



# Are Dev and Test Constraints Holding Back Your Digital Transformation?

# The Pressures of Digital Transformation in the Application Economy

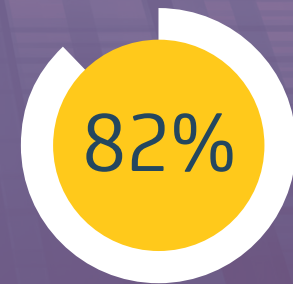
In the application economy, all businesses are scrambling to add digital components to their products and services with the hopes of capturing—and maintaining—the interest of an increasingly demanding customer base. As you undergo this digital transformation, your IT teams face tremendous pressure to not only develop innovative new experiences but do so at an accelerated rate—lest competitors beat you to market with the next big thing.

At the same time new technologies and platforms, such as cloud, as-a-service offerings and mobile devices, are creating additional complexities for developers and testers who need to ensure their software will perform flawlessly across all channels.

Some organizations are tackling these challenges by throwing additional resources at their current software development practice (e.g., more developers and testers, increased investments in dev/test hardware, etc.). But, this approach often leads to diminishing returns and fails to address the number-one issue plaguing the software development lifecycle (SDLC): constraints.

In order to find success in the application economy and capitalize on digital transformation opportunities, you must take a new approach to solving the familiar challenge of doing more with less—and doing it faster than ever before by becoming a more-efficient software factory. [Read more](#) about this topic.

**Step one? Remove the constraints that are holding you back.**



of businesses are implementing digital transformation strategies.<sup>1</sup>

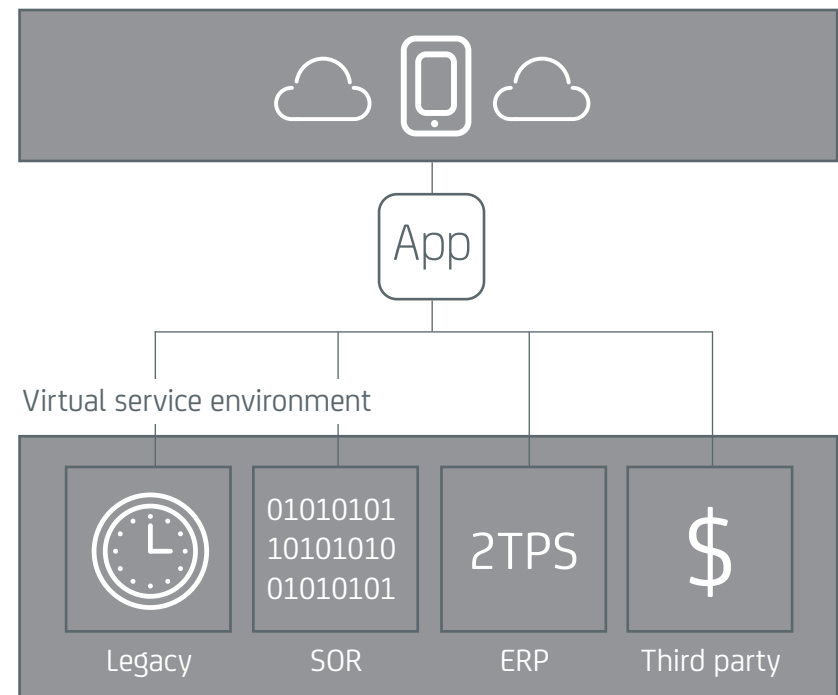
# Remove Constraints With CA Service Virtualization

As many IT professionals can attest, creating and delivering innovative, high-quality software to the market at a rate that matches customer expectations is easier said than done.

This is because composite application development involves numerous dependencies that act as constraints throughout the SDLC. These can include limited access to legacy systems, changing data on systems of record, inadequate real-life performance testing and costs associated with third-party system access.

CA Service Virtualization removes these time, data, performance and cost constraints by simulating dependent systems and customer behaviors as virtual services—whenever and wherever they are needed. As a result, your IT teams can work in parallel, accelerating time-to-market of new applications, while increasing quality and reducing development costs.

Virtual users



# Seven Common Use Cases for CA Service Virtualization

At its core, CA Service Virtualization is all about removing constraints within the SDLC by simulating dependent systems, services and behaviors. In order to understand the true depth and breadth of this concept, however, it helps to see how CA Service Virtualization can be utilized in different development scenarios.

On the following pages, we'll look at how CA Service Virtualization can positively impact a variety of common use cases, including:



Training



Business in a Box



Third-Party Integration/ Collaboration



New Product Launch



Test Data Management



Removing Performance Testing Constraints



Removing Time Constraints

# Use Case #1: Training



A major telecom provider encountered serious constraints within its retail management system (RMS) training environment that were hurting the effectiveness and adoption of its training practices.

## Challenge:

Because the RMS training application “spoke” to many back-end systems, trainers had to spend considerable time manually preparing individual training sessions in different systems, which created additional complexity and costs while limiting the number of training scenarios the system could support.

## Solution:

The telecom provider used CA Service Virtualization to build a virtual version of the RMS training environment, removing the need to manually configure the “live” back-end systems for training.

## Results:

- Avoided \$1M in billing system transaction costs.
- Consolidated backend training systems into a single virtual service environment (VSE) server.
- Removed training constraints and tripled the number of training scenarios.
- Improved overall training experience and adoption.



## How else can you virtualize training?

Some organizations use CA Service Virtualization to create training scenarios on customer-facing applications. This saves them from having to tie up production systems, jeopardize live customer data or purchase additional hardware to mirror production performance.

Read [this review](#) from a software engineer at an insurance company.

# Use Case #2: Business in a Box



How else can you create a business in a box?

Government and other organizations in regulated industries often have secured or off-limits systems that partners must access when integrating services; but these require clearances that can derail a critical project. Using CA Service Virtualization, these companies can create a virtual agency in a box that developers and third parties can test against without having to jump through hoops for security clearance.

Read [this review](#) from a consultant at an aerospace/defense firm with 1,000+ employees.

A major banking and financial services corporation needed a way to quickly and seamlessly integrate the services and systems of the regional banks it acquired with the larger institution.

## Challenge:

In order to maintain a seamless experience for the end customer, the bank needed a way for acquired companies to confirm that their systems met certification requirements and performance SLAs—without having to stand up expensive dev/test environments.

## Solution:

The institution used CA Service Virtualization to create a bank in a box (i.e., a virtual environment that models the performance of all its back-end systems, including systems of record, ERP, CRM, etc.), a live-like VSE against which acquired banks can develop and test their services.

## Results:

- Simplified integration of acquired systems and services.
- Maintained SLA performance levels.
- Ensured a seamless customer experience across the entire organization.

# Use Case #3: Third-Party Integration/Collaboration

As organizations pursue digital transformation initiatives, they're having to integrate more technologies and services from partners and third parties into their composite applications.

## Challenge:

Testing integration and performance of composite applications requires access to third-party systems that are often still in development or have per-use fees that can quickly add up—creating additional time and cost constraints in the SDLC.

## Solution:

With CA Service Virtualization, IT teams can simulate third-party systems and user behaviors for timely, low-cost integration and performance testing.

## Results:

- Accelerated development and testing of composite applications.
- Increased application quality.
- Avoided per-use access costs of third-party systems.



How else can you improve integration and collaboration?

A high percentage of the TELUS solutions consist of integrated applications that must be tested together in an end-to-end fashion. By using CA Service Virtualization, TELUS was able to save \$300K by reducing labor hours for testing infrastructure maintenance.

[Learn more.](#)

# Use Case #4: New Product Launch



A leading telecommunications company was preparing to launch a new partner, device and retail channel that would drastically impact its services, including phone set-up, device activation and sales of related products and services.

## Challenge:

The telecom provider had to accommodate the device vendor's established timeline and unique technological philosophies, while also building interface test cases from scratch, as there were no existing system logs to draw from.

## Solution:

After settling on the interface specifications with the device vendor, the telecom company used CA Service Virtualization to create a virtual integration backboard against which the vendor could begin testing its code. This kept the project moving and bought time for the development team to create the actual live interface.

## Results:

- Created virtual services in two days to support initial integration testing.
- Kept project on track as the team developed the needed non-virtualized code.
- Successfully integrated with a new partner and launched an important new product on time and on budget.

How else can you launch a new product?

With a product launch looming, a wireless telecom provider had to validate that its systems could support an expected tenfold increase in transaction volume and integrate with 16 back-end systems and 80+ operations. The provider used CA Service Virtualization to simulate these dependencies, reducing infrastructure and development costs by 75 percent and \$200K over a 10-week period, respectively—while also catching 300-percent more bugs in performance testing.

Read [this review](#) from a manager of applications development at a communications service provider.



# Use Case #5: Test Data Management

With growing pressure to create new services more quickly than ever, development and test teams cannot afford unproductive idle time as they wait for dependent resources and test data environments to become available.

## Challenge:

Modern, distributed applications require test data to be created and synchronized across multiple systems, consuming significant time and requiring manual effort. In addition, systems under test often run against production or shared systems, which creates issues around data volatility and sensitivity and impacts production performance.

## Solution:

With CA Service Virtualization, QA and development teams can better automate the creation and management of test data, with easy capture and manipulation of virtualized datasets from any messaging stream or database source.

## Results:

- Reduced manual effort and associated costs.
- Eliminated SDLC constraints, enabling parallel development and testing.
- Reduced impact on production performance.
- Automated data desensitization for security and compliance.

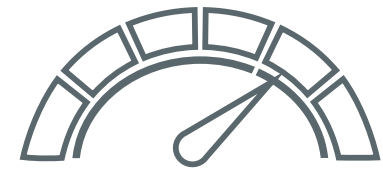


How else can you virtualize test data?

After taking over a credit card loyalty program, a major bank had to convert customers to its system via an online, self-registration application—a process that required extensive data setup and conditioning to adequately test. This bank used CA Service Virtualization to create an always-available test data set, eliminating manual data setup requirements and avoiding \$1M in test data costs.

[Explore the power of CA Service Virtualization and CA Test Data Manager.](#)

# Use Case #6: Removing Performance Testing Constraints



A leading global bank needed a comprehensive test environment that would support the requirements of its 13 development, performance and test teams.

## Challenge:

A consulting firm spent two years creating mocks and stubs for a costly responder framework test environment, but adjusting performance levels required additional manual effort and hardware, and teams still had to compete for available environments.

## Solution:

The bank used CA Service Virtualization to create a constraint-free, on-demand virtual test environment in eight days, replacing the custom-coded environment that took two years to build.

## Results:

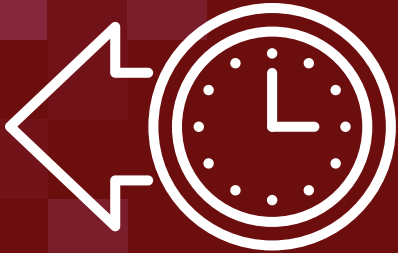
- Decoupled project team dependencies to test systems sooner.
- Gained the ability to adjust performance levels freely for various scenarios.
- Avoided more than \$30M in test lab hardware upgrades.
- Accelerated project delivery by more than 20 percent.

How else can you maximize performance testing?

Con-way, the leader in freight transportation and logistics, developed an on-demand inspection planning (ODIP) application to help it capture lost revenue from misclassified shipments. With CA Service Virtualization, the company was able to eliminate capacity constraints in performance testing of the ODIP app, achieving throughput of 50,000 bills/hour (up from 100 bills/hour) and increasing test cycles from 1 to 10.

[Learn more.](#)

# Use Case #7: Removing Time Constraints



How else can you eliminate time constraints?

As part of its mission to develop new digital business and maintain its market leadership, Telefónica Chile needed a more-efficient way of developing and testing applications so it could meet market demand for new services. With the help of CA Service Virtualization, the company developed, configured and implemented its first 30 services in a record 3 months, while experiencing a 15 percent reduction in time to market overall.

[Learn more.](#)

In response to increasing customer demands in the application economy, many IT groups are adopting agile development practices to accelerate the creation of new applications.

## Challenge:

While splitting development up enables teams to write code faster, they often still experience idle time as they wait for different teams to complete their work, or for needed systems to become available—which essentially moves bottlenecks to a later stage of the SDLC.

## Solution:

With CA Service Virtualization, IT teams can access virtual development and test environments on demand, enabling them to avoid idle time, shift left later stages of the SDLC and achieve truly agile parallel development practices.

## Results:

- Accelerated time to market up to 50 percent by enabling parallel software development, testing and validation.<sup>2</sup>
- Improved application quality by detecting 60 to 90 percent more defects at least one stage earlier in the SDLC—when they're easier and less expensive to resolve.<sup>3</sup>
- Reduced costs by eliminating much of the concurrent demand for development or testing environments and pay-per-use service charges.

<sup>2</sup> Based on actual Customers that have renewed with CA as of a 2014 review of CA Customer database.

<sup>3</sup> Ibid.

# How Many Use Cases Apply to Your Business?

Whether you're looking to expand internal training, increase collaboration with third parties or launch a new product, CA Service Virtualization can help your organization accelerate time to market of higher-quality, more-resilient applications that are easier to deploy and manage. The solution simulates the behavior, performance and data of dependent systems, allowing teams to develop in parallel—and enabling your business to capitalize on the full scope of digital transformation opportunities.

Get more information about [CA Service Virtualization](#). Or, check out [more customer stories](#).

CA Technologies (NASDAQ: CA) creates software that fuels transformation for companies and enables them to seize the opportunities of the application economy. Software is at the heart of every business, in every industry. From planning to development to management and security, CA is working with companies worldwide to change the way we live, transact, and communicate—across mobile, private, and public cloud, distributed and mainframe environments. Learn more at [ca.com](#).

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