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## A COMPARATIVE STUDY OF SEVEN U.S. ONLINE BROKERAGE FIRMS

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### ABSTRACT

The late 1990s have witnessed a spurt in the growth of online brokerage, as new and established companies competed for a share of the red-hot market in Internet stock trading. Companies such as E\*Trade, Ameritrade, and Datek Online emerged, while better-known discount brokers, such as Charles Schwab, Fidelity, and TD Waterhouse, also prospered in the new Web-based environment.

The objective of this paper is to study seven U.S. online brokerage firms: Ameritrade, Charles Schwab, CSFBdirect, Datek Online, E\*Trade, Fidelity, and TD Waterhouse. These firms will be compared and ranked based on their commission, features, services, and e-business technologies.

A new group of heavyweight contenders, namely the traditional full-service brokerages, are now stepping into online trading. The list includes Merrill Lynch, Prudential Securities, and Salomon Smith Barney. While the full-service firms are certain to face significant challenges in adapting a new way of doing business, their entry is certain to change the game for the online players.

### INTRODUCTION

The late 1990s have witnessed a spurt in the growth of online brokerage, as new and established companies competed for a share of the red-hot market in Internet stock trading. Companies such as E\*Trade, Ameritrade, and Datek Online emerged, while better-known discount brokers, such as Charles Schwab, Fidelity, and TD Waterhouse, also prospered in the new Web-based environment.

The objective of this paper is to study seven U.S. online brokerage firms: Ameritrade, Charles Schwab, CSFBdirect, Datek Online, E\*Trade, Fidelity, and TD Waterhouse. These firms will be compared and ranked based on their commission, features, services, and e-business technologies.

### COMMISSION

#### Ameritrade

The commission is \$8 per trade. A \$5 additional fee is assessed for limit, stop, and stop limit orders. There is no limit on the number of shares traded.

#### Charles Schwab

The commission is \$29.95 per trade for up to 1,000 shares. When the number of shares exceeds 1,000, the commission is \$29.95 plus \$0.03 per share over 1,000. Charles Schwab offers a commission discount to active traders who execute a qualifying number of trades in a calendar quarter. The commission is reduced to \$19.95 with 31-60 qualifying trades and to \$14.95 with 61 or more qualifying trades.

#### CSFBdirect

For customers with account balances below \$1,000,000, the commission is \$20 per trade for up to 1,000 shares. For each share traded above \$1,000, the commission is \$0.02 per share. Select clients (those with over \$1,000,000 in their account) will be able to trade up to 5,000 shares before the \$0.02 premium is assessed. The commission is the same for market and limit orders.

#### Datek Online

The commission is \$9.99 per trade up to 5,000 shares and is the same for market and limit orders.

#### E\*Trade

For listed stocks, the commission is \$14.95 per trade for up to 5,000 shares. For trades above 5,000 shares, E\*Trade adds \$0.01 per share to the entire order. For NASDAQ stocks and limit and stop orders, E\*Trade charges \$19.95 with no limit on the amount of shares traded. The commission is reduced by \$5 per trade for investors with 30-74 trades per calendar quarter and by \$10 per trade for investors with 75 or more trades per calendar quarter.

#### Fidelity

The standard commission is \$25 per trade for the first 1,000 shares plus \$0.02 for each additional share over 1,000. A \$5 charge is added to limit and stop orders. Discounted commissions are available to investors who have a minimum of 12 trades in the prior 12 months. The commission is reduced to \$14.95 per trade for the first 1,000 shares plus \$0.02 for each additional share. For select customers with more than 240 trades in the prior 12 months, the commission is reduced to \$14 per trade for the first 1,000 shares plus

\$0.02 for each additional share. The \$5 premium for limit and stop orders does not apply to those customers who have 72 or more trades in the prior 12 months.

#### **TD Waterhouse**

The commission is \$12 for up to 5,000 shares plus \$0.01 for each additional share up to 10,000 shares. The commission is fixed at \$100 for orders of more than 10,000 shares. A \$3 per trade charge is added to limit orders. The commission is reduced to \$9.95 for market orders for select customers with 36 or more trades per calendar quarter.

### **MARGIN TRADING**

#### **Ameritrade**

Initial margin requirements are \$2,000 with a typical 30% maintenance margin requirement, often increased for highly volatile stocks and markets.

The margin interest rate is based on the prime rate. Small debit balances (under \$25,000) pay 1% above prime while large debit balances (over \$999,999) pay 1.5% below prime.

#### **Charles Schwab**

Clients can borrow a maximum of 50% of the current value of the marginable securities in their account, with a minimum equity of at least \$5,000. For some volatile stocks, Schwab imposes a higher margin requirement of 60% or 70%.

#### **CSFBdirect**

The initial margin requirement and the maintenance margin requirement can vary depending upon the nature of the security. The margin requirements range from 30% to 50%.

The lending rate for margin accounts varies, depending on the size of the balance in the account. The lending rate is based on CSFB's Base Lending Rate (CBLR) which is currently set at 6.25%. On top of CBLR, the lending rate premium ranges from 1.5% above (average margin balance of less than \$25,000) to 0.5% below (average margin balance of \$1,000,000 and above).

#### **Datek Online**

The margin interest rate is based on the BCR. Small accounts pay 2% above while large accounts pay 0.5% below, with a sliding scale in between. The maintenance margin requirement varies depending on the security. Maintenance margin requirements start at 30% and may reach 100%. Generally, the maintenance margin requirement is between 30% and 50%.

#### **E\*Trade**

Customers may borrow on margin at E\*Trade. These loans are collateralized by the customer's own securities. E\*Trade

is subject to margin lending rules established by the Federal Reserve and the NASD. Furthermore, E\*Trade maintains internal margin policies that are more stringent than the requirements set by the Federal Reserve and the NASD. Currently, E\*Trade requires that the customer's equity not fall below 30% of the value of the securities in the account. If it does, the customer will then be required to increase the account's equity to 35%.

E\*Trade's margin interest rates are not fixed and therefore are quoted daily and subject to change. The rates are set according to a base rate, which is set by E\*Trade and determined by commercially recognized interest rates, such as the broker call rate (BCR). Currently, the base rate is 7.75%. Depending upon the dollar amount borrowed by the customer and how frequently the customer trades, margin interest rates range between 2% above the base rate to 1.5% below the base rate.

#### **Fidelity**

Fidelity's margin accounts are charged an annual rate of interest that varies from a minimum of 0.25% below to a maximum of 2% above Fidelity's base rate. The base rate is set at Fidelity's discretion based on commercial rates, industry conditions, and general credit conditions.

#### **TD Waterhouse**

In accounts authorized for margin trading, TD Waterhouse provides customer financing at the BCR + 1.25% for debit balances of less than \$50,000 and BCR + 0.25% for debit balances of at or above \$50,000. All margin accounts must maintain a minimum equity of \$2,000. Initial margin requirements range from 50% to 100% while maintenance margin requirements range from 35% to 100%.

### **EXTENDED HOURS TRADING**

#### **Ameritrade**

Pre-open trades can be executed between 8:00 a.m. and 9:15 a.m., while after-hours trades can be executed between 4:15 p.m. and 6:30 p.m. Eastern time.

#### **Charles Schwab**

Pre-market trades can be executed between 8:00 a.m. and 9:15 a.m., while after-hours trades can be executed between 4:15 p.m. and 8:00 p.m. Eastern time. Only limited orders are accepted. Orders up to 5,000 shares are accepted; odd and mixed lots are subject to certain limitations. Most NASDAQ and certain listed stocks are available for trading. Unexecuted extended hours orders are canceled at the end of the session and do not carry over to the next day's regular market or extended hours trading sessions.

#### **CSFBdirect**

Pre-open trades can be executed between 7:15 a.m. and 9:30 a.m., while after-hours trades can be executed between 4 p.m. and 7 p.m. Eastern time. Extended hours trading is restricted to limit orders only and round lot transactions. There are no good-til-canceled orders allowed and all orders are only good during the extended trading sessions. Short sales are allowed for exchange listed stocks as well as NASDAQ stocks during extended hours trading.

#### **Datek Online**

Pre-open trades can be executed between 8:00 a.m. and 9:30 a.m., while after-hours trades can be executed between 4:00 p.m. and 8:00 p.m. Eastern time. Customers may enter NASDAQ limit orders only. They can enter an order for day, good-til-canceled, day + extended-hours or good-til-canceled + extended-hours expiration.

#### **E\*Trade**

Pre-open trades can be executed between 8:00 a.m. and 9:30 a.m., while after-hours trades can be executed between 4:05 p.m. and 6:30 p.m. Eastern time. Only limit orders are accepted; there are no all-or-none, odd lot, short sale, or good-til-canceled orders. Only NASDAQ stocks are accepted for pre-open trades; both NASDAQ and listed stocks are accepted for after-hours trades.

#### **Fidelity**

Pre-open trades can be executed between 8:00 a.m. and 9:15 a.m., while after-hours trades can be executed between 4 p.m. and 8 p.m. Eastern time. Orders that can be placed include limit, immediate-or-cancel, buy-to-cover, cancel, and cancel and replace orders. All orders are eligible for partial executions. Some orders that cannot be placed include market, short sale, fill-or-kill, stop, good-til-canceled, or all-or-none orders. Orders must be in lots of 100 shares, which is also the minimum order. The maximum order is 5,000 shares.

#### **TD Waterhouse**

Customers may conduct extended hours trading for NASDAQ stocks from 4:30 p.m. to 7:00 p.m. Eastern time.

### **E-BUSINESS TECHNOLOGIES**

#### **Ameritrade**

Ameritrade offers alerts and trading via personal digital assistants, web enabled phones, and two-way pages. It uses secure socket layer technology to encrypt information transmitted by the customer to the web site.

#### **Charles Schwab**

The company responds to changing client needs with continued product, technology, and service innovations. During the first quarter of 2001, Schwab launched Stock Explorer, an online stock-screening tool that enables clients to identify equities that meet the screening criteria of different investment strategies. Schwab announced Schwab MyAccounts service, which will utilize technology provided by Yodlee, Inc. to aggregate online financial information for clients and enable them to analyze and manage that information in one password-protected site. Schwab began offering actively trading clients access to StreetSmart, which leverages CyberTrader's trading technology and combines NASDAQ Level II quotes, real-time streaming news, unlimited watch lists and real-time streaming interactive charts with multi-channel access and dedicated personal support.

#### **CSFBdirect**

CSFBdirect Anywhere allows account holders access to price, research, news, and alerts through their pager, digital cell phone, or personal digital assistant. For cell phones to be compatible with CSFBdirect Anywhere, the account holder's cell phone needs to have wireless service.

Security using the wireless system has been established through the use of over-the-air encryption and authentication. This security uses standard secure sockets layer protection and is considered secure for making transactions using wireless devices.

#### **Datek Online**

Datek launched innovative software applications that have revolutionized the industry. The NASDAQ Small Order Execution System (SOES) helps Datek to profit. The Island ECN System helps bring Datek to the forefront of online trading. The Island ECN System, much like the SOES, eliminates the middlemen who normally regulate trading demand by matching buy and sell orders. This system currently moves over 100 million shares of stock daily and only charges a fraction of a penny per share, effectively eliminating the bid and ask spread. These software developments have allowed Datek to assume the role of stock market liberator by leveling the playing field for the average small-scale investor.

#### **E\*Trade**

E\*Trade uses encryption and authentication, such as public key cryptography technology and secure socket layer technology to provide secure exchange and storage of information. Intrusion detection systems are used to identify unauthorized access attempts, while centralized and automated access controls are in place to limit access to customer data. Other measures to protect sensitive customer information include the use of firewalls, network device controls, and access policies that employees are required to conform with.

**Fidelity**

Fidelity has a well-developed e-business group called “FeB.” FeB enables investors of Fidelity Investments to do business online with the launch of electronic account applications, and is responsible for the design of the web site. Currently, the group is seeking to implement its applications in accordance with Electronic Signatures in Global and National Commerce Act (E-Sign).

**TD Waterhouse**

TD Waterhouse provides a variety of electronic channels through which customers can access products and services. Customers can access their brokerage accounts online through the Internet as well as through web-enabled phones and personal digital assistants.

Through webBanking, customers can access a full range of banking products and services offered by TD Waterhouse’s affiliated banks through links to webBroker.

**COMPARISON AND RANKING OF ONLINE BROKERAGE FIRMS**

Selected statistics of firm size for the seven online brokerage firms for 2000 are summarized in Table 1. Charles Schwab is the largest stock brokerage firm in terms of all three measures of size: number of accounts, revenue, and total assets. Table 2 presents selected information of the online brokerage firms. Ameritrade has the lowest commission for market orders, but Datek Online has the lowest commission

for limit orders. CSFBdirect has the lowest account minimum. Datek Online has the longest extended hours trading. Table 3 shows the reliability and accessibility of the online brokerage firms. Reliability is how reliably the online-broker site could be accessed for an electronic trade. Accessibility is how consistently a website’s homepage can be called up across the United States. Datek Online has the highest reliability while Ameritrade has the highest accessibility. Table 4 presents the ranking of the online brokerage firms based on Forrester.com. According to Forrester.com, TD Waterhouse is the best online brokerage firm, despite not receiving even one top rating in its six categories. On the contrary, E\*Trade was ranked last overall, but it received top ratings in two categories: features and usability. Table 5 shows the ranking of the online brokerage firms based on Gomez.com. According to Gomez.com, the best online stock brokerage firm is Charles Schwab and the worse one is Datek Online.

**CONCLUDING REMARKS**

Besides Ameritrade, Datek, and E\*Trade, other discount brokers, such as Charles Schwab, Fidelity, and TD Waterhouse have emerged to compete in the new Web-based environment. A new group of heavyweight contenders, namely the traditional full-service brokerages, are now stepping into online trading. The list includes Merrill Lynch, Prudential Securities, and Salomon Smith Barney. While the full-service firms are certain to face significant challenges in adapting a new way of doing business, their entry is certain to change the game for the online players.

Table 1

Summary of Selected Statistics, 2000  
(in millions)

Brokerage	Market Share of Online Brokerage Assets	Revenue	Total Assets
Ameritrade	3.3%	\$ 655	\$ 3,798
Charles Schwab	38.5	7,139	38,154
CSFBdirect	2.5	358	277
Datek Online	1.4	N/A	3,221
E*Trade	5.6	2,202	17,317
Fidelity	30.6	N/A	N/A
TD Waterhouse	10.5	1,575	10,989

Note: N/A not available.

Sources: *Wall Street Journal*, 11/27/2000, p. R6; <http://www.hoovers.com>

Table 2

## Selected Information of Online Brokerage Firms

Brokerage	Commission		Margin Rate	Account Minimum	Extended Hours Trading (ET)
	Market Order	Limit Order			
Ameritrade	\$ 8.00	\$13.00	Prime+1%	\$2,000	8 – 9:15 a.m. 4:15 – 6:30 p.m.
Charles Schwab	\$29.95	\$29.95	BCR+2%	\$5,000	8 – 9:15 a.m. 4:15 – 8 p.m.
CSFBdirect	\$20.00	\$20.00	CBLR+1.5%	None	7:15 – 9:30 a.m. 4 – 7 p.m.
Datek Online	\$ 9.99	\$ 9.99	BCR+2%	\$ 500	8 – 9:30 a.m. 4 – 8 p.m.
E*Trade	\$14.95 (listed) \$19.95 (NASDAQ)	\$19.95	BCR + 2%	\$1,000	8 – 9:30 p.m. 4:05 – 6:30 p.m.
Fidelity	\$25.00	\$30.00	BCR+2%	\$2,500	8 – 9:15 a.m. 4 – 8 p.m.
TD Waterhouse	\$12.00	\$15.00	BCR+1%	\$1,000	4:30 – 7 p.m.

Sources: Company Web sites.

Table 3

## Reliability and Accessibility of Online Brokerage Firms

Brokerage	Reliability (4-point max.)	Accessibility	Homepage Download Time (seconds)
Ameritrade	2.65	99.8%	6.00
Charles Schwab	3.30	98.8	15.24
CSFBdirect	3.16	98.9	7.00
Datek Online	3.27	98.6	4.00
E*Trade	3.00	95.8	3.00
Fidelity	3.21	97.0	9.19
TD Waterhouse	2.99	86.0	2.00

Source: Kiplinger.com

Table 4

## Ranking of Online Brokerage Firms

Brokerage	Advice	Customer Service	Features	Transacting	Usability	Value	Total Score
Ameritrade	8.57 (6)	12.41 (2)	10.30 (6)	10.71 (6)	8.80 (6)	7.42 (2)	58.21 (4)
Charles Schwab	11.13 (2)	10.71 (5)	11.94 (2)	12.57 (1)	8.38 (7)	3.89 (7)	58.62 (2)
CSFBdirect	9.47 (4)	12.48 (1)	10.68 (5)	11.38 (3)	9.90 (2)	4.56 (6)	58.47 (3)
Datek Online	8.27 (7)	11.88 (3)	9.72 (7)	11.24 (4)	9.27 (3)	7.59 (1)	57.97 (5)
E*Trade	9.04 (5)	10.04 (7)	12.05 (1)	11.55 (2)	10.10 (1)	4.59 (5)	57.37 (7)
Fidelity	11.26 (1)	10.34 (6)	11.41 (4)	11.01 (5)	8.93 (5)	4.67 (4)	57.63 (6)
TD Waterhouse	10.08 (3)	11.83 (4)	11.70 (3)	10.18 (7)	9.27 (3)	6.07 (3)	59.13 (1)

Source: <http://www.powerrankings.forrester.com>

Table 5

Ranking of Online Brokerage Firms

Brokerage	Ease of Use	Customer Confidence	On-Site Resources	Relationship Services	Overall Cost	Overall Score
Ameritrade	4.97 (5)	7.48 (4)	5.52 (6)	4.65 (7)	9.45 (1)	5.98 (6)
Charles Schwab	6.64 (2)	8.04 (2)	8.76 (1)	8.49 (2)	4.60 (7)	7.62 (1)
CSFBdirect	5.19 (4)	8.75 (1)	6.72 (4)	5.66 (4)	6.41 (5)	6.45 (4)
Datek Online	4.14 (7)	7.46 (5)	5.25 (7)	5.15 (6)	9.29 (2)	5.82 (7)
E*Trade	6.68 (1)	6.79 (7)	8.10 (2)	6.16 (3)	7.78 (4)	7.04 (3)
Fidelity	5.79 (3)	7.11 (6)	7.72 (3)	8.69 (1)	5.33 (6)	7.13 (2)
TD Waterhouse	4.74 (6)	7.96 (3)	6.55 (5)	5.42 (5)	8.51 (3)	6.34 (5)

Source: <http://www.gomez.com>