Chapter 1

Sources of Value, Management Challenges, and Industry Impacts

James S. Henry

and

Eileen McGinnis

Sag Harbor Group

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Executive Summary

This book examines the management challenges and industry impacts of new electronic retail financial services, especially Internet banking, brokerage, life insurance, and retail payments systems. Based on interviews with more than fifty leading experts in the arenas of on-line financial services and Internet technology, it considers the outlook for key Internet technologies, the "lessons learned" from previous industry experiences with managing new electronic channels, and the impacts that these new services may have on the basic terms of competition in the financial services industry. Our key findings are as follows:

1. **Technology Barriers**. On the supply side, there appear to be no serious technical obstacles to the widespread deployment of direct and indirect networked financial services over the next 5-7 years in the First World and many emerging markets. Indeed, in this timeframe, a veritable tidal wave of powerful new Internet technologies is likely to sweep down upon the financial services industry, creating much more powerful retail services than exist today. In particular,

    - Endpoint devices, user interfaces, intelligent agents, bandwidth, and network services like connectivity, security, and "middle-ware" will show dramatic improvements.
    - The technologies required for mass deployment of new retail payment systems, especially electronic billing and presentment, will gain much wider market acceptance.
    - Concerns about Internet security will be substantially alleviated. In fact, by the end of this period the Internet is likely to be recognized as a *much more secure* place to do e-commerce and finance than traditional financial channels.

    - One remaining area of serious concern is scalability the current generation of Internet service infrastructure was simply not designed to handle likely traffic growth.

    - Overall, however, the main challenges are managerial, not technical the task is to develop the internal capabilities and practices needed to absorb and exploit this surge of technology and avoid a "technology arms race."

1. **Sources of Value**. From the retail customer s standpoint, Internet-based financial services offer several compelling sources of value. Not only will they be able to provide lower-cost, higher-value substitutes for existing "offline" financial services, they may also make powerful re-combinations of these services more economic, facilitate new information, comparison shopping, electronic payments,

and "intelligent agent" advisory services, and a higher level of customized services to individuals and families.

We are therefore quite bullish about these services potential to fundamentally "re-intermediate" the way that financial services are marketed, sold, priced, and delivered, providing huge cost savings and higher value to consumers and service providers alike. For many customer segments they have the potential to become the predominant way of doing business especially the high-value "time is money" segment.

2. **Management Challenges.** In principle, most of the current leaders in each traditional financial service industries *should be* well-positioned to survive the transition to electronic services, given their financial resources, client bases, the traditional importance of factors like brand and reputation, and the fact that many of the key technology components required to provide these services are likely to be available from multiple "open" sources.

   However, there is a risk that even very powerful institutions will change too slowly, losing share and profitability to a combination of "niche upstarts," "financial supermarkets," and "industry consolidators." This conclusion is reinforced by our finding that, up to now, leading financial services companies have often had trouble managing the design and deployment of retail electronic channels. Among the most important obstacles have been the following:

   - Excessive reliance on proprietary systems;
   - Weak support for industry standards and "co-opetition;"
   - Excessive focus on supply-side benefits; limited up-front customer input in the service design process;
   - Bureaucratic internal management practices, including extremely long product cycles and limited upside incentives for service developers, especially by Internet standards.

   Overall, succeeding with electronic financial services will require new skills and reengineering on the part of today s financial service incumbents.

   In a sense they must become technology companies, with faster cycle times, a more central role for Internet technologists, and increased ability to work with outside development and channel partners. These new competitive requirements are likely to widen the gaps between winners and losers in the industry.

1. **Industry End-States.** We believe these services have the potential to fundamentally alter the structure of the financial services industry perhaps as quickly as the introduction of Internet-based data services has already done in the telecommunications industry.

- **Country Impacts.** The success or failure of online financial services depends heavily on the peculiar characteristics of local country markets. To cite a few polar cases:

- In Scandinavia, where telecommunications infrastructure is very advanced, Internet penetration is even higher than in the U.S., and "digital PCS" wireless services are widely available, the country is much farther along toward the pervasive use of Web-based financial services. It provides an image of future possibilities for the rest of us.
- In Canada, where bank regulation is standardized at the national level and major banks have a overwhelming market share, debit cards have achieved a much more entrenched position, while "smart cards" have had an uphill battle.
- In Japan, where telecommunications services and Internet access are relatively expensive and there is much lower PC penetration than in the U.S., the deployment of new Internet-based services is lagging much farther behind.

- **Industry Impacts.** Several different kinds of industry impacts need to be distinguished.

- Retail electronic services will certainly undermine the returns traditionally earned by institutions that have specialized in particular regions, products, or customer segments. This may have a bi-polarizing impact on industry structure. The decline of location advantages and information rents might seem to favor global, technically-sophisticated universal bank-like institutions that can establish a brand identity above the increasingly noisy fray.
- However, our initial evidence is that economies of scale and scope for Internet-based services are limited, probably in contrast to traditional banking. The ability of large institutions to establish clear "first mover advantages" to date has also been limited.
- So electronic services may also permit some niche players to leverage their local market positions into a global presence. And the surge of new technology into this arena is also opening the door to a host of agile, creative, technology-based entrants. Many of these will fail, but new ones will take their place. Those that survive may be able to take on roles that industry incumbents are structurally unable to play. Overall, there appears to be plenty of ways for smaller institutions that are nimble and smart to win.

- The rise of networked services will create a need for several new kinds of intermediaries, especially certificate authorities for e-commerce, electronic financial advisory networks, billing aggregators, service comparison-shopping aggregators, and financial data aggregators. Long-term, some of these aggregators may, in turn, be replaced by sophisticated software following the rule that *the Net systematically eliminates non-value-added middlemen.*
- Real-time transactions execution that were formerly multi-stage business processes, like inter-bank settlements, may substantially undermine the demand for "reserve money" currency and demand deposits. Since a high share of the banking industry s non-interest income depends on its role in the payments system, over time, this is a serious threat to the "pure commercial bank."
- By making the delivery system more efficient, increasing customer value, and reducing conventional geographic and segment barriers, the new electronic services are likely to accelerate the growth of the overall global retail financial services market. So while the "supply-side" impact of the Internet technology wave on financial services will be to make most segments of the industry more competitive, this is likely to become a higher-growth, more attractive market.

In other words, this is hardly a zero-sum game situation industry participants have a mutual interest in adopting standards and making investments in their customers and technology that help the market grow even faster.

I. Introduction Sources of Value

"We have made changes, yes, we have made changes. But we have made them at the right time. And the right time is, when there is no other choice."

-- Conservative advisor to Kind Edward XII, defending his policy of yielding ground to Parliamentary reformers

Financial services are in the midst of a new industrial revolution. But this time it is a revolution in the means of distribution, communication and service, not just the means of production. The full implications of this revolution for retail financial services customers and producers are still only dimly perceived, but it is already clear that they will be profound. This is partly because it means that there will be less costly, more capacious "new delivery channels" for the same old products on more or less the same old terms from the same old companies to the same old customers. It is also, as we will argue, because this revolution will permit *new kinds of services* to be provided to *new and old customers alike on new business terms* by *entirely new kinds of service providers*. Some of these may be spawned by existing institutions, but others may not have anything to do with the conventional "banks, brokerages, and insurance companies" that we have come to know and love. In this process of "creative destruction," several old ways of doing business will be eliminated, but, as we will see, several new ones will be also created. The objective of this white paper to describe the strategic management challenges and dilemmas posed by these developments, and to propose at least a few solutions.

I. Context Taming the Internet for Business

The context for our discussion of the Internet s potential role as a new financial services platform is its extraordinary growth and its even more extraordinary conversion from a wide-open range to a valuable arena for electronic commerce. This section examines this growth process in more detail, and reviews some recent measures of the Internet s new role in commercial and financial transactions.

As most of us know by now, the growth of the Internet as a new global platform for communications and commerce is occurring at a pace that is unprecedented in economic history. Since its takeoff in 1993-94, it has already attracted at least 45-50 million individual dial-up users in about 100 countries, a contagion rate that is more than five times what was ever achieved by broadcast TV, radio, telephony or cable. As shown in **Figure 1.0**, the Internet already accounts for as many message units per capita as public telephone networks, which have been in business for more than a century.

In the U.S., the number of Internet users has quadrupled in the last three years. By now, about 35 million people, contained in approximately 20 percent of all households, have individual dial-up Internet access accounts. At current growth rates, this total may well reach 60-70 million Internet users in the U.S. by the year 2000, with at least as many more located abroad.

For the most part this extraordinary takeoff occurred without the deep involvement of the business community, except technology suppliers, and with very little use of the Web for serious commercial or financial transactions. As recent as 1996, for example, the total value of all retail goods and services purchased by way of the Internet amounted to a mere $518 million; retail electronic financial transactions on the Internet totaled less than $400 million, and commercial Web advertising totaled just $65 million tiny fractions of their respective off-Web counterparts.

This takeoff also took place despite the fact that many of the Internet s most fundamental technical requirements for bandwidth, security, scalability, directory services, and the availability of cheap, reliable, telephone-like "endpoints" are to this day still works in progress. As we will explore in Chapter II, the Internet s original "open, free-range, non-commercial" roots still exert a powerful influence on the technologies that it uses and the kinds of financial services it can support.

In any case, all this rapid growth has made the Internet an attractive target for everyone with something to sell, including financial services companies, and conditions on the Internet are changing at terabyte speeds. It is no longer just the province of academics, hackers, late-night browsers, and e-mail addicts. It is moving beyond these roots in the direction of becoming a robust new platform for global e-commerce and finance, with a menu of applications and services that are of great interest to people for whom "time is money" -- private investors, heavy traders, and online spenders.

Building on the dramatic growth of the Internet in since 1993, in the last few years millions of people have begun to use the Web for serious commerce, retail banking, brokerage, and even insurance transactions. A key attraction is that its growth does not depend on any one application arena like financial services, e-commerce, research, or communications in a sense, customers are just " there for the taking."

While this is a global transformation, the Scandinavia and the U.S. are leading the pack in these new commercial applications. In tiny Sweden, for example, forty percent of its 4 million families now have Internet access at high data rates, 17 of its 20 banks now offer Internet banking that is accessible from home, office, and digital cell phones, and more than 10 million "smart cards" are being used for digital payments. In the words of one leading banker, "No one here really wants to use retail bank branches or checks anymore." As we will see later, Sweden may provide a good a leading indicator of the kinds of financial services that are possible.

In the US, the intensity with which people are using the Internet is also increasing. According to one recent survey, more than 30 million users in the U.S. are now on the Internet every day. This is partly because they are turning to the Web in increasing numbers to handle basic economic chores. In the last year alone, more than 10 million people in the U.S. have used the Web to get help with electronic shopping, and 3 million have actually made online purchases.

They are also beginning to use the Web for retail financial services. While online insurance sales to date have totaled less than $40 million in the US, by late 1997 there were already 3.5 million online brokerage accounts, with nearly $150 billion in assets under management, and close to 2 million online bank accounts. Although predictions vary widely, the

online pundits who try to forecast such numbers estimate that by the year 2000 they might multiply several times, to at least 10 million online brokerage accounts and 13-17 million online banking households.

These numbers for online users, while impressive, are only a small fraction of current bank and brokerage accounts. But these are not ordinary people. For example, among the top 5 percent of households by income, (the most attractive retail segment for financial institutions and many other businesses), home PC ownership is now almost as pervasive as TV or VCR ownership. Forty percent of these affluent households have Internet access, and nearly half of those that are connected are already using the Web for some kind of electronic commerce or online finance. Among college-educated adults under the age of 30 with incomes greater than $50,000, Internet usage is three times the level of the U.S. population as a whole. On the other hand, among adults over the age of 65, it drops to less than five percent.

Combining the Internet s attractive demographics with its high growth rate, it is not surprising that many sellers, advertisers, financial institutions, and communications companies are all very excited about reaching this new addressable upscale market. All these potential Internet service categories from e-commerce, e-marketing, communications, and financial services -- should be considered side by side, because they all share this common platform and are complementary engines of growth.

To begin with, retailers are quickly moving beyond their first-generation "electronic billboard/brochure-ware" Web sites, adding electronic ordering and payments capabilities. There now more than 1000 catalogues on line, offering everything from custom tailored suits, pet food, and CDs to eavesdropping equipment, Caribbean cruises, and antiques. Twenty percent of Fortune 5000 companies now have Web sites that are capable of handling electronic orders. In 1998 they are expected to do from $3.5 billion to $5 billion of retail product and service sales. Beyond that, estimates vary widely for how fast online sales will grow. Those of us old enough to remember the mail order, office automation, artificial intelligence, and home TV shopping speculative bubbles of the last two decades are necessarily a little conservative. However, many observers believe that by the year 2000, total U.S. online commerce could easily approach $100 billion or more, with retail Internet sales accounting for at least $30 billion of that.

For banking and brokerage and insurance, predictions vary widely. The online pundit who try to forecast such numbers estimate that by the year 2000, the 3.5 million online brokerage accounts and close to 2 million online bank might multiply several times, to at least 10 million online brokerage accounts and 13-17 million online banking households. On-line insurance sales to date have totaled less than $40 million in the U.S. and sales are predicted to reach the rather inglorious total of $1.1 billion.

As a complement to online financial services, Internet telephony, once the province of teenage gamers and technology heat-seekers, is also starting to be taken seriously by many of the world s largest telephone companies and multinationals. Companies like Ford and IBM are setting up virtual "extranets" to send faxes and voice messages to their employees and business partners over the Internet at much lower cost on a global basis. The development of the Internet as a platform for serious business communications - voice, e-mail, voicemail, fax, and eventually video - is a crucial complement to its use as an e-commerce platform, because it will increase the exposure of business users to the Internet and make them more comfortable with its use for ordinary business communications.

And finally, Web-based advertising and direct marketing are also taking off. One recent forecast expects them to increase by a factor of ten to about $8-9 billion in the next three years. Several of our interviews in the e-finance arena supported this growth forecast for example one online brokerage expert indicated that his company s Web-based advertising was already successful enough to justify redistributing ad spending from print and other conventional media.

So the real business of the Internet is now clearly business. Like the common lands of 16th century England, or the prairie lands of the Great Southwest, the Internet is real estate" that has suddenly become valuable and is in the process of being enclosed and privatized -- much of its network infrastructure has by now been turned over to the private sector in most countries. And as business embraces the Internet, more and more financial institutions are also getting into the act. Chided by Bill Gates two years ago for being an endangered species, they are slumbering no longer there are now at least U.S. 2000 banks with Web sites and about 50 banks and 33 brokerages offering account access over the Internet. About 15 U.S. insurance companies are also now offering Web sites, online quotes, and transactions. And there are an increasing number of brave new finance-related "boutique" services on the Web, from GetSmart s online credit card mall to Intuit/ Insweb s insurance mall to American Finance s online mortgage center.

II. Key Impacts and Issues Financial Institutions

Of course the retail financial services industry has already dealt with many challenging new distribution channels during the last few decades, from ATMs, non-Internet PC banking, and electronic funds transfer to mail-order credit cards, voice response units (VRUs), touch-tone banking, and grocery store kiosks. Even apart from the rise of Internet banking, for example, as much as 70 percent of customer contacts with banks and retail bank transactions in the U.S. are now conducted with alternative "direct" channels like VRUs, *other than* ATMs and branches. From this angle, therefore, it is not surprising that many in the industry view the Internet as "just another channel" especially now that Mr. Gates has declared that he really just wanted to partner all along.

Furthermore, the industry has a long history of building its own systems from within. Its more technically-minded members have experimented aggressively with precursors or add-ons to Internet services like screen-phones, non-Internet PC banking, video conferencing, and voice recognition. The U.S. banking industry alone has recently spent nearly $25 billion a year on "I.T." operations and capital -- computer hardware, software, network equipment, and the people required to develop and maintain them, while major players like Citicorp have been spending up to $2 billion a year. Given all these resources and the strong proprietary systems tradition, there may be a tendency to underestimate the potential threat to established ways of doing business that the new, "open-systems"-based Internet services might pose.

In other words, just as some computer companies have mistakenly believed that superior proprietary technology alone would secure them a sustainable advantage, some of the more technically-minded members of the financial services industry appear to believe that distinctive, proprietary solutions are the key to competitive success.

However, as we will argue, none of the new channels already adopted have had the capacity to change the fundamental landscape of the industry in the way that Internet-based services may now do. For compared with earlier "new channels," the Internet is really different:

- **Extensibility.** Most of the earlier innovations in financial channels were "narrow band," relatively limited in scope and functionality, and with little capacity to deliver services offered by non-financial service entrants. The Internet, in contrast, is fundamentally extensible capable of offering a wide range of financial and non-financial services at once, tailored to the individual customer.

- **Openness.** All earlier channels were based on technologies that were initially not so widely available, where systems often had to be reinvented from the ground up to take account of each institution s particular legacy systems. Internet services are based on technologies that are much more "standard" and "open." That not only makes them much less expensive; it also shifts the competitive focus away from achieving differentiation through proprietary technology toward customization and time to market. Both effects may mean that the competitive playing field is now fundamentally more level. Larger institutions may have more resources to work with these new technologies, but this advantages is reduced by the availability of outside technology to smaller players, who may be able to move more quickly, with more focus on particular customer segments. As with networked ATMs, the smaller players can inter-operate with other financial institutions and application providers for a broader span of service.

- **Competitive Poaching.** As we will see, an important side-effect of extensibility and openness may be to open the door to much more successful cross-selling, as well as to many new entrants. Unlike all previous new channels, Internet-based services will permit heretofore - "non-competing" segments of the financial services industry go to war over each others traditional domains.

This is true for several different reasons. First, the Internet allows established customers to have easy access to different services from virtually the same electronic channel, at low incremental sales cost. Second, the availability of online customer information helps to target marketing efforts for these additional financial services. For example, a brokerage may be able to use information about a customer s IRA account to sell whole life insurance products. Third, on the supply side, once a Web-based electronic delivery system is in place for one line of services, it is easy and cost-effective to add other services compared with the traditional proprietary systems approach, or the costs of retraining required

to sell multiple products. And finally, as discussed in Chapter III, new technologies such as electronic cash and bill presentment/payment may provide disintermediation opportunities that support poaching.

- **Location Advantages.** Because of their portability and far-reaching remote access capabilities, Internet-based services go far beyond earlier new channel efforts to undermine the role of geography as a barrier to competition for many financial services. In the limit, any lender (depositor/insurer/bond buyer/investor) anywhere will be able to do business with any borrower (bank/bond issuer/short-seller) anywhere, so long as they are able to exchange enough information. After all, with interactive video, wall size flat-panel monitors, digital fingerprints, and electronic forms, there may not be much difference between applying for a car loan with, say, Luxembourg s online Fortis Bank and applying for one at the local branch except that interest rate one can get on the "world car loan market" in Luxembourg may be a little better, and the artificial intelligence program running the "virtual banker" there may actually provide quicker decisions..

At first glance this may seem to imply that the local and regional banks that many people have come to use mainly because they happen to located near our residences or workplaces are doomed. However, it turns out that this is not necessarily the case at all. While many such institutions will indeed find it difficult to adapt unless they work harder, the new technologies actually give them several new ways to win for example, by making it easier to build service ventures with other service providers around the globe, or by choosing some special service and using the new technology to go "virtually global." Indeed, it may turn out that the real losers here are much larger institutions that have been devoting so much of their resources to becoming "physically global" while staying vertically integrated and proprietary. For example, smaller players might find it easier to ally with counterparts around the world on the basis of a shared "open systems" platform, while larger, more vertically-integrated players may have a harder time integrating outsiders.

- **Regulation**. A closely-related point is that, unlike earlier new channels, the fundamental global reach of Internet services may also eventually undermine the efficacy of traditional forms of bank regulation and perhaps "national" control over money supply and residence-based taxation as well. This raises policy issues that go far beyond the microeconomic focus of this white paper. But they are crucial.
- **Payments Systems.** While earlier introductions of new financial channels have stayed firmly within the boundaries of the conventional *bank-centric payments system,* with its heavy reliance on cash, credit cards and checks (in the U.S.), and debit cards (in Europe, Canada, and many other countries), the Internet begins to open up alternatives. As we will see, these alternatives, supported by the trends toward increasing e-commerce and data communications, will create a need for new, large-scale intermediaries, such as aggregators for bill presentment and bill payment, the "minters" of electronic cash, and digital certificate authorities. But, as discussed in Chapters II and III, they not necessarily be banks.
- **Customer Focus.** The most important distinction of all, however, is that new Internet-based services make it possible for financial institutions to change their focus from the delivery of particular products on a vertically integrated basis, to careful design and tailoring of products and services around individual customer needs. At a 30,000 foot level this sounds like some standard corporate platitude as we will see below, however, the Internet really does permit this kind of customization in ways that previous "channel technologies" never did. This kind of customization is facilitated by the Internet s ability to keep track of individual customers changing product needs, and provide service offers that are highly tailored to their needs for example, by providing Java-based "electronic agents" that keep can track of cash balances or loan needs and prepare specific investment or credit offers that tailored to the needs of each customer.

So we may not be in Kansas, any more, Toto. The only good news that there may still be time to face up to the importance of Internet technology and address this challenge. After all, only a fraction of brokerage customers are doing their transactions on line; the vast majority of bank customers still visit their branches every month, the great bulk of insurance sales are still handled by real live agents, in most markets there is still relatively little "cross-selling" of financial products, and for many customers the notion of using the Internet to shop for banking services or pay bills is still quite strange.

But we have to begin to answer at least four key questions:

1. How should we think about the potential sources of economic value of these new electronic services to customers and industry producers?.

2. What is the state of Internet technology, from the standpoint of providing a firm foundation for a whole new generation of services and customer relationships

3. What are the core management challenges presented by these new services? What can we learn from previous industry experiences with new channels that will help us address these challenges?

4. How should we think about potential impacts of these new service technologies on the terms of competition in the overall financial services industry. What kinds of roles are available to industry incumbents and new entrants, and which ones are likely to win?

III. The Jones Family -- Looking Backwards on Consumer Value, Circa 2003?

In order to tackle these issues without immediately getting buried in a landslide of technical details and institutional trivia, we will first step back to the basic question of what Internet-based services at their best might have in store for financial services customers in a five-to- seven year time frame. In general, the possibilities appear to be pretty exciting, and almost unambiguously positive apart from the nuisances of having to upgrade one s ways of doing business.

To make these possibilities more concrete, consider the case of the Jones family, circa 2003 AD. We suppose a "typical upper-middle-class" family with a top 10% income and family members that are evenly distributed across every stage of the life cycle including retired grandparents, dual-career working parents in mid-career, and teenagers in and about to go to college. The various members of this family need almost every conceivable kind of financial service, from cash management, mortgage finance, home insurance, auto loans, college loans, and tax planning to life and health insurance, portfolio management, annuities, and estate planning. They are the dream customers for every conventional financial institution. What can the new electronic services do for them? As discussed in Chapter II, all the technologies needed to make these services feasible either currently exist or will exist by in the next five to seven years. But exactly how they are developed, and by which institutions, are key variables.

- **Overall Financial Planning.** While Mr. and Mrs. Jones believe they are knowledgeable investors, they also find financial planning complex and time-consuming. They d rather spend their precious home time on other things. They would also appreciate an integrated view of the family s financial situation that, for once, cut across all the conventional "balkanized" product lines offered by banks, insurers, brokers, and finance companies. They d also like their independent advisors (experts who are not necessarily captive affiliates of vertically-integrated institutions which, they perceive, are often just trying to push particular products.) to have easy, selective, and secure access to their financial information.

The Jones family has a professional advisor, a former senior "securities broker" who has teamed up with several other former brokers, insurance agents, lawyers, tax planners, and CPAs to establish professional advisory firm. The Jones live in a high cost urban center, where local professionals of this caliber are in high demand and charge high fees. However, they have found that their Internet-based advisory firm is not only less expensive, but also more accessible and of higher quality. Using the Internet as a meeting ground, library, market place, and virtual bank, this network is able to provide the Jones family with "live" advice, analytical tools, and financial information that pertain to all the key turning points in the family s financial life cycle. They especially like the "online live financial chat-room," where they can have access to multiple specialists who can share spreadsheets and other analytical tools with them over the wire. The Jones can "talk together" with their advisors even if one of them is at work and one is at their home computer, which really helps with scheduling problems.

- **Cash Management/Bill Payment.** Following the advice of one of the financial advisory network s "remote experts," the Jones family has decided to use a "family payments manager," an intelligent agent developed in Java, which resides on the Internet and tracks all the family s payables and receivables. Their ISP, AT&T WorldNet, has worked hard to sign up all the key utilities, banks, cable companies, and other leading service prodivers in the Jones region. This electronic bill aggregation service permits them to receive all their bills each month automatically. Although they have authorized automatic debiting at one of their banks for any bill under $50, they prefer to be able to look at the actual details for higher amounts.

On the liability side, the system tracks bills due and account balances, scheduling electronic transfers or credit requests to handle each of them. On the asset side, it tracks account balances for all the Jones various cash accounts, and arranges for direct credits and debits among institutions in a sequence that maximizes the returns on balances. It also regularly polls depository institutions from around the globe on their best rates in dollars and selected foreign currencies, essentially running a kind of "electronic auction" for the Jones surplus balances. Subject to the approval of the Jones or their financial advisor, it can reallocate deposits and balances automatically. Like other Internet financial services, this one is available to the Jones family on a 24-hour basis, from any location that has Internet access, and from several wireless devices, personal digital assistants, kiosks, and hotel-room Web appliances as well.

- **Credit Management Agents**. With the help of the virtual advisory network, the Jones family has also selected Microsoft s electronic "credit planner," another Internet agent that continuously monitors the Jones family mortgage, car loans, security margin, and other loan exposures, and tracks the terms available from multiple lenders. When interest rates change, the system provides an analysis of whether refinancing might be in order, and if instructed, solicits electronic counterproposals from creditors and prepares the necessary electronic forms for a digital signature. The credit planner can customize its analysis to the Jones tax status; it has secure access to this information because it inter-operates with their advisor s Web-based tax preparation program. (The Jones pay to have their tax status estimated quarterly, using information provided electronically by their banks and brokers.) The system also settles net loan balances electronically between new and old creditors and monitors the family s potential interest in acquiring other assets that may require financing,. Finally, the system has also linked up with an online mortgage investment firm, which had been working exclusively through banks, but has now launched a service that provides direct connections to mortgage holders.

- **Financing E-Commerce -- From Smart Cards to E-wallets.** The younger members of the Jones family, who are especially enthusiastic Internet users, have come to purchase a significant share of non-financial goods and services electronically. In addition to most of the merchandise the Jones family used to buy from mail-order catalogues, it is now also shopping for groceries, computer equipment, airline travel, books, films, clothes, audio recordings, furniture, pet supplies, and even art works, antiques, and cars electronically. To handle payments for these purchases, vendors are providing an increasing variety of online purchase options over the Web. One is an immediate debit against assets that the Jones hold at their preferred depository institution the GE/ Microsoft Credit Company (GE/MSCC), . This is the equivalent of a "debit card" or a check that clears instantly, except that in the case of online transactions there is no need for paper checks or cards, only for the Jones digital signature. GE/MSCC not only processes the debit; it also issues and stands behind the digital certificates necessary to make debits secure. It has issued certificates to many of the merchants that the Jones deal with, so they feel safe authorizing a debit even before they receive the merchandise.

A second option is a standard credit card-like transaction, where trusted third parties like GE/MSCC extend online credit to buyers. A third, more cost-effective for "micro-bill" payments say, for a single look at a WSJ archive document is electronic cash. All of these payment systems are conveniently stored on a smart card. Smart card readers that have now become standard add-ons for computers, Internet screen-phones, and digital TVs, and the same card can be used off-line as well

For this purpose each member of the Jones family now carries a smart card, his own electronic wallet, a tiny general-purpose programmable device manufactured by Intel, with an Intel smart chip and a Microsoft Windows CE v.7 operating system. A much more powerful version of today s smart card, this comes in several wearable formats, including rings, belts, bracelets, and watches. It serves as an authenticator for all debit and credit transactions over the Web, by way of the GE/MSCC, which collects a small transaction fee for every authentication. To kick off the service, GE/MSCC gave the Jones free smart cards containing e-wallets and software connecting the standard reader to the Internet and Internet Explorer, Microsoft s browser. Several banks and brokerage firms offer programs through the browser that download electronic cash from the customers account to the e-wallet. The smart card can also carry personal identity data, "frequent flyer" records, electronic drivers licenses, and medical, health, employment, insurance, and criminal records. Of course the U.S. Congress has refused to *mandate* the issuance of such electronic identity cards because of civil liberty considerations. But it is difficult to do business without them.

The e-wallet replaces the confusing multitude of credit, debit, and stored value cards that used to be available from individual F.I.s. GE/MSCC s smart card is standards-based, Now all these institutions various card services have

become interchangeable, object based, software applications that can be downloaded to the smart card as users see fit. This simplifies the task of managing multiple cards and card readers, and is popular with merchants and consumers alike unlike the first generation of smart cards in the 1990s, which were the equivalent of "proprietary mainframes." This programmable model also enables consumers to shop for competitive payment terms among different F.I.s. In addition, since the wallets have gained widespread acceptance, the Jones family has been able to use their stored-value functionality to eliminate all the hassles of physical currency. Even the children s allowances are now doled out in e-wallets each week; the wallets make sure they know how much money they have left, and can be plugged into a "Microsoft Money for Kids" that helps them plan their spending. The Jones family has been delighted to learn that the security provided by the e-wallet against fraud, theft, or "spoofing" over the Web, at ATMs, or in stores, is actually much *higher* than the security provided by cash, checks, or traditional credit and debit cards.

- **Micro-Billing and On-Line Support.** Partly as a result of the e-wallet service, Sally Jones, one of the younger family members, has found a new business opportunity. She is a whiz at Economics. In her freshman year, her detailed, understandable class notes were the mainstay of her study group and this year she has decided to turn that into cash. She makes her notes for each class available from her Web page for $2, to students who either couldn't make the class or perhaps didn t understand everything. Her home page, which rents for $10 a month from her local ISP, lists the dates of the classes and the lecture topics. She just leaves her smart card in the reader attached to her PC with the system on-line, and students can network to her site, transfer $2 from their smart cards to hers, and get a copy of her notes. Already she s making almost $50 week, and she thinks she ll see increased activity around exam time. Next semester, she is also thinking about renting a Virtual Office from the ISP instead of just a Web Page. For about $10 a month, she can do online tutoring in a virtual chat-room of her own, answering questions, sharing analysis over an electronic whiteboard, and, of course, offering the notes.

- **Portable Access.** To take advantage of all these services while at work, traveling, or at home, the Jones have invested in multiple kinds of Internet access devices. First, they ve bought a new digital TV with an Intel set-top box and a Windows CE v. 7 operating system. It can receive two-way Internet communications, including video conferencing, as well as one-way television, by way of MS/Comcast/WebTV/TCI s new cable modem service. At work, their employers have agreed to permit them access to these financial advisory services "through the firewall." because they are written with digitally signed, restricted access applets and pose no threat to system security. Grandpa Jones prefers a simple Intel Internet screen-phone appliance with extra-large print and easy-to-use menus that just lets him check his stocks and account balances quickly. On the road, the Jones are able to monitor financial news and account balances with a combination of two-way pagers, digital PCS phones, and wireless PCs, or MS/Comcast/WebTV/TCI from their hotel room.

- **Beyond the On-Line Payments Protocol Wars.** Grandpa Jones remembers how it used to be in the Nineties. In search of a new couch, say, he would walk into the furniture store, browse for a while and select the one he liked, and then confront the unpleasant prospect optimizer that he used to be of trying to figure out what the best way to pay for it might be.

There was always the currency . But especially for large purchases like a couch, any kind of currency was a hassle. There was the risk of loss or theft and the nuisance of obtaining it. If the merchant knew him or he had a check guarantee card, he might pay that way. But going through that process with a merchant he didn t know wasted a lot of time and it was easier to write one check to the credit card company at the end of the month.

So it was on to the credit cards, and the analysis of the best one to use. In the case of some gasoline stations he might see a dozen different credit and debit card decals; in the case of his furniture store there was only Visa, Discover, Mastercard, its own private label card, NYCE, Amex, and a new logo from something inexplicably named "Mondex." Now of course Amex gave him a few extra weeks each month to pay his credit charges without interest, so that was usually his top-of-mind choice, except for the fact that some merchants could be bargained with to shave a bit off the price 2% or so -- if he would use Mastercard or Visa instead. That tempted him to carry only a Visa card; although it charged him interest, it also gave him time to pay. And then there were also some nice frequent flyer miles on United Airlines on their Visa, but it charged him more interest, which he had to take into account if he wasn t expecting to pay the balance.

The one clear merit of all this was that after 15 minutes of trading off the value of extra discounts against interest charges and foregone flyer miles, he d often forget why it was that he needed that couch.

Today, in 2003, with the help of Web commerce and standardized e-payment methods, it has become almost too easy to make decisions about alternative payments method. Of course in the initial days of the Internet there was also this unjustified tendency for customers who had grown used to credit cards to *feel more secure* giving their card numbers over the phone even mobile phones -- to complete strangers, partly just because there was a liability ceiling. So for years the drill was for you to be presented at a merchant s Web site with a laundry list of alternative payment methods, and an 800 number for the credit card IVR unit. Since the payment protocols and methods were even more confusing than the flurry of credit card incentives, you usually just used your credit card.

Fortunately, after several years of debate, in 2002 the financial services industry finally came to agree on a new standard protocol for making e-payments over the Web, one that will makes them as simple and secure as personal checks minus all the paper work. Now all the various protocols have now been "encapsulated" by a software gateway that runs on Web servers and understands all of them. In addition, the new software, distributed for free over the Web by JavaSoft, lets buyers record all their various memberships programs, payment preferences, and eligibility for discounts in advance. When a user logs on to a particular commerce or finance site, these preferences are "uploaded" automatically, and the system negotiates a solution that doesn t leave any opportunities on the table. More furniture gets bought.

- **Incentives.** The Jones financial advisory network receives no transactions fees or balances. It gets paid in order to maximize the rate of return on the Jones overall portfolio, including all deposit accounts. It also receives fees for specific advisory services including customization of the basic Microsoft Financial Analysis package and the network infrastructure and software required to use the system. This is bad news for F.I.s that used to make their living mainly on commissions, transactions fees, balance float, and interest spreads. But the Joneses are happy to compensate the advisors with a small percentage of their risk-adjusted portfolio s performance over time. The financial advisor offers this option to some of his customers, if he likes their investment strategy and they agree to use his services for a certain minimum amount of time. He has several different kinds of fee programs, tailored for different kinds of customers, and it is easy to administer them remotely.

II. Generalizations Sources of Consumer Value

This consumer portrait is not meant to be an exhaustive list of the new electronic financial services that may appear in the next decade. And the retail services market certainly has large conservative segments. For example, today s retirees, many of whom are unfamiliar with computers, still account for a disproportionate share of private wealth. At least for the next decade, therefore, such segments may remain users of current technology. But our examples do highlight the revolutionary potential of the new electronic media, at least for a core group of more-affluent early adopters. If the Internet s recent takeoff is any guide, "early adopters" now have a way of becoming mainstream pretty fast.

In particular, the Jones family example underscores several of the most important potential benefits of retail electronic services to customers as well as to "producers." **Figure 1.1** provides a summary of these benefits.

On the customer side, among the most important benefits are the following:

1. **Lower Transactions Costs.** As many other observers have recognized, one immediate potential impact of the new service channels is that they can provide sharply lower marginal transactions costs and higher transactions value for the existing menu of financial services. These include not only the cost of actually receiving F.I. services, but also the costs of searching for them, providing data on one s financial situation and needs, agreeing on terms, and giving customer feedback. These costs are important when transactions rely heavily on physical distribution and paper records for example, in check processing and cash disbursement and for processes that otherwise require personal interactions with F.I. staff for example, loan applications or securities transactions.

In addition to lowering the cost of such services, the new channels also have the potential to reallocate costs among the parties to transactions. On the one hand, they allow customers to do more search, evaluation, and ordering themselves, as in the case of online trading. They also avoid many "indirect" or hidden transactions costs that have been born by customers -- for example:

- The search costs associated with finding the best terms from different lenders;
- Travel costs (including risks of theft and loss) of withdrawing cash or depositing checks at the local branch or ATM;
- Scheduling costs for example, the cost of locating F.I. staff to discuss services during off-hours;
- Storage costs e.g., the costs associated with obtaining, managing, and preserving account records and cancelled checks

2. Increased Transactions Value/ Ease-of-Use. On the value side, compared with conventional delivery channels for existing services, electronic services can lead to greater speed and accuracy, more flexible "anywhere-anytime" service, and offers that are more finely tuned to individual customer needs. Another major source of value is ease of use a reduction in the complexity and "first-use" costs associated with customer training and support, as well as the fixed costs of understanding multiple incompatible offers from different F.I.s. The e-wallet concept is one good example of this,

but it is also important for more complex products, and infrequently-purchased services like home loans or insurance. Finally, as discussed in the next chapter, these new electronic channels are also actually likely to *increase* the level of security and reliability for end-users, although they may transfer some additional security management risks to F.I.s.

3. Re-Intermediation. Both of the benefits just described have to do with the increased value generated by delivering the *current menu* of financial services through new electronic media to *existing*customers. This "disintermediation" effect the substitution of a more direct delivery channel for branches, agents, brokers, and other vehicles -- has naturally captured a great deal of the attention of F.I.s and industry observers, since it threatens their existing channel investments.

However, from the customer s standpoint, another key impact of network technologies is that they will permit a fundamental redesign and *re-intermediation* of retail financial services. We believe that this, in turn, can help to grow the overall market, and provide higher-value services to both new and old customer segments. Longer term, this may actually be the more important impact of these services and also the greatest challenge to existing institutions.

From the customer s standpoint, there are several important kinds of re-intermediation:

- **New Advisory Roles.** As described in the Jones family example, one important new source of value for customers created by electronic networks is that of professional financial advisors. Of course personal financial advisors qua "private bankers" have been around for centuries, especially for affluent investors, but the new networked services permit them to extend their reach in several ways.

1. Advisors can now establish inexpensive, secure, direct connections to customers all over the globe, without dependence on existing F.I.s.
2. They can also team up with other experts all over the globe, providing a "virtual knowledge network." In a period when traditional F.I.s are cutting back on the number of direct agents, brokers, and "personal bankers," this Web-based advisory network may have access to a strong labor pool.
3. Using the Web s incredible access to information, they can back up their analysis with plenty of low-cost data, financial news, and research tools. Advice will no longer be based on quarterly statements and business reviews, but daily even hourly information updates. This information floodtide may only *increase* the value of independent advice.
4. The Web makes "comparison shopping" for certain kinds of more standardizable financial services much easier. While the customer can do that themselves, the advisory network can count on an increasing variety of offers from mortgages and auto loans to credit cards, CDs, and commodity options whose terms can be analyzed with respect to the effects on specific customers.
5. Because of the complexities involved, there may come to be sub-specialties within networked advisory services. For example, there may be online, independent "cash manager" agents that work for multiple customers, whose specialty is to maximize global after-tax yields on cash balances and short-term assets.
6. Customers will have more access to advisors, and advisors will have a wider choice of customers, because their choices will not be dependent on physical proximity.

   Most important, these networked financial advisors can communicate efficiently to provide a unified view of a family s or individual s financial needs, cutting across all the traditional product and industry "silos", and reducing relationship overhead.

- **Consolidation/Integration/Customization**. Another kind of re-intermediation value for customers has to do with the opportunity provided by electronic networks to consolidate and integrate financial services that have, up to now, been provided separately by banks, brokerages, or insurance companies, and credit card providers.

1. One key source of "re-intermediation" is provided by the opportunity to customize financial service offers to the needs of individuals and families, and offer them the best products for their needs so they don t shop elsewhere. The Web is a powerful, much lower-cost tool for gathering information on customer behavior and preferences, and delivering services that can be carefully tailored. Further, as we saw in the Jones case, taking the family as the unit of analysis is often more appropriate than focusing on narrow product lines. Part of the

potential value is just due to "information aggregation" □ if they are able to look beyond the "product tunnels," brokers, portfolio managers, and private bankers are a good position to anticipate a family□ s estate planning, insurance, or mortgage needs, especially with the help of online communications with multiple family members.

2. Of course cross-product selling efforts have often been frustrating in the F.I. industry, at least in the U.S. But the evidence suggests that this is partly a matter of developing trust and credibility □ those few institutions that have stayed the course and built consumer loyalty have indeed been able to cross product lines. This may also a matter of consumer experience □ a new generation of computer users that grows used to trusting Web shopping and secure payments mechanisms may not have qualms about buying multiple kinds of products from the same source.
3. Some of the benefits here are on the supply side, realizing opportunities to identify and recombine basic financial service "objects of value" on the supply side across institutional lines □ for example, by permitting customers to secure asset margin accounts with the cash value of insurance policies, bank CDs, or home equity lines; or by helping them manage their portfolio decisions on a "total assets" basis, including real estate, insurance, CDs, and other non-securities assets in the picture.

- **Re-Intermediating Trust -- The Payments System.** The final kind of re-intermediation is more subtle, but just as important to customers and the industry. This has to do with the role of "trusted third parties" in the payment system □ and what exactly provides the "trust." Historically, the distinctive roles of the predominant retail financial institutions in U.S. capital markets, for example, have been defined not so much by particular products, as by the kind of risks they assume, and their role in the payments system.

  At one end of the maturity/ liquidity spectrum, retail insurance companies have relatively stable, long-term obligations and predictable, low-velocity cash flows; this permits them to be stable providers of long-term loans (bonds), mainly to governments and established corporations. At the short end of the spectrum, banks have traditionally provided secure, government-insured "holding tanks" for short-term cash balances that turn over quickly; and usually command low or even negative real, after-fee, after-tax yields. To facilitate payments, they also distribute physical currency and coin, provide inter-bank wire transfers, and most important, handle check clearing. Although retail banks compete for in public capital markets, and also receive deposits from governments, corporations, and foreign investors, their distinctive role in the traditional domestic retail payments system has been fundamental to their low cost of funds and profitability.

  The gradual erosion of this payments-driven funding for retail banks is not new. As Walter Wriston declared nearly twenty years ago, long before Internet commerce appeared, "The action has gone elsewhere □ the banking system is not now astride the principle intermediation flows in the economy." This statement was a bit premature with respect to retail banking □ paper checks are to this day still the single most important retail payments mechanism, at least in the U.S. economy. However, the Internet□ s ability to put secure, easy to use, electronic payments alternatives in the hands of consumers may finally produce the fundamental disintermediation that Wriston feared.

  Customers, however, are likely to benefit from this trend in several ways:

- By making it much easier for retail customers or their advisors to identify surplus cash balances and relocate them to higher-yielding accounts, the new electronic media will velocity of cash balances, reduces average "float," and increase competition for the funds that remain.

- By making it possible for payers and payees to route electronic cash securely over the Internet to and from a family□ s e-wallet at home or office, consumers may be able to further minimize the role of deposit-taking intermediaries. Indeed, there is no good technical reason why third parties might not be able to bid electronically for the idle "cash balances" on these cards □ and no reason why these bidders necessarily have to be banks.

- More generally, to the extent that Internet-based electronic payments methods come to be perceived as an "easier to use, and harder to forge, steal, or misrepresent" than conventional bank-mediated payments (checks, credit and debit cards, physical cash), banks may begin to lose their special standing as providers of secure non-

credit payments. Federal regulations are unclear as to whether Mondex, for example, can temporarily "create" e-cash while it is stored on the card. To the extent that the Internet gives payers, payees, and non-banks more "direct connect" alternatives, this does indeed qualify as "disintermediation."

At the same time, however, the new payments alternatives may create a whole class of new intermediaries. For example, certificate authorities, a kind of digital notary public, will be needed to take responsibility for certifying customer s digital signatures, host their public keys, confirm that transactions took place, and perhaps also enforce any legal restrictions that apply to encryption. In exchange, these new institutions will much like banks have done for check processing, ATM withdrawals, or wire transfers today -- exacts a small transaction fee each time their digital signatures are used for e-commerce. In the aggregate, this could be quite a large business opportunity, commanding transactions fees of up to $1 billion a year in by the year 2000 in the U.S. roughly the equivalent of all ATM fees. They can certify that a merchant is indeed genuine, and complies to a set of service standards, like delivery quality.

However, to date most banks have not really focused on this opportunity. By the time they do it may be too late new technology-based entrants like VeriSign, Nortel/Entrust, and GTE/CyberTrust are currently leading the pack.

III. Keeping Up With the Joneses -- "Producer Value," Circa .2003?

As in the case of consumers, electronic services also have the ability to deliver new kinds of economic value to existing financial services producers. Most of these producer benefits are similar and complementary to those just described for consumers, so we can condense this discussion.

- **Lower Producer Marginal Costs**. To begin with, just as in the consumer case, this depends on their willingness to trade in old ways of doing business, financial institutions should be able to realize much lower marginal transactions costs relative to physical distribution channels if they do. For example, processing costs for electronic checks are significantly lower than for paper checks, even with the latest OCR/imaging technology.

- **Lower Producer Development, Deployment and "First Use" Costs**. For producers, Internet-based services also have much lower fixed costs of deployment and "first use." These include the costs of training users to access them, the costs of training staff to support them, the cost of developing and testing new services, and the costs of integrating their delivery vehicles and network operations with other Internet-based offers. In general, these cost advantages all derive from the fact that Internet services make use of standard, familiar interfaces and network infrastructure.

- **Lower Relationship Management Costs**. The use of Internet-based services also is likely to reduce the costs associated with managing customer relationships. This is because it is easier and cheaper to track customer activity across services, maintain frequent contact through information services, "expert chat" sessions, and electronic decision support, and target customized offers to particular client needs. Producers may also be able to use a variety of "intranet" technologies to manage their own organizations more effectively.

- **Lower On-Going Customer Support Costs**. Finally, on the cost side, they may also be able to transfer some servicing and support costs from their own operations to their customers for example, by providing them the ability to do their own on-line inquiries.

However, as we have saw above with respect to payment systems, the *net* benefits of the new channels to existing producers are a little more ambiguous, because these technologies will probably level the playing field of relative costs and values, as new entrants and incumbents go to war.

IV. Summary Producer Value (Supply) and Customer Value (Demand) Impacts

We can use some elementary microeconomics to tie this analysis of customer and producer impacts together, and tee up some initial hypotheses about the overall industry impacts of electronic delivery channels. In an economist s very simplified nut shell, as summarized in **Figure 1.2,** the retail financial service industry s overall demand curve is effectively shifted out under the impact of these lower-cost, higher-performance electronic alternatives. In other words, as consumers begin to receive services that are higher in quality --- for example, more differentiated to their needs their willingness to pay for any given quantity of services should increase. (E.g., the demand shifts right from D0 to D1).

At the same time, however, the financial services industry s supply curve shifts out and gets flatter, as the new technologies, now more widely available, not only permit everyone to deliver improved services at lower cost, but also reduce the distinctions among industry leaders, laggards, and new entrants. This simple static model implies that the overall result for the industry is lower prices and increased consumption of services. Interestingly, the impact on total industry profitability is ambiguous; profits, equal to the shaded areas between the average price level and the industry cost curve, may or may not increase, dependent on the relative effects on industry supply and demand. Nor does this analysis say anything about who will collect increased industry profits, if there are any depending on who wins the competitive race, that may go to old warriors or new entrants.

Of course this is just a highly simplified, static representation of a system that is in fact incredibly dynamic. But it gives us a taste of the issues we will consider in Chapter III, when we consider the impact of electronic services on overall industry structure, winners, and losers.

Before we go there, however, we need to step back and take a closer look at the basic technology foundations underlying all these exciting new delivery options. For if those foundations turn out to be shaky, then most of the "imagineering" we have been doing in this chapter would quickly turn out to be pie in the sky.