Authors
Ramchandran, Asish
Gurbaxani, Viijay

Publication Date
1999-11-01

ON-LINE DISCOUNT BROKERAGES: E*TRADE vs. CHARLES SCHWAB

AUTHORS:
Asish Ramchandran
and
Vijay Gurbaxani

CENTER FOR RESEARCH ON INFORMATION TECHNOLOGY AND ORGANIZATIONS
University of California, Irvine
3200 Berkeley Place
Irvine, California 92697-4650

and

Graduate School of Management

NOVEMBER 1999

Acknowledgement:
This research has been supported by grants from the CISE/IIS/CSS Division of the U.S. National Science Foundation and the NSF Industry/University Cooperative Research Center (CISE/EEC) to the Center for Research on Information Technology and Organizations (CRITO) at the University of California, Irvine. Industry sponsors include: ATL Products, the Boeing Company, Bristol-Myers Squibb, Canon Information Systems, IBM, Nortel Networks, Rockwell International, Microsoft, Seagate Technology, Sun Microsystems, and Systems Management Specialists (SMS).

The authors would also like to thank Aarti Shrikhande for her research assistance and Leslie Fell for valuable comments.

Executive Summary

We are witnessing huge growth in the share of the population that is investing in the stock market. Investment varies from low risk and low growth stocks and funds to high risk and high growth stocks and funds. The intermediaries that enable this process of investing in stocks and mutual funds are significant beneficiaries of this trend in the populace. These intermediaries range from firms that advise customers on their investment choices and execute their choices (full service brokerages), to those that simply execute the orders of their customers (discount brokerages).

This paper begins with a broad overview of the financial services industry which comprises the aforementioned intermediaries. It then focuses on the discount brokerage industry in particular. This industry sector is analyzed in detail using Porter's (1985) framework for industry competitive analysis. In the subsequent section, the considerable impact of information technology on the trading process is studied. In an effort to understand the discount brokerage industry better, two firms -- Charles Schwab Inc. and E*TRADE Inc. -- have been analyzed in depth. Charles Schwab has a hybrid business model that includes physical presence via its 295 offices and an on-line presence (http://www.schwab.com). E*TRADE has a pure on-line presence (http://www.etrade.com). In this industry, E*TRADE is usually considered the innovator while Charles Schwab is often categorized as a fast follower. Our analysis of these firms explores the strategy, structure and use of IT within each firm. In the subsequent section, the companies are compared to bring out salient differences and the potential impact of these differences.

There are takeaways from this study of the discount brokerage industry that can be applied to an on-line business model in virtually any industry. An elaborate network of exclusive alliances is a very effective entry barrier in the on-line domain. Economies of scope, scale and volume are critical business drivers in the electronic medium. Moreover, keeping overheads low via effective use of information technology could be a catalyst for success that many companies lack.

Financial Services Industry

With the increasing focus on saving for retirement and the increase in stock ownership plans for corporate employees, the securities and financial services sector has captured the attention of the public. More than forty percent of US households now hold stocks. The total US output of financial services is valued at $1.5 trillion, and the securities and finance area accounts for about $160 billion of the US gross domestic product (GDP). The financial services industry includes a variety of sectors such as the sector associated with raising capital for enterprise, the sector raising money for the individual and the sector that maximizes the existing assets of the enterprise as well as the individual.

Companies involved in raising capital for enterprises include investment banks such as Bear Stearns, which underwrite new securities by setting and supporting prices for securities issues; brokerages, such as Merrill Lynch and Morgan Stanley Dean Witter & Co., which trade securities and commodities; merchant banks (a largely non-US form typified by Rothschilds), which invest directly in companies; and a variety of investment companies ranging from mutual fund companies that manage assets for small investors, to hedge funds, venture capital companies, and investment partnerships.

There are institutions other than banks that help the individual raise money. Examples of these range from large finance companies such as Associates First Capital, a leader in consumer financing, to firms like First Union which allow consumers to consolidate loans and debts against collateral, or as unsecured loans with significantly higher interest rates. More recently, another segment has emerged to that lend to individuals with poor credit ratings. The market leaders include Green Tree Financial and Aames Financial.

The full service and discount brokerage sectors are a significant component of the industry that helps enterprises and individuals manage and grow their assets (see Exhibit 1 for the different segments). This segment also includes asset managers such as Fidelity Investments and the Vanguard Group, which manages mutual funds while offering asset management services to individuals and families. Most investment banks and brokerages, as well as many consumer banks offer asset management services to wealthy individuals. The explosive growth in stock market valuations during the 1990s has increased the fee and commission growth of securities companies by up to 30% per year. The widely held belief in an imminent dismantling of government restrictions has led to a fresh trend of consolidation in the industry. The trend has led to the formation of Citigroup, created by the merger of Citicorp and the Travelers Group, which represents the unification of the banking, insurance, and securities services. Previously, Citicorp was a banking conglomerate while the Travelers Group was an insurance and securities conglomerate.

Full service firms provide expensive and extensive advice for their clients and execute their orders for the purchase or sale of stocks, bonds and other securities. Market leaders include Merrill Lynch and

Morgan Stanley Dean Witter and Co. Discount brokerage firms simply execute orders that they receive from their clients for nominal trading fees. Market leaders include Charles Schwab and Co., Inc. and E*TRADE Inc.

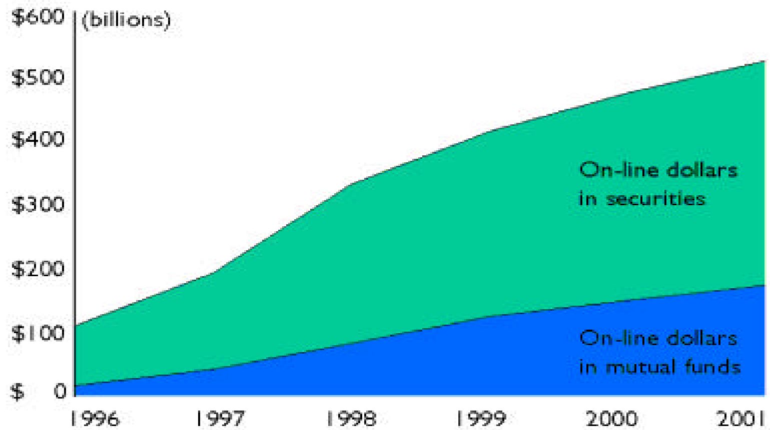
The scope of this paper is limited to the discount brokerage industry. The primary focus will be on the on-line brokerage industry where the business model is just emerging. The two companies studied namely, Charles Schwab and E*TRADE, both have a strong on-line presence. They do, however, differ in their strategy, structure and the manner in which they go to market. This paper will highlight these differences and try to predict the trends that are likely to emerge in this industry.

Industry Level Analysis: On-line Discount Brokerages

On-line securities' trading is a relatively new industry. The roots of the industry can be traced to the development of proprietary account access and trading software by Fidelity Investments, the mutual fund juggernaut and discount broker, in the late 1980's. This was soon followed by Charles Schwab's Street Smart software, based on a Windows operating platform, which helped to increase the popularity of electronic account access and trading. Discount brokers, with their existing focus on lean and no-frill operations, were the first to embrace the "on-line" trading revolution as a means to further reduce costs and improve efficiency of delivery to the customer. Thus, with the rapid rise of the Internet and "e-commerce", these discount brokers were the first to take advantage of the cost savings and expanded market reach made possible by the Internet.

Industry trends, environment and competition.

Most analysts are extremely positive about the growth potential of the on-line brokerage industry. Forrester Research predicts that over 3 million investors will be using on-line discount brokers by the year's end, a 100% increase over the previous year. Additionally, the Forrester report predicts that the number of on-line investment accounts should reach 14.4 million by 2002.[1] The graph below shows the projected growth in investment dollar amounts leading up the year 2001.



On-line investing dollars

(billions)	1996	1997	1998	1999	2000	2001
Securities	94.7	150.9	248.3	289.7	324.6	350.8
Mutual funds	16.7	41.9	82.8	124.3	149.4	173.5
Total	**$111.4**	**$192.8**	**$331.1**	**$414.0**	**$474.0**	**$524.3**

Source: Forrester Research, Inc.

In a recent speech to the heads of brokerage firms at the annual meeting of the Securities Industry Association, IBM CEO, Louis Gerstner, warned traditional brokers that "In the networked world, those with established brands have a fundamental advantage over the upstarts, but only if they move fast enough." When Gerstner went on to quote E*TRADE's president, as saying: "Stockbrokerage is not a profession you want your kids to go into" there was no dissent from the veteran Wall Street crowd.[2] It is clear that the major brokerage houses, such as Morgan Stanley Dean Witter, Merrill Lynch and PaineWebber realize the future of their industry lies in harnessing the vast capabilities of on-line brokerage trading.

But in the near-term, many traditional brokerage houses are still focusing on incumbent technologies such as network upgrades to Windows NT, year 2000 compliance, data warehouse development, and broker workstation development.[3] Despite media hype, many of these firms are not devoting heavy resources to Internet technologies. In a survey by the Securities Industry Association (SIA) and the Tower Group, fewer than 10% of the 230 firms surveyed cited on-line development as an investment priority. Notably, this same survey projects that total Internet spending will reach 17% of the industry IT budget in the year 2000, up from 3% in 1996.[4] Indeed, both Morgan Stanley Dean Witter and Merrill Lynch, after seeing significant decreases in market share, recently announced plans to compete on-line in the form of a discount brokerage offering. This is a trend that other full service brokerages are likely to mimic in the near future.

However, late entrants are likely to encounter significant hurdles in their attempts to build on-line businesses. With the large number of companies in all industries rushing to get on the Web, the costs of developing brand recognition are escalating rapidly. Industry sources say American Express spent millions of dollars last year and got only a small number of customers with its launch campaign for their on-line brokerage offering called American Express Direct.[5] First mover advantage is providing a larger and perhaps, more sustainable, benefit to the innovators than many observers initially anticipated.

Analysis of Discount Brokerage Industry.

In order to understand the potential of an industry, and in particular, which players are likely to benefit, it is useful to conduct a competitive analysis of the industry. We use Michael Porter's (1985) five forces framework to analyze the on-line industry better. Porter argues that the key components of an industry competitive analysis are the power of suppliers to the firms in an industry, the power of customers, rivalry between existing players, the potential of new entrants, and the existence of substitute products or services. We examine each of these in turn.

Supplier power

There are three major categories of suppliers to on-line brokerage firms. These include providers of IT infrastructure, providers of the software required to operate these sites and to provide functionality to its customers, and the information services that will eventually provide content to the brokerage firm's websites.

Once an on-line brokerage decides to commit to a company (or companies) for IT infrastructure -- computer systems and networks – these companies that supply this back-end infrastructure can be reasonably certain that the on-line brokerage will likely remain a customer for some time since future equipment will usually have to be compatible with the existing architecture. Generally speaking, brokerages either commit to platforms such as those offered by Sun Microsystems and Microsoft for their server software needs and companies such as Cisco for their telecommunication or network needs. The same dependencies can be attributed to the software vendors. Major categories of software include system software that ensure that the various components of the infrastructure in place communicate with each other, interface software which provides a user-friendly interface and front-end, and back-office systems that provide the core functionality of these businesses. The more important software suppliers are Oracle, Microsoft, Sybase and AOL Netscape. This makes them fairly powerful. However, given the competitive nature of these technology businesses, a customer can often turn to competing companies. While this may entail substantial switching costs, it does limit the power of any single technology supplier.

Another set of influential suppliers consists of firms that provide financial information to the brokerages such as Aether, Reuters and Associated Press. However, Securities and Exchange Commission reporting requirements and the large number of companies that provide financial information make it unlikely that any information provide can exert significant power over a brokerage firm.

Buyer power

At the present time the market for on-line discount brokerages is very fragmented. The typical customer is educated, middle to upper middle class with respect to income level, and generally makes informed decisions. The takeaway from such a profile is that individually, customers or tend not to wield power in this industry, but can be quite powerful as a group. It is worth emphasizing that the switching costs for an individual customer to move from one brokerage house to another are quite low giving the individual customer a large set of options. Moreover, the existence of chat rooms and other discussion forums on the Internet make it relatively simple for individual customers to share their opinions with each other, and to organize groups that can collectively express their opinions to the brokerage firm.

Rivalry of existing players

The on-line discount industry consists of four or five large companies and numerous boutique brokerage firms that provide focused services to particular segments of the market. The biggest players in this industry sector are Charles Schwab, E*TRADE, Waterhouse Securities, Fidelity Investments and Datek. These large firms account for 57% of the on-line discount brokerage business and the boutiques catering to niche markets account for the other 43% (refer **Appendix Market Shares**). The industry is highly competitive with the large companies engaging in fierce competition between themselves and with the boutiques for market share. This results in the consumer getting a bigger share of the surplus. Notably, one trend in the past two years has been that boutique firms have increased their market share at the expense of the bigger players.

New Entrants

The on-line market is constantly evolving and new entrants to this market are continually emerging. Despite fairly high sunk costs, the lure of the visibility of Internet-based businesses attracts more entrants all the time. At this time, most new entrants are focusing on particular segments of a fragmented market. For example, Jack White and Co. concentrates on clients based in Southern California, and specifically, San Diego. Another likely entrant is a full service brokerage firm. Several of these firms have or are considering spinning off a division to focus on the on-line industry. This new entrant has the loyalty of its existing customers, existing value added services such as investment research, and the monetary backing of firms with existing and ongoing revenue streams. On the other hand, these competitors are constrained by existing channels and pricing models that can result in a sharp decrease in revenues if they compete with discount brokers on price. In fact, in order to avoid direct price competition with discount brokers, several full-service brokers are adopting asset-based fee structures in lieu of transaction fees.

Yet another source of competitors are those companies that have established their core competency in other on-line businesses, have a large customer base, and are attempting to expand their businesses into new industries. Examples include portals such as Yahoo Inc, ISPs such as AOL, and perhaps even Microsoft who could also enter the fray. These companies bring a large customer base to the table and possess a comprehensive understanding of their on-line preferences and behaviors. It is conceivable that these or other companies could enter the discount brokerage industry by catering initially to their loyal customers and then eventually cut into the customer base of other existing market players.

Moreover, new technologies continue to be introduced making it possible for new entrants to leapfrog existing competitors who may have invested in less flexible architectures. Witness the recent efforts of the brokerage industry to reach customers through a variety of information appliances such as the Palm (from 3Com Corporation), not just those that are Internet-based.

Substitutes

Clearly, full-service brokers are substitutes for discount brokers. In theory, existing customers can take their business to full service brokerages, though this is unlikely because of the higher cost of dealing with full service brokers. Customers could also begin trading between themselves in new on-line marketplaces thus disenfranchising the brokerages but this is also unlikely given the high costs associated with authenticating and verifying trades, maintaining the required ownership and registry databases, providing custodial services, and complying with SEC regulations. Companies could stop selling shares (at least for new issues) via brokerage firms and go directly to the customer (company-to-customer transactions). This is also somewhat unlikely, given the economies of scale, scope and volume that brokerages have achieved.

Conclusions from the Industry Analysis

Based on the above analysis, we highlight what we believe to be the key competitive features of the on-line brokerage industry.

High fixed costs and low variable costs characterize the on-line discount brokerage business. Clearly, supply exceeds demand, and in an intensively competitive environment, margins come under tremendous pressure. Unsurprisingly, margins are low in this industry. Given the economics of the business, and in particular, the economies of scale and scope inherent in the technology, market share measured by trading volume becomes a critical success factor. Correspondingly, the size of the customer base and trading frequency are key business drivers.

Scalability of systems is vital to the survival of the on-line brokerage firms. Trade volumes are constantly increasing. Newer and better technology is being rolled out constantly. A company needs to think strategically when committing to a particular technology solution. These technologies must be such that they can be easily upgraded and enhanced to offer new capabilities. Technology can by itself become a source of competitive advantage as evidenced by E*TRADE selling its architecture to companies in other countries.

Further, in a rapidly changing technological environment, new entrants may have opportunities to leapfrog an incumbent's service offerings using new technologies without having to worry about compatibility with previous technological solutions, a feature that an incumbent would have to maintain. Moreover, as the marketplace is still young and continues to evolve, customer preferences are changing. In an industry where a customer's switching costs are low, it is imperative for incumbents to understand changing customer needs and concerns and incorporate them in the service offerings if they are to maintain long-term viability.

Early movers have significant advantages. Since barriers to entry such as technology platforms, regulations or customer switching costs are limited at best, those who enter the market early must create network effects to act as a barrier to entry for late entrants. They can do so by leveraging their customer base to create virtual communities, by developing exclusive alliances with content providers, or by implementing technological and process innovations that can be protected with intellectual property laws. Moreover, brand recognition is established early and is often sustainable as evidenced by E*TRADE and Amazon.

Impact of Information Technology on the Discount Brokerage Industry

This section will compare the traditional trading process to that available via on-line brokerages.

<u>The Traditional Trading Process</u>

To buy or sell a NYSE-listed security through the traditional method, an investor calls his/her stockbroker to place an order. The investor's order is then phoned or transmitted electronically to the NYSE trading floor. The floor broker receives the order from booths that are located along the perimeter of the trading floor. The booths house electronic screens that display the investor orders. The floor broker then goes to the specialist trading post that handles the stock that the investor wants to trade. All floor brokers who have orders to buy or sell the same stock gather around the trading booth. Floor brokers make bids and offers to sell or buy stock using an open outcry to attract the participation of interested parties. Once the highest bid meets the lowest offer, the specialist executes a trade. After the specialist executes the trade, the brokerage firms send confirmations to the buyer and seller. The completed execution is sent to the consolidated tape, which displays the trade to the global financial community. The brokerage firms send written confirmations of the trade to the buyer and seller within three business days. The buyer settles his/her account by submitting payment within three working days. The seller's account will be credited the proceeds of the sale minus commissions associated with the sale within the same three day period. Exhibit 2 depicts the Traditional Information Flow Schematic.

The New Trading Process

Over the last few years, discount brokerages have become very popular with investors willing to conduct their own research and make their own investment decisions. These brokerages offer lower commission rates on trades than full service brokerage firms, but they do not provide security trading advice or in-depth analysis of their client's investments.

The Internet takes the service capabilities of discount brokerages one step further with on-line investment capabilities. On-line investing allows users to submit a trade transaction (either buy or sell a stock) over the World Wide Web. Depending upon the knowledge base of the individual investor, and the opportunity cost of his/her time, on-line brokerages may be a good way for them to trade securities. With its vast array of resources, the Internet is a great medium for investors to obtain information on financial markets, on numerous investment vehicles, and information on individual stocks.

"Investing is an activity dominated by information and transactions, not the physical delivery of product… As such, it is a bit business -- prime territory for electronic delivery"[6]

The first step in the process of on-line trading is to establish an account with a broker offering on-line trading. Once the investor decides to place a trade, the user simply logs on to the brokerage's Web site using a unique log-in ID and password. The investor may place a trade at any time of day, and on any day of the week. Note that the actual trade may or may not take place outside of regular market hours, however. Once connected to the broker's Web site, the user fills out an electronic form specifying the details of the transaction, such as the number of shares to be traded and at what price. From this point, the acquisition of the stock is conducted in an identical fashion to that of the traditional trading process. All investor account information is available on-line; order status, existing positions, account balance and margins are some of the details available. The status of orders placed by customers can be checked on-line or by email.[7] The on-line trading information flow and the on-line schematic are attached as Exhibit 3 and Exhibit 4 respectively.

Internet-based services allow discount brokerages to improve customer service while actually reducing the labor costs associated with providing it. In reality, customers are now executing tasks like obtaining stock quotes or verifying balances, tasks that were previously carried out by brokers. On-line brokerages are able to do this by profiling their customers accurately, understanding the needs of these customers and then investing in technology that cater to these needs cost effectively.

The concept behind the move to Internet based trading reflects a move towards empowering the customer. Specifically, the Internet has facilitated the unbundling of the services that an investor may want, such as research, advice and trading. Not only does on-line trading dramatically increase the availability of the brokerage firm to its customers cost effectively, it allows a customer to obtain these services from a variety of service providers rather than from a single provider, usually a full-service broker. Consequently, even investors who want investment advice may choose to use on-line trading from a discount brokerage while securing investment advice elsewhere.

In the financial services industry, a company that decides to establish an on-line presence then needs to develop an Internet strategy. The strategy for the Internet endeavor must be aligned with the company's overall strategy.[1] In particular, a company must clearly identify the market segment that is likely to be attracted to its on-line services and that which is likely to prefer traditional services. The Internet strategy therefore encompasses the demographic and geographic segments of the customer base that the company is catering to, the level of functionality that is likely to be provided on the web site and the number of "hits" or volume of transactions that it would like to support. This is essential because the net strategy has implications for the core competencies of the company.

Firm Level Analysis

In this section, we examine the two companies' product and service offerings, their strategies and organization structure, and the role of information technologies.

*E*TRADE Inc.*

E*TRADE has been on the forefront of innovation in the discount brokerage industry for many years. It was founded as a service bureau in 1982, providing on-line quotation and trading services to Fidelity Investments, Charles Schwab, and Quick &Reilly. E*TRADE Securities, Inc. was launched as the original all-electronic brokerage in 1992 and began to offer on-line investing services through America Online and CompuServe. Then, with the implementation of the website, www.etrade.com, in February 1996, demand for E*TRADE's services increased exponentially. In October 1998, E*TRADE was named the #1 on-line investing site in the world by Lafferty Information and Research Group. E*TRADE had over

[1] This may include choosing to cannibalize its own customer base, since these customers may defect to an on-line competitor anyway.

832,000 accounts, representing a compounded annual growth rate in new accounts since October 1994, of 134%. Assets under management exceeded $7.7 billion. Average daily transaction volumes increased to approximately 125,600 in September 1998, as compared to around 8,400 transactions per day in September 1996. For the month ended September 30, 1998, E*TRADE opened an average of 883 new accounts per day with average daily deposits of $17 million. Transactions over the Internet represented 93% of the company's September 1998 transaction volume.

E*TRADE Group, Inc. is a focused company. It operates in a single industry segment: securities brokerage and related investment services. The company is a leading provider of on-line investing services and has established a popular, branded destination on-line for self-directed investors. It offers automated order placement and execution, along with a suite of products and services that can be personalized, including portfolio tracking, Java-based charting and quote applications, real-time market commentary and analysis, news and other information services. These services are provided 24 hours a day, seven days a week via a variety of electronic channels. E*TRADE's proprietary transaction-enabling technology supports highly automated, easy-to-use and cost-effective services that empower its customers to take greater control of their investment decisions and financial transactions. E*TRADE's services can be categorized into four related offerings – trading, market and financial information, portfolio and account management, and cash management services.

Trading services include fully automated stock, option and mutual fund order processing via personal computer or touch-tone telephone, including voice recognition. Customers can directly place orders to buy and sell NASDAQ and exchange-listed securities, as well as equity and index options, and mutual funds through the E*TRADE automated order processing system. E*TRADE supports a range of order types, including market orders, limit orders (good-till-canceled or day), stop orders and short sales. Account holders receive electronic notification of order executions, printed trade confirmations and detailed statements.

Market and financial information services include free access to quotes on security prices, market data such as market indices, active securities, and largest gainers and losers. Customers can create their own personal lists of securities for quick access to pricing information. They can also choose to be alerted when there is breaking news on a specific company, or when the price of a security attains a specified level. Through its alliances, E*TRADE also provides immediate access to breaking news, charts, market commentary and analysis and company financial information. Upon placing an order, the customer is provided with a real-time bid or ask quote at no extra charge. For $30 per month, individual investors can obtain unlimited market data. The company's Web site provides links to other business and financial Web sites, including the CNN Financial Network and the EDGAR database, which provides access to SEC filings of public companies.

Portfolio and account management services include on-line access to customers of all portfolio assets held at E*TRADE, including data on the date of purchase, cost basis, current price and current market value. The system automatically calculates unrealized profits and losses for each asset held. Detailed account balance and transaction information includes cash and money fund balances, buying power, net market portfolio value, dividends paid, interest earned, deposits and withdrawals. Brokerage history includes all orders, executions, changes and cancellations. Tax records include total short-term or long-term gain/loss and commissions paid. Customers can also create "shadow" portfolios to include most financial instruments a customer is interested in tracking—for example, assets held at another brokerage firm. These shadow portfolios can include stocks, options, bonds and most mutual funds.

Cash management services provide customers with the ability to send payments through the mail, federal wire system or the Internet. E*TRADE provides free check-writing services with no minimum through a commercial bank and is exploring the expansion of these services. Through its strategic relationship with National Processing Company, it has expanded its cash management offerings to include electronic funds transfer via the Internet and an automatic deposit program to allow scheduled periodic transfers of funds into customers' E*TRADE accounts. It also allows un-invested funds to earn interest in a credit interest program or to be invested in one of five money market funds.

These services are offered to consumers through a broad range of electronic gateways, including the Internet, touch-tone telephone, including voice recognition, on-line service providers (America On-line, AT&T WorldNet, CompuServe, The Microsoft Network and Prodigy), interactive television and direct modem access. All records are maintained on one centralized system, so that customers have access to current account information regardless of which gateways they are using. E*TRADE is continually striving to increase the functionality of its services, as well as to offer new services that enhance customers' on-line investing experiences. Its services are aimed at giving consumers increased control of their personal investments by providing a direct link to the financial markets and to financial information through a personalized user interface.

The company's ultimate aim is to provide customers with the ultimate market account (Refer Appendix B) comprising end-to-end banking and other financial services for the customer. To this end, E*TRADE has pioneered many innovations. These include consolidating no-load mutual funds into a brokerage account, selling mutual funds on the web, assembling buyers and sellers of mutual funds in private transactions away from the funds, allowing retail investors to split the spread on NASDAQ stocks and trade like institutional investors, and providing immediate hedging opportunities in commodities.

Strategy and Structure

E*TRADE is committed to being the lead-edge innovator for on-line financial services, and simultaneously providing high levels of customer service. To this end, E*TRADE has developed alliances with Internet access and service providers, Internet content providers, providers of home and on-line banking services, and electronic commerce companies. To date, E*TRADE has concentrated on securing alliances with Internet access, on-line service and content providers. The aim of these strategic relationships is to increase its access to on-line consumers, to build and enhance brand-name recognition and to expand the products and services the company can provide to its on-line customers. This network of alliances also serves to create barriers to entry that would make it difficult for new entrants to compete directly with them.

While a majority of the Company's customers access its services directly through the Internet, direct modem access or touch-tone telephone, many use on-line service providers such as AOL, AT&T WorldNet, CompuServe, The Microsoft Network and Prodigy. Strategic relationships with such service providers allow E*TRADE to access a greater number of potential customers and allow the on-line service providers to offer their subscribers a broader range of service options. For example, E*TRADE has a nonexclusive agreement with AOL to place E*TRADE in its on-line brokerage area, giving its large subscriber base access to E*TRADE's Web site. It also has an alliance with Microsoft Corporation to integrate E*TRADE's on-line investing services into the Microsoft Investor on-line trading area of The Microsoft Network. Customers can also download information from their brokerage account into applications like Microsoft's Money and Investor Portfolio Manager. Likewise, the company has entered into an agreement with Yahoo! that provides direct access from the Quotes area of Yahoo! Finance to E*TRADE's Web site. Similar alliances have been developed with PointCast and AT&T. E*TRADE has arrangements with SinaNet to reach Chinese speaking investors in the United States, and with the Fourth Communication Network to reach customers in hotels.

Combining the popularity of Internet investing with a full range of banking services, E*TRADE and Banc One Corporation have established co-branded Web sites to market each other's financial services. In addition, E*TRADE offers a co-branded credit card through First USA, the credit card subsidiary of Banc One. A strategic relationship has also been created with Intuit, Inc., to allow customers to download E*TRADE account information into Quicken 98 . In addition, users can directly access E*TRADE's Web site from Quicken 98 and the Excite Business and Investing channel by Quicken.com.

Content such as news, quotes, charts and fundamental data help provide investors with the information necessary to make investment decisions. E*TRADE has developed partnerships with leading content providers to fulfill customers' information needs and help drive transaction volume. An example of this includes an arrangement with BASELINE Financial Services to provide customers with access to a wide array of investment fundamentals, First Call earnings estimates and historical prices on over 6,500 stocks. Briefing.com provides free real-time market commentary and analysis to E*TRADE customers. E*TRADE has entered into a revenue sharing agreement with INVESTools that provides its customers with direct access to 25 brand-name research reports and newsletters plus stock screening tools on a pay-per-use basis. Quote.com provides current news and quote lookup features. Customers are also provided with news provided from Reuters News, PR Newswire and BusinessWire. IDD provides E*TRADE customers with access to mutual fund profiles and two types of screening tools (Quick Fund Search and Advanced Fund Search) within the E*TRADE Mutual Fund Center. InUnity Corporation provides customers with access to electronic prospectuses for funds offered within the E*TRADE Mutual Fund Center. Morningstar, Inc., provides performance information and proprietary "star" ratings on mutual funds within the E*TRADE Mutual Fund Center. The company has also entered into a revenue sharing agreement with MSNBC Business Video which provides E*TRADE customers with direct access to exclusive audio and video segments at a preferred customer discount.

E*TRADE is expanding into new international markets via alliances with companies in key markets. These alliances enable it to capitalize on these relationships, by providing market knowledge, contacts and local understanding. Nova Pacific Capital Limited provides on-line investing services to customers in Australia and New Zealand under the E*TRADE name, and VERSUS Technologies, Inc. provides on-line investing services to Canadian residents.

Given the importance of technology as a key component in maintaining market leadership in the Internet arena, E*TRADE has developed partnerships with leading technology providers support its products and services with up-to-date features and offer the best solutions for customers. For example, National Processing Company provides E*TRADE's customers with the ability to initiate funds transfers from checking accounts at third-party institutions into their E*TRADE accounts over the Internet. E*TRADE incorporates Neural Applications Corporation's Java-based intelligent process optimization solutions and data management systems into its Java-based charting and quote applications. Telesphere Corporation provides real-time market data on some internationally traded securities in addition to data on domestically traded securities.

Use of Information Technology

The E*TRADE engine is a proprietary transaction-enabling technology that automates traditionally labor-intensive transactions. Because it was custom-tailored for electronic marketplace use, the E*TRADE engine provides customers with efficient service and has the added advantage of being scalable and adaptable as usage increases and service offerings are expanded. Moreover, the design of the E*TRADE engine and related software is multi-tiered allowing for rapid expansion of network and computing capacity without interrupting service or requiring replacement of existing hardware or software.

E*TRADE's core technology allows for standardized processing across multiple gateways. The primary components include a graphical user interface (GUI), the interface server that connects the customer to the processor, and the automated transaction processor. The GUI environment is based on Netscape's Secure Enterprise Server and can be accessed by individuals utilizing the major web browsers - Netscape Navigator or Microsoft Internet Explorer. E*TRADE's GUI connects to the interface server through a bank of Sun servers. These "gateway servers" provide for load balancing and offer immediate scalability. Access is restricted through the use of secured network servers and routers. The interface server's primary function is to provide access to an efficient, standard transaction processor from all gateways. The server technology enables communications through multiple platforms and allows different platforms to communicate with each other. The core of the E*TRADE engine is the automated processor, designed to provide the highest degree of automation for all E*TRADE transactions. The automated processor is designed to rapidly read data, process transactions and transmit information to multiple locations. Over 85% of its transactions are processed without any manual intervention.

E*TRADE uses a combination of proprietary and industry standard security measures to protect customers' accounts. Customers are assigned unique account numbers, user identifications and trading passwords that must be used each time they log on to the system. The company relies on encryption and authentication technology, including public key cryptography to provide the security and authentication necessary to effect the secure exchange of information. Touch-tone telephone transactions are secured through a personal identification number ("PIN")--the same technology used in ATMs. A second level of password protection is used prior to order placement. In addition, the company has an agreement to provide digital certification and authentication services for electronic commerce through its alliance with VeriSign, Inc.

Charles Schwab Corporation

Charles Schwab provides a full-service investing experience to customers via the Internet and through 295 branch offices. Its IT capabilities include speech recognition and touch-tone telephone technologies, multilingual and international technologies, in addition to which they provide direct access to professionals around-the-clock. Charles Schwab services 2.2 million active on-line accounts with $175 billion in on-line customer assets. Schwab on-line investors transact over $6 billion in securities through www.schwab.com each week. In 1999, Charles Schwab was the market leader in the discount brokerage industry, capturing over 50% of industry assets. As another indicator of its success, its stock market valuation exceeded that of brokerage behemoth, Merrill Lynch in 1998.

Innovation through information technology is a key component of Charles Schwab's success. Its president, David Pottruck, has been cited as saying, "We are a technology company in the brokerage business." The company has introduced numerous technology-based service offerings, including StreetSmart and subsequently e.Schwab, PC-based programs for on-line trading. Schwab has won numerous awards for its leadership in technology, including the Gartner Group's 1997 Excellence in Technology Award, the Global Information Infrastructure Award for Top Commerce site and the CIO 100 Award.

The Charles Schwab Corporation was incorporated in 1986. It engages in securities brokerage and related financial services. It's principal subsidiary, Charles Schwab & Co., Inc. (Schwab), is a securities broker-dealer, which was incorporated in 1971, and entered the discount brokerage business in 1974. It also operates numerous other subsidiaries. Mayer & Schweitzer, Inc. is a market maker in NASDAQ and other securities providing trade execution services to broker-dealers and institutional customers. Charles Schwab Investment Management, Inc. acts as the investment adviser for Schwab's proprietary mutual funds, called the Schwab Funds. The Charles Schwab Trust Company provides custody services for independent investment managers and serves as trustee for employee benefit plans, primarily 401(k) plans. Charles Schwab is a retail discount securities brokerage firm located in the United Kingdom.

Strategy and Structure

Schwab's strategy in the brokerage industry has been to discount its service offerings significantly from full-service brokers, while still charging fees higher than what the deep-discount brokers charge. It believes that it can succeed by offering higher value than the low-end discounters while significantly undercutting the prices that full-service brokers charge.

Schwab has a different business model from those brokerages that concentrate solely on Internet trades. Schwab has adopted a hybrid strategy, focusing not just on its Internet-based offerings, but also on its retail branch offices. Customers have the option to either conduct transactions on-line or walk into a branch office to consult with a broker. Indeed, their new initiative, SchwabNow!, is aimed at expanding the products and services offered by Schwab to its customers by complementing the capabilities of its branch offices, rather than to supplant them. Schwab also offers two-hour on-line investing seminars at its branches for those not as comfortable with technology. This offers a significant point of distinction between the services that Schwab offers relative to other discount brokers.

Schwab also has several product offerings that are not offered by many of its competitors. A good example of this is its Mutual Fund Marketplace that provides its customers with a large choice of mutual funds from Schwab and other mutual fund companies. While some of these funds required transaction fees from its customers, another offering, Mutual Fund OneSource, offered no-load mutual funds with no fees o customers. Schwab charged the fund companies a percentage of assets, between 25 to 35 basis points, as a commission. The ability to trade mutual funds from a large number of fund families, and receive a single consolidated statement provides customers with significant incentives to consolidate their investment activity at Schwab.

Schwab does not however engage in proprietary research nor does it provide advice. I t has however engaged in alliances with independent financial advisers, who can provide advice to the segment of the market that does want investment counsel. Schwab provides a proprietary software service to these advisers that automates the back-office functions of a financial adviser for a nominal fee. This, in turn, encourages advisers to locate their clients' assets in brokerage accounts at Schwab.

Of course, they have also been implementing numerous Internet-based investment services, such as the Asset Allocation Toolkit-TM for portfolio allocation guidance, and the Mutual Fund OneSource-TM-Online, and Market Buzz-TM sites for research and information. Moreover, Schwab was first to market with a range of securities that could be traded on-line that exceeded its competitors offerings. Schwab preempted E*TRADE in providing the capability to trade government and corporate bonds, and mutual funds.

Schwab pursues new investors via traditional marketing channels rather than pursuing strategic alliances on-line as E*TRADE does. To this end, Schwab advertises extensively on a combination of channels such as cable, television, radio, and via targeted approaches such as athletic event sponsorship, and direct rather than focusing primarily on on-line channels. Schwab's advertising and market development expense has risen rapidly to $155 million in 1998, compared to $84 million in 1996. Expenditures for these programs helped Schwab attract $80.8 billion in net new customer assets in 1998, compared $54.2 billion in 1996. Schwab opened 1,380,000 new accounts in 1998, compared to 985,000 in 1996. Customer assets from new accounts represented approximately 50% of net new customer assets in each of the past three years.

Schwab is currently engaged in an attempt to establish relationships with on-line banks and other Internet sites involved in on-line banking so that it can add retail banking to the range of services it provides to its customers. The SchwabNow! initiative attempts to provide Schwab customers with a complete financial experience encompassing banking (checking, savings, etc.), free real time quotes, low cost trading and other associated products and services. Schwab has also developed alliances with providers of financial information – First Call and Quote.com – to provide some of these capabilities.

Schwab is also structuring its organization to integrate its physical offices with its on-line services. The company is attempting to reduce its customer service costs while retaining its efficiency by encouraging its customers to go on-line for their service needs. In the past year they have reduced their customer service staff from 2000 to 1500[2].

Use of Information Technology

The engine running the Web site is an RS/6000 computer that accesses an IBM DB2 database housing all of the electronic information. The RS/6000 was chosen as the distributed platform for its easy scalability and so that a single vendor, IBM, could be looked to for the solution to any problems that might arise. At Schwab, it was chairman and founder Charles Schwab who first insisted on a strong Internet presence. "In many ways, technology is the driver and enabler of all we do, and it's been Schwab's hallmark to enable customers to interact directly with technology themselves. Schwab will continue to build additional electronic channels to enable more investors to self-direct their financial affairs," says Schwab.

*Firm Level Comparison: Charles Schwab Vs. E*TRADE*

E*TRADE vs. Charles Schwab

The table below provides a quantitative summary of some key indicators for E*TRADE and Charles Schwab:

	E*TRADE	**Charles Schwab**
Account Values	$113 Billion	$354 Billion
# of Accounts	3,200,000	4,800,000
Breakdown of Accounts (Advisor / Individual)	33%/67%	40%/60%
Total Funds / No Fee Funds	6,800/1,325	4,500 / 1,000 (est.)
Branches	20	279
Internet / Touchtone&Prop/ Traditional Call	85% / 10% / 5%	48% / 20% / 32%

(Sources: Interview with Peter Mangan and *Wall Street Journal* - June 2, 1999)

Clearly, Charles Schwab dominates E*TRADE when it comes to volume and scale. Schwab's assets are more than three times that of E*TRADE, even though it has only 50% more accounts. Obviously, Schwab has many more branches that E*TRADE. Interestingly, the share of trades that originate on the

[2] Morgan Stanley Dean Witter report April 1999.

Web are quite different. Less than half of Schwab's trading activity originates on the Internet compared to 85% for E*TRADE. Almost one third of Schwab's customers still use the telephone.

Schwab and E*TRADE also differ in the area of providing advice. While both companies rely on investment advisors, Schwab provides clients with more advice, tools, and research regarding investment strategy. E*TRADE gives preferential treatment to their independent financial advisors by giving them access to a larger network of no-fee mutual funds, but steers clear of anything along the lines of investment advice. On one hand, E*TRADE caters more to the well-educated, seasoned investors and sees most of its growth opportunities with independent advisors. (Ferguson, Aug 26, 1996, p. 159) On the other hand, Schwab is focused more on the first-time investor who may require more guidance. Schwab offers "Schwab-style" advice in the form of Advisor Source program, which directs clients to a group of fee-compensated independent investment managers, and IT based tools which help customers in the decision making process. (Dewan et al., 6)

A widely accepted comparison of discount brokerages is the annual ranking of the best and worst discount brokerages by *Smart Money*, the Wall Street Journal magazine of personal business. The criteria upon which the firms are ranked change slightly every year to reflect the service and quality that investors desire from their brokerage firm. In 1997, for example, 21 companies were ranked according to nine categories with "Trading Costs" and "Breadth of Products" categories receiving double weight, as they are the most important to individual investors. (Hagy and Holson, 99)

From 1994 to 1998, *Smart Money* selected E*TRADE and Company as the top brokerage firm, with the exception of 1997, when E*TRADE finished second to Waterhouse Securities. From the inception of the survey in 1994, Schwab never surpassed E*TRADE and finished 6th, 2nd, and 3rd for the years 1995, 1996, and 1997, respectively. Interestingly however, in on-line trading, E*TRADE ranked 15th out of 21 companies, while Schwab took the number one slot.

When using the Smart Money survey to compare the two firms a couple of major points are noted. Both companies excel in terms of breadth of products. If you want to talk to a human to buy or sell securities, Schwab is the most expensive of the 21 companies surveyed and E*TRADE is approximately average for the group. E*TRADE is superior to Schwab in terms of the number of mutual funds and number of no fee mutual funds. Schwab has strict selection criteria for accepting funds into its family, which is based upon past performance. In addition, you can buy funds from the Fidelity Investments family at E*TRADE, but not at Schwab which sees Fidelity as a direct competitor. Schwab has the best on-line trading available in the industry while E*TRADE's is considered to be the most useful and secure.

In the table below, we compare the financial performance of Schwab and E*TRADE. These figures include net revenues, net income and on-line account totals per quarter for the years of 1997 and 1998. A graphical comparison is provided in Appendix C.

	E*TRADE 1997 quarterly numbers				E*TRADE 1998 quarterly numbers			
	q1	q2	q3	q4	q1	Q2	q3	q4
Net Revenue	$32.20	$37.00	$48.50	$51.10	$53.30	$62.30	$68.70	$88.10
Net Income	$3.05	$3.10	$5.50	$4.90	$6.10	$6.60	$(15.70)	$(13.20)
# Accounts	145,000	182,000	225,000	325,000	403,000	459,000	544,000	676,000
	Schwab 1997 quarterly numbers				Schwab 1998 quarterly numbers			
	q1	q2	q3	q4	q1	Q2	q3	q4
Net Revenue	$535.70	$530.70	$611.80	$620.60	$604.40	$638.00	$705.20	$788.60
Net Income	$66.70	$64.00	$76.50	$63.10	$68.00	$76.30	$97.80	$106.40
# Accounts	750,000	865,000	1,000,000	1,200,000	1,600,000	1,800,000	2,000,000	2,200,000

NR and NI in millions

Date	Schwab NR/qtr	E*Trade NR/qtr	Date	Schwab. Ni/Qtr	E*Trade Ni/qtr	Date	Schwab Accts	E*Trade Accts
3/31/97	$535.70	$32.20	3/31/97	$66.70	$3.05	3/31/97	750,000	145,000
7/1/97	$530.70	$37.00	7/1/97	$64.00	$3.10	7/1/97	865,000	182,000
10/1/97	$611.80	$48.50	10/1/97	$76.50	$5.50	10/1/97	1,000,000	225,000
1/1/98	$620.60	$51.10	1/1/98	$63.10	$4.90	1/1/98	1,200,000	325,000
3/31/98	$604.40	$53.30	3/31/98	$68.00	$6.10	3/31/98	1,600,000	403,000
7/1/98	$638.00	$62.30	7/1/98	$76.30	$6.60	7/1/98	1,800,000	459,000
10/1/98	$705.20	$68.70	10/1/98	$97.80	$(15.70)	10/1/98	2,000,000	544,000
1/1/99	$788.60	$88.10	1/1/99	$106.40	$(13.20)	1/1/99	2,200,000	676,000

While the growth in the number of accounts at Schwab is higher, the percentage growth of the accounts is higher in the case of E*TRADE. E*TRADE is also successful in enticing new first time customers who tend to day trade more frequently than does Schwab. Schwab has successfully transitioned a large number of its physical office clients to the on-line business model. At the time of this writing, approximately 60% of all Schwab transactions are being made on-line. The bulk of revenue generation for Schwab is via its physical offices. Less than 10 percent of its revenue is generated on-line. Schwab uses the Internet as a means to attract clients, reduce overheads by transitioning regular clients over to the Internet for their customer service requirements and maintain market presence. E*TRADE relies on the Internet for its survival with well over 90% of its revenue generation originating in that medium.

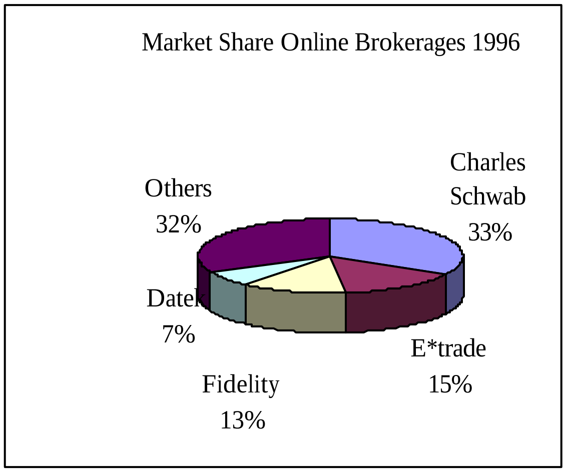
Conclusions

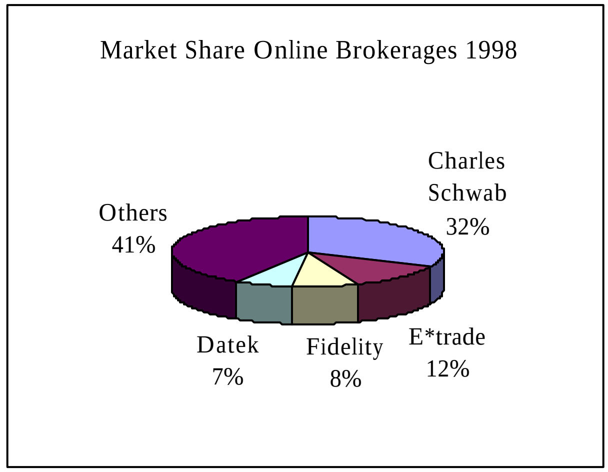
The information and financial services industries are characterized by rapid technological change, changes in customer requirements, frequent new service and product introductions and enhancements, and emerging industry standards. The introduction of services or products embodying new technologies and the emergence of new industry standards and practices can render existing services or products obsolete and unmarketable. The future success of a competitor in this space will depend, in part, on its ability to develop leading technologies, enhance its existing services and products, develop new services and products that address the increasingly sophisticated and varied needs of its prospective customers. Discount brokers must respond to technological advances, emerging industry standards and practices on a timely and cost-effective basis.

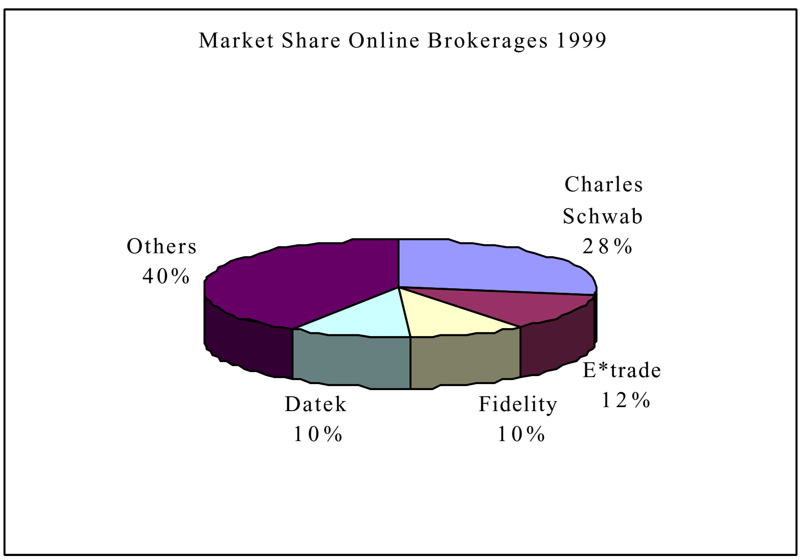
The costs of owning and operating a commercial website in financial services are fairly expensive. The cost to a new entrant is very steep. For the early entrants, this is a sunk cost. Thus, intense competition is very much a reality in the on-line world. To succeed in the face of such competition, companies need to have economies in scope, scale and most importantly volume. Economies of scale help offset recurring costs such as upgrading of infrastructure. Since customers want integrated financial offerings, it is the goal of most financial services firms to provide for every financial need of the consumer ranging from 401K plans to savings accounts to money market accounts at one site (refer Appendix B). This requires economies of scope. A network of alliances developed with on-line partners can be an effective strategy to offset the absence of other barriers to entry. These alliances can act as a deterrent to new entrants who can find market penetration to be a monumental task.

Appendices

Appendix A Market Shares 1996, 1998, 1999





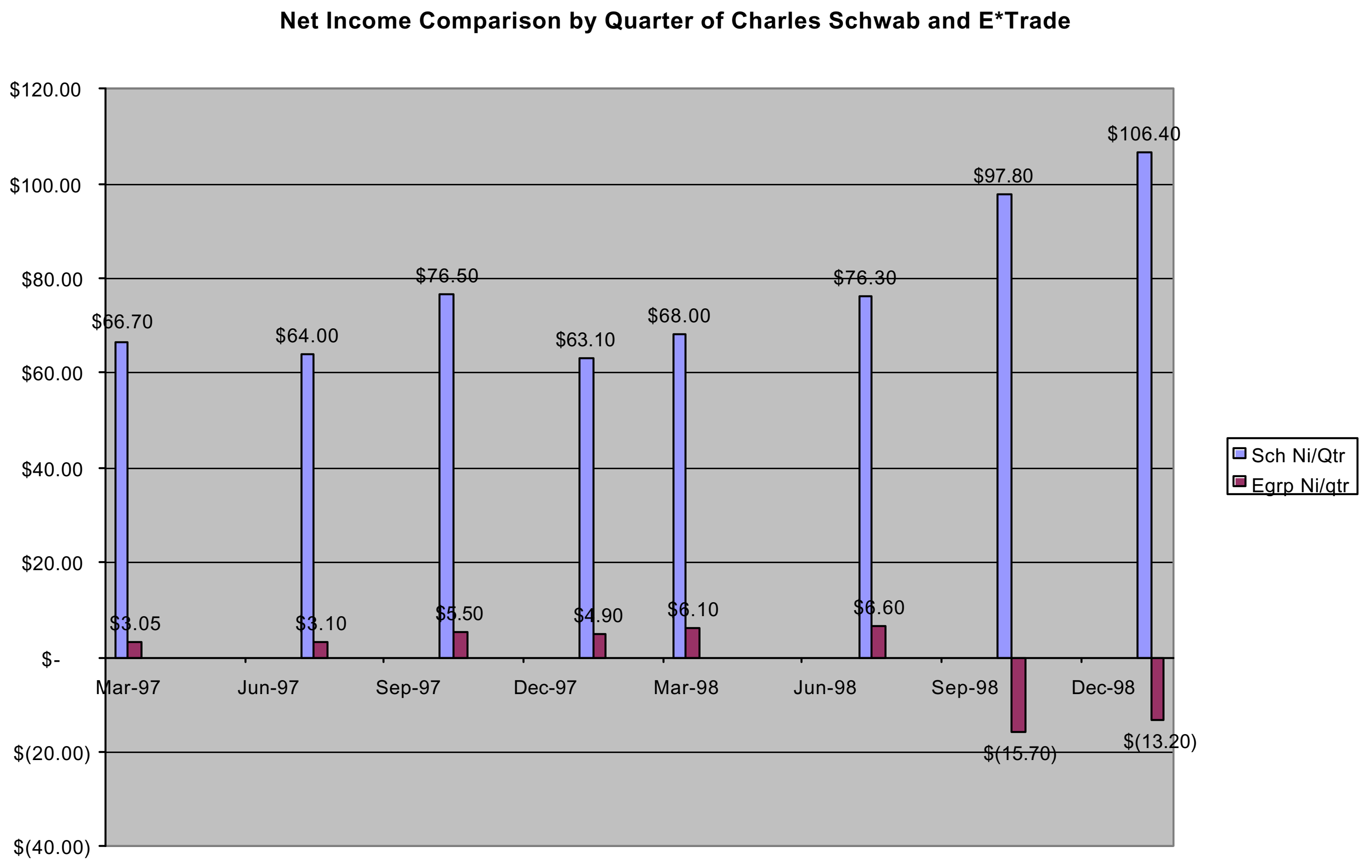


*Appendix B E*TRADE's Ultimate Market Account*

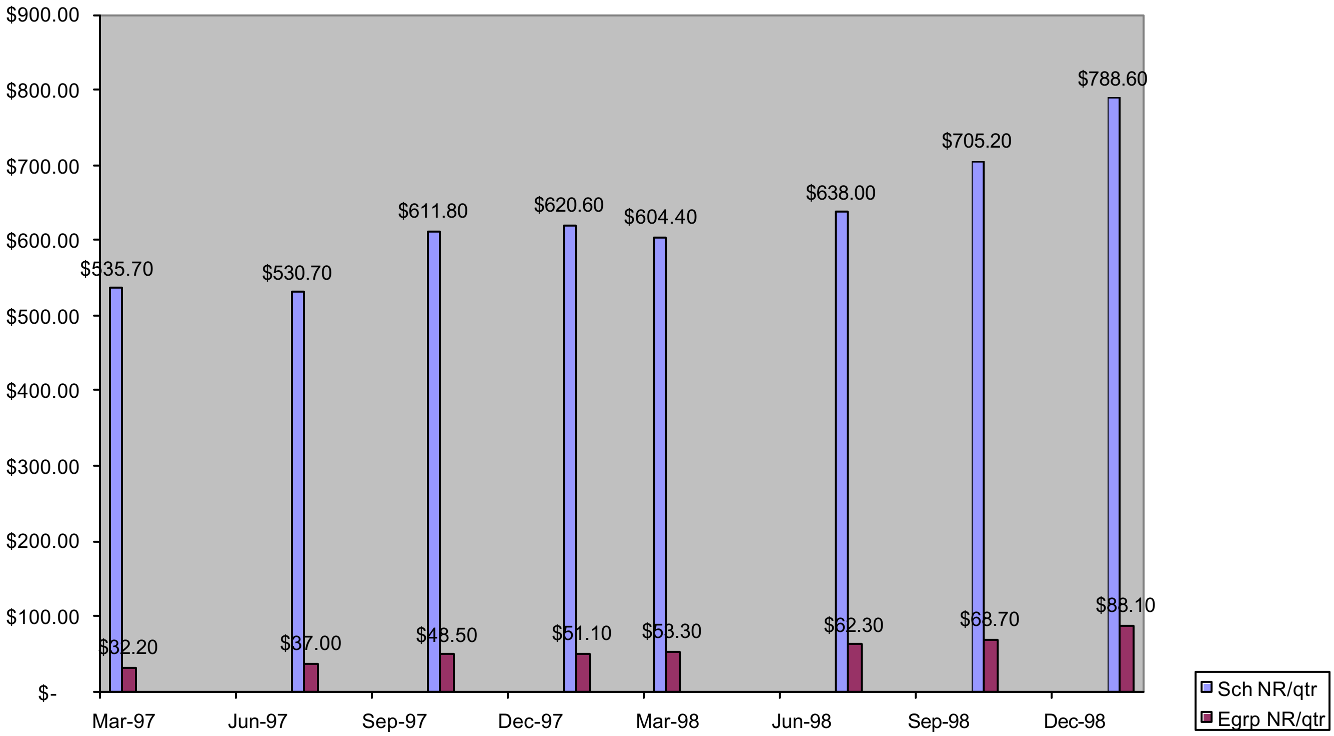
Summary of Benefits:

- No annual fees
- No set-up fees
- No ATM Charges
- Discount Brokerage Services
- Free Gold MasterCard Debit Card (with Everyday Low Price Guarantee)
- Free Gold Visa Credit Card
- Minimum initial deposit of $5,000 in cash (and/or marginable securities)
- Post paid calling Card feature (17.9cents/minute anywhere in US)
- Daily Sweep of accounts
- Option to earn frequent flier miles on the account
- Account is insured against fraud (up to $75 million)

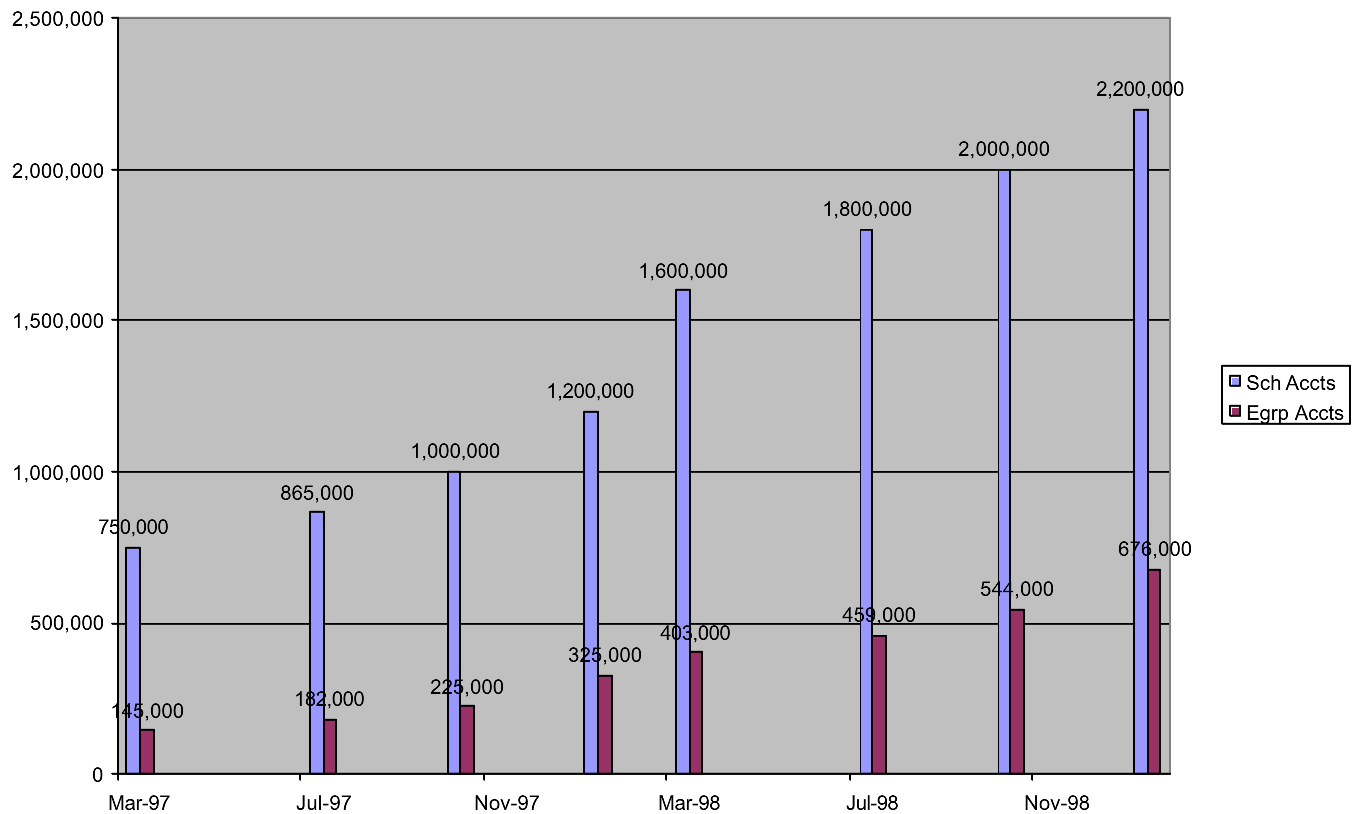
Appendix C Comparison of income, revenue and account growth



Net Revenue Comparison By Quarter of Charles Schwab and E*Trade



Growth in Online Accounts per quarter: Charles Schwab and Etrade



EXHIBITS

Exhibit 1: Industry segments

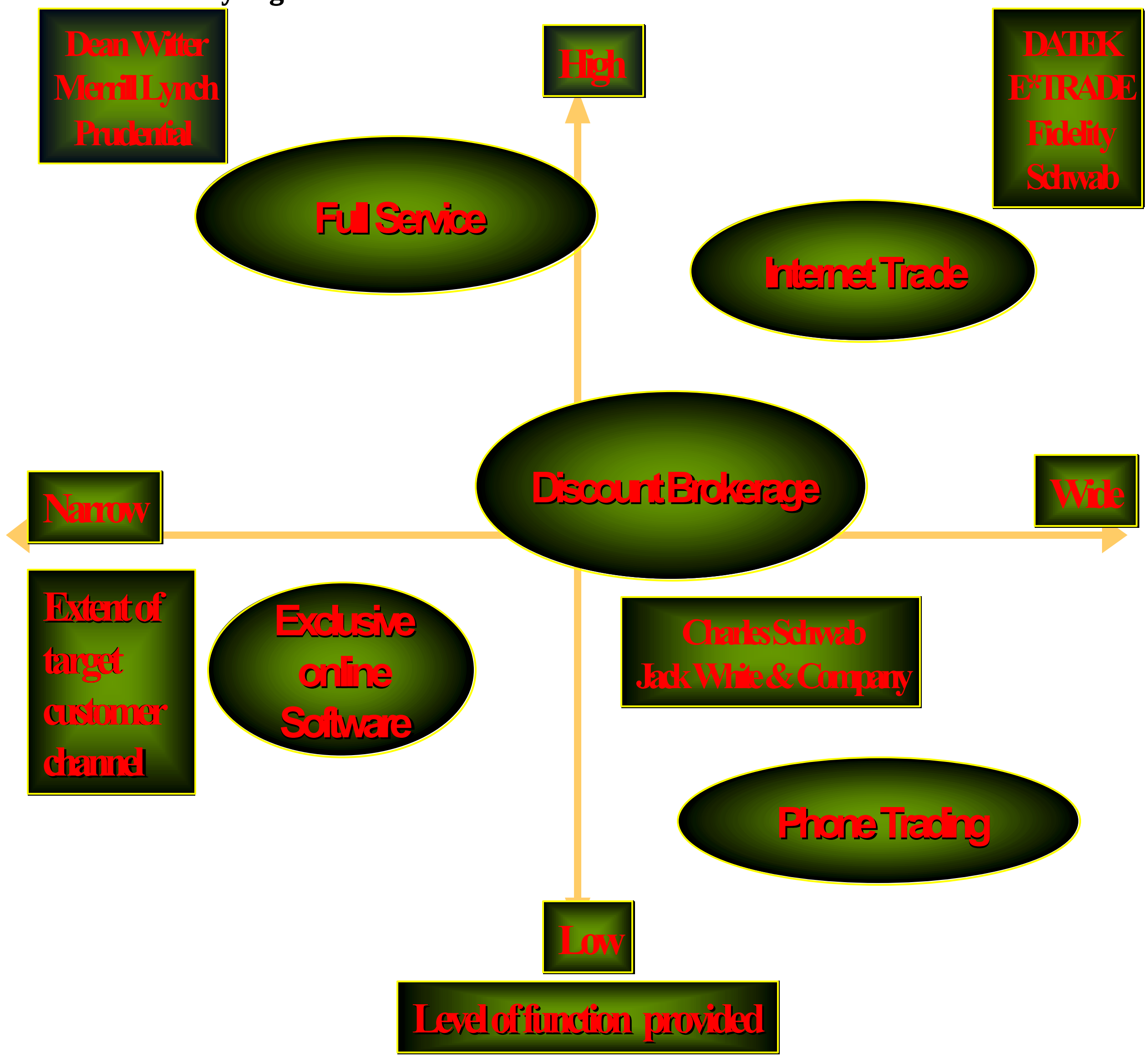


Exhibit 2: Traditional Brokerage Information Flow Schematic

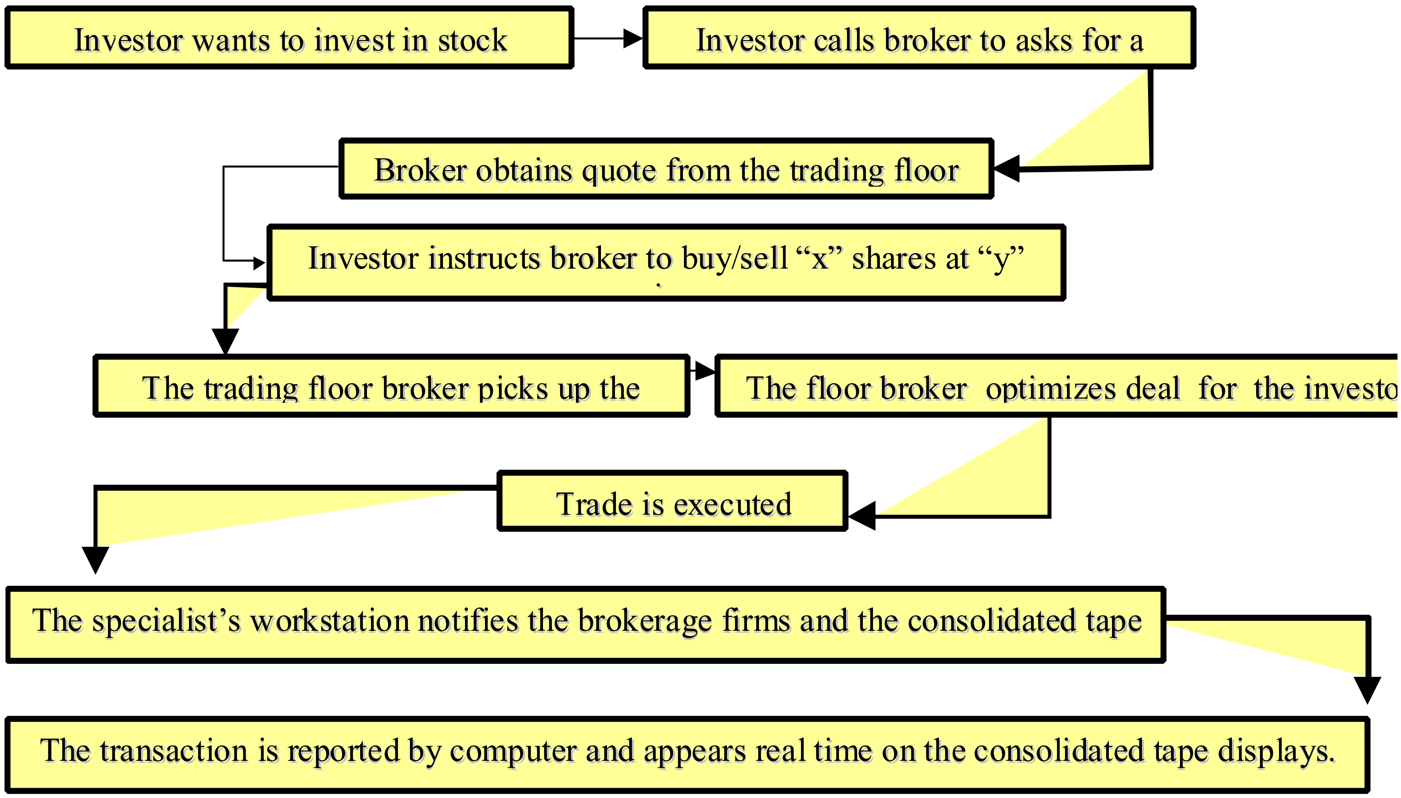


Exhibit 3: On-line Brokerages Information Flow Schematic

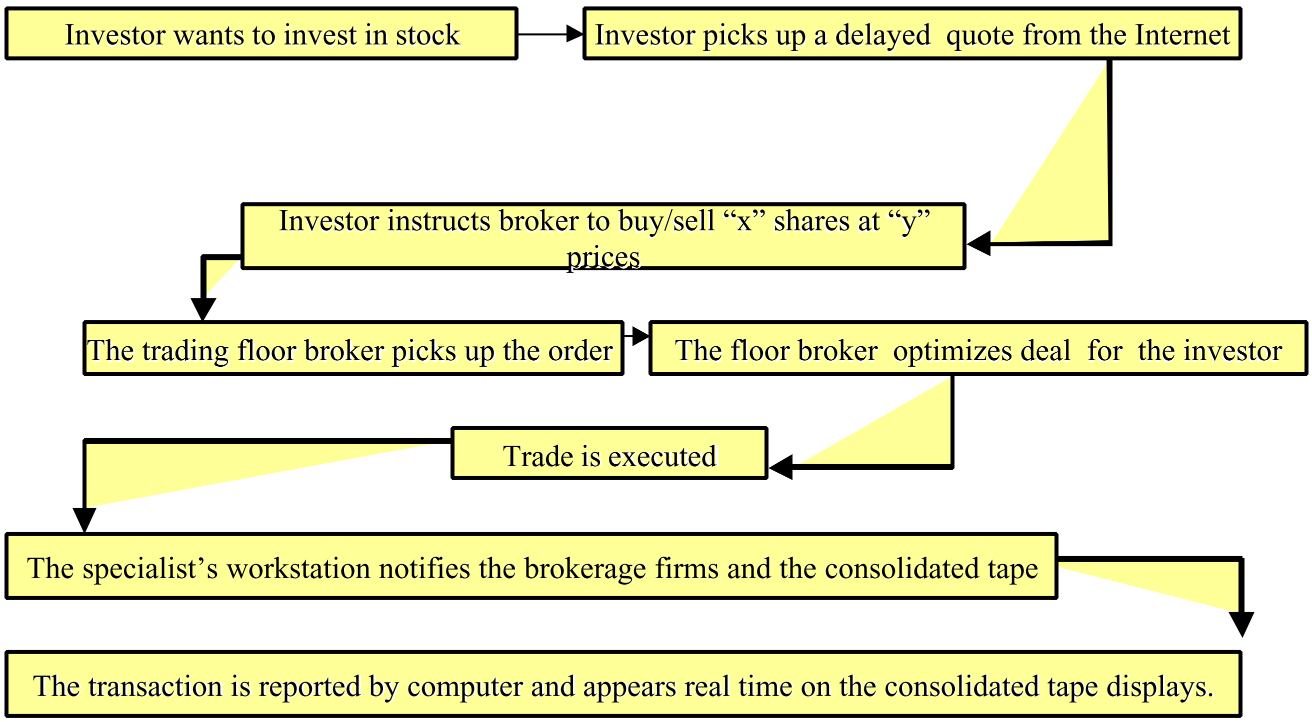
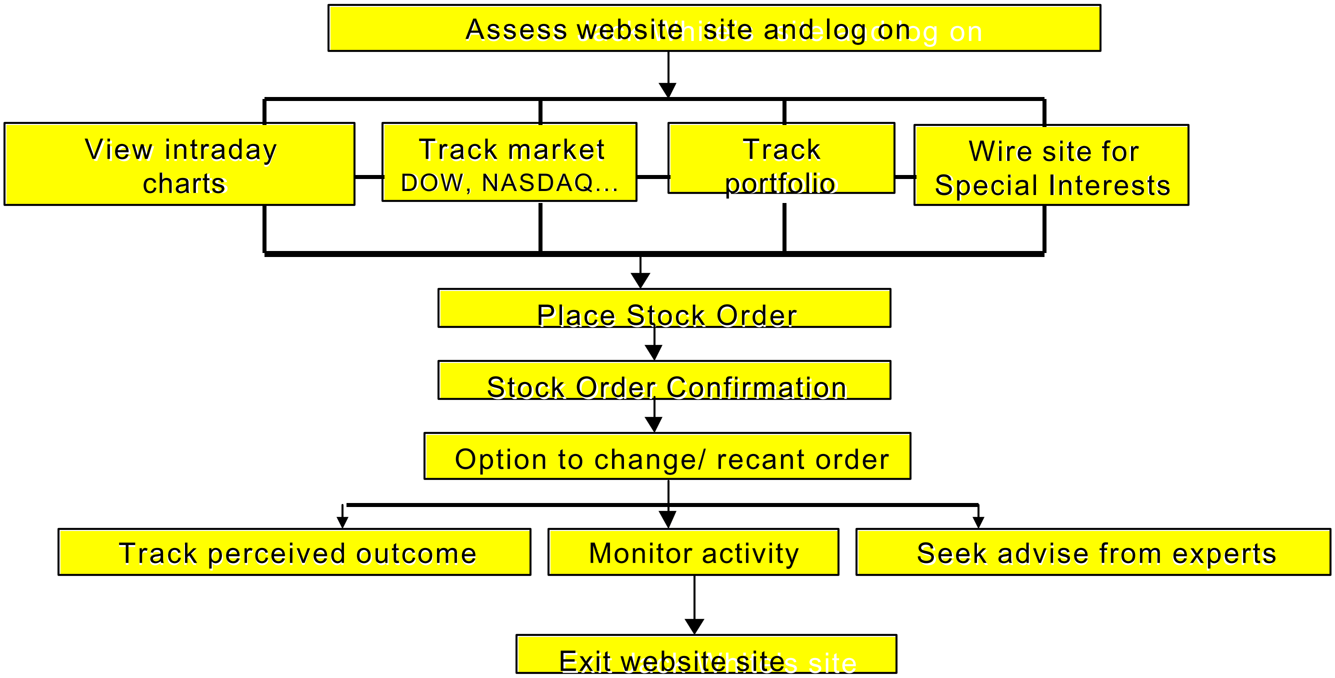


Exhibit 4: On-line Trading schematic



Bibliography

E*TRADE Inc.. Various company publications and reference materials.

Charles Schwab & Company. Various company publications and reference materials.

Barker, Robert and Heller, Jamie. "The Best and Worst Discount Brokers". *Smart Money*, July 1996.

Bauder, Donald C. "Jack White sells pioneer brokerage". *San Diego Union-Tribune*. April 1, 1998.

Dewan, Sanjeev; Gurbaxani, Vijay; Melville, Nigel. "High Finance Goes High Tech: A Case Study of Charles Schwab". Center for Research on Information Technology and Organizations, Graduate School of Management, University of California. May 18, 1998.

Eisenstadter, Ingrid. "Can't Get Enough? Do It After Hours' Individual Investors Turn to Discount Brokers to Trade After Hours". *International Herald Tribune*, May 13, 1998.

Ferguson, Tim W. "Jack the Giant Killer". *Forbes*, April 1997.

Ferguson, Tim W. "Jack White". *Forbes*, April 26, 1996.

Forrester Research. "Money & Technology Strategies". Volume 1, Number 11. July 1, 1996.

Foust, Dean. "On-line Brokers: Do You Get What You Pay For?". *Business Week*, May 25, 1998.

Hagy, James R. and Holson, Laura M. "The Best and Worst Discount Brokers". *Smart Money*, July 1998.

Jack White & Company. Various company publications and reference materials.

Kalb, Peggy Edersheim. "The Best and Worst Discount Brokers". *Smart Money*, July 1995.

Mangan, Peter. Executive Vice President Mutual Funds and Institutional Services, Jack White & Company. Personal Interviews, April 1998 - June 1998.

Mulligan, Thomas S. "NASDAQ's New World of Orders". *Los Angeles Times*, April 28, 1998.

Porter, Michael E. *Competitive Advantage*, New York, NY, Free Press, 1985.

"POSIT accepts retail orders from Jack White". *Wall Street and Technology*, February 1997.

"Product Development". *Financial Net News*, April 27, 1998.

Raghavan, Anita. "Why Wall Street Firms Trail in On-line Battle". *Wall Street Journal*, June 2, 1998.

Weisul, Kimberly. "Jack White & Co. is the first to sell mutual funds on the Web". *Investment Dealers Digest*, April 15, 1996.

Weisul, Kimberly. "Jack White crossing system leaves the gate". *Investment Dealers Digest*, February 9, 1998.

Weisul, Kimberly. "Leveling the trading field". *Investment Dealers Digest*, August 26, 1996.

Weisul, Kimberly. "Morningstar nabs big discounter for Web brokerage". *Investment Dealers Digest*, March 31, 1997.

Wiles, Russ. "Wall Street, California: Insight for Investors". *Los Angeles Times*, March 10, 1998.

Zajac, Jennifer. "How to save money when you trade your NASDAQ stocks". *Money*, April 1997.

"Investment Fraud and Abuse Travel to Cyberspace" (1996), SEC Office of Investor Education and Assistance, www.sec.com/consumer/cyberfr.htm

"National Study Finds On-line Discount Brokerage Firms Gaining Market Share While Others in Industry Lag Behind" (1996), Star Development Group, Inc., www.stardev.com/release.html

"Passwords, Firewalls, and Encryption" (1997), StockUp, www.stockup.com/on-line/pass.sht

"Schwab: Web got jammed" (1997), *CNN Financial Network*, 10/30/1997

Barlow, John Perry (1995), *1994 Annual Survey of American Law*, New York, NY, Dobbs Ferry: 355-361

Berst, Jesse (1997), "How the Internet Will Topple Wall Street", *ZDNet*, 3/3/1997, www.zdnet.com

Burke, R. Raymond (1997), "Do you See What I See? The Future of Virtual Shopping", *Journal of the Academy of Marketing Sciences* 25 (4): 352-360

Caldwell, Bruce (1997), "Wall Street Revamps", *Information Week*, 9/22/1997

Chrein, Lloyd (1997), "On-line investing isn't taking the 'Net by storm say surveys", *On-line Money Daily*, 2/14/1997 www.pathfinder.com/@@rDtsgwYAXi6D4Rm*/money/moneydaily/latest/

Connely, Kate (1997), "E*TRADE & Robertson Stephens form an Exclusive Alliance to Offer IPOs Via the Internet", E*TRADE Visitor Center, www.etrade.com

DiPersio, Mike (1997), "On-line Investing", *CGA Magazine*, www.cga-canada.org/CGAMagazine/july-aug97/invest_e.htm

Dow Jones News Service (1997), "On-line Stock Commission Fall Below 0", *San Jose Mercury*, 11/17/1997

Festa, Paul (1997), "E-trading commissions to multiply", CNET, 8/20/1997, www.news.com/News/Item/0,4,13577,00.htm

Fischer, Eileen, Bristor, Julia, and Gainer, Brenda (1996), "Creating or Escaping Community? An Explanatory Study of Internet Consumers' Behaviors", *Advances in Consumer Research* (23): 178-180

Gerlach, Douglas (1996), "On-line Brokers Bring Benefits to Busy Investors", *Better Investing BITS*, NAIC Computer Group, Winter 1996, www.better-investing.org

Gerlach, Douglas (1997), "Tidal Wave of on-line investing Web sites brings flood of information", *The Business Journal*, Portland, OR, www.amcity.com/portland/stories/042897/focus7.html

Gomez, Julio, Weisman, David E., Trevino, Victor B. (1996) "Money & Technology Strategies: Brokers & The Web", *The Forrester Report*, Forrester Research, www.forrester.com

Hill, John (1997), "Investing On-line Does Pose Some Risks", *The Columbian*, www.columbian.com/mr_chips/invest.html

Johnson, H. Thomas, Kaplan, Robert S. (1987), "Relevance Lost, The Rise and Fall of Management Accounting", Boston, MA, Harvard Business School Press

Kane, Margaret (1997), "Study: On-line investing will be slow over next five years", *PC Week On-line*, www.zdnet.com/pcweek/news/0120/23msri/htm

Maclachlan, Malcolm (1997), "E*TRADE Brokers Deal for CyberCash Content", *TechWire*, www.techweb.com/wire/news/apr/0422etrade.html

McGeehan, Patrick (1997), "Gerstner Goads Wall Street: Get on the Net", *The Wall Street Journal*, 11/7/1997: C1

Moffie, Jeffrey J. (1996), "Financing on the Internet", invest-o-rama!

Mooradian, Todd A. (1996), "The Five Factor Model and Market Mavenism", *Advances in Consumer Research* (23): 260-263

Narisetti, Raju, Weber, Thomas E., and Quick, Rebecca (1997), "How Computers Calmly Handled Stock Frenzy", *The Wall Street Journal*, 10/30/1997: B1

Noglows, Paul (1995), "On-line Brokers Cut Commission Costs", *Inter@ctive Week*

Peterson, Robert A. , Balasubramian, Sridhar, and Bronnenberg, Bart J. (1997), "Exploring the Implications of the Internet for Consumer Marketing", *Journal of the Academy of Marketing Sciences* 25 (4): 329-346

Raghavan, Anita, Simons, John (1997), "Some Trading On-line Is Trying Task", *The Wall Street Journal*, 10/29/1997: C1

Rayport, Jeffrey F., Sviokla John J. (1994), "Managing in the Marketspace", *Harvard Business Review* (November-December 1994): 141-150

Rosenberg, Scott (1997), "Don't be shocked when you can't reach your on-line broker", *Salon Magazine*, www.salonmagazine.com/21st/rose/

Stanley, Linda R., Lasonde, Karen M. (1996), "The Relationship Between Environmental Issue Involvement and Environmentally-Conscious Behavior: An Explanatory Study", *Advances in Consumer Research* (23): 183-186

Tambyah, Siok Kuan (1996), "Life On the Net: The Reconstruction or Self And Community", *Advances in Consumer Research* (23): 172-177

Thackray, John (1997), "Defining Moment: On-line Stock Sales", *Information Week*, www.techweb.com/se/directlink.cgi?IWK19971020S0053

The New York Stock Exchange Home Page, www.nyse.com

Tran, Mark (1996), "Net Takes Its Share", The Guardian, October 1996, www.web.co.za/mg/pc/96oct/09-oct-broker.htm

Whitestone, Randy (1997), "Wall Street Smiles on E*TRADE", *Inter@ctive Week*, 1/27/1997

Wit Capital Homepage, Wit Capital, www.witcapital.com

Zajac, Andrew (1997), "On-line traders get stuck", *San Francisco Examiner*, 10/29/97: C1

---

[1] John Thackray, “Defining Moment: On-line Stock Sales,” Information Week

[2] Patrick McGeehan, “Gerstner Goads Wall Street: Get on the Net,” The Wall Street Journal, November 7, 1997

[3] Bruce Caldwell, “Wall Street Revamps,” Information Week

[4] Bruce Caldwell, “Wall Street Revamps,” Information Week

[5] John Thackray, “Defining Moment: On-line Stock Sales,” Information Week

[6] Julio Gomez, "Money & Technology Strategies: Brokers and the Web," Forrester Inc.

[7] Mike Dipersio, “On-line Investing,” CGA Magazine