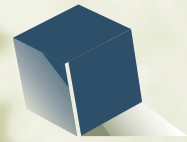


Handheld Device Trends in the US Retail Brokerage Advisory Industry



TOWERGROUPSM

The Power of Knowledge

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Executive Summary

TowerGroup has been engaged in a series of research projects examining the ways that wireless technology and mobility are influencing business decisions in the financial services industry. This report examines usage of wireless handheld devices in the US retail brokerage industry, with a focus on financial advisors.

Retail brokerage firms spent \$47 million (USD) in 2005 to provide mobile devices to the financial advisors associated with the firms. TowerGroup projects that spending for this purpose will rise to \$175 million in 2011, at a compound annual growth rate (CAGR) of 22%. Enterprise-wide adoption of mobile devices will vary depending on channel. The undertaking for the captive full-service channel will be the most ambitious of deployments because of firms' willingness to invest more heavily in advisors as well as control over the distribution channel.

Advisors are more apt to use wireless devices to complete service requests they usually refer to their administrative sales assistants, such as funds transfers and withdrawals and duplicate statement requests. Advisors are not likely to initiate securities transactions through mobile devices regularly, although they do require mobile functionality for urgent situations. Advisors want to be able to initiate workflows remotely that can be completed or affirmed in queue upon their return to the office or by a sales assistant.

To summarize the key findings from our research:

- Increases in workforce mobility suggest that the retail brokerage advisory channel is ready and willing to adopt more sophisticated mobile devices and applications.
- Mobility applications and tools will become critical elements for workforce delivery and execution as the advisor role evolves from being centered on transactions to being more consultative and collaborative.
- Mobility presents new complexities for those responsible for information technology at brokerage firms, especially regarding usability, cost, and risk management in the areas of security and regulatory compliance.
- Brokerage firms are likely to attain the maximum return on investment at the lowest cost of ownership by extending existing applications and IT resources into the mobile channel, not by inventing new applications.
- A mobile device may be more secure than a laptop computer because it can meet advisors' technical and functional needs for mobility without the risk associated with a laptop's greater storage capabilities and application functions.



- Given that the majority of National Association of Securities Dealers (NASD) members are categorized as “small firms,” TowerGroup believes that data-enhanced consumer devices will gain market share in the securities industry through 2011.

Background on Handheld Device Adoption

There is little question that mobile technology, in particular mobile phones for voice and messaging capability, have earned their place in the personal and professional lives of individuals. More than 2 billion users worldwide subscribe to mobile services. In the United States alone, an estimated 218 million people (more than 70% of the population) subscribe to mobile services. Cellular technology is indeed one of the most widely accepted technologies in the world.

We all witnessed the Internet boom of the 1990s and bust of the 2000s. What we actually were seeing was an explosion of technological change. The boom and subsequent bust were largely driven by hype that provoked a tidal wave of investment without much thought for return on investment (ROI). Nonetheless, the boom was based on technological evolution that was real and that continues today.

Client Expectations Drive New Business Requirements

Underlying the Internet boom were four fundamental disruptions that have forever changed the way financial services institutions do business.

- The emergence of the “always-on” society. The explosion of broadband access, both wire line and wireless, has enabled this phenomenon.
- The rise of an insatiable demand for immediacy: Customers want what they want, and they want it *now*.
- Businesses quickly replaced their physical addresses with their electronic virtual addresses because the always-on society wants instant access to services, instant gratification of their needs, total online experiences, anywhere as well as any time, 24x7.
- The exponential growth in electronic data transactions, in particular at brokerage firms and on trading exchanges, is driving new requirements for storage, encryption, bandwidth, and reduced latency.

Advisor Adoption

The brokerage advisor channel was one of the early adopters of cellular communications, not just for the status that carrying a cell phone conferred, but also for the legitimate utility of mobile communication with clients and business associates alike. For more than 20 years, the cellular telephone has served as a reliable and effective tool for direct voice communication and remote message retrieval, improving response rates, speeding the dissemination of information, and enhancing business governance in an industry where “information is king.”

As an institution expands its usage of handheld devices from a limited number of executives to hundreds of employees, there is a greater need for the business to justify the investment. It is at this point that we see the role of the information technology department (IT) expanding to a centralized function to establish strategy, standards, and policies regarding these devices and to better evaluate the company’s infrastructure needs.

The analysis of trends in the next section focuses on how handheld devices that business applications will be an important aspect in the daily routines of financial advisors and how these devices provide some competitive edge in the market today.



General Mobility Trends in the Retail Brokerage Industry

Cellular communication and, more important, the devices and applications that deliver it are entering a new phase of utility. They are moving beyond simple voice communication and some “push” communication to the delivery of rich content and enhanced two-way application functions. The tools of the trade are being extended from the desktop to the palm of the hand with the intent to enhance productivity, further the value proposition, and increase revenue.

Mobile investments in brokerage will continue to grow because of early demonstrations of compelling value across advisor segments. Business models will occur at varying speed and sophistication in specific channels. The undertaking for the captive full-service channel will be the most ambitious of deployments because of firms’ willingness to invest more heavily in advisors as well as control over the distribution channel. Meanwhile, investments in other channels will be less intensive.

The following paragraphs briefly summarize the major drivers concerning the adoption of mobile devices among financial advisors.

Changing Value Proposition

As the brokerage industry has moved away from transaction-based business toward fee-based offerings, the nature of the client/advisor relationship has continued to change. Because advisors now must be more engaging and informed, they are spending more time away from their offices to meet face-to-face with clients and reinforce the value of the relationship through personalized attention.

Enhanced Customer-Facing Capability

The competitive nature of the brokerage industry and the time-value proposition of information and money are increasingly driving new requirements for advice to be more information rich (not just data rich). These requirements necessitate technology to go beyond the use of purely transactional workflow systems (like e-mail) to more sophisticated sales force automation (SFA) and customer relationship management (CRM) applications, including secure alert and more advanced request/receive capabilities.

Process Improvements

Investments in mobility can reduce the cost of service delivery and improve data accuracy. Moving data input and retrieval to a mobilized workforce of field and sales personnel enables firms and advisors to operate with the most readily available information. They can update information in the sales process as well as manage client assets in an efficient and effective manner.

Client Acquisition

At heart, advisors are salespeople, and firms looking to improve the top line must assist advisors in client acquisition and the sales cycle wherever possible. Mobile solutions offer the potential for advisors to strike while the iron is hot and place a new account along with the associated assets into the appropriate workflow. Doing so by means of rules-based exceptions at the point of sale can reduce the cost of service delivered and improve data accuracy and compliance.

Client Retention

Margins in the brokerage industry have been under pressure for some time. Although the migration to fee-based business will help, the initial revenue generated from new assets is less today than it was under a transaction-based model. Client retention is closely tied to client-facing drivers and advisors’ ability to deliver on a value proposition. Advisors also need to capitalize on the ability to take immediate action



remotely to effect change in services or products. In a fee-based environment, increasing the tenure of a client is paramount to increasing profitability for the firm and the client.

Network Infrastructure Improvements

For several years, firms have tried to improve the enterprise network infrastructure and leverage capabilities across lines of business to deliver efficiency and innovation within the enterprise. Having met with some success in this infrastructure improvement, CTOs/CIOs are looking to extend the capabilities of the network beyond the walls of the firm and into the field, where advisors can remotely leverage these improvements.

Advisor Retention

Turnover in the retail advisor base in 2005 was 16%, and the pressure to retain top producers increases as firms continue to invest in developing, training, and supporting them. Extending platform devices and services to advisors in the field can be both an attractive offering for prospective advisors and a tool for retaining successful advisors, tying them to the enterprise, and enhancing the value of the firm.

Consumer Electronics

Businesses should not underestimate the extent of consumers' personal adoption of emerging technologies like mobility and the corresponding pressure that places on businesses' IT. Twenty-five years ago we saw this phenomenon with personal computers, and just 15 years ago we saw a similar environment with rise of the Internet. People accustomed to the convenience of the latest consumer technology began to expect the same convenience from banks or other businesses as well as in the workplace. TowerGroup believes the brokerage sector is now subject to the same pattern of individual adoption with respect to mobile technologies. Although individual employees are now using their own personal devices for utility not just for fashionable convenience, advisors' usage of their own personal devices for business opens the employer to increased risk.

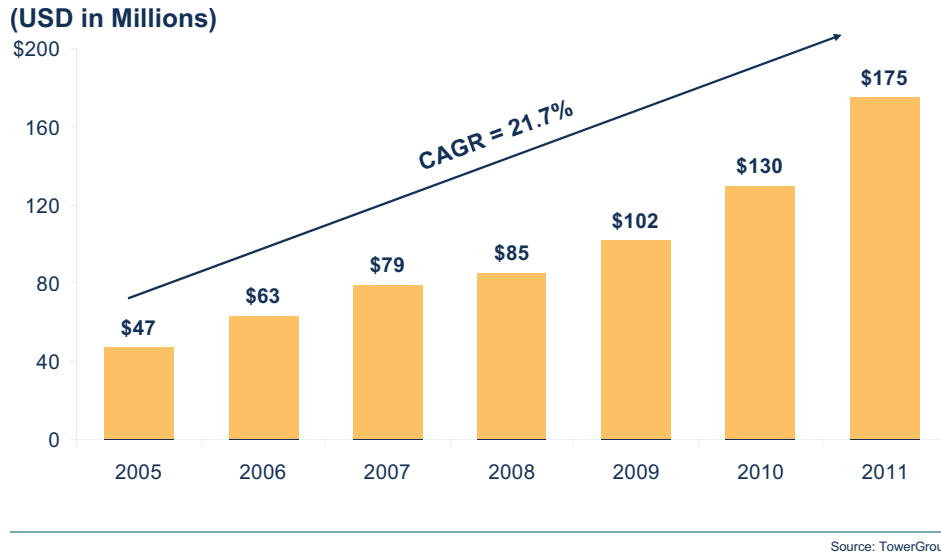
Cost

Firms must decide whether they will pass on to the advisors the cost of the mobile devices they provide to them. If they do, they also need to determine how to cover the cost of the service and how to account for the charges for ongoing usage, particularly for bandwidth consumption if they extend internal data to the devices. Exhibit 1 offers TowerGroup's projection of retail brokerage advisory spending on mobility through 2011. TowerGroup expects firm-sponsored mobility spending in the advisor market to increase at a CAGR of almost 22% to \$175 million in 2011. It is important to remember there is a difference between the firm-sponsored market for mobile devices and the current personal ownership and liability market, which has been estimated at over \$250 million in voice fees alone.



Exhibit 1

US Retail Brokerages' Spending on Mobile Devices for Advisors (2005–11P)



Broker-dealers' approach to funding mobile devices will depend on the market segment in which they participate and the extent to which they pass the cost through to the advisors. TowerGroup estimates that the annual cost to equip an advisor with a high-function mobile device will range from \$1,100 to \$1,500. Factoring in the costs of bandwidth, support, and application development, that number could swell to more than \$2,000. Approaches to cost allocation vary from a subsidized program under which the advisors assume responsibility for the device and the service plan to a full-fledged operational expense carried by the line of business. As an example, TowerGroup expects that within the independent broker-dealer channel, the hardware purchase and service will be the responsibility of the advisor, while the firm will control the applications and access to the firm's data.

Handheld Device Usage for Retail Brokerage Advisors

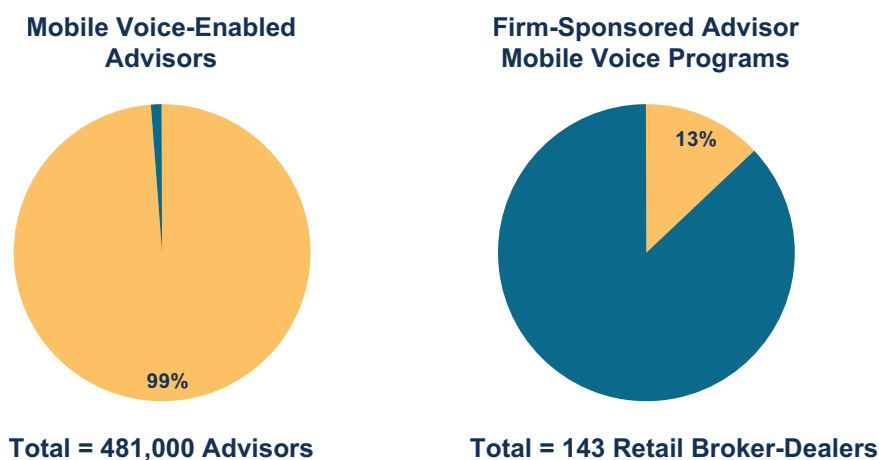
The estimated half-million advisors in the securities industry are equipped with cellular telephones. An advisor without a cell phone is as rare as a cowboy without a 10-gallon hat or an accountant without a calculator. As Exhibit 2 illustrates, the advisor channel was one of the early adopters of this revolutionary technology. However, this adoption was a personal liability assumed by the individual advisor. The number of broker-dealers that sponsor and are liable for deployment of mobile phones and service to their retail sales force is relatively small at 13%. For voice services alone, this represents an addressable market equal to more than \$250 million in annual service fees. Extending these users to a data plan would cost approximately 1.7 times that amount.

While enterprise users of mobile devices and early adopters of data-enhanced devices are concentrated in large full-service brokerage firms, most of the growth in adoption appears to be coming from the smaller firms. TowerGroup expects that many of these smaller firms will continue to adapt alternative devices as employees refresh their personal technology and gravitate toward more sophisticated mobile devices as they become available. Today, most mobile devices in the hands of advisors are their own personal devices. Under this model, advisors are liable for the devices and, to an extent, the way they use them.



Exhibit 2

US Retail Brokerage Advisors' Use of Mobile Voice Programs (2006)



Source: TowerGroup

In the interviews that TowerGroup conducted for this research, most advisors indicated that the functionality they desired mimicked many of the tasks advisors ask of their sales assistants on a regular basis. Examples included distributing funds via check and Fed Funds wire. Interestingly, when polled, advisors indicated that they were unlikely to execute the purchase and sale of securities over a mobile device but, in the event of an emergency, they would desire at least limited functionality in this area. However, advisors do want to be able to initiate workflows remotely that can then be completed or affirmed in queue upon their return to the office or by the sales assistant.

Barriers to Adoption

Deployment of mobile devices in an enterprise presents a number of new key issues that the IT department is compelled to address. These issues are paramount to firms considering an enterprise-wide deployment of mobile devices, and failure to adequately address them may prevent the firm from offering or deploying a successful enterprise-wide mobile solution. Compliance and security are two key concerns for all segments, while device selection, standards, and infrastructure improvement are cause for concern to varying degree. In some respects, the financial services industry has underestimated the utility and the risk that mobile devices represent within the advisor channel.

Security

Hundreds of laptops leave the safety of the office environment every day under the arms of advisors and become exposed to unnecessary risk. Because of the laptops' storage capacity and application capabilities, their theft or loss could render an organization seriously vulnerable if not infamous. TowerGroup expects some institutions to mitigate that risk by issuing advisors enhanced handheld devices that can meet their functional needs without the added liability caused by the inherent large storage capacity of laptops. Best-in-class mobile devices can store presentations and applications and have full Internet accessibility, keypads, and color screens. Emerging tool sets allow a firm's IT department to control and secure the associated data. The ability to limit the resident data to that required for a specific customer or advisor mitigates the risk of a compromised device.



Mobility should cause institutions to rethink their data security perimeter. Most firms have established a security perimeter based on devices. The devices may be those residing on the desktop in the office, or they may be the Internet firewall, the virtual private network (VPN) box used for remote access, or the security software preloaded on a remote user's laptop. But information continues becoming fluid, more mobile.

The formal adoption of mobile solutions forces information mobility and therefore its security complexities front and center. Increasingly, mobile devices, including laptops, smart phones, and other appliances have multiple network access mechanisms, including Bluetooth, wireless fidelity (Wi-Fi), and Universal Serial Bus (USB) connections. Firms need to rethink who has what data, why they have it, and on what devices. For example, employees who synchronize their mobile devices with an e-mail account whose records include account numbers risk exposing their firm's customer data and other sensitive information if their devices are lost or stolen. An unsecured network connection like Bluetooth or Wi-Fi may even create an unmonitored access to the firm's network.

As the universe of resident wireless network access options available to the handheld devices rise, organizations should take prudent steps to secure data during transport via end-to-end authentication and encryption schemes.

As the demand for more data and complex presentations of information grows, so does the need for storage capacity. Companies can now employ "removal storage" cards, such as Secure Digital (SD) devices, in order to compensate for the lack of resident storage in personal digital assistants (PDAs) and smart phones. These tiny storage devices are easily lost or stolen. They are often overlooked as a prime security hole in a solution.

Retail brokerage firms will need to consider the increased security risks and variables introduced by removable storage devices and take remedial steps. Security options for removal storage cards should include, but are not limited, to the following:

- User-protected storage card access
- Total encryption of the data
- "Locking" the storage card to the handheld device
- Network based "leasing" of the availability data based on user attributes (location, workday times, etc.)

Most firms have not begun to address mobile managed security in general and devices like smart phones in particular. Reasons range from the ineptness of the security solutions available to the difficulty of managing security because of the large variety of mobile devices deployed. However, TowerGroup believes that the wide use of mobile devices in retail brokerage calls for rethinking the security risk, a problem that will only worsen over time due to the continued increase in information fluidity.

Compliance

Unfortunately for the brokerage firms and advisors, the specter of regulation still looms over the securities industry. A firm's deployment of a mobile solution requires the same controls as the controls governing the advisors sitting in their offices. In fact, the burden and complexity of regulatory compliance will likely be greater in the mobile environment, given that the device is outside the walls of the firm and possesses significant communicative and collaborative capabilities that might easily go ungoverned. Integrating mobile devices and the data passing through them into existing compliance applications may be more difficult than is justified, particularly if the desired device solution operates in an open-port environment



across an unlimited number of carriers and service providers. In this regard, some mobile technology providers offer an advantage over others because they operate through a single port on the network, giving a sense of manageability to the staff charged with securing the network and monitoring the data flow and its content if necessary.

Device Selection and Support

For most firms, security and support will take precedence over device cost and broad feature capability. Features and functionality are critical to the success of a deployment and determine the device's ability to support the mobile applications and in turn the advisors. However, to the extent that the specific function of a mobile device presents a security risk, firms will opt to disable the function in exchange for increased security. Likewise, in order to reduce the amount of IT support and training expense necessary, firms will opt for less feature-rich devices, choosing to do without features that lie beyond the core business objective of the investment in mobility.

Supporting deployed devices represents both a technical challenge and an added expense for brokerages. If the deployment is large enough, it may warrant investing in specific skill sets within a more dedicated service group in the IT department. Technical support personnel trained in the variables of wireless network connectivity, specific application support, and security administration must be available across multiple time zones.

Mobile workers care most about the mobile experience. They care less about the handheld device itself and care least about the operating system. To maximize the integrity of the user experience, IT should consider the following:

- User interface ergonomics
- Business utility of the solution
- Reliability of the device
- Battery life

Many decisions by a firm's IT department will affect multiple attributes. This creates a complex decision tree for IT, who must take into account attributes of the application, the operating system environment, the device, and the available wireless networks. For example, the choice of wireless network type will affect both the business utility of the solution and battery life. There is a trade-off between network speed and battery life. For users of a handheld messaging and transaction-based solution who would benefit from far more battery life and consistent coverage, a wireless network that has acceptable speeds and latency (such as EDGE) may be preferable to a theoretically faster wireless network (such as UMTS or 1xEVDO). Another example of a trade-off is the choice between a tightly coupled solution and a decoupled solution. The first represents a device-operating environment that is tightly coupled to the wireless network and combined with an application delivery model that uses data push technology. A decoupled solution relies on application data being pulled by the user's device or by intermittently dialing into the network to the application server.

Standards

Standards in the mobile environment remain elusive. In all aspects of mobile devices, from operating systems to features, function, and configuration, the manufacturers and carriers vary in the way they deliver their products and services. With a nod to competition and an open market, the differences are understandable. Nonetheless, they present a challenge. Vendors that wish to extend services to a mobile



environment are constrained by the device configurations, immature applications operating environments, and ever-changing proprietary demands that mobile operators place on device manufacturers.

Infrastructure

A broker-dealer's mobile offering will meet only limited success if the institution does not improve the infrastructure that supports the line of business that the mobile offering is to support. Without process improvement and control, the mobile offering will fall short of the institution's intended goals. Firms will need to closely evaluate their stated objectives for the mobile offering in light of the maturity of the process being extended. If necessary, they should invest in addressing the process's shortcomings before extending the process into the field via a mobile device.

Summary

Much like the personal computer in the 1980s, mobile devices are finding their way into corporate enterprises virally through organic growth because of the convenience and functionality they offer. Like PCs, mobile devices are a premier example of consumer adoption of technology being a prelude to institutional adoption. Adoption of mobile and wireless technologies in the retail brokerage advisory industry is no different. In fact, casual adoption of mobile devices already in play in advisors' enterprises should raise security and privacy concerns as well as cost-of-ownership issues that today may be invisible but that reflect negatively on costs of operation.

Enhanced data applications and collaboration through mobile devices clearly present an emerging opportunity for the retail brokerage industry to improve advisors' productivity and enhance the advisor/client relationship and the delivery of services. TowerGroup believes that many advisors are actively repurposing personal devices for business use and thus potentially exposing their firms to unnecessary risk. To counter this risk, broker-dealers should begin to standardize the mobile platform and policy for the enterprise and encourage the enterprise to adopt standard devices and solutions.

Firms demonstrating leadership will be those with root characteristics that extend existing investments in their infrastructure and application portfolio, not those who build new boutique infrastructure or application sets for mobility. TowerGroup expects brokerage firms' spending on devices and services to increase nearly 22% through 2011.



Research in Motion Limited commissioned TowerGroup to conduct independent research and analysis to assess the use of handheld mobility in the retail brokerage industry. The content of this report is the product of TowerGroup and is based on independent, unbiased research not tied to any vendor product or solution. Although every effort has been made to verify the accuracy of this information, neither TowerGroup nor the sponsor of this report can accept any responsibility or liability for reliance by any person on this research or any of the information, opinions, or conclusions set out in the report.