

A Data-Enabled Change in Target Markets

Fintech Sandbox Case Study on Elsen

Elsen was founded in 2013 by friends Zac Sheffer, Justin White, and Ryan Johnson, who met at Northeastern University.

The idea for Elsen came to Zac following a stint with a global investment bank, where he was surprised by the state of the systems used for aggregating, manipulating, and presenting financial data. Sensing an opportunity, he and Justin began work on a new approach to processing data utilizing GPU technology and massively parallel data optimization. The result was a high-performance computing engine optimized for complex time series calculations and capable of process financial computations used in managing equity portfolios and managing risk up to 500x faster than traditional technologies.

Having utilized algorithms for trading in their own accounts, their initial thought was to bring the benefits of their platform to retail customers. They saw an opportunity to make it incredibly easy for brokerage clients to create and thoroughly backtest sophisticated trading algorithms without needing to know how to code. They built and began testing a retail-oriented beta version of the platform featuring a GUI designed by third co-founder Ryan Johnson in the second quarter of 2014.

The Pivot

That summer, intrigued by what they were hearing about speed, several hedge fund managers approached Elsen looking for faster, better ways to test their own trading algorithms. They were using outdated technology and running backtests when in-house servers were available, which was frequently overnight. With Elsen, they saw that they could run complex algorithms in minutes, rather than hours or even days using the tools currently at their disposal. Elsen's secure, cloud-based capabilities also appealed to these hedge funds because it allowed them to instantly and cost-efficiently scale their resources based on need. These hedge funds

represented an exciting and compelling market opportunity. After extensive research, Elsen decided to switch focus from retail traders to hedge funds and other institutional asset managers in the Fall of 2014.

This change in target market presented Elsen with several challenges, as institutional clients have very different requirements for their vendors and a much longer buying cycle than retail investors.

The first and biggest challenge involved the need to access both fundamental and pricing data from global capital markets on a different scale than before for use in testing and in demonstrating Elsen's capabilities. Elsen would also need to show that they could work with multiple data providers and many different types of data simultaneously.

"We knew we'd get nowhere in this market if we couldn't demonstrate that our platform worked on the same robust datasets our prospective clients were using. But six figures for capital market data was more than we could afford."

- Zac Sheffer, CEO of Elsen

Elsen held conversations with several data providers over the course of the fall, and could see that identifying the right people at each firm, and negotiating separate agreements with each provider, would take months. But as luck would have it, as 2015 began, FinTech Sandbox was ready to bring on board its first startups, and Elsen was selected for this inaugural class.

"Elsen fit the profile of an eligible startup perfectly. They had a strong, well-thought out use case, knew exactly which datasets they needed, and had a team in place that could hit the ground running."

- Jean Donnelly, Executive Director of FinTech Sandbox

As a member of the Sandbox, the time required to access new datasets telescoped from months to weeks. Elsen began with datasets from Thomson Reuters and FactSet. They were able to ingest current and historical fundamental data for tens of thousands of companies in both established and emerging markets, macro- and microeconomic data, real-time trading data from global exchanges, and, later on, sentiment data from StockTwits.

“This was big for us. Without access to this type of data, we couldn’t complete our Accelerated Computational Engine™ to institutional standards, and we couldn’t provide a real demonstration to prospective clients.”

- Justin White, CTO of Elsen

Elsen also received AWS credits from Sandbox infrastructure partner Amazon Web Services.

“Something else we needed to offer to succeed in this market is brand-name, high quality infrastructure. As a provider of high performance computing applications that run complex financial simulations, AWS gives us scalability, reliability, security, and – importantly – credibility with asset managers.”

- Zac Sheffer, CEO of Elsen

As Elsen was joining FinTech Sandbox, they were also closing on a \$400,000 seed round. If not for FinTech Sandbox, more than half of the money raised could have gone to data providers. Instead, Elsen was able to use that capital to strengthen its technology team, bringing on a lead software engineer with extensive financial services experience.

Giving Back

FinTech Sandbox does not require equity from participating startups. Instead, it asks that they engage with the greater Sandbox community. Elsen has been deeply involved in the broader ecosystem: making introductions, presenting at FinTech Meetups, and contributing to Project Sandcastle.

Sandcastle is a GitHub repository for code and other resources, and Elsen has posted ingest scripts and detailed introductions to specific datasets that will save the next wave of Sandbox residents significant time. By sharing what they are learning in terms of best practices with Sandbox data partners, Elsen is making the onboarding process easier for their future clients.

“Working with some of these datasets is an order of magnitude more difficult than we had anticipated. So Project Sandcastle will be hugely helpful to the next startups in FinTech Sandbox.”

- Justin White, CTO of Elsen

About Elsen

Elsen offers a scalable and reliable cloud-based high performance computing (HPC) platform optimized for financial data and financial algorithms. Complex time-series calculations and simulations widely run in financial services for backtesting, pricing, and risk management are ideally suited to run in parallel. The ability to run more complex models with more complex calculations, scenarios, and sensitivities with greater speed and efficiency can mean understanding hidden risks or finding a sustainable trading advantage. For more information, visit www.elsen.co.



About Fintech Sanbox

The financial services industry relies to a great extent on FinTech startups to tackle difficult technological challenges, create new paradigms, and drive innovation. But FinTech entrepreneurs have a unique problem, which is the high cost of data they need to build applications.

FinTech Sandbox is a Boston-based nonprofit fostering innovation by providing free, streamlined access to critical data and resources to FinTech entrepreneurs and startups around the globe. Founding sponsors include Fidelity Investments, F-Prime Capital, Thomson Reuters, Silicon Valley Bank, Amazon Web Services, Intel, SIX Financial Information, Goodwin Procter, and .406 Ventures.

“ As FinTech entrepreneurs and investors we started FinTech Sandbox because we saw that access to data was a large barrier to innovation. By providing free data and infrastructure for FinTech entrepreneurs, we can fuel the development of important new technologies to the benefit of the entire industry. **”**

- David Jegen, co-founder and board member of FinTech Sandbox