Case Study

24/7 End-to-End Energy Trading Platform

Project turnaround delivering a first of its kind, cloud based, commodities trading platform maximising the value from the customer's existing technology investments.

Adaptive

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Business need

A leading European energy provider was engaging directly with their existing clients via voice-driven trading in the gas and power markets. They wanted to distribute their prices electronically to allow clients to view and trade on firm prices over the web - similar to how a single-dealer platforms popular with investment banks had been successfully operating for several years.

E-trading would give their clients access to 24/7 liquidity, significantly reduce their cost to accessing the markets, and lower operational costs and risks by enabling post-trade processes to be automated. Successful implementation would give the energy company a significant first mover advantage in the market.

Why the firm chose Adaptive

The firm engaged Adaptive because it was a technically challenging project, and the firm wanted to get it right first time to maximise their competitive advantage. In fact, they were the first energy provider in the country to attempt such a project. They needed a consultancy with a track record in building real-time trading platforms over the web using the latest technology.

After discovering Adaptive through a [Hansel-minutes podcast about real-time UIs](#), the firm invited Adaptive to tender and were impressed by the quality and business acumen demonstrated by Adaptive's user interface (UI) designs. The firm also recognised that while their business is different from that of investment banks (who comprise the bulk of Adaptive's client base), their own data needs of pushing real-time data securely over the web are essentially the same; the functional aspects are important, but of far more importance is the workflows. Ultimately, what counts is the data and how it's captured and processed. A third component was integrated into the workflow, which allowed a user to view their current position with the bank, then continue with the original call to action and initiate the proposed trade.

Adaptive's solution

Adaptive took care of all aspects of the delivery: project management, user experience (UX) and visual design, architecture and technical design, business analysis, UI and backend development, and testing and integration. Adaptive also built a test client to stress-test the platform, profile the server under load, and validate performance against the nonfunctional acceptance criteria.

Within only four months, Adaptive's small team of six people had built and deployed production-ready versions of the service layer, messaging layer, a web UI for trading and a separate UI for administration: for a fixed price, on time and within budget. All acceptance criteria (functional and nonfunctional) were met within the agreed timelines. Impressed by such a positive outcome, the client invited Adaptive to complete a larger phase of work comprising a team of nine for a year.

The functionality and design

The minimum viable product (MVP) stage of the project comprised click and trade functionality: the platform took market data from the firm's internal market (order book), applied margins (per client) and published to clients. When clients hit a price, the platform handled all the trade acceptance logic, including integration with the central credit check systems, and placed a fill-or-kill order. Adaptive also built a real-time intraday blotter.

The initial instrument scope was for intra-day energy hours and quarter hours, and gas ba-

lance-of-day. The system was built to be easily extensible, so adding instruments requires minimal code changes (mostly configuration) and the firm will soon be adding energy forwards, gas forwards, and more.

The main features of the build are as follows:

- **User interface**: web-based, single-page design, built using Google AngularJS.

- **Middleware**. The client chose RabbitMQ for the middleware, but Adaptive has expertise with all major middleware solutions.

- **API**. Adaptive built a client-trading API that enables the firm's clients to automate their trading on the platform.

- **Security**. Adaptive built the authentication, with secure password storage, password change and reset workflows, and integration with a third-party provider for two-factor authentication. Adaptive also conducted penetration ('pen') testing and helped the external firm with auditing the platform.

- **Administration**. Adaptive built a suite of REST endpoints that can be used to administrate the platform (user onboarding, daily limits reconfiguration, etc) and an admin UI via which the firm's administrators can add their own users and client users, and configure their permissions, margins, trading limits, etc.

Thank you

Adaptive

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The Real-time Trading Experts

Adaptive is a global financial technology consultancy with clients throughout Europe and America, supported by offices in London, Barcelona, Montreal and New York. Their clients include tier-1 investment banks, brokers, asset management firms, commodity trading houses and fintech providers. They provide expertise in designing, building and operating bespoke software solutions such as electronic trading systems, real-time workflow solutions and digital platforms on internal infrastructure as well as public cloud.