

CA saves \$3 million a year and improves competitive advantage by simplifying Software Change Management.

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# Executive Summary

## Challenge

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In today's IT-enabled world, a business process change will quickly be followed by changes to core applications. As a software provider, CA needs to be able to cope with multiple software change requests from its clients as well as the ongoing development of its many hundreds of software products. Many of these software products were acquired from other companies and each team operated their own stand-alone software development and had to maintain all of their unique set of development tools. With 4,000-plus developers around the world using non-standard processes and management tools to make these source code changes, the company's productivity and profitability was at risk.

## Opportunity

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CA develops, markets, delivers license software products and services that allow organizations to run, manage and automate aspects of their computing environments, or IT infrastructures, which are critical to their business. To reduce the cost and complexity that was inherent in its current development approach, CA decided to create a Common Source Code Repository. The goal of the program was to gain control over CA's most important asset, the software that is used to build and maintain over 1,100 commercial software products. The second objective was to take control and standardize the number of servers, locations of the software change management servers, and to create a common development toolset where best practices could be shared between development teams.

## Benefits

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Using CA's own Enterprise IT Management (EITM) Change & Configuration Management solutions, the company has been able to implement flexible but consistent processes across more than 150 development teams based in dozens of locations around the world. As a result, the administrative burden has been dramatically reduced. Developers maximize their productivity by using automated processes that help synchronize source code changes and the release of new builds across multiple IT platforms. By improving the efficiency of its Development Services, CA has been able to:

- Make annual cost savings of more than \$3 million
- Improve the quality and accuracy of their software products
- Speed up the development process
- Reduce business risk

All these factors contribute to the company's competitive advantage and enable it to provide clients with a better service and better software solutions.

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## SECTION 1: CHALLENGE

*“It is very important for the company’s competitive advantage that we can meet client demand for new and innovative products.”*

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**Prajval Parthasarathy**  
Vice President of Development, CA

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## Keeping pace with business and IT change

There’s no avoiding change in today’s fast-moving society. Government regulations, industry standards, customer requirements and technology are continuously changing — organizations the world over must evolve with them or face extinction.

With core business functions now underpinned by technology, any change to business processes will also necessitate modifications at both an IT infrastructure and application level. Keeping track of numerous software changes, and implementing them as soon as possible, is essential for safeguarding productivity and profitability.

For software development companies, this change management problem is magnified several times over — as are the risks if they fail to deliver. With revenue and customer loyalty often riding on new product releases and customized fixes, software changes must happen fast and to an exceptionally high standard.

### Sustaining product innovation and quality

With thousands of clients across the world and a portfolio of more than 1,100 software products, CA is often working on hundreds of software changes at any one time. The company is one of the world’s largest IT management software providers and its products are designed to unify and simplify complex IT environments.

At the hub of CA’s activities is Development Services, which accounts for more than a third of the company’s 14,500 employees worldwide. Based in multiple locations across four continents, Development Services’ work is vital to the ongoing evolution of CA’s products and its customer support operation.

Innovation is one of the company’s core values, and as such it invests millions of dollars in research & development every year. Change is fundamental to the innovation cycle and to enabling continuous quality improvement — a key goal not just for CA but many organizations around the world.

For CA’s clients — which include 99 percent of Fortune 1000® companies — these quality improvements must be reflected in the software they rely on every day to help govern, manage and secure their IT infrastructures.

As a result, CA’s 4,000-plus developers are under considerable pressure to deliver fast and accurate changes to the company’s products. As Prajval Parthasarathy, Vice President of Development at CA, explains, “It is very important for the company’s competitive advantage that we can meet client demand for new and innovative products. Any delay in the launch of product upgrades could be particularly damaging for our reputation and profitability.”

### Coping with development diversity

To ensure time-to-market is not impacted, CA’s developers need fast access to easily update and change application source code. With the company reliant on multiple software change management systems, source code — and the entire change management process — was at risk. In total, Development Services had 20 different software change management solutions in

production — ranging from sophisticated commercial systems to internally developed tools and freeware.

Such diversity in a development environment is by no means unique. Acquisitions, globalization and IT complexity can all contribute to a non-standardized development environment — especially if an organization needs to modify application source code for mainframe and distributed platforms. A lack of standardization and centralization, however, can quickly lead to operational and financial inefficiencies.

With many of CA's developers administering their own change management tools, productivity was just one of many disadvantages of the company's current approach. There were also ramifications for:

- Intellectual property
- Operational overheads
- Quality control

As Grace Gao, a Manager within CA's Development Services, explains, "With two-thirds of software changes being administered locally by development teams, modified source code was not being backed up centrally. Any disaster or hardware failure could have resulted in the loss of valuable source code and hours' worth of work."

With such high stakes, CA needed to mitigate these risks and develop a more efficient approach to software change management across its entire development operation.

*Any disaster or hardware failure could have resulted in the loss of valuable source code and hours' worth of work."*

**Grace Gao**  
Manager, CA Development Services

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## SECTION 2: OPPORTUNITY

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### Consolidation and centralization simplify change management

To reduce the cost and complexity associated with its current software change management processes, CA embarked on a company-wide project to create a common source code repository (CSCR).

To support this repository, the company also needed to establish centralized and standardized processes while at the same time allowing for the flexibility that is intrinsic to any development operation.

To achieve this balance and its core objectives, CA turned to its own EITM Change & Configuration Management solutions to unify and simplify the development environments. Instead of relying on 20 different tools as well as manual processes, CA's development team and activities are being migrated to three integrated solutions:

- CA Software Change Manager (formerly CA Harvest)
- CA Software Change Manager for Mainframe (formerly CA Endeavor® Change Manager)
- CA Change Manager Enterprise Workbench

These three solutions provide CA with a unified platform for changing source code across multiple technology platforms. Despite this unification, CA's development teams still have sufficient local control to enable them to work in individual ways. The source code itself,

however, is now stored centrally in the company's CSCR, which means it is protected by company-wide security and recovery management measures.

Jim Bryant, CA's Executive Vice President and CA Chief Admin Officer, comments, "Our most important corporate asset, other than our employees, is our intellectual property (IP). CA's core IP is our source code that is used to create our commercial applications. To maintain IT governance a company-wide policy was created to implement the protection of our software assets. CA Software Change Manager provides full automation of application development including access control and centralized archiving of source assets."

### Ensuring fast access to source code

Effective access to this central store of source code is essential for maintaining the efficiency of the company's development team. Like many large companies, CA has software programmers based around the world — many in developing countries, such as India and China.

CA has built a strong global product development staff in Australia, China, the Czech Republic, Germany, India, Israel, Japan, the United Kingdom and the United States. CA's technological efforts around the world ensures the company maintains a global perspective of customer needs while cost-effectively tapping the skills and talents of developers worldwide.

Although an offshore approach to software development has indisputable cost advantages, it does create additional quality and co-ordination problems. With developers in multiple locations all working on the same source code for different projects, code can quickly become out of sync if remote caching or replication processes are interrupted — a very likely risk in developing countries where bandwidth is limited and the infrastructure is less stable.

As Gao explains, "Version control can be a massive problem when developers are using replicated source code. Any code collisions have to be rectified manually, which is time-consuming and costly, and can soon wipe out any savings made by having an offshore development operation."

To address this problem, CA's Software Change Management solutions have been specifically engineered to provide developers with high-speed access to source code — no matter what their location. By compressing file sizes and optimizing bandwidth, the solutions help eliminate the time delay that is often associated with checking out multiple elements from a source code library. As a result, CA developers in India enjoy a similar response time to their counterparts in New York — even though they are accessing source code that is held on a file server more than 7,000 miles away.

### Safeguarding a valuable asset

The need for simplified access must, however, be balanced with security. Protecting source code from unauthorized access is essential — especially given that this information is vital to the company's future competitive advantage.

*"Our most important corporate asset, other than our employees, is our intellectual property (IP). CA's core IP is our source code that is used to create our commercial applications."*

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#### Jim Bryant

Executive Vice President and Chief Admin Officer, CA

*“Using CA Software Change Management solutions, we have been able to create defined and repeatable development processes. The various development phases are now much easier to manage and benefit from high levels of automation.”*

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**Grace Gao**  
Manager, CA Development Services

CA Software Change Manager for Mainframe plays a key role in this process and provides both audit trail and access management capabilities. The solution is used to:

- Limit access to source code based on corporate policies
- Enforce change approval
- Provide an audit trail of all changes and why they were made
- Provide a hard link between the runtime environment and the source code that was used to create it

This functionality — along with the solution’s online cross-referencing facility and automated build options help to increase productivity.

### **Automating the development lifecycle**

Accessing source code is just the beginning of the development cycle — a process that can last several weeks or months if a project involves sustained engineering for a new product release. Co-ordinating this process and accurately tracking progress is highly complex — especially when source code is being developed for two different technology environments: distributed and mainframe.

CA Software Change Manager and CA Software Change Manager for Mainframe are optimized for the unique needs of each kind of developer and include unique features that help to simplify the development process within these environments. This functionality helps developers:

- Automate release and build management
- Track defects and problems
- Audit applied changes and configurations
- Integrate security capabilities

Using the built-in workflow engines of CA Software Change Manager, these core processes can be matched to a company’s complex development lifecycle and quality assurance model. As Gao confirms, “Using CA Software Change Management solutions, we have been able to create defined and repeatable development processes. The various development phases are now much easier to manage and benefit from high levels of automation.”

### **Simplifying software change management across multiple platforms**

CA Software Change Manager solutions also enable Development Services to bridge the gap between mainframe, distributed and cross-platform environments.

To help cope with the complexity of clients’ IT infrastructures, CA Software Change Manager has been designed to enable developers to migrate source code changes across mid-range and distributed platforms. For example, a developer can easily check in and check out code from a UNIX system to a Linux system using an automated workflow. Prior to deploying CA Software Change Manager, this was a manual process and was time-consuming and susceptible to problems.

Developing source code for heterogeneous platforms is further enhanced by CA Software Change Manager. This enables Development Services to co-ordinate source code changes on the same product but in different environments. Synchronizing these two sets of code is essential for quality assurance and the final build release.

Using CA Software Change Manager, Development Services can manage disparate changes as a single entity and ensure they travel together through the development lifecycle. This visibility is essential when tracking custom changes for CA clients, as they will often be operating both a mainframe and distributed environment.

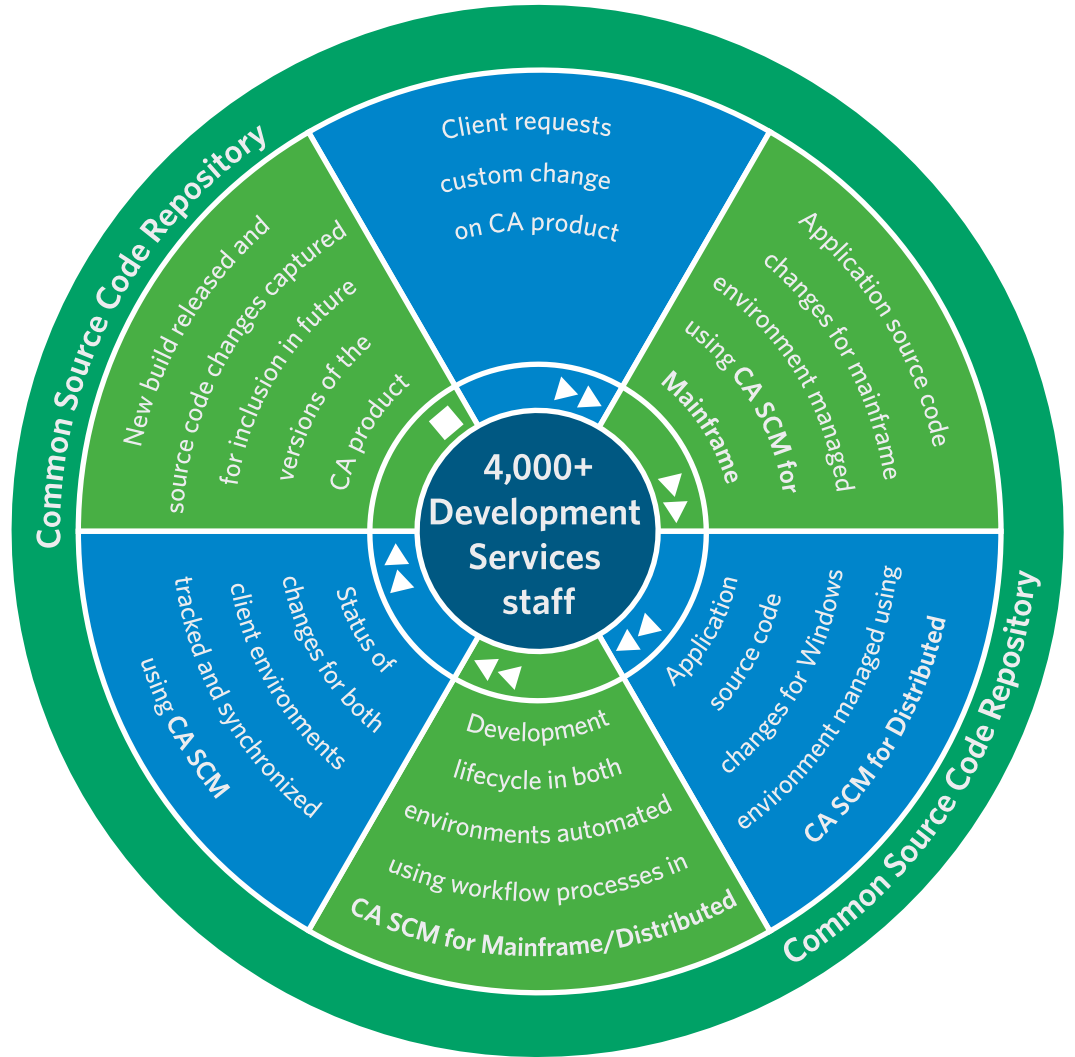
Visibility of source code changes is also important for capturing complex client fixes and functionality for future product releases. If a client requests a change to a CA product, it is essential this change becomes part of any future versions.

Using CA Software Change Manager, Development Services can blend all source code changes made to a product and apply these to a final build when working on product upgrades. As a result, clients not only benefit from their own personalized fixes but also additional functionality developed for other CA customers.

FIGURE A

By implementing integrated Software Change Management solutions, CA is able to co-ordinate source code changes across multiple platforms and ensures they are synchronized in time for release.

INTEGRATED CHANGE MANAGEMENT PROCESS



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## Better results with lower costs

The ability to merge source code changes is just one example of how CSCR and CA's Software Change Management solutions have benefited its customers. The new approach has also enabled Development Services to:

- Improve the quality and accuracy of code
- Speed up the development response to level two support requests

These factors all help to maintain customer satisfaction levels, as Gao confirms, "By decreasing the development time while also increasing the quality of source code changes, we are able to provide a better service to the business and CA customers."

A more efficient development process is also critical for CA's competitive advantage. Failure to launch a product on time could have considerable implication for the company's reputation and profitability.

### More time spent on development

The financial benefits of CSCR stretch well beyond safeguarding new product revenue streams. The consolidated model has also enabled CA to make significant savings both in terms of staff productivity and software licensing. As Gao explains, "Within every development team, there would be one or two people responsible for administration. Now, we have three people across the entire world co-ordinating our development activities."

As a result, administration, maintenance and system downtime used to account for 282 months' of work. Thanks to CSCR, it now equates to only 24 months. As a result, personnel costs alone have led to savings of more than \$3.2 million (see figure B). Add to this the financial benefits of redeploying more than 142 servers, and the elimination of multiple licensing fees; the annual savings are nearer the \$4 million mark.

"With the implementation of CA Software Change Management, we have defined a single repeatable process for development that occurs world-wide. "Our old methods were a drain on resources," comments Ron Cass, CA Vice President of Development. "By centralizing our software change management processes, we have freed up developers to concentrate on what they do best: writing great code. CA Software Change Management allows us to build quality software that meets our aggressive development schedules."

*"By centralizing our software change management processes, we have freed up developers to concentrate on what they do best: writing great code."*

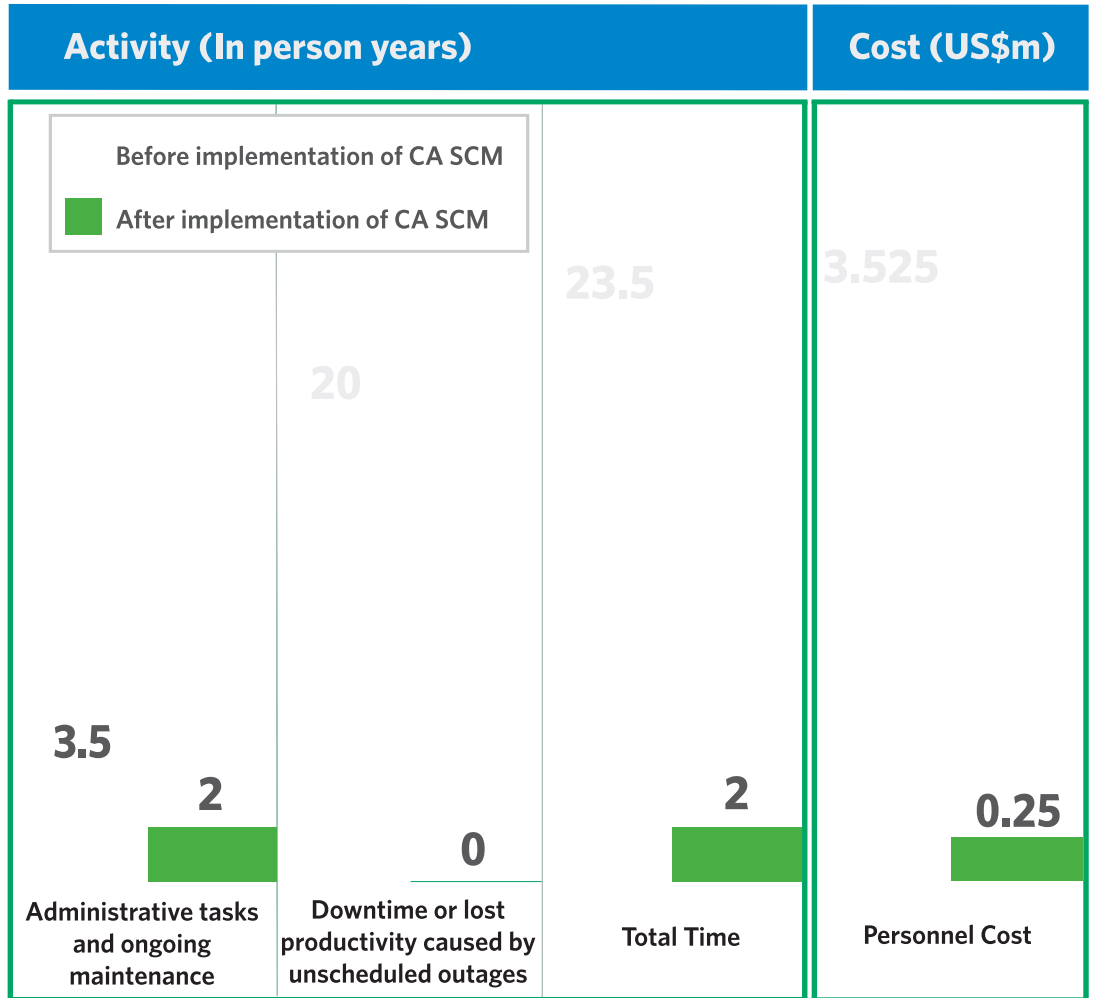
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**Ron Cass**  
Vice President of Development, CA

**IMPROVED PRODUCTIVITY REDUCES ANNUAL COSTS**

By reducing the time spent on administrative tasks and system downtime, CA has been able to make dramatic productivity gains. This in turn has led to financial savings of \$3.275 million a year on full time equivalent personnel costs.

**FIGURE B**



In addition to benefiting CA's bottom line, CSCR has also enabled the company to:

**MITIGATE RISK** The CSCR is hosted and supported by the CA's IT department. This means that source code is backed up every night and protected against external factors, thereby helping to safeguard the company's intellectual capital.

**IMPROVE GOVERNANCE** The new process provides a clear audit trail of all source code changes and prevents unauthorized fixes from being implemented. This helps to enhance regulatory compliance and ensures greater internal control of the change management process.

**INCREASE AGILITY** CA can respond more quickly to changes in the market by ensuring the efficiency of its product innovation process and the productivity of its 4,000-plus developers.

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## SECTION 4: CONCLUSIONS

The time it takes a company to respond to change can have a direct impact on its future success and profitability. To ensure that IT applications can keep pace with business demand, organizations need to have efficient software change management processes.

Code collisions, multiple management tools, poor quality assurance and local administration can all delay the release of new and upgraded software solutions, which means users will be reliant on out-dated applications that no longer meet the needs of the organization.

By creating a centralized and standardized approach for managing software changes, organizations can cut through the complexity that is inherent in any development environment.

As a result, developers will be able to produce better code in a shorter timeframe — and at less cost to the business. This not only enhances cost control but also competitive advantage and customer service levels.

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To learn more about the CA Change & Configuration Management architecture and technical approach, visit [ca.com](https://www.ca.com)

CA, one of the world's largest information technology (IT) management software companies, unifies and simplifies the management of enterprise-wide IT for greater business results. Our vision, tools and expertise help customers manage risk, improve service, manage costs and align their IT investments with their business needs.

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