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Agilent Boosts E-Commerce Revenue with Easy-to-Use Web Site Leveraging Oracle Technology Stack

Agilent Technologies

About Agilent Technologies

Agilent is a market leader in life sciences, diagnostics and applied chemicals with over 11,000 employees serving customers in over 100 countries and earning revenues of US$4.8 billion.

Benefits Highlights

- Avoided significant software maintenance license costs, consolidated servers, and improved IT resource utilization

- Ensured revenue growth and cost optimizations for future e-commerce projects

- Accelerated implementation, saving hundreds of thousands dollars

- Achieved 99.9% uptime at genomics site, up from 90%

- Implemented single sign-on access and real-time integration across all the systems

- Achieved 100% virtualization

- Increased requests for quotes from customers by 50%

- Reduced publication time to one hour, boosting productivity by about 88%

- Improved search and drill-down functionality 2X

EXECUTIVE SUMMARY

Agilent traces its roots back to 1939 when Bill Hewlett and David Packard started their computing and measurement business that later became HP. In 1999, all product lines that weren't directly related to computers and printers were spun off and became Agilent in a $2.1 billion IPO, the largest in Silicon Valley at that time. Over the last 15 years, through a series of strategic moves, Agilent narrowed its focused on and grew its life sciences, diagnostics and applied chemical markets business. Currently, Agilent employs more than 11,000 people, serves customers in over 100 countries, and has revenues of US$4.8 billion.

Although most of Agilent's products are sold through direct sales, the company's genomic e-commerce website had the potential to become a major source of revenue. However, the original website, built with .NET platform, was fraught with problems. With recurring system failures, the site had less than 90% uptime and lacked flexibility because of the heavily customized .NET and SharePoint code. Usability issues were numerous and included content gaps, a cumbersome user interface, ineffective search capabilities, and an error-prone shopping cart. All of this contributed to a poor customer experience, low user adoption, and lagging site-retention rates. As a result, most customers ended up placing orders by phone.

To revitalize its e-commerce presence, Agilent decided to revamp the site's infrastructure using a full stack of Oracle technologies, including Exalogic X2-2, ATG Web Commerce, Endeca, identity management, and traffic directory in a virtualized environment. The solution focused on:

- **Scalability** — to accommodate user growth as well as multiple online stores

- **Flexible, integrated systems** — with real-time integration of all functional systems across the site

- **Enhanced architecture and navigation** — for a more intuitive user experience

- **Type-ahead search and listings for complex products** — to provide more self-service capabilities

ORACLE PRODUCTS

- Oracle Exalogic Elastic Cloud
- Oracle Identity Management
- Oracle ATG Web Commerce
- Oracle Traffic Directory
- Oracle Endeca Commerce

The new site went live in 6 months and Agilent immediately began seeing performance improvements, including an increase in e-commerce revenue, as well as productivity improvements for both IT and business users. In addition, by consolidating systems and taking advantage of lower software maintenance fees, the company realized significant cost savings.

A FULL ORACLE STACK BASED ON EXALOGIC X2-2

Oracle Exalogic is an out-of-the-box engineered platform for mission-critical enterprise e-commerce and other business applications. When utilized as the basis of a full Oracle stack, Exalogic provides customers with superior scalability, reliability, and availability — the exact benefits that Agilent was seeking.

Agilent chose to implement Oracle Exalogic X2-2 in a conventional deployment with the goal of consolidating multiple environments on a single machine. Using only two compute nodes, Agilent deployed all of the genomic website's environments, including testing and production, in virtualized segments on the same physical rack. The different applications were isolated with partitioning, while separate virtual machines were provisioned for Oracle ATG Web Commerce, Oracle Endeca, Oracle Traffic Director (OTD), and Oracle HTTP Server. The solution used distinct VLANs for web, application, and database tiers, and the OTD, ATG, and Endeca MDEX components were deployed across the Exalogic hardware nodes for better fault tolerance. After migrating to the Exalogic platform, Agilent's genomics site achieved 99.9% uptime, up from 90% before.

The old .NET-based website had experienced numerous system failures throughout the year, as well as poor user adoption and retention due to all kinds of issues, including content gaps, an unintuitive UI, ineffective search engine, and a dysfunctional e-commerce shopping cart. All of this made for a poor customer experience that yielded low new customer adoption and poor retention. Moreover, the existing .Net platform simply couldn't match the capabilities of ATG and Endeca solution on Exalogic. Since Exalogic offers the flexibility to accommodate complex custom code and application integrations, Agilent was able to quickly and easily integrate third-party systems such as Microsoft's Active Directory and SAP's order fulfillment, order status, item price, and availability. This enabled Agilent to offer an innovative chromosome-browser tool and very specific search capabilities by probe, gene, and chromosome location.

> **"We were running on legacy technology that we could not scale. Our older systems and platform lacked a lot of features. The innovative capabilities of Exalogic made the decision to move to the Exalogic platform easy from an IT perspective."**
>
> KEVIN PHAN, IT WEB MANAGER

With single sign-on access and real-time integration across all the systems, the genomics site went from cumbersome and ineffective to seamless and user-friendly. Features like one-click quick buying and order verification, as well as enhanced XML and traditional shopping cart functionality, now take just seconds to complete, improving the buying experience.

Currently, the genomics e-commerce site utilizes two compute nodes. Since Exalogic nodes are self-contained servers, Agilent can easily add more to accommodate additional online stores without taking down the site—allowing the company to scale its e-commerce capabilities across its enterprise.

Oracle Traffic Director—Performance, Manageability, Security

Agilent uses the Exalogic platform's built-in application delivery controller, called Oracle Traffic Director (OTD), to speed application deployment. Agilent uses OTD on both the web and application tiers. In the application tier, it balances loads to external systems, like SharePoint and Commerce Server. At the same time, it terminates SSL in the web tier to ensure security. While configured to manage the site's complex traffic patterns over both public and private networks, it routes traffic from the ATG cluster to the Endeca MDEX cluster over the private network. OTD manages incoming web traffic from an external load balancer, and manages server communications between applications.

A Personalized Customer Experience with ATG

Agilent decided to replace its legacy online store with Oracle's ATG Web Commerce solution. Leveraging the web solution, Agilent utilized custom dashboards to group its complex genomic products by use and detail and dynamically present related product information based on customer search criteria or click patterns. Previously, customers would see awkwardly organized web pages or non-relevant data, but with ATG, content is formatted in an intuitive, user-friendly manner. As customers browse the site, they can easily find products, details, and related items in three clicks or less. Agilent has found that it takes customers half the clicks to place an order. With double the functionality of its previous site, Agilent has greatly enhanced the customer experience.

To support Agilent's global reach, ATG's multi-country and multi-language capabilities allowed the company to deploy localized content and promotions. With a "commerce anywhere" strategy, ATG's cross-channel, flexible backend ensures that the genomic website will be compatible with any mobile device, including tablets.

> **"The ease of implementing the solution was a major decision factor for us—even more important than cost savings. Exalogic is a solid solution."**
>
> KEVIN PHAN, IT WEB MANAGER

Dynamic Search Capabilities with Endeca

Working in conjunction with ATG, Oracle Endeca Commerce enabled Agilent to present a consistent user experience across its genomics website. Users can explore the site by area of expertise, product hierarchy, or use the smart search capability to see everything pertinent to a product on a single page. The Endeca Search functionality ensures that appropriate products and information are presented to the customer regardless of data source—whether from a catalog, literature, or PDFs. The Endeca MDEX Engine functions as a metadata layer that stores data in records that "load and go" with little up-front data modeling. Endeca's scalable web delivery capabilities will allow to Agilent to expand the site as new devices and social media platforms go mainstream.

Deployed in Record Time

Delivered on time and under-budget in just six months, the genomics e-commerce site was Agilent's first web development project in recent history to achieve this goal. Oracle Virtual Assembly Builder, with its preconfigured application assemblies optimized for Exalogic, helped Agilent's 25- to 30-person development team implement the solution six times faster than with traditional methods. "Application deployment on Exalogic is predictable, repeatable, and reliable," said Kevin Phan, IT Web Manager.

OPERATIONAL AND FINANCIAL BENEFITS

Agilent is already seeing benefits from its Oracle platform. Operationally, Exalogic has given Agilent the reliability, flexibility, and scalability it needed to turn its genomics e-commerce site into a stable, productive revenue stream. Agilent now has an innovative platform on which to build a competitive web presence; and as the technology landscape evolves with new devices and social media, the full Oracle stack solution with Exalogic, ATG, and Endeca will allow Agilent to keep pace, resulting in:

- Significant avoidance of software maintenance license costs, greater server consolidation, and improved IT resource utilization

- E-commerce revenue growth and cost optimizations for future e-commerce projects

Operationally, Agilent saw the following improvements:

- 99.9% system uptime

- 100% virtualization

- 50% increase in requests for quotes from customers

- One-hour content publication time frame

- 2X improvement in search and drill-down functionality

"We are definitely seeing more e-commerce customers. Our existing customers are also ordering many more products. Although we haven't launched any new products, we think the difference is that customers can find products much more easily."

CAROLINE TSOU,
DIRECTOR GLOBAL
MARKETING PROGRAMS,
GENOMICS SOLUTION
DIVISION

Dependable 99.9% Uptime

Oracle Exalogic consistently outperforms competitor systems, including Agilent's legacy .NET platform or comparable HP Blade hardware servers. As shown in Figure 1, Exalogic helped boost uptime at Agilent's genomics website from 90% to 99.9%.

Figure 1. Improved System Uptime
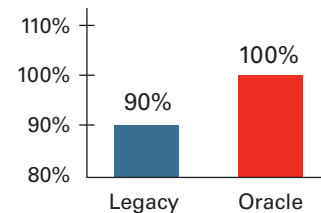
Software Maintenance Cost Avoidance

Since Exalogic requires fewer CPUs to achieve high service levels, Agilent was able to purchase fewer software licenses per processor. Agilent could avoid significant software maintenance costs and reduce its overall maintenance costs by a factor of five.

Increase in E-commerce Revenue

Frustration with the previous site led users to abandon online shopping carts and place orders by phone. Performance tests of the genomics website on the Exalogic platform are showing extremely fast response times compared to the legacy environment—with pages served in 0.15 seconds or less. Combined with streamlined content presentation from ATG and the improved search capabilities from Endeca, customers can now locate an item in just three clicks. This allows users to find products in roughly half the clicks than the previous site.

With these performance and content improvements, Agilent sales personnel now eagerly show the site to customers and prospects around the world. There are signs that sales will continue to trend upward: requests for quotes (RFQs) have increased over last year, and as shown in Figure 2, e-commerce revenue from the genomics site has risen steadily since the Oracle deployment—the first consistent double-digit online growth at Agilent in several years.

Figure 2. Year-over-Year E-commerce Growth
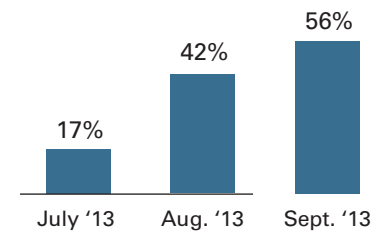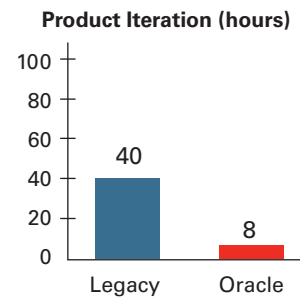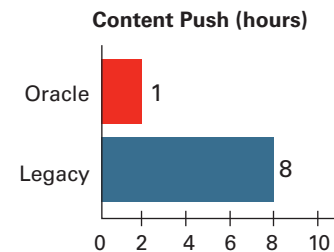
Infrastructure Consolidation

On the basis of its cost-effective pricing, simple implementation, and scalability, Exalogic has now become the hub for Agilent's e-commerce operations. As Agilent shifted from its legacy .NET platform, it consolidated nine back-end servers and moved to a 100% virtualized environment. The new genomics online infrastructure sets the stage for Agilent to expand e-commerce capabilities to other lines of business. To that end, Agilent could potentially consolidate up to 50 systems on the Exalogic platform.

Using Exalogic's built-in Oracle Enterprise Manager, Agilent's IT staff now has an application-to-disk view of the entire system. When issues arise, IT can troubleshoot two times faster than with other platforms. And since the Exalogic solution is consistently functioning with a 99.9% uptime, Agilent expects a decrease in support interactions and costs. Simplified maintenance means that Agilent should be able to consolidate IT resources within the next two years.

More Productive Business Users

Business users say they can access the Exalogic-driven website information more easily, enabling more informed, strategic business decisions. In addition, business users no longer have to rely on IT to make every update to the site, so campaign and product management is much easier. As Figure 3 shows, the Exalogic platform allows users to publish content much more quickly—in one hour compared to eight. As a result, Agilent should be able to boost productivity by about 88%. Site updates or changes that used to take a week via IT, now take just one day, as shown in Figure 3. Agilent is expecting to launch about 40 products in 2014 with corresponding updates, edits, and iterations for each campaign. This web development work effort has shifted from IT to the marketing team—freeing up technical resources to focus on much more strategic technology projects.

Figure 3. Faster Content Publishing and Site Updates

Content Push (hours)

Oracle	1
Legacy	8

Product Iteration (hours)

Legacy	Oracle
40	8

Accelerated Deployment for Future Online Stores

Deployed in just six months, the genomic website features state-of-the-art architecture, navigation, search capabilities, content publishing functionality, and localized support for multiple languages and countries. As shown in Figure 4, a comparable web development project usually takes 12–18 months to finish. The speed of the implementation allowed Agilent to save hundreds of thousands dollars compared to a typical deployment. Since the new centralized Exalogic, ATG, and Endeca solution is in place, Agilent can take advantage of economies of scale and add new e-commerce tenants to the infrastructure as necessary. This will speed the rollout of new online stores and reduce Agilent's overall deployment costs.

Figure 4. Faster Web Deployments
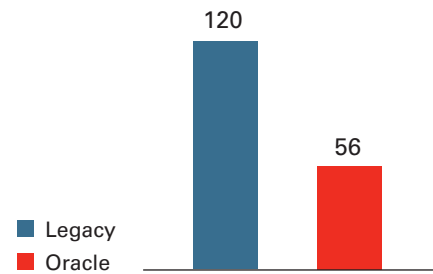
BENEFITS SUMMARY

Agilent should see a reduction in software maintenance, providing a significant cost savings. Because of Exalogic's technical performance and Oracle's favorable licensing policies, Agilent doesn't need as many CPUs — and each license is more cost-effective. Since Agilent was able to significantly consolidate back-end systems, it will avoid an additional infrastructure costs.

The new genomics website has provided the kind of flexible, scalable, and reliable platform that Agilent needed to improve its e-commerce capabilities. Add in the enhanced navigation, content presentation, and search functionality, and Agilent has set the stage to quickly and cost-effectively roll out additional online stores — and continue its double-digit online revenue growth trend.