relatively easy market to ship to, with few restrictions. There is also a huge amount of error in filling out the forms and this creates additional delays. So, in fact, many times products arrive in other markets more rapidly than the paperwork, and we have to wait for the paper to catch up. All that will change as Japan moves to all electronic export documentation. With the Internet, all of this unnecessary hassle is going to be a thing of the past. This will be a critical step for business and government.

The export trade of Japan is \$800 billion and 7% of this – \$56 billion – is spent for paperwork. With new electronic systems we can save a large part of this – perhaps it can be reduced to \$16 billion. At the same time, in addition to XML that is the next-generation language for the Internet, we will adopt state-of-the-art-technology for this EDI system in order to have excellent security and authentication capabilities.



One of our important customers is Canon. One of the great things about Canon is their ability to meet new challenges. Not long ago, Canon approached us and said that they would like us to cooperate with them in the open procurement system they were developing. (See slide) The purpose of this system is to help them purchase from new suppliers and to reduce lead times and inventories. It will be built in three phases and, when it is complete, they plan to do business through this system with some 1,300 suppliers, including foreign suppliers. It will be a very powerful network.

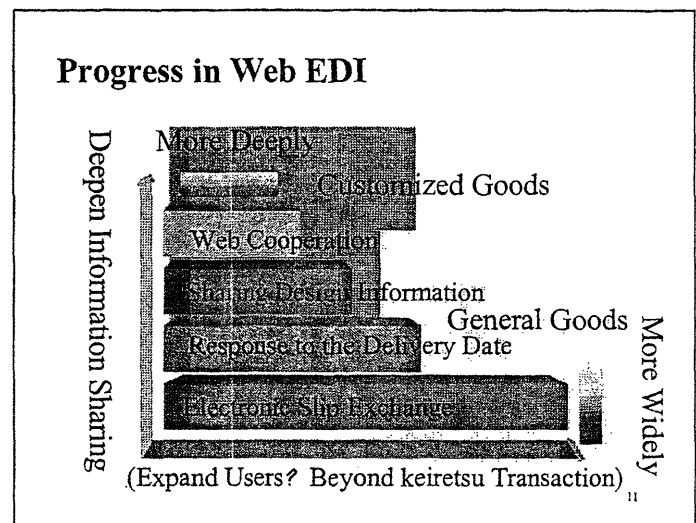
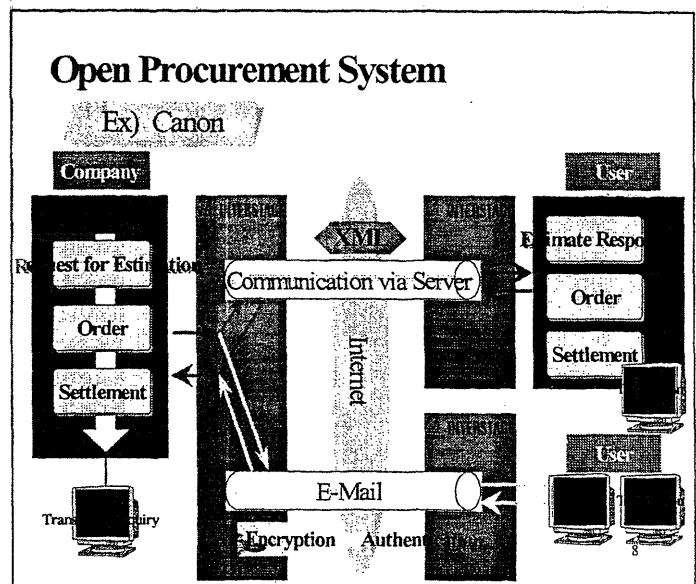
More widely, more deeply

Fujitsu has developed its own purchasing system over the past several years. In this system we have featured transparency – that is, the selection of suppliers that offer the most in terms being the cheapest, best and fastest. This changes the way firms compete. But what counts the most is quality. Transparency is more necessary than in the past in these systems. But as this is implemented, everything must be transparent in the network era. We are expanding the network to include 400 other members of the Fujitsu group and our customers and that will increase its use. Today almost 100% of Fujitsu's general products purchases are made through such purchasing networks.

Using our EDI systems, Fujitsu is trying to go more deeply into its markets through more sharing of information and networks with our suppliers. (See slide) This will require deeper exchange of product information, for example, in order to cooperate in design and other functions. Information will be shared much more widely and more deeply than in the past. This is a major change in our model and it brings the idea of the virtual enterprise much closer to reality.

In the Fujitsu procurement system, we share information in relation to detailed estimation and analysis with the "Partner Suppliers" that we distinguish from our general partners. About 20% of the transactions for Fujitsu's procurement procedures are carried out via the Internet today, and the remaining 80% is done through our own exclusive lines. But within about two years we would like to transition it all to the Internet. Even today about 93% of the value of purchases is conducted on-line.

In the highly competitive semiconductor industry, investments are very large and prices fluctuate wildly. It is like a seesaw game, where investments are almost a gamble. Companies – and even governments – are concerned about this. So they have developed the concept of doing more sharing of IP – intellectual property – rights. Over the past 10 years, things have changed a lot in this industry. In circuits, it has been realized that new designs provide some protection, but can be copied over time.



Engineers doing development work realize that others may be doing similar work and it makes sense to share. We have developed better means for sharing IP by putting it all on line and sharing it. This will continue to develop in this new century and will permit firms to profit more from the sale of their IP. This collaborative activity can go on 24 hours a day in different places around the globe, and greatly speeds up work.

Web-based Cooperation

Now I would like to talk about Web-based cooperation. In the US there is widespread use of a Pentagon system developed in the 1980s called CALS – Continuous Acquisition and Logistics System. This system is very well known and it provides a good example of broad scale cooperation. We have made widespread use of it in Japan and we have made a lot of progress in this area. But there has been a huge gap in knowledge, and in the use of such systems, between the DoD – Department of Defense – and the public sector.

To make such real-time systems work, standardization is very important. In the US the DoD has developed such standards for many items – both goods and services – because they buy such a wide variety of products. To do this digitally, everything will have to be standardized. Otherwise we will sink in a sea of paperwork. Since 1993 the DoD has shared its standards with the rest of the world. I was introduced to it then, and I realized that it was very important for Japan. So I have publicized it in Japan, and a lot of Japanese companies are making good use of it. A number of industries, including the construction industry, are adopting the CALS standards and the Ministry of Construction encourages the construction industry to adopt CALS for procuring materials. So these concepts will guide future practice.

Future Developments

Last but not least, there are several challenges to be overcome. First is globalization. For the Japanese, we must transcend Japan's borders. We need to do more networking to achieve efficient globalization. Second, we need to achieve more speed in these systems, and in R&D and other functions. Firms will not succeed without it. Third, firms need to specialize and to cooperate in networks. Too many Japanese firms try to do everything. I am an old man now and I say what I think, and I see that Japanese firms must specialize. They must concentrate on their core competencies. They must scale back to what they do best and build for the future on that base. Growing large networks is more effective than growing small separate enterprises – while maintaining the benefits of specialization.

Shigeto Itoh, Sr., VP, Emerging Technology, SYNEX Japan

I would like to talk with you today about how my company – SYNEX Japan – uses e-business approaches to compete in this market. I have been in the computer industry for 24, 25 years. I have worked in mostly in the US and Japan, and Europe for a short while, and in Australia. Now my company – SYNEX – is involved in computer parts distribution here in Japan. We are bringing a US business model to this activity and so far we have been successful.

It has been widely stated that the Internet is really hurting the distribution business by reducing margins. With information everywhere, everyone can know where they can buy and what the price is. This is what is really hurting the distributors. To a degree I agree that the traditional distributor could disappear in the near future. In order to survive in these severe conditions, we need to add value so that our customers will continue to buy from us. To ensure that, we are already doing a number of good things such as providing a turn-key service and support. Our service includes a wide range of product availability, quick delivery, competitive prices, prompt RMA – return merchandise authorization – etc. But we cannot ask customers to pay much more for this service. So we must also be able to provide these services very efficiently. Good computerized systems help us do that.

At SYNnex we have more IT engineers than sales people because good IT systems are the only way we can provide good service to our customers while maintaining control of our costs. We – and other distributors – are looking very seriously into very specialized SCM – supply chain management – systems to add further value. We have started to provide EMS – electronic contract manufacturing services. As our PC customers have moved from BTS – build to supply – to BTF – build to forecast – to BTO – build to order – to CTO – configure to order systems. Today we see CTO as one key way to serve customers better, because they can minimize their inventories and reduce the risk of a future price drops, as they don't need to own the goods until they receive orders from their customers. Although it's a B to C model, firms like Dell and Gateway have also used similar IT systems very well to effectively serve their business customers directly.

We have developed our own Web-based e-commerce models. Using these approaches we are helping our customers reduce inventories, reduce obsolescence, cut component costs and cut lead times. This helps our customers' speed up time to market. Through this process we make everything as transparent as possible and maintain excellent communications with our customers. In fact, today our customers and suppliers can actually see all of our inventory in real time via Internet.

In the past, computer systems were often distributed through the channels of their own *keiretsu* in Japan. But these systems are no longer functional today. Distributors and resellers under the *keiretsu* often complained concerning their supplier's inability to provide the right product at the right time. Similarly suppliers also complained about their distributors' and resellers' inability to promote sales as strongly as they want. As the top company of a *keiretsu* becomes challenged financially, its power is reduced with respect to supporting all of the groups under the same *keiretsu*. Instead, today each group is encouraged to be financially independent. The limitations on dealing solely within a *keiretsu* are reduced, and some are opening up to buy and sell across traditional *keiretsu* lines through B2B e-commerce.

However, there are some problems to overcome. To enter our systems they may have to process order entries twice. Once for their own systems, then again for ours. This is a redundant exercise, and many companies are reluctant to repeat the same entry for the different systems, particularly as that can create input errors. Such customers send us a hard copy order via fax or mail, following a phone conversation, and we enter it for them. We cannot force our users to repeat the same work for our system.

So there are additional challenges in executing B2B e-commerce. We have already built a Web-based B2B system for serving our customers, but usage has not been as high as we had hoped. What we need is a single entry system that enables the same data to be shared by all concerned parties dynamically. I have not seen such solutions yet. EDI is not an answer because it cannot dynamically link two systems together. But, I am sure that XML and other dynamically connecting language will help to solve this kind of problem in the future. That is a key challenge for the future as we move to provide ever better service for our customers.

Talley Goodson, VP Asian Operations, FreeMarkets

I would like to talk today a little bit about our company – FreeMarkets – show some examples, and talk about what we think it will take to be successful in B2B. By way of background, FreeMarkets is the global leader in on-line B2B auctions. We do four things to help our customers:

- Reduce procurement costs for custom engineered components, MRO, commodities and services;
- Save time in the bidding process by receiving hundreds of bids in a matter of hours;
- Find and screen high quality sources for our clients, who tend to be large global companies that demand high quality sources of supply; and

- Sell surplus inventory for higher prices and lower costs than they could do it themselves.

We are a global company with 11 offices around the world. Our stock symbol is FMKT. We have been public for about six months now and that has been a wild ride. We have about 600 employees and speak some 30 languages. I live in Singapore and cover the Asian market.

We measure our sales relative to the market and to date we have done \$5.4 billion of auction volume over 4 years. In 1999 we concluded \$ 2.7 billion, and in the first quarter of this year that number was up to \$1. So our business is doubling every year. We serve a variety of markets including automotive, defense, aerospace, consumer products, electronics, energy, and the public sector. The reason we are in business is that we save customers money. We estimate that we have saved them over \$1 billion. Our clients include many global companies.

The FreeMarkets Auction System

(Mr. Talley demonstrated the system by showing a tape of several actual lots being bid on by potential suppliers. In each case, the bidding called for making an offer to supply a lot of various parts over a period of time – often up to three years, but much more frequent repeat auctions are held for some commodity products – with results being tracked against price indices for these commodities.)

The FreeMarkets software is designed to conduct auctions in a limited period of time – usually a number of hours – and to track the bids in terms of reductions from traditional costs. So long as there are bids coming in, the closing time may be delayed. Only pre-qualified bidders can participate. Several lots are bid at one time, to permit suppliers to bid efficiently. Once a reserve price is met, the purchaser will select a winning bidder for each lot, but the winner need not be the lowest bidder, as a firm may elect to pay more to continue working with a previous supplier – and avoid switching costs – or with a preferred supplier. In general we find that during auctions bids decline slowly at first, then more rapidly, and then begin to level off well below traditional levels. In working with Japanese clients, they are very quality conscious. So it is a challenge to us to find and qualify additional suppliers that will meet their standards.

To conduct an auction, FreeMarkets personnel work with the client to create a strategy, identify and qualify new bidders, and develop and distribute the RFQ. A suite of Web-based tools called the Buyer Desktop supports this process. FreeMarkets tends to be a strategic component of a customer's overall buy-side e-commerce strategy. In general, we therefore seek a 1-3-year contract with a client, but will engage for a shorter pilot contract to get started. In a typical week FreeMarkets conducts many auctions and has had experience in some 100-plus markets. FreeMarkets refers to its coverage as “horizontal” – horizontal products across many vertical markets. FreeMarkets compensation comes from a percentage of the transactions actually made through our system. We are paid by our client and receive nothing from the bidders.

Where there is an effort to form an industry exchange, FreeMarkets may serve as a technology supplier and platform. Clearly, that takes a lot of technology investment and the need for an extensive team to support these kinds of operations. We have built impressive operations centers and receive a lot of mass media publicity as we do these bidding events around the world. Auctions and reverse auctions may not work well in certain markets where there are limited numbers of potential bidders, so you have to be careful about that. In some industries, there has been concern about the resulting exposure of prices. Nonetheless, about 90% of the firms that have signed up for “trial” auctions have become regular clients.

Session 4. *The B2C Revolution: Managing the Migration from Bricks to Clicks in the Financial Services Sector*

Chair: E. Keith Henry, Program Associate, MIT

Martin Watson, Director, AETNA Life Insurance Company

As you know, AETNA is a very old company – 150 years old – so we have a lot of mortar and a lot of bricks. I would like to talk with you about how we are facing the challenge of how to go into the new world. I will also talk about the potential for electronic “pure plays” in this area and about the “bricks and clicks” combinations that we see as most promising. Companies like ours are fantastic at certain aspects of the business. At AETNA we are wonderful at creating new products that we can then give to our agents who then go out and sell them and we have great servicing capabilities for these products. We then throw all this information into our knowledge base. We sell mainly through a face-to-face sales force and we also make more limited use of telephone, and direct mail, which usually doesn't work that well. We are working hard to offload some of that effort to telephone or automated systems and to improve the ways we run these systems.

One of the interesting things about older financial services companies is that over time they may build very strong brand identities. At AETNA for example, back in the 1970s we had a very strong ad campaign around the theme “AETNA. Glad I metcha.” People remember that – even if they don't really know what the company does or what exact products it now offers. We left the property and casualty field six years ago now, but many people still believe they can buy these products from AETNA and they get angry when we tell them we no longer sell these products. The AETNA agent force has done a terrific job of going out and contacting people and educating them about insurance and getting them to think about their long-term financial goals and how AETNA can help them protect what they have today and reach their financial goals.

We spend a lot of time figuring out how to build teams that can create good products. This is one of the issues we face today as we try to compete in the new world with on-line companies. We may tend to design products that are skewed around the sales force and the agents' relationships with people rather than around the customers. That is a critical question: “Who owns the customer?” Is it the agent? In the traditional world it usually is the agent. In the traditional company, it is usually the career agent. These agents make a career with your company and you have to think of them. Or you may work with independent agents and you have to think of them. They can decide what products to put in front of their customers. So there is a tendency to design products to rely on the agent and to be beneficial for the agent, but that may not be as good for the customer or the company. The pricing of the products may be unnecessarily complicated and they may be more profitable for the agent than for the company. Another wonderful thing about the traditional insurance company is that you have lots of capital resources to throw at something promising. This is an important advantage as we look at some of the new Internet companies and what it will take to meet their challenges to us and our brand images.

Our issue is how to take all the parts of the company – the product groups, – the marketing groups, the sales force, the service groups – and bring them together to do the best job of interacting with the customer – not just through the agent – but in a variety of ways. That is, how to use this wonderful tool called the Internet – that makes pricing seemingly transparent – where you have reams and reams of information – moving into a WAP enabling environment – with a wonderful variety of things you can do to communicate better with the customer. This is a challenge, working in an internal environment where certain segments are traditionally owned by various parts of the business and it is difficult to get into who will have to give up what. I don't want to get into the issue of “my property” and we need to get beyond that by working together.

With the Internet we've already got the brand values, we've got the agent sales forces, and we can develop great products very quickly. But we've also got the question of how to use the Internet to quickly leverage this brand. In our case, we're still being recognized as a P&C company. How can we avoid channel conflict? How do we interact with the customer and improve customer relationship management, rather than give it to a third party?

That permits me to move into the Internet discussion. What we are doing is just one approach. Again, you have the issue of channels conflict with the Internet. We've got these large forces of agents. We've got the independent agents. We've been supporting them for years. That's a lot of capital investment. Now if you go purely direct, you cut out very much of this force. That's a lot of disintermediation. And you get into a lot of internal arguments. There is also the speed to market issue. Even though you can create products fast for agents, it takes time to learn how to get them ready for the Internet and how to do that in the existing organization. So there are many models out there for how to use the Internet. For traditional companies there is the issue of whether to put up a site that is mostly "brochureware," or whether to develop new products and market them on the Internet.

At the same time we are watching new companies marketing insurance on the Internet and we see the problems they are having handling orders as they come in. There is a funny ad on TV in the US about a new Internet start-up that goes on line and advertises and then the orders start to come in. At first they are very pleased, but as more orders come in, they realize that they have no way to handle the volume. That's a big advantage for the existing companies. But we have to spend a lot of money trying to make our systems Internet ready, building some transactional capability, making it possible to come in over the Internet and look at your account, make a change of beneficiary, maybe change some personal information, maybe generate some quotes. It's not really revolutionary. But on the back end, the system can print out some information that will permit the agent to go out and complete the transaction.

Or, you can go further and transform the company. Everyone wants to transform their company to use the Internet, but it's not so easy. It's not easy to create it or to integrate it into the existing organization – especially with all the "silos" of functions that exist. We have spent a year and a half working on our strategy for how we can transform. We have decided that we are not ready to fully transform our company. Instead, what we have been working on is partnering and forming multiple relationships with a number of companies. So we have formed a relationship with Intel. We said to ourselves, "You know what? We're not going to be able to hire 80 top level engineers to Hartford, Connecticut." I don't know how many of you have been to Hartford, but trust me, it's not as glamorous as San Diego.

We're not going to be the experts on global hosting. Or on doing the GUI front end. Or on integrating all the back-office functions. It's really an old idea – outsourcing. But we don't want just a vendor-client relationship. We want commitment and investment, where people have a vested interest to make it succeed. Partnership. We don't just want a lowest bid from Intel or IBM, like in a FreeMarkets auction. We want them to also really partner with us and to participate in the gain if we succeed.

We have also recognized that to really succeed in the new world of the Internet, we will have to integrate and sell other people's products and we have to include other partners. So we have taken a new name for this business – AELAN.com – and in this way we will be able to offer products that do lifetime financial event planning. This is what our goal is: To interact with people and to offer them different products at different points in their life cycles and to build relationships that go on and on. In this way we can partner with the best product partners around the world to create portable products. We can then use data mining to extend these relationships. We have developed a native language agent that permits people to type in questions and to get answers – and questions – back. Through this discussion we can find out what they want and propose solutions. We have the capability to have people come in and get quotes and actually buy products on-line. But many people are reluctant to do that so we also have the option of getting some information or a quote and then transferring to a call center to complete the transaction – just as customers do at some on-line retailers like Land's End. So we will have

multiple products, good sales support, and in that way, hopefully, we will have the best of both worlds. This leads into what we think is most important and that is relationships. We will have to have partnerships with many companies that we might normally consider competitors.

We will also work with companies to create Business to Employee – B2E – programs that will permit them to offer their employees a wide variety of options and products. That will permit us to come back and interact with the customer to help them meet their financial goals. That's critical to what we are doing.

Cyrus Shaoul, Head, Strategic Technology Division, Digital Garage

I would like to talk with you today about a very important concept that I call "The Good Experience". It is critical to this new frontier of e-business. Some of you may be familiar with this idea, but I hope I can bring some new information to most of you.

Industry Atmosphere

In this session we are focusing on the Internet financial industry and everyone knows that this industry is currently undergoing a lot of deregulation in Japan and there are a lot of new companies coming into the market, including foreign firms, and many new partnerships are being formed. Our company – Digital Garage – has developed e-business strategies and built Web-sites for a number of companies in this sector: Banks, insurance companies, and stock brokerages. So I have been involved in the dirty work, right in the trenches and on the front lines, in making things happen in this industry. We all understand that there is going to continue to be a lot of consolidation as banks and other financial institutions seek market share. So there will be a lot of competition and mergers and only the fittest will survive. I hope our clients will be among the survivors.

Digital Garage

At Digital Garage, unlike many consultants, we not only act as advisors to major Japanese and foreign firms, but we also give them actual implementation plans and promise to assist them in implementing it. So we have to be sure that our plans are implementable by us, because we are prepared to help every client execute the plans we give them. That makes us a rarity out there among most consulting firms.

We strategize with our clients, we brainstorm, and then we actually have to integrate all the technology and interfaces to make it work. We also have our own internal advertising agency. Our people come from a wide variety of backgrounds in marketing and advertising. Additionally, we have very high Internet know-how. In this way we can help clients promote their products and services. We also work with our clients well past the launch of their sites and continue to support them as their e-businesses evolve on-line, until they are ready to take on the full task of managing on their own.

One phrase that I see a lot these days is "Web DNA" – meaning people who have the Web in their blood – as opposed to those who are new to the business. I don't know how you judge this, but I hope we have it, that we think "Internet" in everything that we do – the sociology, the psychology – everything. And that also differentiates us from many of our competitors.

I and my firm have been called "retro" or "conservative" because none of the people in our firm are into the hype that has characterized the e-business environment – particularly in the US. That has created a "bubble" in the industry the last couple of years – and now the recent vaporizing of the stock market, based on hype that does not make sense over a longer period of time. People were taking ideas and converting them into public companies in just six months and then flipping them in a very short time. We prefer to build value over a longer period of time and that is a rare approach in the Internet/e-business market. There seem to be few people in the US, at least, that take this approach. I like the term "foundational business." That is, we try to create a foundation on which many things can grow. We are looking all the time for foundational kinds of ideas – and we have found several – that we can

use to build foundational businesses on the Internet. We have worked with a number of clients in the financial services sector and we also work with clients in a number of other sectors including logistics, retailing, B2C, etc.

Key Factors for Success in e-business

There are a number of things that make a site successful. Low prices. Differentiated, exceptional products. Reputation and brand equity. You may have advanced technology that is essential to your business. Encryption. Better selling ideas or promotions. These may well attract customers to the site. But my personal opinion is that – in addition to all of these – the key factor for succeeding on the Internet is to provide the highest quality of customer experience. That is, from the first contact with the company, from the moment they arrive at the site, the customer should feel that they have a painless and enjoyable experience.

I call it “The Good Experience” because I mean it in a very broad sense. For example, when you call a telephone company to get a number, even the tone of voice of an operator makes a big difference. It is a very general and holistic term, and that’s why I like it. As a graduate of MIT, I tend to be very quantitative. But this general, vague and un-qualitative term is the only way to capture this experience of relating to a business or product or university or site. So, to succeed on the Internet, you need to use all aspects of the encounter to create a great customer experience. This is not a theoretical idea. Rather it comes from the experience of helping clients to succeed and from sometimes failing to see what was necessary and therefore helping some clients to fail. I have gained a lot of empirical knowledge that I can share. When you provide a good experience, you have great increases in customer loyalty, customer retention, and lifetime value of your customers. If you don’t have that good experience, brand equity can be very quickly destroyed by just one bad experience.

When people are starting up a new business, they do a lot of consumer research to try to figure out what people want. Then, too often, they disregard that research and go ahead and do whatever they want. That is not enough. You must also use what you learn from the research.

Implementing The Good Experience

At MIT I became disenchanted with the purely quantitative. So I left the Department of Electrical Engineering and Computer Science and joined the Department of Brain and Cognitive Sciences. I tell you that because I feel it is from that department – now that I have six years experience and have started a successful business – I have come back to those roots in human psychology to understand what it takes – what the critical ingredients are – to build “The Good Experience.” I don’t think that is something that any real computer programmers can create. I don’t want to create a false impression here, but I don’t think that people who have the kinds of minds that can create a very logical and structured program also have the kinds of minds that create “The Good Experience”. Only a few have the right “tech/touch” combination. So we have the monster that we call the Web, with so many hard-to-use sites.

We need to change the way we approach building sites to make them serve users better. If you are a computer person, you hate AOL and you won’t go near it. But if you are a normal person, you probably find it easy to use and you like it. The people who built the AOL site are from that rare group of people who understand that. And that’s a lesson for us all.

There are some rules for building better sites. These are obvious things, but perhaps not to everyone. You have got to have an easily usable, efficient GUI. Let me give you just one statistic here; for every click that you require users to make, you lose 50% of the users. So, if they have to go five clicks to get to where you want them to go, you will lose most of the audience before they get there. Just think about that if you are thinking of building a site. Your pages also have to be fast to load and you have to know the technology to make them that way. Respect privacy. If that is violated, your credibility is gone. You need great customer support. These are perhaps obvious rules, but they are often forgotten.

As for current financial Web-sites, my take on them is that design-wise they are generally too cluttered and they are too slow. That is, there is too much information on the page for the average person to read. I've asked many Japanese people about that and 90% agree. Too many clicks and really bad support. This creates a great opportunity for anyone who can create something better and that is my message for you today.

To succeed, concentrate on the experience. Throw away everything else. Understand the customer. Think as they think. Get feedback and use it. If you provide the great experience, everything else will follow. Think locally. What works in other places may not work well here. Start small and learn. Then grow. If you grab too quickly, your customers will slip away as there is no barrier to keep them. Concentrate on "The Good Experience."

Koichi Sakamoto, Bank of Tokyo-Mitsubishi

Today, I would like to talk about what's happening in Japan with regard to B2C e-commerce, in particular, with regard to the financial sector. As you know, Japan is somewhat behind in this area, but our bank has been intensively working on it and has started to offer e-business services. For this presentation, I will start by taking a general view at the current status of e-business efforts retail banking industry. In particular, I will describe "Tokyo-Mitsubishi Direct" which is our Internet banking service for consumers. I will overview its characteristics and how we have developed it. Next, I will give my personal view about the strategic aspects of B2C e-business for the financial industry. I will examine them from two standpoints: Business models and channels management. Thereafter, I will talk about the insights that can be derived from the cases of US and European financial institutions, by comparing them with Japanese institutions. In addition to describing B2C Internet banking, I will refer to the organizational issues that back our e-business strategy. Lastly, I will conclude with my personal view of the future and my basic ideas about what's important for financial institutions.

The Current Status of Internet Banking for Consumers

According to the press, the Internet population in Japan is increasing rapidly and has now reached about 27 million. Many people believe that this has been driven by the introduction of I-mode service. In fact, I-mode has acquired more than 5 million subscribers, or 20% of total Internet users, since its introduction last year. This means that mobile devices – in particular I-mode – have gained larger and larger importance for e-commerce in Japan. In terms of on-line financial services, there are about 500,000 on-line banking users and some 700,000 on-line trading users. In comparison, the US Internet population using financial services is some two to three million out of 100 million total users – only about 3%.

So Internet use in Japan has been increasing and the use of financial services over the Internet has been increasing even faster. In the 1970s, when ATMs were introduced, very few people made use of them. It took some time for people to start. But, today ATMs are accepted by the masses and embedded in banking services. I think that the use of Internet based financial services will follow the same curve, taking some time to grow.

"Tokyo-Mitsubishi Direct"

In his presentation, Mr. Shaoul pointed out that many of the Web-sites of financial services are too complicated, crowded and difficult to use. In the case of our site, this might have been true for the previous version. Officially, we launched our site last September. For the earlier versions, we used "smart card" technology to ensure security. But the flip side of using it was that people didn't find our site easy to use. I myself didn't feel comfortable. So we decided to take a different approach in terms of security measures, to balance the trade-off with ease of use. In order to find the best balance, for each of our designs, we developed a prototype and we asked users to try it out and give us their feedback.

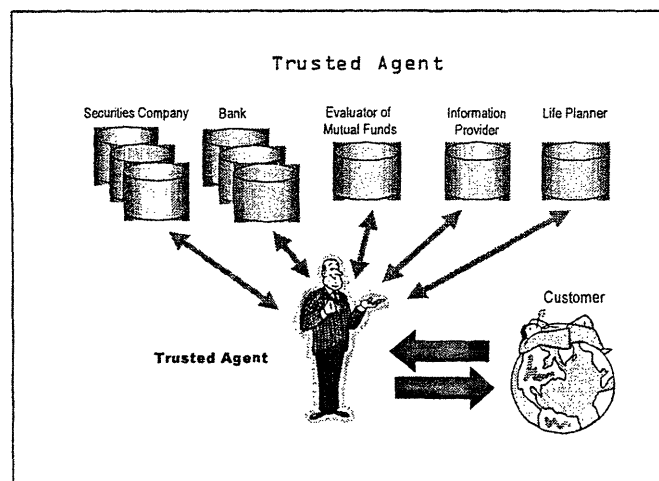
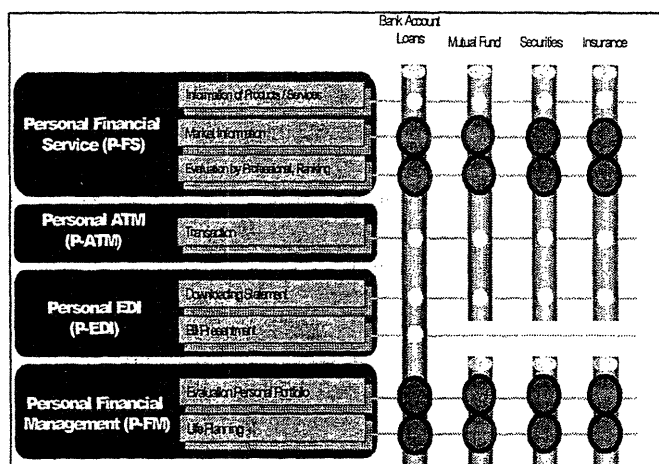
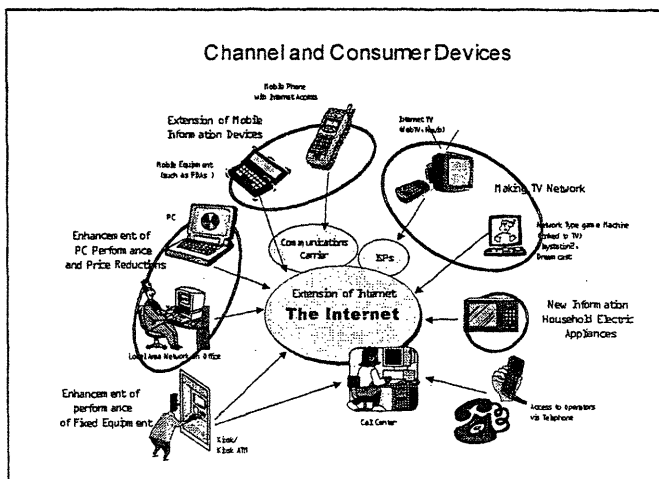
This approach led us to come up with the idea of a combination of SSL 128 and password/ID using random numbers which is a very secure, but easy to use, security measure. In addition we launched the service at the best time, from the standpoint of the Internet usage growth curve. We think that our well-balanced security measure was one of the main reasons why we have been successful in acquiring customers so rapidly – 300,000 customers in 9 months. Another important characteristic of “Tokyo-Mitsubishi Direct” is the concept “Anytime, Anywhere, Multi-device.” We have tried to make it possible for users to access the system wherever they are, using whatever device they want. We offer services through PC, telephone, I-mode mobile phone, TV with set-top boxes such as Web TV, NTT workstation and game machine. (See slide) To make this possible, we used JAVA extensively in developing the system. This makes it easy for us to add different devices and make changes to the system.

B2C e-business the financial industry

In terms of our business models, we are pursuing two different approaches: A "convenience" model and an "agent" model. The convenience model is designed for mass customers – where we pursue economies of scale. We offer simple transactions, such as deposit, withdrawal, transfer and so forth, at low cost. (See slide)

At the same time, we have identified that we need a different business model for the core customer segment that uses our bank as their main medium for financial transactions. This customer segment needs to do more complicated transactions such as loans or investments, where they require consultation with professionals, whom we have coined “agents” in this model. In Japan, people have a high degree of trust in banks, which is our core competency. We are trying to leverage this competency in this model. We will have our “trusted agents” serving customers for complicated services such as investments, life planning and so forth. (See slide)

Another aspect, which I would like to mention with respect to B2C e-business for the financial industry, is the discussion of bricks versus clicks. Many of you have read May 29th story in *The Economist* about how banks are using direct channels. It discusses the issues that net banks, which offer services purely



through direct channels, are facing. I believe that what they say is quite correct. People often speak about “migration from bricks to clicks.” But I disagree with this idea. It is true that dot-coms have speed and flexibility and incumbents may be slow to adapt to changes. But it is not only speed and flexibility that matters. Once the incumbents make their move, they can leverage their competencies, such as scalability and brand recognition.

In the Japanese financial industry, we have what we call “network dedicated banks” which offer settlements based upon the network’s low cost structure, with no bricks and mortar branches. But we think that customer needs can vary according to various factors such as occasion, type of transaction and so forth. For example, even an Internet heavy user may occasionally want to visit a branch office when he wants to consult with a financial advisor. My view is that the “network dedicated bank” is a business model that does not fully meet customer needs and can exist only during a transition period.

Western Business Models

In this audience, I think there are people who are trying to bring Western business models to Japan. There are many aspects that we can learn from Western business models. In particular, flexible way of thinking and speed are the two things I think are most important. However, when we introduce Western business models, we must always keep in mind that there are aspects that are universally common and others that are locally different. For example, I think technology and individual value are common among different countries. But the Japanese settlement system is different, for instance, from the US system. We have a very efficient settlement system, which is equivalent to ACH – the Automated Clearing House system – in the US, but with much lower fees and better performance.

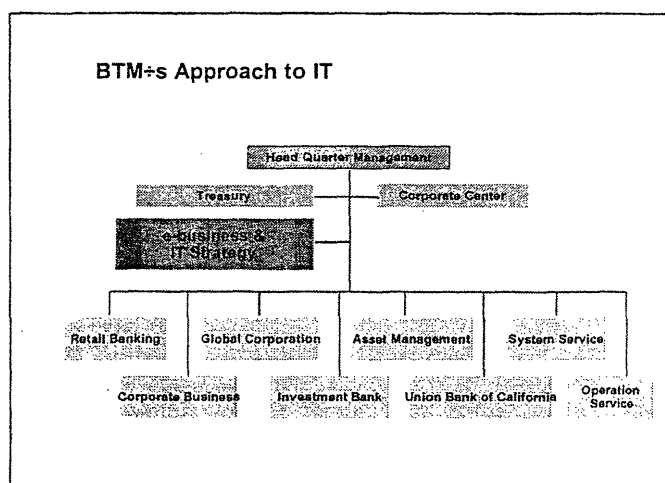
If I were asked to pick another example, however, I would say consumers’ perceptions about security are different. The Japanese consumers are still very concerned about disclosing their credit card numbers over the Internet. Moreover, in term of channels, we have B2E – business to employee – channels. It is Japanese firms’ tradition to provide certain financial services to employees as a fringe benefit. Also we have a much larger number of convenience stores all over the country. So we regard these as channels through which we can offer services. It is my advice that one should create the best balance and mixture between global standards and local peculiarities.

Organization and Culture

As I mentioned, flexibility and speed are the two important aspects that Japanese firms should learn from Western business models. Aiming at achieving these two, we have decided to implement an organizational reform to support this basic vision with two key concepts: One is to become a “Hybrid Bank” with a diverse range of skills and expertise; the other is to build a “Bank for You” by catering to individual customer needs and preferences.

With respect to organizational reform, we are planning to start a new business unit system July 1, 2000. After the reform, while Corporate Management bears bank-wide management responsibilities, eight business units will be created to serve relevant customer and product segments. Each unit will be given specific authority and responsibilities for speedy and viable decision-making.

The bank’s IT governance is centralized in the “eBusiness & IT Initiatives Unit” which is directly overseen by top management. By empowering each of its operational units, the bank is expecting to facilitate out-of-the-box thinking, infusing new ideas and processes throughout the organization. (See slide)



Today information and communication technology offer new business potential. They create new business opportunities. IT truly affects our future as a bank. So, the eBusiness & IT Initiatives Unit's mission is to lay the foundations for facilitating IT deployment throughout the company, and to explore how we can use it to produce new value. Its mission also encompasses R&D, new business incubation, and business model development.

Future Perspective

I would like to talk about our bank's future perspective. As I mentioned, we have two different business models for B2C Internet banking: the "convenience" model and the "agent" model. For the convenience model, we would like to leverage and enhance our Internet banking "Tokyo-Mitsubishi Direct" in order to acquire critical mass and lower cost by realizing economies of scale. By doing so we can offer our services at lower prices for consumers. With respect to the agent model, we have a plan to offer a full range of on-line services including securities investments, insurance and loans along with personalized consultation by professionally trained financial advisors. We will provide these types of value-added services to affluent customers who use the Internet for financial services, which we call the "Web rich" segment. Through this service, customers can not only make various kinds of financial transactions, but can also obtain such services as consultation through the Internet. For example, customers will be able to consult with superior financial advisors about their investment plans through the computer screen, even if they are at home sitting in their living room. We think this will provide rich value-added services for our core customers using state-of-the-art technologies.

In addition to B2C, a trend worth watching is B2B. We will support our corporate customers with respect to their e-business strategies. For example, we can provide payment solutions when our corporate customers are launching their e-commerce sites. In addition we have a plan to establish a portal site for our corporate customers, particularly focusing on small businesses. We will provide business specific functions to help them streamline their business processes and provide additional value.

To conclude my presentation, I would like to talk about my personal view about what's important for financial institutions in this era of the Internet.

- First of all, I believe alliance strategy is one of the keys for the e-economy. Under the constraints of resources and time, you cannot develop everything by yourself, independently, and keep up with time-to-market. You need to select some certain areas and focus your resources on them. In order to offer the highest level of service, you need to make alliances and establish the best of breed.
- Secondly, I think it's critical to clarify what should be standardized for social infrastructure and what should be uniquely created as our source of differentiation. For example, if specifications for smart cards were to be created differently by each bank, merchants would have to install various kinds of card readers. That would burden them with higher social costs, making smart cards difficult to be accepted by a critical mass.
- Thirdly, I would like to point out the importance of making a clear distinction between manufacturing and sales. Unlike manufacturers, financial institutions have traditionally mixed the functions of manufacturing and sales into one single function, which hampered them in implementing effective sales and product development. In order to make the distinction between sales and manufacturing, these functions must be separately managed. However, separating the functions is not enough. You should create a system where good collaboration between sales and manufacturing can be generated. They should work closely together, like a pair of wheels.

Lastly, I would like to thank the MIT Japan Program for providing me an opportunity to present what our bank has been doing and my personal thoughts with respect to e-business. For those of you who

have questions or want to partner with us, please feel free to contact me. I will be happy to talk with you.

Session 5. *The Venture Environment in Japan and the US: Turning New Business Models into New Businesses*

Chair: D. Eleanor Westney, Professor, MIT

Muhammad Hiraj, Vice President, Morgan Stanley Dean Witter

I would like to speak to you about capital markets, about which Internet companies can go public, and the current outlook for technology IPOs. In the NASDAQ market these days, as always, the only thing that is constant is volatility. And the only thing you can bet on is change. Many of the companies that were making a lot of noise and had a lot of buzz surrounding them just six months ago, unfortunately, have practically disappeared. You must have seen newspaper and magazine articles about the number of Internet companies that are going broke every week or every month. It's been ugly out there.

B2C

In e-commerce, in the B2C sector, stock prices are currently down an average of 70% or more from their last twelve months highs for the sector. Many investors are now unwilling to invest in such companies. Even though last week was one of the best weeks in NASDAQ history, it still did not help most of the companies in this sector. Many of the early Internet IPOs did create phenomenal wealth for their founders and for their early investors. Of course, those who sold at higher levels probably are, already retired and living happily in Hawaii. But this volatility is hurting new companies that need capital and need to hire talent. The outlook has changed so much that many bright young engineers are now asking for higher cash compensation rather than accepting stock options.

Many B2C stocks are well below their issue price. There is a limit to the tolerance investors can have for the roller coaster ride in stock prices that they have been on for the past 18 months. So these investors are returning to selectivity and sanity, looking for fundamentals and value. They are questioning things like revenue-multiple valuations and high cash burn rates with no profitability.

Valuation

Morgan Stanley published a research report in 1996 that suggested that the Internet/e-businesses is eventually likely to be a 1% net margin businesses. So one must wonder why so many of these businesses ever got driven up to such high valuations if, in the end, many of them cannot achieve the margins necessary to deliver good profits to their investors. Most of that certainly has been due to the supply/demand imbalance.

Looking at the Japanese IPOs in the Internet space, we see that while Oracle Japan and Itochu Techno-Science are way up, that several IPOs are down substantially – more than half – from their offering prices. I have been involved in the #1 and #2 on the list, Oracle and Itochu, and also in Crayfish, that went up sharply – from \$24 to \$170 – and is now trading substantially below its issue price. As in the US, only a few IPOs eventually end up staying well above their issue price.

Internet Opportunity

So, "What's a good Internet company to invest in?" In a research report that we issued a year ago, we said that eventually less than 30% of Internet IPOs will be trading above issue price. I think that's a bit aggressive. Maybe 20% or lower. A substantial majority – 75% or more – of the IPOs Morgan Stanley sponsored are still trading above IPO price, but as we have seen for the overall market, once the initial six months or so are over, many IPOs go through a decline in price and less than 20% or so are likely to perform well in the mid to long term. Here is a quote from *Motley Fool*, "90% of Internet stocks are

overvalued and 10% are dramatically undervalued". Many thought that Amazon.com was overvalued when it went public at a few hundred million market cap. So I am not sure what to make of its current \$20 billion market cap, but it has done well for its early investors.

We publish an IPO report every year in which we analyze IPO performance, starting from the early 1980s when we did the Apple Computer IPO, to the present. This report shows that a few of these companies tend to account for a large share of the value in the public market. At the time our last report was published, 5% of the companies accounted for 77% of the total value in the market. Companies come and go and turnover is part of life in this business. What the market does reward is companies that come up with unique new business models and can continue to deliver on these business models. The market gives these companies a substantial premium. So when there is a successful model out there, several companies come in and try to do the same thing and the space gets crowded. And then certainly there is a shake out. So if you want to invest in IPOs, our research shows that the time you are likely to get the best returns is when there are the fewest IPOs and less market hype. It is easier to tell who the leaders are at that point. So perhaps the best advice is: "Go invest in IPOs when markets appear to be closed."

We continue to believe that the NPV of cash flows is the place you start when you value a company and bring it to market. Sometimes we get the criticism that some of our IPOs do well because we under-price them. However, we start with the fundamentals. So the valuations we came up with were much lower, compared to a market that was very over-priced. The pricing was often a lot higher than the filing and the after-market trading.

In the technology and Internet markets, "The winners – #1 and #2 – take all." It is relatively easy to get into the portal space. But in that space, AOL and Yahoo have 80% of the value. The easier the area is to get into, and the lower the barriers to entry, the fewer the businesses that get high valuations. On the other hand, in Internet infrastructure and software, it tends to be a lot more fragmented and less concentrated. So the market capitalization is a lot less concentrated as well.

Execution

What are our criteria for sponsoring companies for IPO? Our criteria are no different than for any other method of fundamental valuation for a company and for its ability to execute. Sometimes the technology business is more about execution than about technology. It's not just about business models, but execution. If technology were the #1 criteria, Oracle may not have been the #1 database company and Apple could have been the #1 in operating systems, not Microsoft.

In Japan, there has been less IPO activity, and valuation multiples tend to be higher, because of the scarcity value. Oracle Japan is currently valued at 6 times its parent company's valuation. That is interesting given that Oracle Japan gets this valuation despite the fact that it does not have resident R&D but tends to resell products from its parent.

In the end, it is people that make a company happen, not just business models. In Japan, talented and experienced management is harder to recruit because not too many experienced managers are open to working in a startup environment. So what makes a good Internet Company? To quote Don Valentine of Sequoia Capital, a famous venture capital firm in Silicon Valley:

- **Monster Market**
- **Killer Product**
and
- **A few Good Men and Women**

And of course EXECUTION.

David Marra, President, BOOOK.com

A number of speakers from the financial community have just spoken about the venture environment from a financing and deal perspective – the 30,000 ft. level, if you will. My company, BOOOK.com, which has been over a year in the making, launches this week. My views on the venture market are, in many ways, similar to that of the previous two speakers, but my perspective is that of the entrepreneur on the ground – ground zero, if you will. What I am going to talk about today are the challenges faced by the *entrepreneur* – putting a team together, raising capital, generating revenues – in the Japanese venture context.

My view is that while in five or ten years the venture business in Japan might look a lot like that of the US, I think it is more likely that it will be very different. Why?

On the surface, the Japanese venture business and the US venture business looks very similar. We have a number of investors that are similar. A number of the large market participants are the same. Both countries have large, highly educated, populations. The Internet is growing dramatically by all measures in both countries, and future growth possibilities are outstanding.

However, there are striking differences. The US has a long history of VC funding, developed over many business cycles. Tolerance for risk, and the ability to evaluate risk, are well-developed in the US. That is just starting to be the case in Japan. The US Internet space is dominated to a very large degree by VC funded companies.

Now let's look at the Japanese Internet Space. The *daikigyo* – large, established Japanese companies like Sony and Recruit – were the first to enter the VC space and they occupy a large part of it. The next large group are US Internet firms, who, based on their success in the US, came to Japan with established brand names and support organizations. These two groups dominate the Internet business in Japan. Therefore venture funded businesses constitute a much smaller slice of the Internet pie in Japan than in the US.

Right now, in the US, we have VC-funded Internet companies driving Internet growth by taking over traditional businesses – witness the AOL/Time Warner deal. That's not happening yet in Japan and *it may not happen*. The challenge for venture capitalists and venture businesses in Japan is how to grow the Internet industry even though big corporations dominate it.

In order to make this happen, it comes down to the relationship between the VC and the entrepreneur. There have to *be* entrepreneurs who understand the rules of VC-funded businesses. What is it that a VC is really looking for in the entrepreneur? First, a great idea. But not just a great idea – it has to be a *big* great idea. VCs are managing large sums of investors' money, often over \$1 billion. These economics dictate VC behavior – VCs have to place *big* bets, and get *big* returns. They don't want to invest \$1 million to get \$10 million in three years – a great return for sure, but nothing on \$1 billion. They need to invest \$50 million and make \$500 million. So a VC is not just looking at the return, it's also looking at the magnitude of the return.

To make these big gains possible, the vision of the entrepreneur must be huge. Most entrepreneurs – including myself – start out by putting all our money into a vision. Then have to walk into a room of venture capitalists and say, "I can make you \$200 million, or \$500 million or \$3 billion because of this, this and this. I've got the idea. It's a *big* idea. And I've got the *team* to pull it off."

One of the really important reasons that a VC is willing to look at an entrepreneur and put a relatively large amount of money into his business is because of the team. The entrepreneur must understand what he can do, but also what he can't do himself, and he has to fill in all the blanks with the team. In the case of Japan, it is an open question whether there are entrepreneurs who can put the teams together.

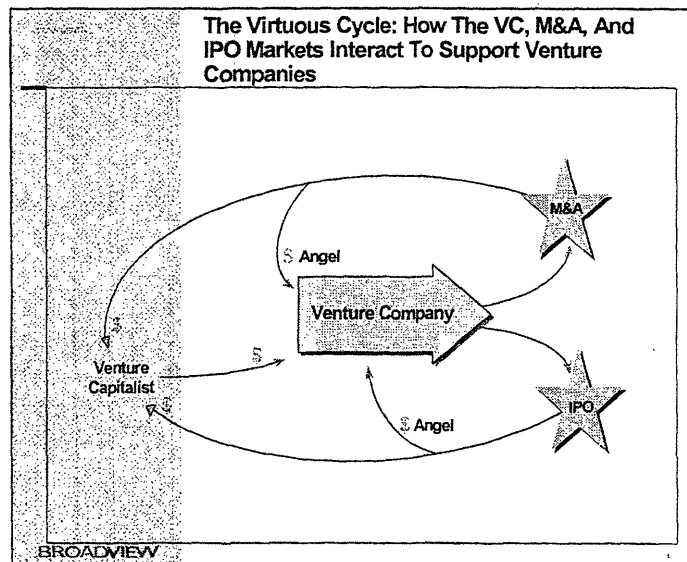
In the case of BOOOK.com, we attracted \$8 million in our series A. Our team wasn't just me. We have a 15-year veteran of the software industry who has been a senior manager at large Japanese companies and knows the software business inside and out. We have a Web-site creator who knows everything about the US Net and the Japanese Net and was building enterprise Web-sites at Toyota before he came to BOOOK.com. We have an editor-in-chief who joined us from a big successful Japanese magazine to create original Web content. When you walk in the door with all these elements, the vision, *the big vision*, and then the team. As Muhammad Hiraj said, "It's execution that counts." That's right. The venture capitalist is looking at the team and asking himself the question, "Can these people actually do it?" The most important thing supporting these high valuations is that there are companies out there where investors *do say*, "These people can do it."

The Internet is doubling every year. There are more users on the Net, spending more time on the Net. They're spending more money on the Net. As we seek to forecast whether there is going to be a healthy VC environment in Japan, the question is whether Japanese entrepreneurs understand the dynamic that needs to exist between the entrepreneur and the VC. It remains to be seen whether Japanese start-ups can attract experienced managers with big visions who will create great teams and ultimately great Internet companies in Japan.

Brian Riordan, Representative Director, Broadview Japan

I'd like to talk with you today about the venture environments in Japan and the US and how they compare. Some of you may not know much about Broadview. We provide financial investment advice to high tech companies. Our company has almost 270 employees based in New York. Our Tokyo office is our newest and we have just nine people here in Tokyo. I've been in Japan about 9 years.

In Japan and in the US it is important to understand the dynamic – the cycle – that drives these things, and to see who fits where in the cycle. (See slide) The main vehicle is the VC – the venture capital company. The venture capitalists put in the money. The company goes public – about 1 case in 10 – or there is a merger the rest of the time, and then the money goes back to the investors who do it again. Occasionally, there is a rich individual who acts as an "angel investor" and helps get things started. These all work together to create the market.



What convinced us to come to Japan is that 2 or 3 years ago, Japanese VC firms were growing rapidly from a low base and the IPO rules were changing. The average age of IPO companies was 27 years, but it was coming down fast and things were changing. In the US, in 1999, there was a lot more than usual activity. About \$27 billion was invested by VCs, and \$14 billion from IPOs – a reverse of the usual ratios – as compared to over \$750 billion in M&A activity. This reversal of VC and IPO ratios is an indicator of the bubble we were going through. Usually you go public to have access to capital. But in the US in this period, it was easier to get venture capital than to go public. And this reflected the lack of companies with a proven track record to go public. In this regard, I agree with Muhammad Hiraj.

In Japan, in 1999, the picture was similar to the usual US pattern, with \$6 billion in VC finance, \$2.7 billion of IPO activity and over \$42 billion of M&A activity. Looking at trends in Japan, it is clear that activity has been increasing fast from 1996 to 1999 in all sectors. (See slide)

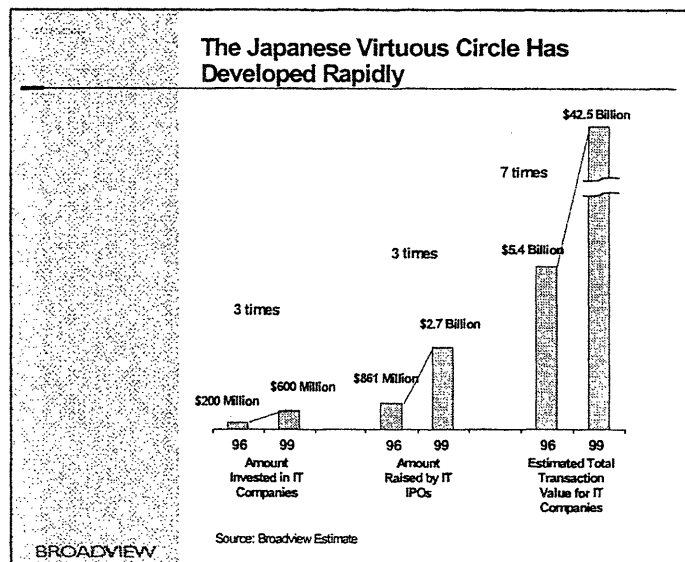
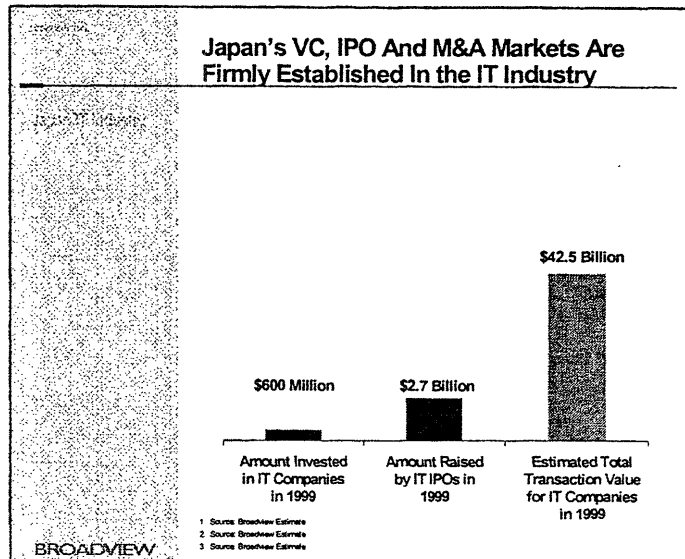
Still, comparing Japan to the US, there is clearly still a lot of room to grow in Japan (See slide).

There are some similarities and differences in how VC has developed in the US and Japan but, in general, the patterns are quite similar. A lot of foreign investment firms are now coming into this market and that will also have an influence. In general, in Japan, investors have been more interested in "Portfolio Theory." That is, they have invested relatively small amounts of money – \$100,000, \$500,000 – in 20, 40, 100 companies. Basically, they just invest. They say, "Call us. Call when you get rich. Let us know when you're done." There is not a lot of interaction in the meantime. The way Japanese VCs find investments is also pretty passive. They put up a sign to show they are in business and say, "Send us your business plans." Then they invest in 1 in 100. No management participation. Part of this was a reflection of the Japanese regulatory situation. If you invested in a lot of companies, and sat on many boards, that was illegal. But that has gone away in the last 18 months.

The US was very much that way in the 70s and 80s even though we did not have that kind of regulation. But what we are finding in the US now is quite different. VCs are investing in fewer companies and investing more in each one – usually at least \$20 million – and taking a more active role.

What the best US VCs do is to form their own ideas about where there is going to be opportunity. Then they go out and find the companies that they think are going to be #1 or #2 in that space. If they can't find it, they create it and go after this opportunity. Then they are very active in making sure this company is successful. They usually have a board seat. They give a lot of advice about strategy, and they make sure the management team is up to the challenge. They have no qualms replacing the president. That's hard in Japan. But in the US, if the guy who started the company is not the guy to ramp it up to 1000 people, that's an understood thing. Next year, Japan will be operating on this model. This is true in part because so many overseas firms have moved into this market and have proven already that this is a better model.

The "hot" themes in Japan today, based on talking to a lot of people here – maybe 25 companies a week – are B2B companies, B2C companies, and wireless. In the US you can't even get in the door today with B2C. But in Japan, there's still plenty of room in the public market for B2C. In fact, so far, they really only have Rakuten that went public this month and has a great market cap and is going up. So people are interested in investing more in B2C in Japan. In wireless, everyone knows that Japan is

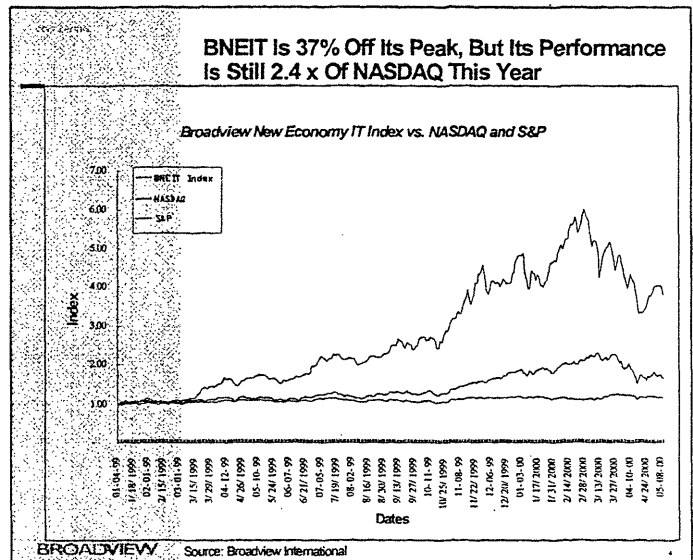


ahead. So in theory, there is a lot of interest. But there is a shortage of entrepreneurs and it is hard to find a good business plan to invest in.

In the US, I would say the largest areas of interest today are B2B and Optics for Telecommunications – largely due to Cisco. They will buy anything that moves. In the US, people will try to “make companies for the gorilla of the industry.” That doesn’t happen yet in Japan. B2B is still very strong in the US – with 25 different public companies already in that space – and we have to see how that plays out. There also continues to be a lot of interest in infrastructure plays – things that make the Internet work better – that enable e-commerce.

As for differences between Japan and the US, in the US there is more focus on selling to the “gorilla” for a good price, sooner, safer, if you can get a good valuation. In Japan there is more focus on technology. We at Broadview tend to look more at the market and how revenue is growing. In Japan, there also seems to be a fascination with young – under 40 – managers. You can’t get many good older managers to leave where they are and come with new dot-com companies. But in the US, VCs prefer a guy who “has done this before.” In Japan, VCs look for market gaps – such as places where firms have done well in the US.

We are very excited about what is going on in Japan. So we recently created the BNEIT – the Broadview New Economy Internet Index for Japan. Made up of companies that have gone to the market over the past 2 years. Plus one exception – SoftBank. Everyone else went to market in the last 2 years. If you had invested in this Index in January 1999 – in spite of all the bad things that have gone on lately – today you would have almost 4 times your money – and that’s a lot better than NASDAQ in the US. (See slide) So there is a lot to be optimistic about in Japan and Broadview looks forward to playing a role in the future development of this market.



Speaker Information

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Robert Feldman is the chief economist for Japan for Morgan Stanley, and is a Managing Director of the firm. As part of Morgan Stanley's global economics team, he is responsible for forecasting interest rates and the Japanese economy. He participates in formation of the foreign exchange and equity strategies of the firm and contributes regularly to the daily, weekly, and other publications of Morgan Stanley. Prior to joining Morgan Stanley in 1998, Feldman was the chief economist for Japan for Salomon Brothers from 1990-97. He worked for the International Monetary Fund from 1983-89, in the Asian, European, and Research Departments.

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Shigeto Itoh has spent has a long history in the consumer electronics and computer industries: 16 years at Tandy Corp.; 5 years at Alpha Peripherals, Irvine (R&D company, owned by Mitsumi Elec.); 2 years at Akia USA (computer company, owned by Akia Japan); and 1 year at SYNNEX.

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Takashi Nawa is a Partner in McKinsey & Company's Tokyo Office. He is a leader of McKinsey's worldwide Electronic Commerce Practice and also leads Tokyo office's Electronic Commerce Practice. He was also a member of *"Council for IT-driven Industry Process Redesign"* organized by Ministry of International Trade and Industry (MITI) in Japan in early 1999. Prior to joining McKinsey, Nawa was employed as a manager at the Mitsubishi Corporation in Tokyo and Mitsubishi International Corporation in New York.

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Ken Okamura became Dresdner Kleinwort Benson's Chief Strategist for Japan in November 1998. Prior to becoming Chief Strategist, he was a member of the top-ranked Japanese strategy team for Dresdner, a fund manager for Baring Asset Management, investing institutional assets in Japanese equities from both London and Tokyo.

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Brian Riordan is a Representative Director of Broadview Japan, a subsidiary of Broadview International, an investment bank that provides venture financing as well as strategic and financial advice to technology firms around the world. Riordan worked in strategic consulting for 5 years in Tokyo and London before joining Broadview six years ago. At Broadview, he has worked in New York and in Silicon Valley before founding the Tokyo office 2 years ago.

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Martin Watson is a Director, AETNA Life Insurance Company. Over the last 11 years, Watson has been in leadership positions in the health insurance and international financial sectors. He has held various executive positions within AETNA Inc., AETNA Financial Services, and AETNA US Healthcare, ranging from Director of Core Member Services for AUSHC, to Assistant Vice President of New Business in AFS, and Vice President of E-Business for AETNA International. Prior to joining AETNA, he founded and managed a successful multimedia firm.

In addition to an MBA, and JD, Mr. Watson also holds two Bachelor degrees.

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Eleanor Westney holds the Sloan Fellows Chair in management at the MIT Sloan School of Management where she teaches in both the Strategy and International Management group and the Organization Studies group. Westney is also the Associate Director of the MIT Japan Program. In 1994-1995, she served as the Director of the Sloan School's Senior Executive Program, and she has taught in executive programs at INSTEAD, Carnegie-Mellon, Chalmers Institute of Technology in Sweden, and the University of Toronto. Since her undergraduate days she has studied Japanese society and organizations, and she has been Visiting Researcher at the University of Tokyo and Visiting Professor at Hitotsubashi University.

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