



Case Study

STOXX

Client Profile:

STOXX Ltd. is an innovative index provider whose indices are licensed to more than 500 global companies. It is a wholly owned subsidiary of the Deutsche Börse Group, based in Frankfurt, Germany. STOXX calculates more than 8,000 indices and also acts as the marketing agent for the indices of Deutsche Börse as well as the Swiss Infrastructure and Exchange (SIX) Group of Zurich, Switzerland. These indices include the Deutscher Aktienindex (DAX) and the Swiss Market Index (SMI). STOXX indices are licensed for use with exchange-traded funds (ETFs), mutual funds, futures, options, structured products, and more.

Tecnology Used:

Liferay 6.2 SP 5, JDK 1.7 as a part of best practices, Spring 3.0, Maven 3.2.1, Oracle 11g, Oracle Golden Gate, Apache SOLR, Amazon Web Services (AWS, Selenium, JMeter and Blazemeter

Business Situation:

STOXX was earlier part of the Swiss Infrastructure and Exchange (SIX) group, which offers comprehensive global financial services in the areas of securities trading, clearing and settlement, as well as providing financial information and facilitating payment transactions. In 2015, the ownership of STOXX changed hands when it was acquired by the Deutsche Börse Group, necessitating the movement of STOXX's application and infrastructure from SIX to Deutsche Börse.

After considering Compassites' expertise and experience with web portals and portal migration, STOXX decided to make Compassites their technical partner.

Solution Approach:

On carefully studying STOXX's underlying development, maintenance, infrastructure and upcoming business needs, Compassites decided to set up a dedicated Offshore Development Center (ODC) providing end-to-end software development, maintenance, testing, release management and production support.

Compassites' ODC has a dedicated team made up of Business Analysts, Solution Architects, Technology Architects, Developers, UI/UX specialists, Test Architects, and Testers.

The solution strategy for STOXX involves a multi-pronged approach that includes:

Improving search functionality:

- ❑ Compassites improved the SOLR implementation, resulting in significant improvement in indexing, higher search granularity and faster searches
- ❑ Enabling data replication on different nodes with improvisation in SOLR

Portal Architectural changes:

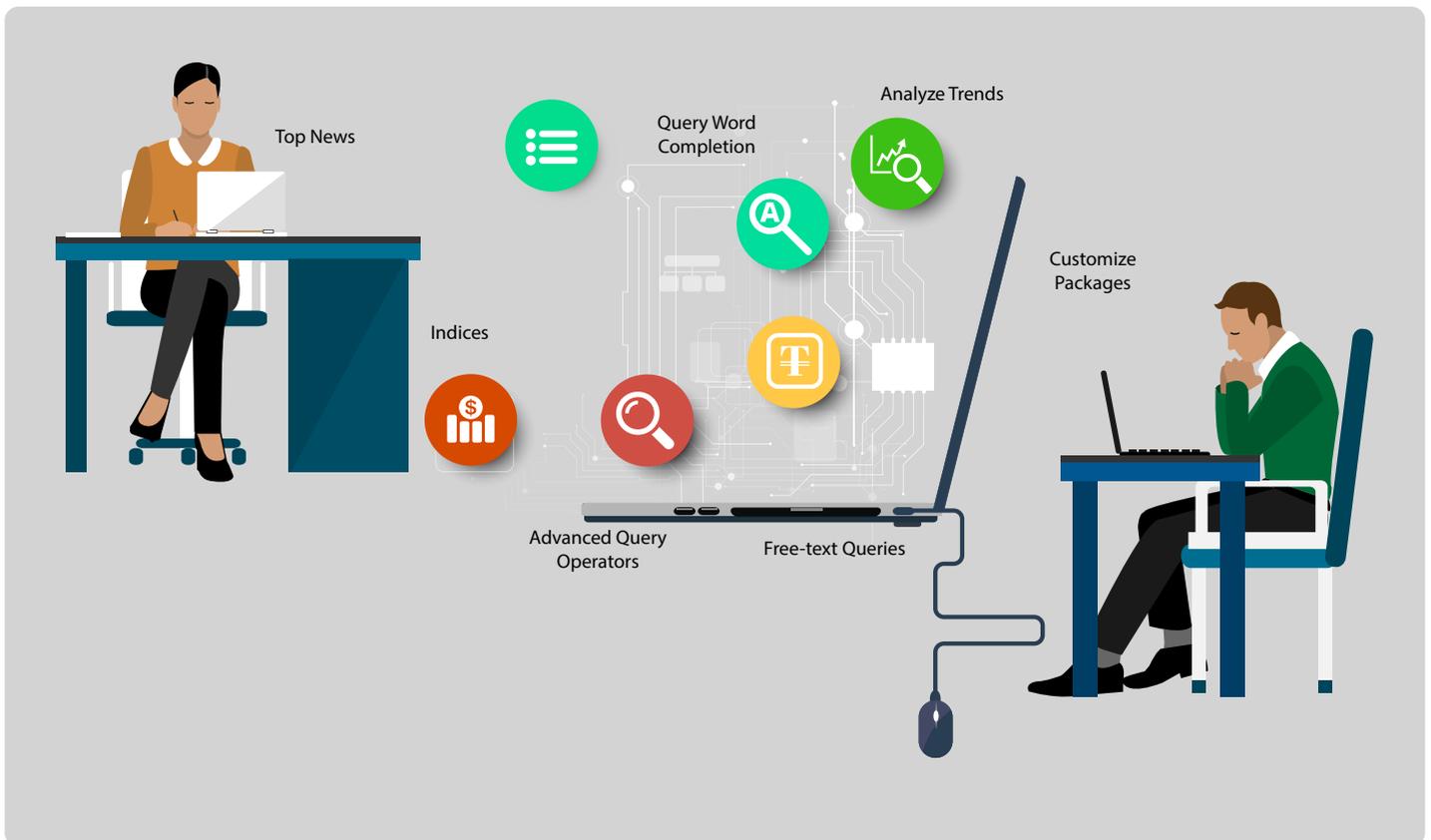
- ❑ Slow loading and Ecache issues are resolved by adopting Liferay best practices
- ❑ Structural improvements to the Document and Media Library
- ❑ Implementation of Cloudinary for image manipulation, including cropping, repositioning and re-sizing

UI Improvements :

- ❑ Enhancements to the UI and UX, with a focus on the usability and user experience, resulting in an improved user experience of the site
- ❑ Menu re-structuring for more intuitive approach to site navigation
- ❑ Re-designing the UI for better readability and data improvisation. This includes:
 - ❑ Restructuring the index home page to achieve a customer-centric experience through colour differentiation in important elements
 - ❑ UI changes in mega menu to enhance user experience

Migration to Amazon:

- ❑ The migration of STOXX’s virtual assets from SIX’s architecture to Amazon Web Services (AWS) on Cloud
- ❑ Using AWS’ elastic load balancing, which allows the distribution of incoming application traffic across multiple Amazon EC2 instances in the cloud. This improves the level of fault tolerance in applications and provides the required load balancing capacity needed to distribute application traffic
- ❑ A disaster recovery plan, wherein STOXX’s data will be housed in AWS servers in two regions, so that in case of failure of one system, the other will handle the additional load seamlessly and transactions can continue without interruption





Testing:

- ❑ We have automated the testing process by creating a test automation suite. Testing applications is handled through this suite, which not only reduces manual effort but also increases efficiency by running numerous regression suites.
- ❑ Currently keyword-driven automation is in place, which not only supports the current scenario, but can be scaled further. Thus, any new index family or package can be added or substituted for an existing one with minimal effort.

Framework used:

We have used Liferay 6.2 and Spring Framework for developing the custom portlets/applications, and for building, we have used the Maven tool.

Benefits & Results:

Just 3 months after establishing the offshore development center (ODC), STOXX started reaping benefits:

- ❑ Systematic feature updates and major enhancements to the portal
- ❑ A more robust site, thanks to increased regression and automated testing
- ❑ Ensuring that all production issues are resolved quickly
- ❑ The migration to AWS helped bring down infrastructure costs significantly
- ❑ Seamless migration of the infrastructure from SIX (on premises) to AWS (cloud) with zero downtime
- ❑ The site has become more scalable and its performance has improved significantly

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