

# Telecommunications Company Cuts Testing Costs and Improves Customer and Partner Satisfaction with CA Service Virtualization

## Introduction

Periodically, ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts conduct Return on Investment (ROI) case studies on enterprise management products demonstrating above-average customer value.

This EMA ROI case study profiles TELUS (NYSE Ticker: TU) Corporation's use of CA Technologies' industry-leading CA Service Virtualization solution.

*"TELUS Corporation provides a range of telecommunications products and services in Canada. ... [These] include wireless and wireline voice and data; data services, such as Internet protocol; television; hosting, managed information technology, and cloud-based services; and healthcare and business process outsourcing solutions.... As of May 8, 2015, TELUS Corporation had approximately 13.9 million customer connections, including 8.3 million wireless subscribers, 3.1 million wireline network access lines, 1.5 million high-speed Internet subscribers, and 937,000 TELUS TV customers. ... TELUS Corporation was founded in 1993 and is based in Vancouver, Canada."<sup>1</sup>*

## Interviewee Information

Hugo Sampaio: Director, Information Systems

Hugo Sampaio and his teams are responsible for testing and releasing to production applications used by internal and external TELUS customers. Examples include applications supporting TELUS call-center agents, field technicians, customer portals, service assurance teams, billing, etc.

## CA Service Virtualization

Traditionally, testing of integrated, component-based applications has been constrained by lack of access to the systems where components are hosted. Modern distributed applications link to multiple internal and external platforms that are hosted in the data center by partners, by customers, and by a wide variety of industry-specific service providers. Each platform requires specific data exchange formats and protocols, some of which are proprietary, not publicly documented, or unavailable for security reasons. In addition, some platforms can be accessed only on a "for pay" basis, making live testing extremely expensive. In short, the majority of such integrations go untested or under-tested because the platforms cannot be accessed for non-production purposes.

CA Service Virtualization is one of only a few products on the market that record the responses of such platforms and then play them back to simulate real-world production environments for software testing. This process enables developers and Quality Assurance (QA) testers to conduct "flight simulations" against real system models as opposed to traditional scaled-down stub programs. The ability to thoroughly test integrated components throughout the lifecycle is extremely valuable in ensuring that software will perform well once it goes into production.

### HIGHLIGHTS

**Vendor name:** CA Technologies

**Product name:** CA Service Virtualization

**Product function:** Modeling and simulation of software system dependencies

**Availability:** Currently available

**Target market:** Application Development, Deployment, and QA teams

<sup>1</sup> Company information from [finance.yahoo.com/q/pr?s=TU+Profile](http://finance.yahoo.com/q/pr?s=TU+Profile), accessed June 10, 2015.

According to CA Technologies, “CA Service Virtualization simulates constrained or unavailable systems across the software development lifecycle (SDLC), allowing developers, testers and performance teams to work in parallel for faster delivery and higher application quality and reliability.”<sup>2</sup>

## Problem Scenario

Hugo Sampaio describes TELUS as industry-leading in customer loyalty. Approximately five years ago, TELUS adopted a “Customers First” program and set out to lead the industry in “likelihood to recommend.”

Two primary drivers led the company to seek out a service virtualization solution. The first was a need to improve availability of software testing environments. A high percentage of the TELUS solutions consist of integrated applications that must be tested together in an end-to-end fashion. In all of these cases, multiple applications must be up and available with full data synchronization for tests to run successfully. The challenge was that if one of these applications was unavailable or if data was not aligned between applications, the tests would fail. To complicate matters, maintaining these applications for testing purposes required significant overhead and cost.

The second driver was the need to improve overall testing, basically “replacing something that wasn’t working well.” In addition to having to deal with a tightly integrated environment, TELUS also had legacy applications that were still in production but were no longer actively being modified. The cost to support and maintain testing environments for these applications was also very high.

## Acquisition and Deployment

The company’s key requirement for investing in a service virtualization solution was to remove the roadblocks and challenges associated with performance testing. A member of the TELUS team came across an article on CA Service Virtualization (CA SV), and Accenture, their Systems Integrator and testing partner, recommended the product based on its success at another large company.

In terms of time to value, Hugo states that “installation is straightforward.” With some help from CA Professional Services, the solution was up and running within a few days and setup was “painless.” Hugo also states, “Creating a service is easy, particularly for web services.” For example, as part of an initial Proof of Concept (POC), the TELUS team was able to set up a Java-based web service test in just a few hours.

The process of building services for more complicated services such as mainframe and MQ was also “relatively straightforward, but [it] took longer,” according to Hugo. He was quick to add, however, that the time added was in “days, not weeks.”

From Hugo’s perspective, the hardest task was prioritizing which services to create. TELUS solution architects examined their entire system to determine which services had the strongest business case for virtualization.

The initial training and enablement process also required time, which meant that it was several months until teams actually bought into the process. However, when they did, the organization began to see the value proposition delivered by CA Service Virtualization in terms of time savings and software quality improvements.

<sup>2</sup> Description from CA Technologies at <http://www.ca.com/us/devcenter/ca-service-virtualization.aspx>

## Outcomes and Value Proposition

Hugo reports multiple sources of Return on Investment (ROI) from the use of CA Service Virtualization.

### *Virtualization of Wireline Data Activation Systems to support/test service provisioning*

Similar to most Telcos, TELUS tests and releases software applications to production environments that support customer-facing activities (e.g., Billing, Order Management, Customer Relationship Management, Call Centre Apps) separately from those supporting Operational Support Systems (OSS).

However, in order to test the changes to Business Support Systems (BSS), TELUS required connectivity to, and alignment of data between, BSS and OSS. Furthermore, ownership of the OSS testing environments did not reside with the teams supporting the BSS stack. This ongoing need for connectivity and data alignment between stacks created several testing challenges. One was due to lack of access for testing purposes to environments in the OSS stack, and another was the need for dedicated infrastructure supporting the OSS stack, to cite a few examples.

To solve these problems, the TELUS team was able to virtualize the applications that handle the wireline data activations. This removed the dependency that existed on the OSS stack during testing of Wireline High-Speed services.

By creating virtual services, the team enabled the decommissioning of three testing environments—freeing up infrastructure, storage, and labor. Service virtualization saved them time and money, while also ensuring an optimal customer experience.

#### *Returns on Investment: Wireline Data Activation System virtualization*

- **Cost savings of \$300,000 per year** – Cost savings resulted from freeing up infrastructure and storage, reducing labor hours necessary for maintaining infrastructure, and eliminating the need for development teams to spend time deploying and maintaining stubs and triaging defects.
- **Higher quality testing and improved uptime** – Virtual services are always available for use, ensuring that testers have access to testing tools whenever they are needed.

### *Virtualization of 300 services used by developers and QA to test eight major software releases per year*

TELUS personnel have virtualized approximately 300 services over the past two years, replacing testing environments previously used for product and performance testing of eight major software releases per year.

These services are utilized for both testing and training. The majority of the virtual services (approximately 75%) are used by the testing teams. The remaining 25% are used by development teams. A few services are also used by teams supporting training of TELUS internal team members. The annual savings are estimated at approximately **\$800,000 to \$1 million** annually in testing of the releases and training, based on personnel time savings and decommissioning of testing environments.

#### *Returns on Investment: Replacement of testing environments*

- **Cost savings of \$800,000-\$1 million per year** – Cost savings resulting from elimination of hardware/software systems previously used for testing purposes, increase in environment uptime, improved quality

**Annual combined savings from wireline and test environment virtualization: Approximately \$1.1 million - \$1.4 million per year. This amounts to between 5 and 7 percent of overall QA budget.**

### *Additional savings not yet quantified*

- **Replacement of live systems with virtualized systems for customer service agent training environments** – Currently, a small percentage of the virtualized services developed by TELUS support training environments for customer service agents. TELUS has discovered that they don't need a complete set of back-end systems for training purposes, since agents only interact with front-end systems in their day-to-day work. The virtualized back-end replicates the experience of "live" agents interacting with production systems, leading to further cost savings from decommissioning agent testing systems.

To support additional agent testing, TELUS has just signed an agreement with CA for additional CA SV licenses for use in training approximately 200 wireless and wireline consumer agents per day.

- **Replacement of load testing tools with load testing against virtualized services** – TELUS QA teams have also been able to swap out load testing tools by using CA SV to virtualize load testing. Per Hugo, "Once a service is virtualized, we can throttle that service to, for example, emulate 1000 transactions per minute. Not only can we test a single application, we can also see how dependent systems behave at a touch of a button. This is an additional value-add that we did not anticipate and which we have not yet quantified."
- **Parallel development with partners to support time-sensitive sales initiatives** – Another unanticipated benefit was the ability to support partners in releasing new products (such as selling and activating mobile phones at a retail store) faster. In preparation for the release of a new phone, for example, retail vendors and partners can develop client applications that "talk" to TELUS systems to coordinate hardware orders with service provisioning. Previously, neither TELUS nor its retail partners could fully test the connections until both had developed their sides of the transaction. To complicate matters, retail sales could be delayed if TELUS could not develop fast enough. To solve this challenge, TELUS can create a virtualized service that mimics the capabilities partners need for testing. Both sides can develop their software in parallel, resulting in significant time savings in bringing new products into stores. This has improved relationships with retail partners and increased overall stakeholder satisfaction by enabling faster time-to-market.
- **Service-Oriented Architecture (SOA) testing** – Like most telecommunications firms, TELUS supports a wide range of SOA integrations with partners and customers. TELUS found that CA SV is particularly well adapted to SOA testing, and this is an additional use case for service virtualization.

### **Quotes**

*"When considering a service virtualization acquisition, consider the commitment of the vendor partner to work with you. Working out business cases and building complex service virtualizations take time; fully realizing the value proposition of a tool often requires vendor assistance during the initial stages. We believe that one reason why we have been able to fully utilize the capabilities of CA Service Virtualization is because of the way CA has stood behind the product."*

*"Pick a good partner, centralize with solution architects and virtualization engineers to support the product; then, once virtualization has been established as a practice, propagate and federate across the organization."*

### **About EMA**

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