CELENT

THE STATE OF ONLINE BROKERAGE PLATFORMS

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EXECUTIVE SUMMARY

The US self-directed brokerage market continues to evolve in the post-financial crisis world. The wealth management industry faces an unprecedented shift in assets between generations, increased regulation by authorities, client demands for advanced multichannel services, transparency, and quality customer service amidst the digital evolution both within and outside the financial services sector. Despite unpredictable and challenging economic conditions over the past several years, the US self-directed market has shown moderate growth in 2014. Online brokerage firms continue to enable the self-directed investor by building out their offerings, including asset classes, client education tools, and trading platform functionalities on multiple channels.

Beginning in July 2014, Celent conducted a study of the US online brokerage industry. Celent focused on the self-directed market and identified major trends and developments for trading activity, core capabilities and differentiators, and brokerage technology.

The main findings of the study include:

- Regulations, client expectations, and technology are driving change throughout the wealth management and online brokerage industries. Clients expect transparency (including performance reporting), competitive pricing, and quality, client-centric service.
- There is a general sense of recovery and growth in the market and at brokerage firms. Customer DARTs (including mobile DARTs) and the number of customer brokerage accounts are showing steady growth rates.
- The US online brokerage market is highly fragmented as the number of trading platforms has expanded and new firms have entered the market.
- The self-directed investor population continues to outpace the non-self-directed investor population. The average profile of the retail investor is expanding to include retirees, women, millennials, and baby boomers. Firms are offering free, extensive, in-depth education resources for the retail investor.
- Social media and mobile channels are at the forefront of firms' strategic plans. Most firms are utilizing social media sites to connect with current and prospective clients; online investor communities are growing in popularity.
- Financial institutions interested in offering online brokerage services have the choice to work with a third party vendor, build their own online brokerage functionality, or extend their clearing firm's functionality. Clearing firms are posing challenges to existing trading technology providers by offering one-stop shops.

This report begins with a segmentation of the self-directed investor market, and follows with a placement of online brokers in a taxonomy that groups US brokerage firms by client segmentation. The study provides an understanding of developments and trends in the market in addition to identifying the major market players, their core capabilities, differentiators, and client types. Celent also provides insight into the channels served by these firms. The study examines platform development, including technology options for firms and evaluating the true "cost of free." The report concludes with a prospective look at the future of the online brokerage industry, the growth of the various retail investor categories, and what online brokerages can do to differentiate in the marketplace.

THE ONLINE BROKERAGE MARKET

DEFINITIONS AND SEGMENTATION

The online brokerage market consists of investors with a wide range of trading activities, demographic profiles, and risk tolerances. Celent defines investors as falling in the following three categories:

- **Traditional investors.** Long-term investors with sporadic trading activity (<3 trades per month). This defines the largest proportion of self-directed investors.
- **Active investors.** Investors trading between 3 and 10 trades per month. Active investors tend to use a wider range of tools than traditional investors.
- **Active traders.** Investors trading over 10 trades per month. This group of investors tends to be more self-directed and is less interested in advice. Occasionally, firms will define a fourth segment for those who trade hundreds of times per month. These "hyperactive traders" tend to consist of individuals who trade for a living or may trade on family accounts.

In order to better understand the self-directed market, Table 1 distinguishes active investors from active traders. These two segments are similar in that they tend to be more sophisticated and demand more enhanced tools than traditional investors (who make up the majority of US self-directed investors). Active investors and active traders differ in how frequently they trade, which therefore affects their preferences.

Table 1: Active Investor and Active Trader Preferences

	ACTIVE INVESTOR	ACTIVE TRADER
Advanced trading capabilities	X	X
Integrated charting features	X	X
Real-time market information	X	X
Sensitivity to commission rates		X
Execution speed		X
Access to a variety of venues		X
Availability of streaming information		X
Availability of services such as education, networking, mobility	X	
Availability of advisory support for trade suggestions	X	

Source: Celent

The US online brokerage market continues to be highly fragmented as the number of trading platforms has expanded and new firms have entered the market. As shown in Table 2, Celent has categorized online brokers based on a taxonomy that groups US brokerage firms by client segmentation. Firms are categorized according to the characteristics of their typical users, focusing on traditional investors, active investors, or active traders. Within the traditional investor segment, firms are classified by business model as publicly traded stand-alone firms, private stand-alone firms, wirehouses, bank broker-dealers, independent broker-dealers, or asset managers. Within the active investor and active trader segments, firms target either quasi-professional traders or nonprofessional traders. The quasi-professional designation is based on the types of tools and information used by the client set, and includes such things as sophisticated charting and back-testing of investment strategies and the ability to build complex trading strategies across asset classes.

Over the past several years, there have been new trading platforms entering the market. In Celent's 2012 report, *The Race for Self-Directed Investors: Developments in Online Trading Among Brokers and Banks*, we reported that a number of firms targeting active investors and active traders had emerged. Celent also remarked that a number of bank brokers, insurance groups, mutual fund providers, and private wealth managers had enhanced their online trading capabilities to supplement their other wealth management services. While both observations continue to be prevalent in 2014, Celent has also seen a convergence in services and products among brokers and bank-brokers targeting the mass affluent customer.

Online Brokerage Taxonomy

Table 2: Online Brokerage Taxonomy

PREDOMINANT CLIENT SEGMENT	PREDOMINANT PRODUCTS	BUSINESS MODEL	REPRESENTATIVE FIRMS
Active to hyperactive traders (tens to hundreds of trades per month)	Stocks, futures, options, FX	Active trader platforms	Cobra Trader Interactive Brokers Just2Trade LightSpeed MB Trading SureTrader TradeStation thinkorswim platform from TD Ameritrade
Active investors and lower end active traders (3 to 10 trades per month)	Stocks, options, mutual funds, ETFs	Focus on stocks and options trading	eOption OptionsHouse (merging with tradeMONSTER) OptionsXpress (owned by Schwab) SpeedTrader TradeKing

Traditional investors and lower end active investors (fewer than 10 trades per month) Stocks, mutual funds, ETFs, bonds, retirement products, increased trading in options	Large publicly traded stand-alones	Charles Schwab E*Trade TD Ameritrade
	Other stand-alones	ChoiceTrade Kapitall Scottrade Sogotrade
	Asset managers	Fidelity Robert W. Baird Vanguard
	Bank broker-dealers (partially advisor dependent)	Merrill Edge (Bank of America) WellsTrade
	Bank-broker-dealers	Sharebuilder (Capital One) US Bank
Traditional Investors (equities, mutual funds, ETFs, retirement products)	Other bank brokers, typically regional banks	Examples include: Fifth Third Bank First Tennessee Bank Bank of the West
	Other wealth managers, insurance groups, etc.	Examples include: American Century TIAA Cref USAA Voya Financial
Novice investors and lower end traditional investors (and to some extent active investors) Equities, ETFs, FX, retirement products	“Digital Disruptors”: “Robo-Advisors”/ automated advice platforms, social trading/investing firms	Betterment eToro LearnVest Motif Investing Personal Capital Wealthfront ZuluTrade

Source: Celent

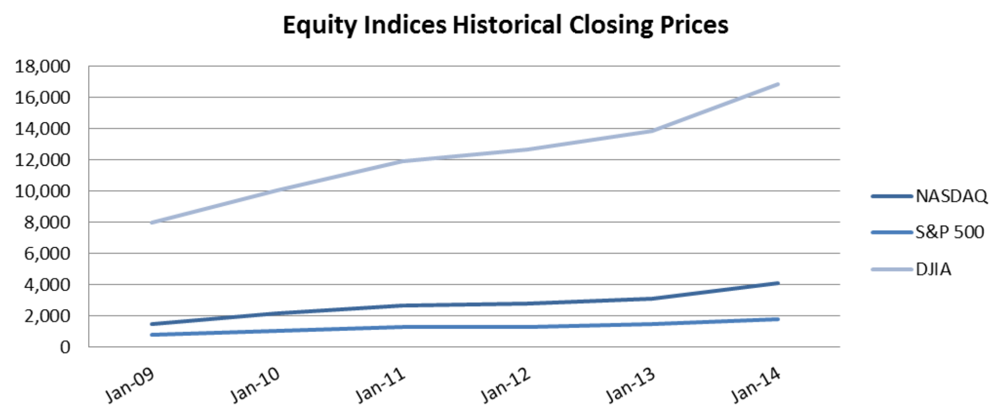
Developments and Trends

Celent highlights a number of key trends in the evolution of the online brokerage industry.

Market Trends

Leading US equity indices continue to improve since 2009. NASDAQ, S&P 500, and the DJIA have shown significant improvement over the course of 2009–2014, as shown in Figure 1.

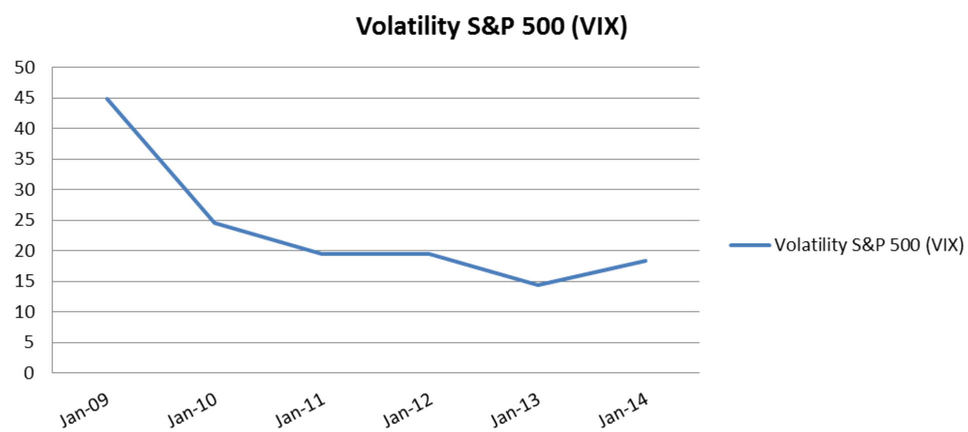
Figure 1: Equity Indices Historical Closing Prices* (2009 to 2014)**



Source: Yahoo Finance
*Close price adjusted for dividends and splits; prices in USD.
**Data as of Q3 2014.

Volatility in the S&P index has fallen since 2009, shown in Figure 2, indicating that investors have become less fearful and less uncertain in the market.

Figure 2: Volatility S&P 500 (VIX) Historical Prices* (2009-2014)**



Source: Yahoo Finance
*Close price adjusted for dividends and splits; prices in USD.
**Data as of Q3 2014.

Continued consolidation in the correspondent clearing space. The landscape of clearing firms is shrinking, and to stay competitive, these firms have invested in technology to expand their repertoire of services, including front office technology to support online trading, as well as aggregation and reporting.

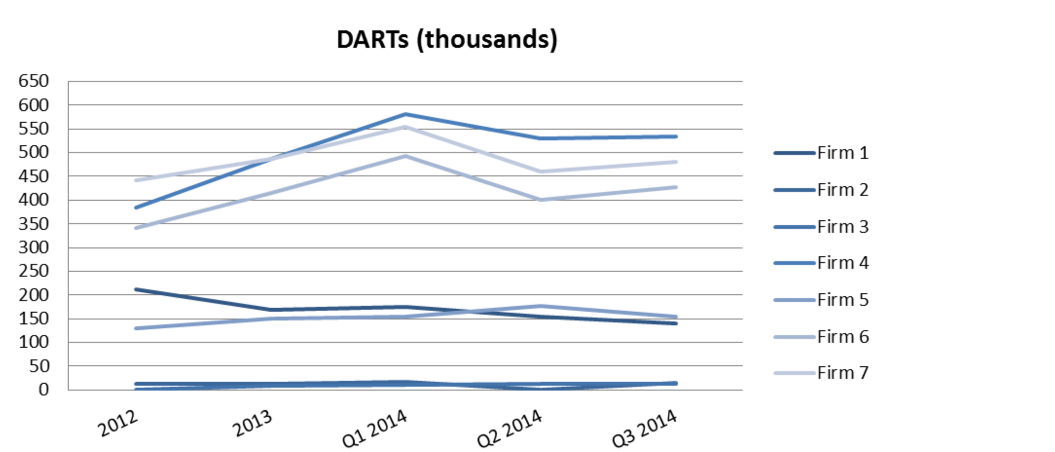
Regulations, client expectations, and technology are driving change throughout the wealth management and online brokerage industries. Most notably, Anti-Money Laundering (AML) and Know-Your-Customer (KYC), Foreign Account Tax Compliance Act (FATCA), and regulation of social media use among financial services are challenging the traditional industry on a fundamental level and creating opportunities for market entrants. Clients expect transparency (including performance reporting), competitive pricing, and quality, client-centric service.

- **Transparency is still of foremost concern to investors and regulators.** As a result of the financial crisis, investors remain uncertain about the market and economic climate. Investors' demands for increased visibility, reporting, and control of their investment decisions continue to challenge brokerage firms. Investors are gradually becoming sophisticated and desire high-quality and timely reporting in addition to choosing their own investment strategies. Therefore, customer service, data visualization tools, and timely reporting are priorities in addition to making market/education materials readily available to clients.

Investor Trends

DARTs growth is showing signs of improvement. Despite positive index indicators, daily average revenue trades (DARTs) at major online brokerages and active trader firms have shown mixed growth rates between 2012 and Q3 2014, shown in Figure 3.

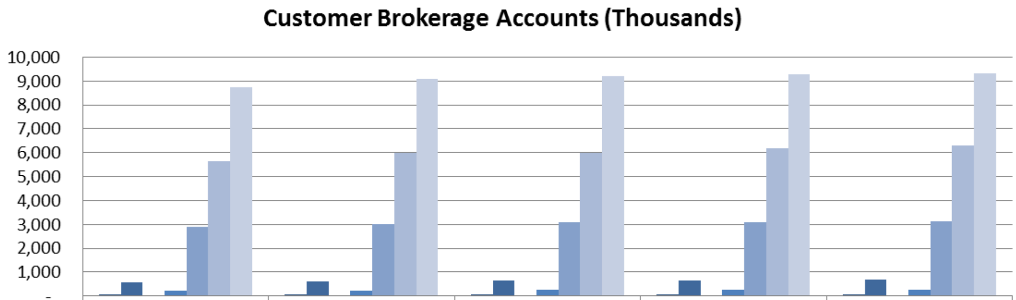
Figure 3: DARTs at Major Online Brokerage Firms (Thousands)



Source: Firm interviews, SEC filings, company quarterly reports
Note: Firm 3's DARTs start from 2013 and include virtual trades.

Number of customer brokerage accounts is showing steady growth. The number of customer brokerage accounts at the major brokerage firms has grown gradually between 2012 and Q3 2014, shown in Figure 4. This is an indication that more retail investors are entering the self-directed market, although they may not be actively trading in their accounts, given the DARTs metrics for Q1 and Q3 2014 in Figure 3. The implication of less activity per account is a challenge that online brokers are looking to overcome by adding a diverse array of products that tend to encourage more trades and multiple positions such as options, futures, and FX.

Figure 4: Customer Brokerage Accounts (Thousands)



	2012	2013	Q1 2014	Q2 2014	Q3 2014
Firm 1	74	76	83	85	86
Firm 2	567	622	649	667	670
Firm 3	-	9	11	14	15
Firm 4	210	239	252	262	272
Firm 5	2,903	2,998	3,102	3,102	3,126
Firm 6	5,645	5,993	6,000	6,200	6,300
Firm 7	8,746	9,093	9,200	9,300	9,326

Source: Firm interviews, SEC filings, company quarterly reports
Note: Firm 3's account numbers start from 2013.

Mobile trading DARTs are increasing. Almost all brokerage firms offer mobile trading on the iPhone, Android, and iPad. Mobile trading services on Blackberry and Windows phone are not as prevalent, although some firms are developing software to trade on these devices. Most firms have reported an increase in customer mobile trading DARTs; one firm cites a steady increase for mobile trading DARTs since 2012, with 13% of trades placed on a mobile device in 2014. Mobile wealth management is becoming table stakes; dynamic client-advisor interaction and integration with CRM are prevalent.

The average self-directed retail investor profile is expanding. The average active trader in the US is male and in his mid-40s; however, there are an increasing number of individuals aged over 45 years old opening active trader accounts. Additionally, major brokerage firms are seeing an increase in the number of females and millennials opening self-directed trading accounts. As such, firms will need to understand these segments and further fragment their customers based on risk profiles, communication styles, and goal-setting strategies.

Retail investors today demand a more streamlined, efficient, and hands-on trading experience starting from the account opening process to placing their first trade to reporting. Clients are requesting a faster ACH setup and fund clearing times, in addition to the ability to pass firms' CIP requirement in real time. In response, firms are putting considerable effort into making the account opening process as seamless as possible. As expected, brokerage firms use different CRM systems, such as Microsoft Dynamics CRM, Salesforce, or their own propriety system. Additionally, they leverage third party solutions, such as LexisNexis and World Compliance, for rapid background and suitability cross-checks for both US and international customers.

Firms continue to offer peripheral services outside of trading. In a cost-sensitive and competitive business environment, brokerage firms continue to offer a diverse set of services to capture retail investors' assets. There is a continued focus on providing retirement products and services, analytical software, loyalty programs, and social components.

- Some of the features and functionalities provided to attract higher-value accounts and improve retention of such accounts include: waiving minimum activity fees, one-on-one training sessions, free access to premium industry publications, and aggressively discounted fees for active traders.

Education resources for the retail investor are critical. Firms are providing a wide range of free, in-depth investor education programs ranging from traders' glossaries, tax advice, market intelligence reports, in-person seminars, student trading labs, and webinars, among others. For example, one major brokerage firm presented over 500 webinars in 2014, a 20% growth from the previous year. With the proliferation and accessibility of the Internet, information, and financial market education resources, the number of investors is expected to continue growing.

Bank brokers are cross-selling and up-selling to capture more client assets. Many bank brokers are lowering their commissions and aggregating account information so as to attract mass affluent investors who use retail banking services, but hold self-directed accounts with a discount broker. Additionally, mass affluent and HNW investors typically hold more than one trading account; therefore, bank brokers who can offer the ability to cross-sell between their online trading and advisory-based services may have an advantage.

Technology Trends

Social media and online client communities are increasingly utilized; social media can strengthen the relationship between firm and customer. The digital revolution both within and outside the financial services industry has had a significant impact on consumers' expectations.

- As a result, brokerage firms are dedicating considerable resources to the development of their digital strategies. Firms are using Facebook, Twitter, LinkedIn, and YouTube, among other social media sites, to inform and educate their online audience.
- Additionally, firms are building out robust online client communities where traders can connect and discuss a wide variety of topics relevant to trading. Social trading and social investing sites, such as eToro and Motif Investing, where traders can connect with each other and mirror trades, are growing in popularity.
- Social media can build, and in some cases rebuild, brand trust and reputation. Particularly after the financial crisis, the notion that "people trust people" and no longer trust institutions has been heightened. Many online brokerage firms in the US are actively listening and responding to customer comments via social media.
- Through social media, firms have more control over content discussions and have the opportunity to communicate clearly with an expansive audience, ultimately resulting in increased transparency and even collaboration.
- Social media can create an open and collaborative business model where users and firms learn from each other; the user becomes a significant contributor to the firm and can help build innovation and new ideas among employees.

Development of hybrid (self-directed/partially advisor-led) services. Some of the major brokerage firms offer a hybrid investing service, meaning these firms can support both DIY investors and those who prefer some professional guidance. This is one example of how firms are expanding their services to reach a wider array of investors. Indeed, a "dual platform" approach (offering both brokerage and advisory options) enables firms to better address the individual investment preferences of investors, and to respond more effectively to those preferences over time.

Extension of asset classes, particularly on mobile devices. The majority of trading platforms offer some form of options trading; firms continue to meet investor demand for trading FX, futures, and international equities. Brokerage firms are developing their mobile apps for investors of all experience levels. Some examples include a wider range of asset classes beyond the standard trading of equities, the ability to view balances, advanced functionalities around charting, streaming videos, and access to research. The added feature of virtual/demo trading accounts enables investors to place hypothetical trades and chart their performance before committing to the trade with real money.

Traditional brokerage firms are incorporating social features and hybrid (DIY/advisor-led) services to attract new clients. The emergence of online advice and social trading firms in the US is a result of varying investor expectations of pricing and customer service, investor demographics, and delivery models, and is challenging the traditional online brokerage industry; automated investments speak to younger, upwardly mobile clientele. As such, some of the major brokerage firms offer a hybrid investing service, meaning these firms can support both DIY investors and those who prefer investing with professional guidance. As investors continue to demand transparency, control over their investments, and financial advice at a low cost, the proliferation of social trading/investing and automated investment firms will continue.

Use of Front Office Advisor Technology and Self-Directed Investor Tools Across Brokerages and Banks

Over the past few years, the range of remote servicing options (e.g., video, tablet, and chat) available to bank and brokerage advisors has increased dramatically. The positive impact on cost structure and scalability is one reason firms have invested so heavily in these new tools and platforms. At the same time, the embrace of front office digital technology by banks and brokerages has been underpinned by the expectations of clients, who are increasingly tech-savvy and likely to live at a distance from their advisors. While the 24/7, always-on model puts pressure on the advisor, it reflects today's digital reality.

Implications for traditional servicing models will grow more pronounced with the emergence of millennial and other "next gen" clients. Their distinct behaviors and consumption patterns include greater self-reliance and a disinclination to want to sit down with an advisor. As discussed in this report, banks and brokerages have sought to incorporate robust trading platform functionality into mobile devices (for example, by providing FX and futures trading capabilities) to attract these types of investors.

Where in-person meetings are needed, however, "desktop-on-the-go" functionality is a must. As such, firms have invested in mobile (and particularly tablet) platforms that enable the advisor to prospect (and even initiate onboarding) as well as deliver solutions and insight. Advisor portals with drill through (i.e., the ability to view data at multiple levels, and various levels of complexity) provide instant access to client, market, and portfolio performance data, for example. Firms now seek to harness this kind of data in direct support of on-the-go decision-making and execution. The question is how to make the advisor more nimble. Analytics-driven artificial intelligence (cognitive computing) will play a major role by enabling the matching of "product to profile" and the adjustment or reconstitution of portfolios in real time.

MAJOR MARKET PLAYERS

CORE CAPABILITIES

With the fragmentation of the online brokerage industry and the parallel emergence of specialist firms focusing on options, etc., the range and depth of products and functionality available to retail investors of all trading frequencies have expanded tremendously. Options are increasingly table stakes for online platforms, which have also invested resources in providing support for trading in international equities, futures, and foreign exchange, in addition to basic banking services such as sweep and checking accounts.

Firms will continue to build out their trading platforms to accommodate high-volume trading and support complex trading strategies for their most profitable clients: the active investor and trader. For these clients, speed is key, and firms are increasingly engaging third party solutions (e.g., LexisNexis for suitability and background checks) to streamline processes from account opening through execution. Other firms are seeking to improve the quality of their sites, around navigation in particular. While responsive design has been gaining momentum recently, this does pose challenges in optimizing the feature-rich brokerage experience for multiple form factors. As a result, many firms still have a focus on mobile strategy that provides an optimal experience regardless of form factor.

Given the limitations around product and platform (all firms are seeking to maximize speed and ease of use), firms are increasingly seeking to differentiate themselves by addressing client needs in terms of journeys or lifecycles. Such an approach implies added value (dynamic vs. static approach) and, increasingly, some sort of advice delivery.

Table 3 outlines functionality support among online brokers' flagship trading platforms.

Table 3: Functionality Support

FUNCTIONALITY	SUPPORT
Advanced charting	XX
Back-test trading	XX
Portfolio monitoring (profitability of each trade)	XX
Point and click order entry	XX
Allow multiple watch lists open	XX
Access to IPO information	X
Account opening (real time)	XX
Money movement: - ACH, transfers, wires, checks, others	XX
Alerts and notifications	XX
Auto trade	XX
Auto invest	XX

Block trade	XX
Analysis tools (charting, analytics)	XX
Portfolio reporting	XX
STP integration to trading	X
Real time market information, news	XX
Overlay management	-
Decision engine (rules and workflow): - Approval rules, options margining, review and release, order routing, booking for settlement, audit trail to monitor exceptions	XX (options margining, order routing); X (all others)
Account Management: - Real time access to balances/positions, account history, search capability, cross-account views	XX (for all)
Administration console: - Create users, set up user preferences, access review and release for operations, user reports	XX (for all)
Different system access levels depending on type of user	XX
Market trading after hours	-
Integration with / link to: - PFM -Tax reporting -Other	XX (Tax reporting) X (PFM)

Source: Broker surveys, Celent
XX = Common support of dedicated app / top priority.
X = Some support, usually in most advanced apps / in development.
- = Uncommon.

In order to remain competitive in the industry, online brokerage firms continue to develop strategies to attract and retain higher-value accounts, as well as active investors and traders. Products and trading platform features and functionalities are for the most part uniformly offered across all customer segments and emphasize speed and ease of trading multiple products.

- The active investor and active trader have access to more sophisticated platforms, which offer, for example, a variety of integrated charting tools, access to proprietary API and FIX CTCI, and abundant and clean historical market data, among others.
  – Some firms are working toward having one customizable platform that will cater to all customer segments. This sort of platform will meet the varying demands of active traders (superior customization and data streaming) and traditional investors (a more simplified interface) alike.
- Certain firms offer a loyalty reward program to attract active investors. The loyalty program works similarly to frequent flier programs and rewards active brokerage customers with reduced commission and pricing.
- In order to attract higher-value accounts, some firms offer access to a premier customer service team and a high-end active trading platform. These clients are also offered free access to a third party streaming quote platform.

DIFFERENTIATORS

Over the past 12 to 18 months, firms have revisited their strategies so as to adjust to market demands. Firms strive to provide customers with cutting-edge trading technology, a wide breadth of product selection, and electronic access to trade global markets at the lowest possible cost. In some cases, firms have reassessed their pricing structures by expanding their tiered pricing, including new pricing levels, and adding an unbundled pricing plan, while others are focused on enhancing their mobile and tablet apps.

Certain firms have developed platforms to support both DIY investors and investors who prefer some professional guidance. TradeKing, which rolled out an automated advisory platform this summer, is a leader here, although eTrade (whose Build-Your-Own-Portfolio solution uses a questionnaire to recommend an asset allocation, which a customer can then implement on his own) and TD Ameritrade have made steps in this direction. TradeKing's decision to offer a more actively managed approach ("Momentum" portfolios) in addition to its "Core" portfolio offerings aligns with the firm's origins in trading and may herald a broader industry pushback against the longstanding trend toward passive investing.

Rather than DIY or self-directed, we might call these investors "self-serve," reflecting their tendency to go online and shop for the specific services they need. This is a very millennial sort of construct. Investors get advice without having to deal with the advisor, and they get control without having to figure out everything themselves.

Investor expectations around flexibility and choice (along with rising client acquisition costs) will encourage firms to consider partnerships with new market entrants. During the fall 2014, Fidelity announced a distribution partnership with the automated investments advisor Betterment, a surprise move which trumped Charles Schwab, which six months before had announced it was developing its own automated platform.

Few firms have the resources, or for that matter, the hubris, to follow Schwab's lead and build their own, supermarket-sized platform. Most firms will take a more nuanced approach. TD Ameritrade has given multiple start-ups (most notably SigFig, FutureAdvisor and Upside Advisor) access to its VEO account management and trading system, rather than team up with a single automated advisor. Such a *piecemeal rather than partnership* approach should be the rule going forward, at least until the sky-high valuations of today's crop of automated advisors begin to tumble.

As described in more detail below, the ability to deliver an effective digital strategy is key to achieving differentiation. Clients are demanding high touch tech: this may be the execution of a digital strategy centered on reporting and document storage, or a carefully executed social media strategy or video platform for educating investors. Ideally it is a combination of both.

Clients also want context. Firms need to be able to integrate market data / account data / portfolio data to provide clients an actionable picture of their financial position, for example through visualization tools. Good data management (i.e., the ability to handle data in a way that supports hygiene, security, and light speed transmission) is important given its value as a decision tool, in that it can be sliced and diced to the specifications of an end investor, and as a supporting element of a digital strategy.

In terms of workflow, data functions as a throughput for the back end processes that drive the client experience. In recent years, the ability to pull real time data into the workflow has prompted the flowering of both user experience (UX) and interface (UI), enabling customizable investor portals and performance reports. At the same time, the automation of data transmission has freed investors and operations staff, and even advisors from the tyranny of most manual inputs.

Client Types

The brokerage firms surveyed in this study target an array of investors ranging from traditional investors to active traders and mass market to UHNW. While the data skews slightly towards traditional investors and the mass market / mass affluent, there is not one customer segment or investor type that dominates the results. Although the demographics of the active trader skew slightly toward a male in his mid-40s. Celent's research findings reveal that the profile of the typical online retail investor is expanding to include women, millennials, and tech-friendly retirees seeking to assert greater control over their financial futures.

With regard to gender balance, Celent expects the trend to greater parity to accelerate, with more and more women entering the self-directed market at all customer segment levels. While the active trader segment will remain male-dominated, the proportion of female investors in this segment has shown steady if undramatic growth. Having recently broken the double-digit barrier, the proportion of female investors holding active trader accounts should reach 15% by the end of 2015. While female investors tend to be more risk-averse than their male counterparts, the significant but limited number of female active traders means that this characteristic should not have a major impact on overall investor behavior patterns, nor firms' responses to it. As one online brokerage firm noted in response to a Celent survey question, "Risk does not come in pink."

The attitude of millennials towards the question of risk is more complex. Having seen their parents lose money in the financial crisis, millennials tend to evince concern about volatility and market exposure, but this concern is not typically expressed in their trading behavior. Perhaps this is because millennials tend to be self-reliant, looking to high touch tech and clean and configurable information to help them execute on their ideas.

At the other end of the age spectrum, the baby boomers, and active retirees specifically, are an important segment of the market given their demographic weight and the ongoing de-accumulation of their wealth. As such, online brokerage firms are increasingly investing in building out their sites' retirement functionality; for example, to facilitate rollovers and account consolidation. In addition to portfolio analysis, allocation, and monitoring tools, they are also building in personal financial management capabilities that include estate planning calculators. For a closer look at the types of PFM platforms on the market, as well as the specific features valued by investors, see the Celent report *Beyond Budgeting: The New Generation of Personal Finance Tools*.

As females, millennials, and retirees all represent growth opportunities for online brokerages, firms are investing in education as a means to further cultivate and engage these investors. Much of the focus here is on building investor confidence. Jargon-free tutorials and short videos are examples of easily consumed vehicles designed to help novice investors apply newfound expertise. More experienced investors may be directed to webinars or encouraged to try out simulation-oriented tools. Firms serving a broad range of customers will forgo a "one size fits all" approach in favor of training vehicles addressing discrete customer segments. TradeKing, for example, offers a range of tools accessible via three separate navigation paths, including skill level.

Channels Served

The digital revolution taking place within and outside of the financial services industry has had a profound impact on the expectations of retail investors and brokerage firms' responses. Always-on access to data, social media, and a focus on mobility have been the watchwords of this revolution, which shows no signs of slowing down. As such, the ability to offer a robust set of digital tools and strategies is a key differentiator for firms.

In this report, Celent will highlight some of the key developments within firms' digital strategies, referring to the online, social, and mobile channels. The benefits of engaging with customers via any and all of these channels are plentiful: communicating with a broad audience, building brand reputation, providing a soft marketing tool, and serving clients' expectations of transparency.

Online brokerages have outpaced other wealth management providers in realizing gains from digitalization. Looking forward, they will place increasing emphasis on integrating mobile delivery and social media initiatives into a cohesive strategy. Mobile-enabled trading platforms enabling peer input and private social networks present one way forward. To date, the area where mobile and social capabilities have mostly intersected is in the social trading sphere: think TradeKing Trader Network in the US and eToro in Europe. These will increasingly function as client service channels, in which users answer others' questions. Blogs and interactive forums such as wikis will also inform the discussions.

Online

The online channel continues to be the preferred choice for trading among self-directed retail investors. More screen real estate gives firms the opportunity to provide a full range of functionalities, not just around execution but as a showcase for these firms' data visualization and reporting tools. Demand for analytics, visualization, and enhanced reporting has increased in the face of continued investor uncertainty around the health of both the markets and their personal portfolios. Brokerage firms and their software vendors are giving investors peeks behind the performance "curtain" by revealing key drivers and enabling investors to adjust their asset allocations accordingly. The idea is to give the retail investor access to the kind of quality performance reporting typically reserved for institutional and HNW clients.

Mobile

Historically, investors have tended to trade online or via website, while using their mobile devices for tracking and monitoring purposes. However, the increasing development of mobile devices and the widespread adoption of iPads and other tablets are generating new possibilities.

While not all firms reported their mobile DARTs, there is a notable increase in the percentage of trade volume completed via mobile apps (2012–2014) for the firms that did report such data. For example, a brokerage firm reported that only 0.2% of trade volume was completed via mobile apps in 2012, a dramatic difference from its 2014 figure of 2.4% while another firm reported that they had reached record mobile DARTs for Q3 2014 at 13%.

Active traders particularly value mobility, and an ability to configure the trading screen, set up preferences, and view videos, technical indicators, analyst reports, and research on a mobile device (particularly the tablet) is becoming a baseline requirement. To create the richest mobile experience, the largest firms will continue to develop native apps in the near term, while smaller brokers will develop hybrid apps as a way to manage the proliferation of new devices and operating systems. This proliferation is supporting broader trends such as investment in cloud and HTML5 technology. HTML5 will rapidly become the standard for the coding of trading platforms, given that it can be used to support multiple platforms and thereby save on development costs.

Table 4 highlights the point that mobile trading is no longer a nascent technology among online brokerage firms. Firms have expanded both their mobile services and support of different operating systems. Over the next 12 to 18 months, Celent expects that firms will enable investors to communicate with an advisor or customer service contact via mobile and trading app.

Table 4: Mobile Functionality

FUNCTIONALITY	IPHONE	ANDROID	BLACKBERRY	WINDOWS PHONE	IPAD	OTHER TABLET
Standard trading	XX	XX	X	XX	XX	X
View balances, positions	XX	XX	X	XX	XX	X
Transfer funds	X	X	-	X	XX	-
Access news, quotes, charts	XX	XX	X	XX	XX	X
Streaming market data	XX	XX	X	X	XX	X
Communicate with advisor	-	-	-	-	-	-
Other	XX (Examples include: View option chains, apply indicators to charts and into quote views, chart trading, placement of conditional orders)	XX (Examples include: View option chains, apply indicators to charts and into quote views, chart trading, placement of conditional orders)	-	-	XX (Examples include: View option chains, apply indicators to charts and into quote views, chart trading, placement of conditional orders)	-

Source: Celent questionnaire, brokers' websites, and annual reports, Celent
Key: XX = Common support of dedicated app / top priority.
X = Some support, in development.
- = Uncommon.

Brokers have increased their support of multiple operating systems, as shown in Table 5, which details support across operating systems for independent online brokers, active trader-focused brokers, and bank brokers.

Table 5: Broker Support of Mobile Platforms

FUNCTIONALITY	IPHONE	ANDROID	BLACKBERRY	WINDOWS PHONE	IPAD	OTHER TABLET
Stand-alone independent brokers	XX	XX	X	X	XX	X
Active trader brokers	XX	XX	X	X	XX	X
Bank brokers	Banking app only	Banking app only	-	-	Banking app only	-

Source: Celent questionnaire, brokers’ websites and annual reports, Celent
Key: XX = Common support of dedicated app / top priority.
X = Some support, in development.
- = Uncommon.

Social

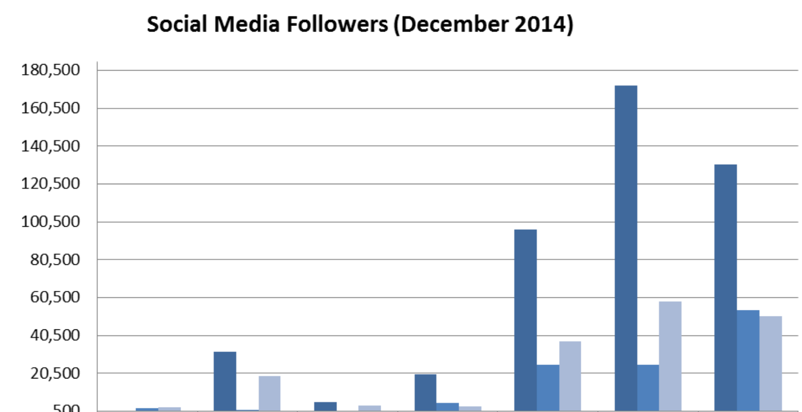
Online brokerages continue to lead the financial services industry’s social media adoption efforts. Third party platforms such as Facebook (total 1.3 billion monthly active users), LinkedIn (over 300 million members), Twitter (total 271 million active users per month), and YouTube (more than 1 billion unique users visitors each month) have presented opportunities to engage customers and potential customers, notably those who are using mobile devices. Public gravitation towards mobile is reflected in a recent survey by Statista: for example, mobile accounts for 86% of all time spent on Twitter. The overwhelming popularity and influence of social media present a significant opportunity for online brokers as well as other types of wealth managers.

Private social networks present another opportunity to develop relationships with customers. Citibank’s Private Banking In View platform targets NextGen clients via a social networking site that provides the children of UHNW clients access to budgeting and money management tools as well as news services, restaurant ratings, and other “lifestyle”-oriented services.

Celent has seen social media evolve in the following aspects:

Participation on third party social communities continues to increase. Celent previously reported that in mid-2010 online brokers had fewer than 10,000 followers on Facebook and Twitter respectively (in some cases, less than 1,000 followers). While a handful of firms studied in this report are still in this bracket, overall, the number of participants on these sites has grown significantly. Figure 5 and Figure 6 show the number of Facebook “likes,” LinkedIn and Twitter followers, and YouTube page views a sampling of brokerage firms have as of December 2014. Of these seven firms, YouTube channel views clearly have the highest participation rate, indicating that investors may prefer brief video tutorials on investing to other forms of social media communication. Facebook “likes” rank second (total of >458k), followed by Twitter (total >174k followers) and LinkedIn (total >112k followers) in terms of usage and popularity.

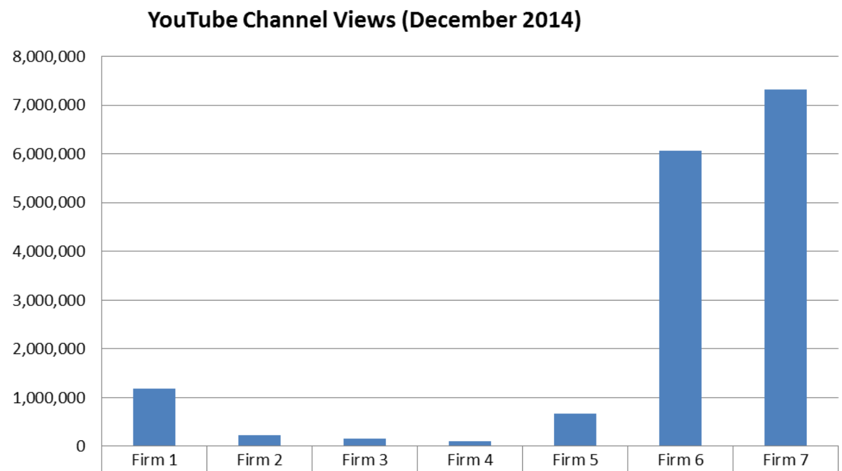
Figure 5: Social Media Followers (December 2014)



	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6	Firm 7
Facebook "Likes"	985	32,080	5,391	20,232	96,666	172,184	130,578
LinkedIn Followers	2,081	1,168	567	5,091	24,989	25,259	53,783
Twitter Followers	2,700	19,300	3,376	2,871	37,200	58,500	50,900

Source: Social media sites

Figure 6: YouTube Channel Views (December 2014)



	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6	Firm 7
YouTube Channel Views	1,180,397	231,731	159,743	110,802	670,348	6,068,808	7,317,761

Source: Social media sites

Third party social communities as direct service and customer engagement channels. Facebook, LinkedIn, Twitter, and YouTube act as platforms for firms to highlight company updates, share investment ideas, and provide perspectives on industry news and events. Aside from broadly publicizing information to followers, firms are using social media platforms to connect with clients, which ultimately act as a soft marketing tool. For example, firms may introduce a topic to its customers then track client responses or activities (likes, favorites, retweets). As social media platforms continue to develop, the purposes they serve to online brokerage firms become further differentiated.

Social media can strengthen the relationship between firm and customer. Social media can act as a tool to build brand trust and reputation. This is especially important after the financial crisis, when people seek personal and customized attention to their financial situation. Brokerage firms in the US are actively listening and responding to customer comments via social media. Increasingly firms (and senior and C-level employees) are directly responding to customers instead of issuing broad corporate statements. Through social media, firms have more control over content discussions and have the opportunity to communicate clearly with an expansive audience, ultimately resulting in increased transparency and even collaboration.

PLATFORM DEVELOPMENT — UNVEILING THE “COST OF FREE”

TECHNOLOGY OPTIONS FOR FIRMS

Catering to the self-directed and active trading markets is not an easy task. We can say it is a commoditized market, where players provide similar offerings to retail investors. From a strategy perspective, firms are focusing on where their clients need help. The major leaders in the space talk about a huge disconnect between what a financial institution can offer and what investors need and understand. A lot of the investment from the firm’s side is going to focus on servicing the investor, with a strong focus on customization, education, and embracing the user in general with a high level of engagement.

When a brokerage firm is faced with the need to implement an online brokerage platform, they have a few options:

- **Build a trading platform.** Typically stand-alone brokerage firms choose this option. A third party vendor, such as Scivantage, can provide a prebuilt trading dashboard or allow the broker to build out an interface; the vendor also provides the data and middleware via web services.
- **Use a third party vendor**. This is most common with full service brokers or bank brokers. Vendors can include a wealth management platform player (SunGard, Broadridge), or independent providers such as Scivantage.
- **Extend clearing firms’ functionality.** Clearing firms (Pershing, National Financial, Apex), mostly focused on back office functionalities have now front office technology options for firms.

Clearing providers have enhanced their capabilities to provide an integrated banking and brokerage experience. They have also focused on partnering with specialty companies to offer the best experience on the decision-making process. Over the past few years, clearing platform providers have continued to enhance their offering to include online trading portal functionality for a firm’s front end. Such enhancements have been to the benefit of mid-tier banks and financial services firms that already rely on these vendors’ clearing and do not have the internal resources for building out a trading platform.

This expansion of functionalities outside of their core clearing business has led to a consolidation of clearing firms in the market. We expect to see further consolidation in the space. Some clearing companies have been offering a one-stop shop to firms that are interested in outsourcing their online brokerage platform. These platforms provide the basics for firms to bring their online trading operations up and running. Bundling purchases is a proven approach in multiple industries to improving value while reducing cost. The saying “There is no free lunch” applies to technology deployment. The bundled service package typically offered as part of a “free” implementation can mean hidden charges, for example, for clearing services, in addition to larger opportunity costs. And the fact that a broker is tied to the back office of his service provider can lead to shortcomings in performance and execution.

For that reason, unbundling the technology may offer several advantages, including cost savings and more transparency, and allow clients to pick and choose the desired functionalities. On the other hand, bundling can undermine the value and effectiveness of an offering and leave revenue on the table. So firms will need to evaluate what is best for their objectives and requirements. The regional and mid-tier banks will look for flexibility and ease of integration with best of breed solutions; larger firms which have larger budgets can afford to either build it themselves or customize what their clearing firm is providing.

Build Vs. Buy: Costs, Benefits, Drawbacks

The decision to build or buy is an important milestone in the quest for differentiation in that it informs future decisions around technology and staffing that can weigh directly on a company's future. Yet the decision process around "build vs buy" (or partner) is more complex than dollars and cents and to a fair degree rests with one's vision of the future.

Buying would seem to be an obvious way to do an end run around the limitations that have held back other online brokerages and custodians. These limitations center on legacy technology (i.e., systems dating back to the early 2000s) as well as culture: unlike some of the newer startups, these are not software engineers. Less control over enhancements would seem to be offset by faster speed to market, easier vendor integration, and lower staffing costs, as well as the easier deployment of multichannel delivery options, including social/mobile capabilities.

At the end of the day, however, a firm may decide to build irrespective of other considerations. First, implementing technology solutions "in house" (versus buying or using a vendor, which can be expensive and confining) may simply be part of its DNA. Building in house may help a firm retain the ability (i.e., the code) to tweak or build out the platform at a later date. Acquisition or even partnering (including via a white-label solution) can pose some sticky integration problems.

Table 6 provides a summary of strengths/weaknesses for build vs. buy strategies.

Table 6: Build Vs. Buy

OPTION	STRENGTHS	WEAKNESSES
BUILD	Increased flexibility and control over releasing enhancements and upgrades. Ability to leverage internal talent to create unique brand. Can respond immediately to client feedback. Full control over costs.	It is becoming increasingly expensive, especially with managing new channels such as social media and mobility. Requires in-house talent. It may be difficult to keep up with the latest technology available in the market. Speed to market is slow. Integration to third party systems may be challenging.
BUY	Allows brokers to focus on front end while vendors support middleware. Access to industry experts is vital, especially for those who are just entering the market. Vendor can provide easier connectivity to trade-order systems. Can support channel expansion and integration. Speed to market is typically faster than build approach. Increasingly, a lower cost approach to offering online trading (reduces staff, maintenance cost, etc.).	Brokers have less control over enhancements. Vendor products are, by definition, not unique, which is a major detractor in the online brokerage market. However, vendor customizations allow brokers to build unique brand.

Source: Celent

OUTLOOK

Based on Celent's research, we can draw several additional conclusions about the US self-directed market:

- The self-directed investor segment is growing faster than the non-self-directed segment (4.9% and 1.4% respectively).
  - Overall annual growth rates in the self-directed investor market will be 4–6% (2015). The US self-directed population is rebalancing away from traditional investors and more toward the active investor and active trader.
  - In 2014–2015, Celent expects that active investors and active traders will make up 43% and 6% of the total US self-directed market respectively.
  - Women and millennials will continue to enter the self-directed market at all customer segments, slowly changing the average self-directed investor profile.
- Brokers will need to focus on enhancing their trading platforms to differentiate themselves and capture clients. They will have a choice to pick from a best of breed offering or take advantage of front office developments of clearing providers.
  - Bank-brokerages have focused on integrating banking and brokerage services as well as implementing a single sign-on, real time money movement, and the ability to view holdings across multiple accounts. Further integration will focus on prefilled account data for easier account opening, and integrated banking-brokerage mobile apps.
- More and more firms will dedicate considerable resources to digital strategy development.
  - Celent expects mobile trading DART growth to increase in 2015, although the online channel will remain dominant among retail traders. Firms will continue to develop tablet-based trading platforms that allow investors to personalize their dashboards and trade a variety of asset classes on one platform.
  - Social media strategies will continue to mature. Most firms are utilizing social media sites, such as Facebook, Twitter, LinkedIn, and YouTube to connect with current and prospective clients. Celent expects this trend to grow in the foreseeable future. Additionally, social communities have emerged as a low-cost service channel and are growing in popularity among investors.

Was this report useful to you? Please send any comments, questions, or suggestions for upcoming research topics to info@celent.com.

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If you found this report valuable, you might consider engaging with Celent for custom analysis and research. Our collective experience and the knowledge we gained while working on this report can help you streamline the creation, refinement, or execution of your strategies.

Support for Financial Institutions

Typical projects we support related to online brokerage include:

Vendor short listing and selection. We perform discovery specific to you and your business to better understand your unique needs. We then create and administer a custom RFI to selected vendors to assist you in making rapid and accurate vendor choices.

Business practice evaluations. We spend time evaluating your business processes. Based on our knowledge of the market, we identify potential process or technology constraints and provide clear insights that will help you implement industry best practices.

IT and business strategy creation. We collect perspectives from your executive team, your front line business and IT staff, and your customers. We then analyze your current position, institutional capabilities, and technology against your goals. If necessary, we help you reformulate your technology and business plans to address short-term and long-term needs.

Support for Vendors

We provide services that help you refine your product and service offerings. Examples include:

Product and service strategy evaluation. We help you assess your market position in terms of functionality, technology, and services. Our strategy workshops will help you target the right customers and map your offerings to their needs.

Market messaging and collateral review. Based on our extensive experience with your potential clients, we assess your marketing and sales materials—including your website and any collateral.

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