Bell Integration
Ambitious Transformation

CASE STUDY

Data Centre Move Unlocks New Efficiencies for a Global Financial Institution

A new state-of-the-art, highly resilient and efficient data centre delivers next-generation high-frequency trading capabilities to customers

Bell Integration delivers a major multi-phased data centre migration, with zero disruption to critical go-live services.

Background

Connecting to a Greener, More Efficient, Future

One of the world's leading providers of financial markets infrastructure, this stock exchange wanted to shift its primary stock exchange to a new energy efficient and highly resilient data centre.

As part of the move, the stock exchange wanted to streamline its infrastructure environment. Rationalising and consolidating redundant applications and services and replacing its legacy network with newer, more performant hardware.

To further reduce its environmental impact, the stock exchange also planned to deploy a new private cloud solution at its new data centre and transition around 30% of its internal applications and services to the cloud. A move that would enable it to decrease its hardware footprint, and benefit from an additional reduction in its consumption of power, cooling and maintenance resources.

In addition to generating significant operational cost and environmental savings, the modernisation project would enable the stock exchange to elevate the performance of the transactional and information services it provides to thousands of stockbrokers and traders.

> "To further reduce its environmental impact, the stock exchange also planned to deploy a new private cloud solution at its new data centre and transition around 30% of its internal applications and services to the cloud."

The requirement

Executing a flawless transformation

Undertaking a migration project of this scale and scope would require careful planning and peerless execution.

Alongside transforming and transitioning over 200 applications, either to the cloud or to the new datacentre, 8,000 workloads and thousands of legacy servers needed to be decommissioned prior to exiting the legacy data centre. All of which had to be achieved with zero disruption to service users or the stock exchange's hosted customers.

In addition to this, a number of physical servers also needed to be 'lifted and shifted' to the new data centre or other DC locations. An activity that would involve undertaking some highly complex global network changes as well as firewall, storage and backup migrations.

But that wasn't all. Having sold the building housing its legacy DC to a developer and agreed a hard exit date for vacating the facility, the stock exchange faced paying a punitive £1.25 million penalty for every month it continued to occupy the facility beyond this date.

With the clock ticking, the stock exchange needed to execute a faultless and robust migration of its services with zero delays and no disruption to markets or clients. And all under the watchful eyes of the financial regulator, who would be scrutinising the entire programme closely.

To help it undertake this complex migration programme, the stock exchange selected Bell Integration as its migration partner.

Responsible for providing expert planning, guidance, oversight, governance and reporting over all workstreams relating to the move, Bell Integration would manage and direct the phased transition of all workloads, business services and physical hardware, as well as undertaking the final decommissioning and removal of any remaining physical infrastructure in readiness for the final building handover.

Working with multiple business divisions, Bell Integration needed to architect every aspect of this multifaceted migration project. Everything from determining timeframes for re-platforming workloads to driving all data centre consolidation activities and keeping hundreds of people informed, every step of the way, as each intricate migration phase progressed.

To ensure that no business units, services, people or processes were negatively impacted by any of the planned changes, Bell Integration's first task was to ensure the entire environment was appropriately evaluated in readiness for preparing a detailed phased migration strategy.

The solution

An end-to-end migration journey

First Bell undertook a fully physical and logical audit of all existing infrastructure, including all dependencies and interconnects, providing a detailed catalogue of the existing DC footprint and built a live reporting tool to manage all server and application data. This ensured all stakeholders in business groups across the stock exchange could utilise the reporting dashboard to instantly access up-to-the-minute information on the schedule and status of each migration, server and workload transition event.

In addition to the physical audit of the data centre, Bell's team of experts also analysed output from virtualisation systems, platform teams and monitoring to ensure every workload was captured. That included over 3,500 virtual desktops hosted on Citrix and VMware.

Next, utilising its vClarus migration planning tool, Bell architected a logically phased schedule for all planned consolidation and migration activities. Managing around 1,200 individual target migration dates and the reconciliation of exit changes throughout the course of the project.

As applications were migrated, servers were then managed through a detailed decommissioning process which involved close liaison with individual application teams at the stock exchange to ensure each team could manage the design, build, test and cutover of their applications.

Bell's powerful reporting tool became critical to the overall success of the project. So much so that the stock exchange quickly came to depend on this 'single version of the truth' as providing the most complete and reliable view of its environment. Clocking up to 9,000 views, Bell's reporting dashboard went beyond simply keeping everyone informed of next steps and progress.

Having deployed a new private cloud solution, based on standardised builds to reduce maintenance and management overheads for on premises services, Bell's reporting tool provided the stock exchange's Private Cloud team with granular insights on the final load the new platform would need to support. This included detailed updates on CPU, RAM and storage needs based on the footprint of newly virtualised and legacy virtualised applications and workloads.

With regard to the physical transition of hardware, Bell Integration executed more than 20 weekend migration events, undertaking the physical lift and shift or virtualisation of servers and related supporting storage. As part of this process, Bell reconfigured networks, initiating improved IP addressing to handle all associated network address translation needs.

In early 2023, the stock exchange completed the final switchover following extensive validation tests with customers to ensure they could connect to all markets and services. The flawless go-live of the new data centre was achieved, and trading proceeded as normal from Day One.

The outcomes

Counting the performance and market gains

Completed over a three year period, the transformation programme has already delivered some measurable gains.

In terms of sustainability, the elimination of over 5,000 servers and digitalisation of 30% of applications has reduced power consumption by more than 900 kW hours. Representing a run rate saving of £3.5 million for the stock exchange.

Simplifying the application landscape and initiating a new, greener and highly performant infrastructure and generated significant gains for customers. By bringing together and modularising its trading engine and market data platforms, the stock exchange has elevated the resilience and failover capacity of its services while reducing time to market for new changes.

Delivering significant improvements in latency, throughput and capacity, customers are now experiencing a 45% reduction in latency times. All of which means that customers receive confirmation of their orders more quickly and predictably than ever before, and feedback on the new platform has been overwhelmingly positive.

“In the race to zero latency, customers have come to expect nano-second improvements. We’ve been able to offer them so much more,” confirms the stock exchange’s CIO.

The new data centre is now both more innovative and robust in its architecture and tooling and is also highly energy efficient – powered entirely by green energy.

Why Bell Integration?

Working in a methodical and highly collaborative manner, Bell lead a three-year high profile DC consolidation and migration programme that involved liaising with eight separate business divisions, migrating tens of thousands of workloads, and creating strategies to handle a multitude of transformation events.

Experienced at handling large scale DC migrations, Bell was selected as the ideal partner to handle this complex project.

Utilising its unique vClarus methodology and tooling, Bell Integration was able to build a central dataset spanning the full service mapping – from Business Service down to tin on the ground. This dataset became central to decision-making and planning for the entirety of the three year project.

So much so, that the stock exchange asked Bell to build on and extend its reporting tool to deliver a variety of different views. By combining Bell's scheduling, strategy and scheduling reporting with other data sources, the stock exchange was able to understand the impacts and benefits other projects needed to achieve.

Commenting on the successful completion of the project, the stock exchange's CIO said:

"It was remarkable, given the complexity of the project and the many pieces that needed to fall into place to make it all possible. This project has been a true testament to the power of teams collaborating to get the job done."

About Bell Integration

Bell Integration is a global technology leader that partners with customers to create lasting, ambitious digital transformation.

We are our customer's accelerator – orchestrating the right partners, systems, and ideas to create measurable impact.

Bell Integration brings over 30 years of trust, expertise, and innovation to the table, evolving from an independent UK-based business to a global powerhouse.

With talented teams operating across continents, we support the full IT life cycle from strategic consulting to project design and delivery.

See how Bell Integration can help your business succeed. Please contact us on marketing@bell-integration.com or visit www.bell-integration.com.