

SEI & Drexel University Partner for Solution Development

**INNOVATIVE TESTING ENHANCES
USER EXPERIENCE**

SEI New ways.
New answers.®



DREXEL UNIVERSITY

**Solutions
Institute**

EXECUTIVE SUMMARY

The financial services industry experienced significant changes as a result of the financial crisis in 2008. Increased regulations, deteriorating public trust, and bank executive sanctions forced financial institutions to implement much needed cultural and structural changes. Immediately following the financial crisis, nascent technology FinTech exploded in the financial services industry. Taking several years to gain momentum, FinTech met the changing investor demands by providing sought-after tools and services as alternatives to traditional banking, investment, and payment models. This evolution of the financial services space forced legacy brands and dominant players to pay closer attention to these startups. The FinTech startups originating out of Silicon Valley, New York, and London offered new levels of access to financial products and services, as well as streamlined easy-to-use mobile and web experiences. Overall, the financial services industry was in a rapid state of digital transformation.

SEI continued to monitor the evolving digital landscape of the financial services market. Clients, primarily financial intermediaries, once again began looking to the company to provide revolutionary solutions to meet the emerging consumer demands. Based upon its market analysis, SEI focused on the end-client experience, a consumer-facing wealth management portal, which was a critical vehicle through which individuals monitored one's financial goals and specific investments.

SEI established core design tenets and key principles, engaged in competitive analysis and client research, and tested iterative design concepts to create a new digital portal. In 2015, as part of this design and testing process, SEI partnered with the world-class scientists at Drexel University to conduct a neuro-ergonomics and usability study on its new client interface. Through this study, SEI could determine if its new product delivered the intended state-of-the-art user experience before investing additional capital to further develop the solution.

Financial Services Competitive Landscape

Following the 2008 financial crisis, FinTech and the regulatory crackdown permanently altered the financial services industry's competitive landscape. The market was no longer dominated by a handful of large traditional competitors, as an untold number of startups globally entrenched themselves as strong players for the long haul. In 2016, \$4.6 billion was invested in U.S. FinTech venture capital, making it the second highest FinTech investment year of the decade. FinTech impacted many aspects of the financial services industry, including payment processing, lending, social investing, and digital advice delivered through client-facing portals. Spurred by greatly simplified and engaging client experiences, this rapid growth was also driven by consumers' expectations for user-friendly web, smartphone, and tablet applications.

The financial services competitive landscape changed forever. SEI's clients no longer simply competed against other legacy brands; they also faced a new, lesser-known generation of companies that provide financial service technologies. These clients, large and small, reacted to the industry upheaval with a new focus on digital delivery of financial services, offering a faster, more convenient, and user-friendly experience across software platforms.

SEI – Background

Founded in 1968, SEI is a leading global provider of investment processing, investment management, and investment operations solutions that help corporations, financial institutions, financial advisors, and ultra-high-net-worth families create and manage wealth. As of December 31, 2016, through its subsidiaries and partnerships in which the company has a significant interest, SEI manages or administers \$751 billion in hedge, private equity, mutual fund and pooled or separately managed assets, including \$283 billion in assets under management and \$468 billion in client assets under administration. SEI is headquartered in Oaks, Pennsylvania.

For nearly 50 years, SEI has anticipated changing market and consumer needs, responding with innovative solutions designed to help investors meet the challenges of personal and institutional wealth management. The company's latest solution, the SEI Wealth PlatformSM (the Platform), provides banks and wealth management firms with a fully integrated, unified platform designed to support clients' businesses across their entire wealth management enterprises.

SEI built its digital client-facing portal as a component of the Platform in 2006 to provide end-investors online access to their investment information. Compared to some notable competitors providing similar user experiences in 2006, only the Platform could be characterized as a truly global and fully-integrated solution that could solve the challenges facing the wealth management marketplace.

SEI TIMELINE

TODAY

SEI continues to enter new markets with new solutions

Financial Advisors [U.S.]
Institutional Investors [U.S./U.K.]
Investment Managers [Global]
Global private banks [U.K.]
Independent Wealth Advisors [U.K.]

Manager of Manager Investments
Fee-based processing platform
Globalized processing
Integrated pensions & finance
The SEI Wealth PlatformSM
Goals-based investing
Total Operations Outsourcing

1980's

Entering the asset management business

SEI helped change the way people look at investing by integrating modern portfolio theory with comprehensive asset allocation models — a process that now is an investment cornerstone.

1970's

Focusing on the trust and estates industry

SEI transformed the industry by developing the first real-time, on-line automated trust and investment accounting system.

1968

It started with an idea

Al West developed the first computer-simulated training technology for bank loan officers. He named his company "Simulated Environments Incorporated". Today, it's simply SEI.

CORE REDESIGN PRINCIPLES



In late 2014, SEI began to research, design, and prototype the next generation of the end-client experience. In response to emerging client needs and the rapid evolution of the FinTech sector, SEI aimed to drive a competitive advantage, while retaining its current client base, by creating a new interactive and immersive experience that truly engaged clients.

SEI utilized information collected from traditional end-investor surveys, its existing client base, active prospects, as well as primary and secondary market research, to form core redesign principles of the end-investor experience in order to meet the changing digital demands of the marketplace.

By incorporating these principles, the new consumer-facing portal would fit financial intermediaries' needs and reflect their various wealth management engagement models. Additionally, SEI would support their clients' specific value propositions by illustrating their unique voice, messaging, and brand. Because of its unique market position as a truly global wealth management provider, SEI had the opportunity to engage with US and UK consumers to help define the unique design elements. SEI also designed mobile native solutions for iOS and Android, while ensuring the web experience they were developing maintained strong synergies to its mobile deployment. SEI realized that the market was rapidly moving towards increasingly engaged user experiences. As a result, SEI built its end-client experience on a flexible portal technology to allow for quick adoption of emerging client needs without needing to restructure the underlying technology.

Additionally, in early 2015, SEI sought to facilitate what they defined as the "experience continuum," namely the alignment of the user experience and engagement model across the financial intermediary and the end-consumer user base. The new interface was a key component in delivering the experience continuum. SEI saw this emerging trend as an important element in helping financial intermediaries consistently represent and deliver their value proposition to clients. This alignment provided consistency of engagement and consumption of the Platform's solutions and services for all users. To drive this innovation, SEI iterated various designs and incremental testing to refine the look and feel of the digital portal, as well as drive consumer engagement and reinforce the intermediaries' experience continuum – key tenets of the usability study. SEI focused on the use of real-time financial data to provide engagement, exploration, and interactivity.

The Drexel University Study

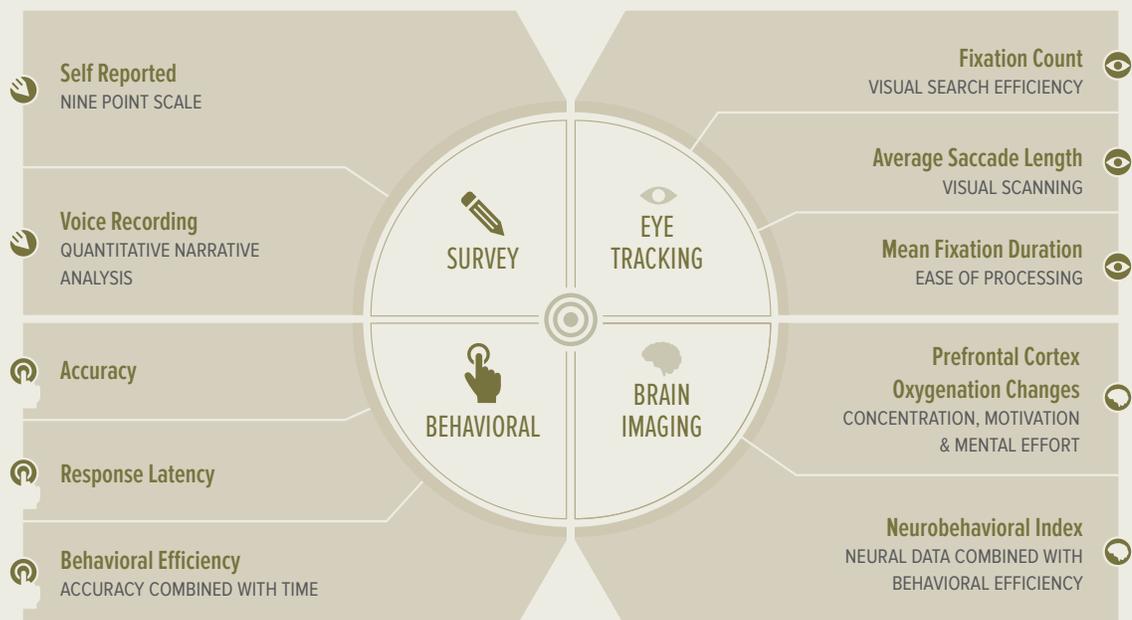
In late 2015, SEI strategically partnered with Drexel University's LeBow College of Business and School of Biomedical Engineering to plan a usability study for SEI's consumer-facing wealth management portal. The study, conducted at Drexel LeBow's Behavioral Science Laboratory, utilized Drexel's scientific and rigorous approach, which involved triangulation of behavioral, self-reported responses (and narratives) and neuro-physiological research methodologies.

Triangulation is powerful and innovative, as it uses a multi-method approach

to data validation (see Figure 1). Once validated, a nuanced view of the results is developed using two or more methods (four in Drexel’s approach) to authenticate the data with cross verification. The sample selection and data collection were designed to provide unbiased insights about the users’ experiences. The study included 37 participants across various demographics, including SEI clients, Drexel-recruited non-SEI-related individuals, and select SEI employees who had limited awareness of the technology solution.

The participants were asked to perform certain website tasks while hardware (fNIR, eye trackers, and stimuli presentation computers) objectively measured physiological effects during the interaction. Eye tracking measured visual search efficacy, efficiency of visual scanning, and ease of processing interface elements. Brain activity is measured through the oxygen consumption of neurons; higher oxygenation levels indicate greater levels of exertion. The end-client experience study included five components with seven tasks per component on a continuum that ranged from easy (1) to medium (2) to hard (3). By combining more traditional testing methods of qualitative surveys and eye tracking with behavioral and neuro studies, the test results provided a comprehensive view of not only the usability of the interface, but also the engagement and interactivity levels that SEI sought to achieve (see “*Triangulation: The Circle of Measurements*”, below)..

TRIANGULATION: THE CIRCLE OF MEASUREMENTS



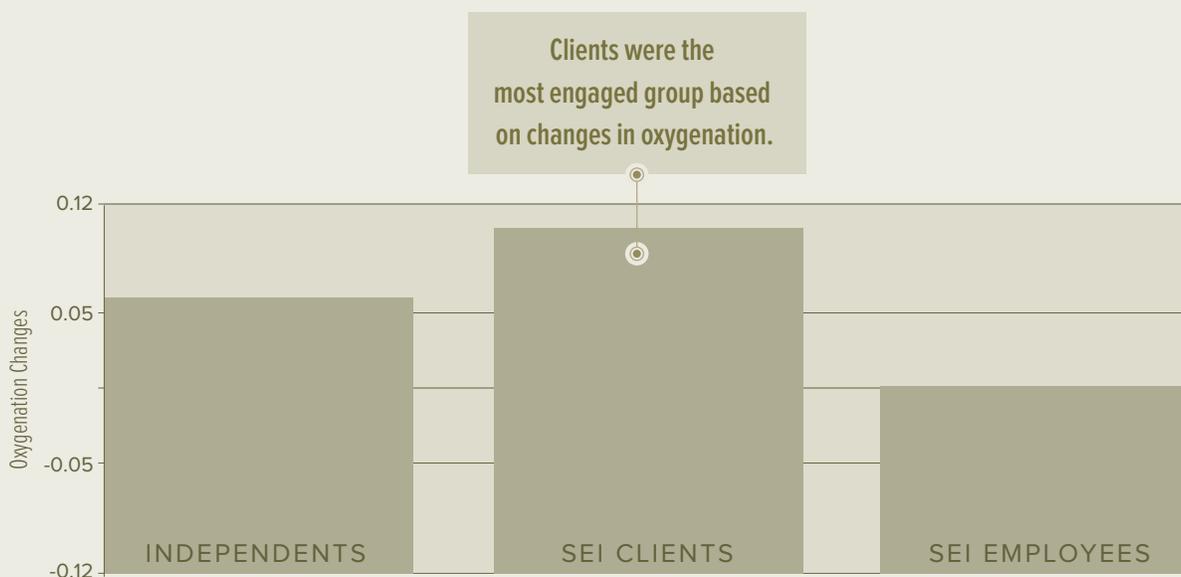
Findings

Drexel and SEI used first-week findings to evolve the portal prototype, as well as modify the testing protocol for second-week testing. Changes made to the prototype allowed for a comparison of results between the two weeks and helped determine if the changes to feedback areas were effective. User tasks proved some iconography and icon placement were counterintuitive. Other tasks revealed unclear visual cues when helping users navigate a drop-down menu for sub-accounts (or portfolios). Lastly, users lacked awareness of the interactivity of certain charts, which revealed more data with a mouse roll-over, and users also lacked the dexterity to retrieve additional information from stacked charts. SEI addressed these three key issues in the subsequent weeks of testing and data collection and found that modifications met user needs. Such iterative, real-time testing of a website was unique to this study and not often performed in the industry.

Further analysis of the study's findings demonstrated higher measures and ratings for the new end-client experience – a significant improvement in user experience as compared with its predecessor. The new site received an average rating of above 7 (1 = low, 9 = high), performing better on every measure, which includes overall website ratings, neurobehavioral indices, behavioral efficiency, and average saccade length. Overall, all groups exerted minimal effort when using the site; results did not produce any demographic diagnostic differences; and SEI clients were the most engaged group in the study. User engagement level was determined based upon the combined triangulation results, which are strongly determined by the fNIR study results.

Behavioral task performance was almost twice as efficient with the new end-client experience versus the previous interface, and 90 percent of non-SEI employee participants would recommend the new portal to others.

BRAIN IMAGING MEASURING ENGAGEMENT



Showing clients their wealth goals was the most engaging, most efficient, and highest-rated section in the user interface. Participants stated they would return to the site just to view their goals.

The study presented additional interesting findings:

- › Investors without an advisor performed tasks with an average accuracy above 75 percent.
- › Visual search speed was similar regardless of investment experience.
- › The new website allowed for more rapid visual search.
- › All investors understood the info within a normative time (0.46 seconds/fixation).
- › Investors required similar amounts of search regardless of their investable asset level.

This study revealed end-investors' preferences in their online investment experiences, including website features to include/exclude in order to adapt to marketplace changes. The study focused on neuro-behavior and behavioral efficiency, specifically the ability for a user to expend minimum cognitive effort while achieving optimal user results. End-investor test results indicated a more engaged user experience, supporting the portal's increased functionality. Drexel recommended further evaluation following the beta test.

New End-Client Experience – Ready for Prime Time

Ryan McKendrick, an expert in the field of Neuro Business from the Human

“ SEI's consumer facing wealth management portal has been redesigned with the user in mind. It is apparent that effort has been made to improve performance and reduce stress in accordance with cognitive theory. Specifically, taking into account human limits on memory for task related information and moving of the focus of attention. The reduced need for scrolling should reduce the memory demands of users, combined with the large symbols and sectioning should aid users as they visually search for information. Correctly, the site presents between three and five sections of visual information. This should optimally utilize the limited working memory of users as well as allow for integration of information across sections. While the use of recognizable symbols for menu navigation is commendable, it may prove challenging for new users before they develop an adequate representation of what each symbol means. With this in mind some core menu items might benefit from verbal descriptors to aid in initial use of the site.

Factors & Applied Cognition Program at George Mason University, said of SEI:

The interface enhancements led to a significantly more engaged user experience. Further evaluation following the beta test and early 2017 product launch is recommended. SEI will continue to work with Drexel University to study the new website's usability, as well as test for modifications and enhancements in the months following the launch. Additionally, continuous client engagement and website analytics programs will aid SEI in frequently improving the end-client experience.

SEI New ways.
New answers.®

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