CA Drives Competitive Advantage in the Application Economy

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Contents

Competitive Advantage throughout the Application Lifecycle

Additional Relevant Information

Business, rewritten by software™

From planning to development to management to security, at CA we create software that fuels transformation for companies in the application economy.

Dear Client,

From entertainment to communications to finance, applications are rewriting the world in which we live. CA software transforms businesses' ability to thrive in this new reality, delivering the means to deploy, monitor and secure their development-driven investments.

We are focused on providing you with a world-class IT management solution that helps you respond to business needs and allows you to bridge the environments of today to those of tomorrow.

CA Technologies commissioned a global survey of 1,450 senior business executives on how global enterprises are responding to the challenges of the application economy. And the findings revealed that half of all companies surveyed say that their industry is being very or highly disrupted by the application economy, and 44% are already experiencing this impact in their own organization. Businesses are acting quickly to respond to the rapid advances by increasing investments by 25%, acquiring software companies to obtain critical application development skills, and delivering more customer applications each year.

We are building on our portfolio and 35 years of experience helping customers manage large, complex IT environments, and making significant investments in acquisitions and R&D to help customers achieve their IT goals.

How does an enterprise know how to optimize its IT investments and shift spending from maintenance to innovation? How does an enterprise increase visibility to what's going on in IT and talk to the business in its own terms? Through CA Technologies, you can get all of this from a single vendor that understands IT's need for scalability, performance, reliability and security; a partner that can help you optimize your IT supply chain to help achieve your business goals.

We are focused on your success and offer new technology, support, and no-cost value programs. We help you to maximize and extend the value achievable through use of additional features and functionality, increased utilization, and avoidance of unnecessary additional software purchases. These and many other benefits help exploit your technology to better assure top performance, help meet SLA's and leverage synergies within and across platforms. And, we look forward to working with you!

Sincerely,

CA Technologies

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Executive Overview

CA Software Drives Competitive Advantage in the Application Economy

From planning to development to management to security, CA creates software
that fuels transformation for companies in the application economy.

Proposed [Solution Name] for [CUSTOMER ONE]

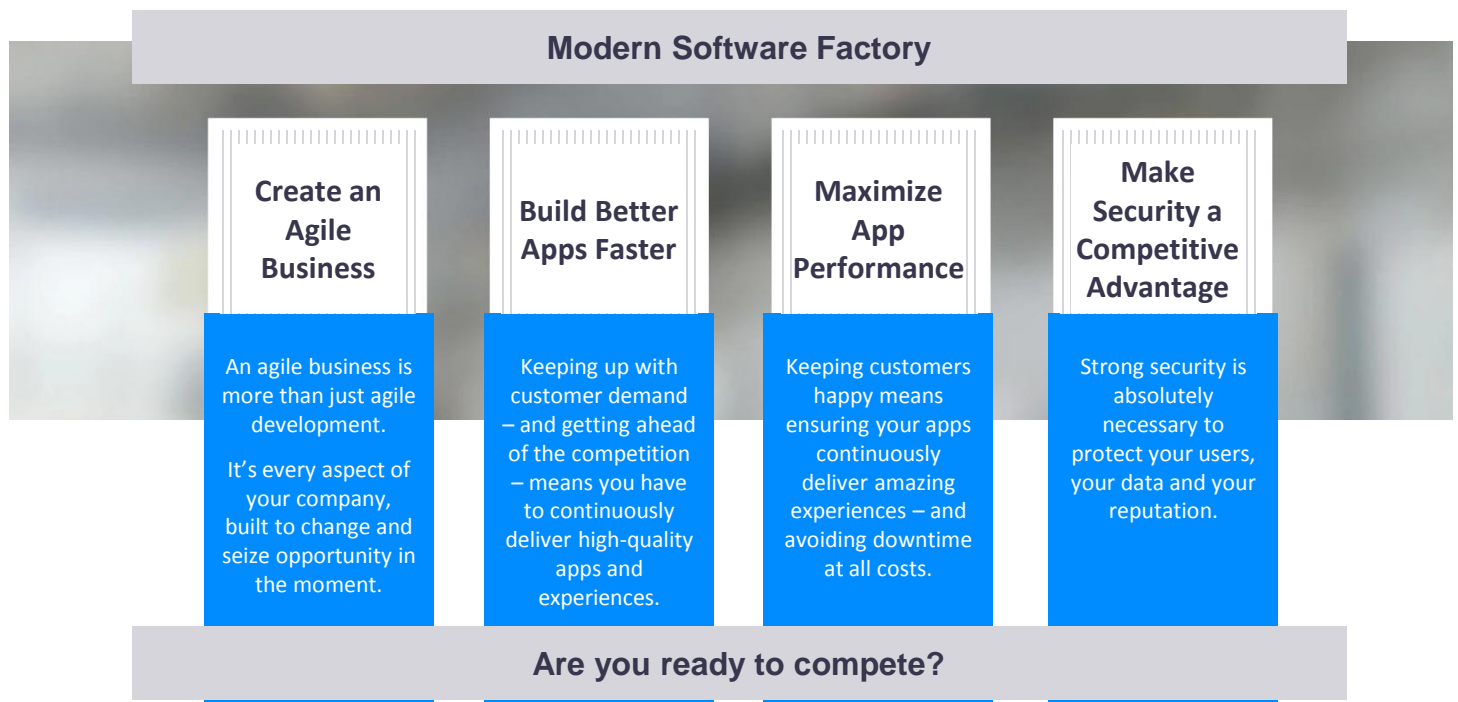**The Journey to Digital Transformation**

CA products may help address challenges across the complete service lifecycle — from portfolio planning and service modeling, to service assembly, automation, assurance and production management — with solutions that work across a wide variety of our customer's choice of platforms, technologies and vendors.

With a Modern Software Factory every business is ready to compete

The Modern Software Factory is where
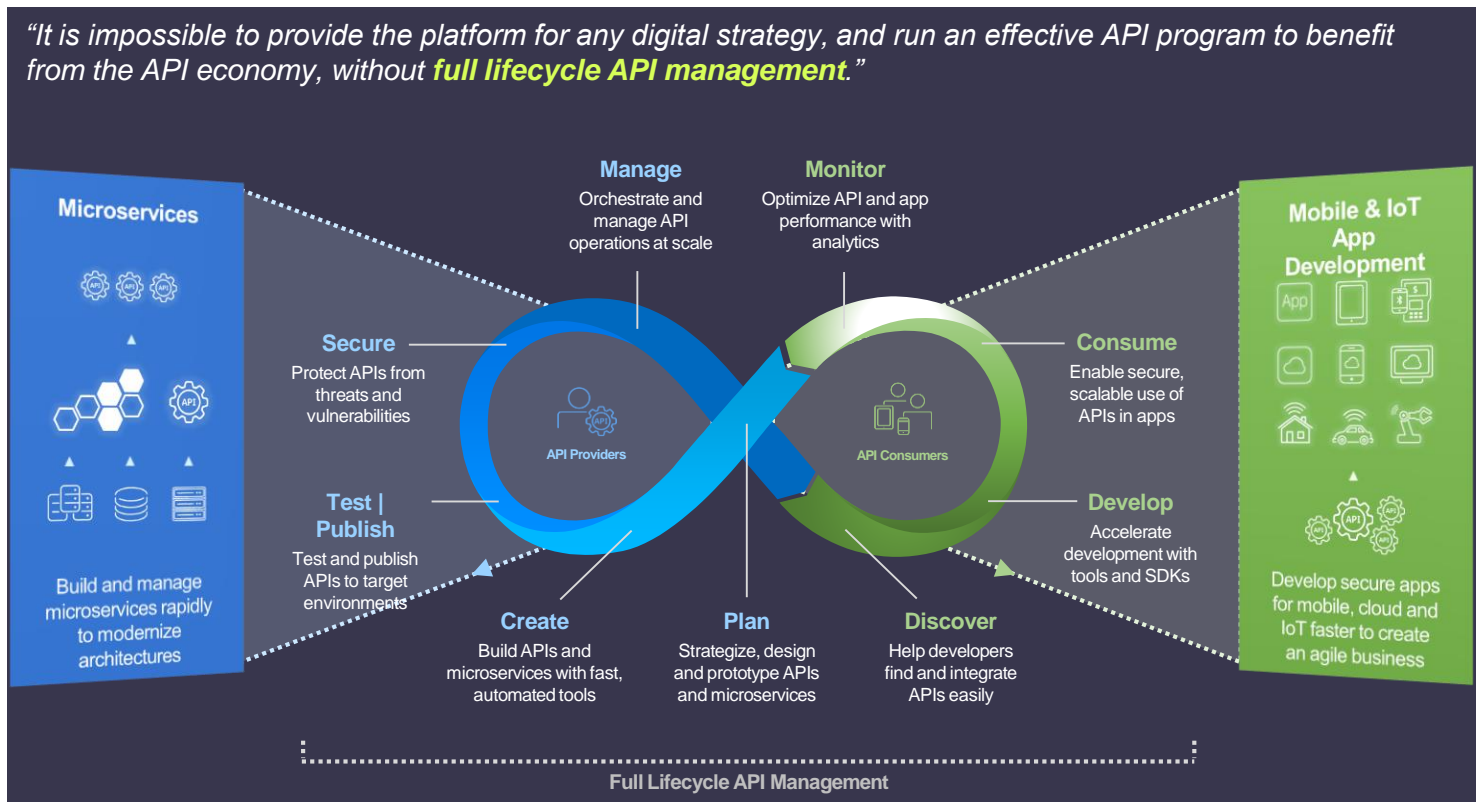
AGILITY + AUTOMATION + INSIGHTS + SECURITY

work together for your business.

Modern Software Factory

Create an Agile Business	Build Better Apps Faster	Maximize App Performance	Make Security a Competitive Advantage
An agile business is more than just agile development. It's every aspect of your company, built to change and seize opportunity in the moment.	Keeping up with customer demand — and getting ahead of the competition — means you have to continuously deliver high-quality apps and experiences.	Keeping customers happy means ensuring your apps continuously deliver amazing experiences – and avoiding downtime at all costs.	Strong security is absolutely necessary to protect your users, your data and your reputation.

Are you ready to compete?

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SOLUTIONS OVERVIEW – SUMMER 2018   ca.com

Executive Overview continued

The Modern Application Architecture Model

*"It is impossible to provide the platform for any digital strategy, and run an effective API program to benefit from the API economy, without **full lifecycle API management**."*

A modern application architecture model sits in the middle between existing enterprise data, and the mobile/cloud/IoT endpoints that customers/partners/employees interact with. There is a clear lifecycle that is required in order to "bring enterprise data to life" using this model:

- A clear plan, strategy, and prototype for what the data will look like to consumers.
- Building the APIs and microservices that will expose the enterprise data, quickly and efficiently.
- Testing the new services and deploying them to target environments - on premises, in the cloud, or hybrid.
- Securing these APIs and the apps that will use them from threats and vulnerabilities.
- Orchestrating and managing APIs at runtime.
- Helping developers discover and onboard the APIs as required.
- Enabling developers to develop apps and consume the APIs as easily and securely as possible.
- Providing insights in the form of monitoring and analytics to both API providers and consumers.

Two additional elements that add efficiency and value to the model:

- **On the left, for API providers**, the ability to build, manage and orchestrate microservices (under the APIs) contributes to the modernization of legacy architecture.
- Because the challenges of microservice management are similar and analogous to those solved by API management, we consider microservices and APIs to be closely related.
- **And on the right side, tools that help developers build secure, quality apps that consume APIs** also add value to this model. Over the past 18 months or so, we have continued to bring innovations to market across the API lifecycle.

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Competitive Advantage throughout the Application Lifecycle

CA Technologies solutions support key areas of Agile Management, DevOps, and Security

Plan & Prioritize

Get the agility you need to drive change–from the boardroom to development.

Develop & Test

Your business runs better when you do them together.

Release & Deploy

Cut your release time by up to 90 percent with CA.

Manage & Monitor

Maximize visibility into your apps, services and infrastructure— all the way to the mainframe.

Connect & Secure

Secure your digital enterprise to win in the application economy.

Plan & Prioritize.

Build and deliver the right software with speed, quality, and efficiency

Agility is the new reality. Get the agility you need to drive change–from the boardroom to development.

When Your Objectives Include:

Apply agile methodology to your enterprise

- Agile Management
- Agile Platform and Coaching
- CA Agile Central

Align execution to strategy with investment transparency

- CA Project & Portfolio Management (CA PPM)

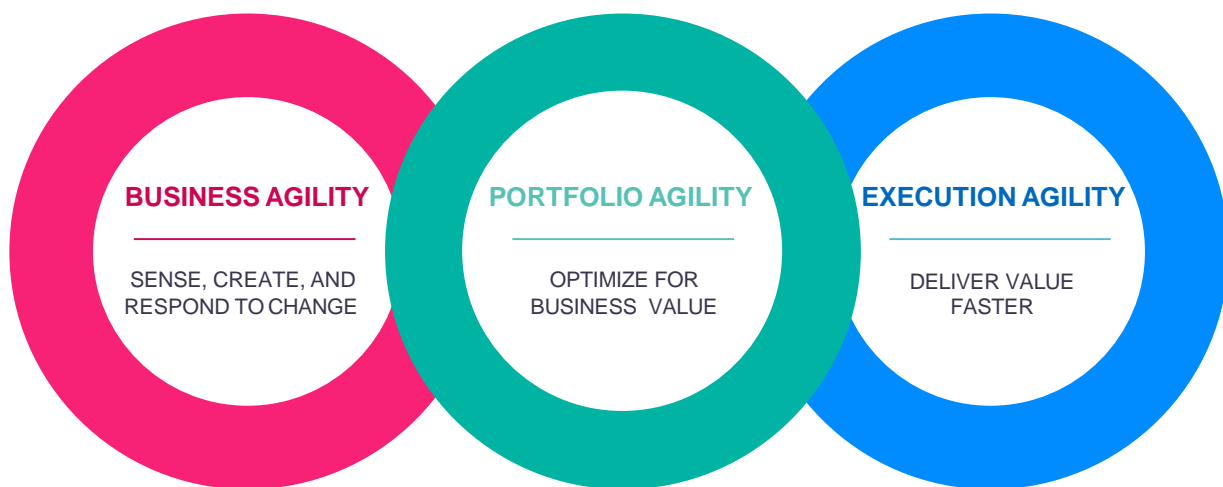Enable team collaboration anywhere, anytime.

- CA Flowdock

Agile Management
Build and deliver the right software with speed, quality, and efficiency

Building agility into your organization means sensing, creating, and adapting to change: quickly and confidently. You need execution agility to make speed and performance your competitive advantage. You need portfolio agility to create opportunities with focus and insight into your organization's highest value initiatives.

You need business agility to take a disciplined approach to managing change, building responsiveness into your organization's DNA.

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BUSINESS AGILITY

SENSE, CREATE, AND
RESPOND TO CHANGE

PORTFOLIO AGILITY

OPTIMIZE FOR
BUSINESS VALUE

EXECUTION AGILITY

DELIVER VALUE
FASTER

Every industry is subject to disruption.
Only a truly agile business is equipped
to respond.

Forrester Research Inc. Forrester Research, Inc., January
2014, Forrester Perspective: Measure and Improve Your
Business Agility

Agile firms grow revenue 37% faster.
Agile firms generate 30% higher profits.

MIT SeeIT Survey of 649 firms. Sloan CISR—Weill.

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Agile Platform & Coaching

Agile teams are proactive, responsive and innovative

CA Agile Central provides a proven approach (Ready>Sync>Go) that combines transformation consulting, training, coaching and an enterprise-class agile platform for full visibility to increase time to market and predictability of business deliverables.

READY → SYNC → GO

1-4 Weeks   2-5 Weeks   12 Weeks

Transformation Consulting

Platform

Training

Coaching

RELEASE PLANNING is the essence of Enterprise Scale Agile

Coordinating teams to achieve:

- Realistic Plans
- Optimum Business Value
- Shared Commitment
- Early Detection of Risks & Dependencies
- Alignment

Leading to:

- Quarterly Predictability
- Higher Team Productivity
- Faster Time to Market

Proven Approach to Scaling Agile

PREP Event	DURING Event	POST Event
Work Capacity Planning	Team Planning	Release Planning

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CA Agile Central Platform
BUSINESS VALUE ESTIMATIONS

How you deliver value to your customers says a lot about how well you can compete in a technology-driven world. CA provides expert transformation consulting, training and coaching, supported by an enterprise-class agile platform that enables you to harness the proven power of agile methodology at scale. With CA Agile Central you will deliver on your strategy faster and more predictably.

Business Value Proposition	Business Value Enabler	Impact Range	Key Resources Affected
Time savings improvement for Scrum Masters	• Realistic collaborative planning of the work quarterly and by iteration/sprint • Personalized navigation and quick detail views • Efficient / easy reporting and real-time dashboards • Visibility into WIP in real-time • Timely visibility into risks and dependencies	8 - 12%	Count of Scrum Master FTEs
Time savings improvement for PMO & Portfolio Managers	• Collaborative planning to tie strategic initiatives to the work in order to deliver the highest value features • Real-time dashboards (not just reports) • Coordinate agile development work across multiple teams and programs • OOTB comprehensive reporting capability • Supports scaled agile capabilities and metrics. (SAFe and other scaled agile methodologies)	25 - 35%	Count of PMO & Portfolio Manager FTEs
Time savings in overall efficiency for Dev/Test staff	• Insight for improved planning, tracking, and analysis of the financial performance of key projects • Visibility into WIP and capacity • Increased efficiencies regardless of methodology • Rollup and reporting cost savings • Insight supporting continuous improvement	3 - 7%	Count of Staff in Dev/Test
Time savings for Product Owners	• Rollup and reporting relieves administrative burden of collecting data and/ or preparing status reports • Timely visibility into risks and dependencies • Efficient / easy reporting and real-time dashboards • Personalized navigation and quick detail views	15 - 25%	Count of Product Owner FTEs
Increase flow of value to customers by delivering more, faster	• Increase in productivity and velocity due to agile provides faster time to market thereby increasing revenue • Provides substantive improvements in team and organizational velocity • Ensures substantively faster development and delivery throughout the application lifecycle • Customer-centric strategy ensures that the right things are being built, in the right way at the right time	3 - 7%	Revenue enhanced by on-time or early release

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Agile Central Transformation
BUSINESS VALUE ESTIMATIONS

CA Agile Central Transformation provides a powerful combination of an enterprise-class agile platform with expert transformation consulting, training and coaching. So you can harness the proven power of agile methods at scale to deliver on your strategy faster and more predictably.

| Business Value Proposition	Business Value Enabler	Impact Range	Key Resources Affected
Reduction in development costs	• Improved velocity, reduction in invisible inventory (software), reduction of work in process • Task switching is reduced, team focus is improved, leads to a productivity leap • Use of smaller batches of development work ensures that teams spend more time adding value and less in wait-time due to process queuing	8 - 12%	Enterprise-wide Developer FTEs
Reduction in QA costs	• Improved team velocity ensures Quality Assurance Engineers spend more time focusing on incremental testing of smaller components leading to improved integration testing • Substantive time savings across all involved in the QA role are realized	25 - 35%	Enterprise-wide Testing & QA FTEs
Cost Savings from defect reduction throughout the Software Development Lifecycle	• Reduces cost of fixing defects after release to production which is typically many multiples higher than the cost of fixing during earlier development phases	3 - 7%	Defects per year per FTE (950 total)
Increase in predictability of business outcomes	• Predictability of workload against effort is improved by utilizing relative sizing techniques • Software development is a made-to-order process with corresponding improvements in work sizing that have a direct effect on predicted cost of delivery • With direct interaction with stakeholders, expectations are continually managed • Continual planning ensures alignment of stakeholder expectations against product management plans	15 - 25%	Proportion of revenue influenced by development FTEs
Improved time to value for revenue generating applications	• Increase in productivity and velocity, due to agile, provides faster time to market, thereby increasing revenue • Provides substantive improvements in team and organizational velocity • Ensures substantively faster development and delivery throughout the application lifecycle • Market share has potential to grow at a rate nearly identical to growth rate of overall market	3 - 7%	Revenue influenced by 90 day early release of application

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CA Project and Portfolio Management (CA PPM)

Ensure Confidence: Eliminate the barriers between ideas and outcomes

- Let the data tell the story: analyze investment portfolios
- Set the course: align projects and resources with business strategy
- Don't skip a beat: evaluate and evolve projects, products, and applications
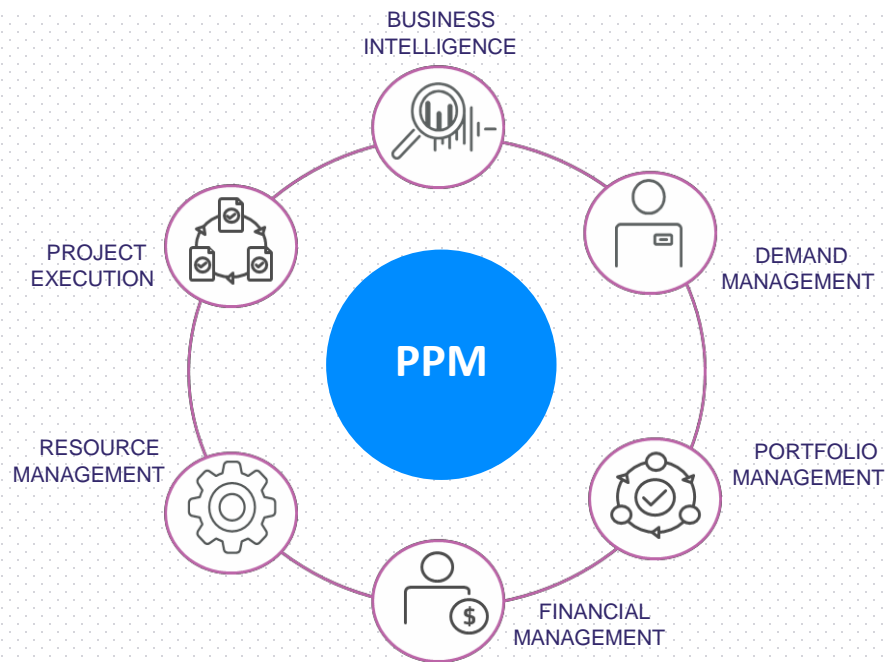
Enterprise Portfolio Planning	IT Portfolio Analysis	Business Transformation	Program Management Office	Application Portfolio Management	Product Development	Professional Services Automation

You need a better and faster way to execute your strategies. You need to capture insights regardless of where they derive, convert them into meaningful work and manage that work in a consistent, predictable way, so they ultimately deliver real customer value.

CA PPM represents a single platform that enables you to manage the entire innovation lifecycle and make more informed strategic investments. It helps you track and prioritize market and customer requirements, and make smarter decisions on how to invest limited resources, so you can optimize your enterprise, IT, service and product portfolio. Further, it offers the unified, comprehensive project management capabilities you need to deliver quality initiatives on time and on budget. Plus, it's available via SaaS, on-premise and hosted delivery models.

Key Benefits and Results

- Make smarter portfolio decisions above-the line.
- Assure projects deliver desired results in line with market needs and business strategies.
- Manage all financial aspects of your portfolio with accountability.
- Gain better visibility and control of projects to speed delivery.
- Drive better project execution with your choice of development methodology..
- Centralized projects, resources, staffing and budgets inform impact of change.
- Constraint-based scenario comparisons help achieve best results.

For more information, please visit

ca.com/ppm

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CA PPM
BUSINESS VALUE ESTIMATIONS

Organizations have identified and redirected 10-15% of their IT budgets from operational 'run the business' expenses to transformational 'grow the business' initiatives through the use of CA PPM.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Improved new product development and project return rates	Visibility for project managers to keep projects closer to budget, and portfolio managers to reduce low value projects	Potential increase in revenue	Project and Portfolio Management	3 - 5%	Annual project budget
Improved new product development and project resource utilization	Increased management insight into work activities, resource pools, costs and availabilities	Cost reduction in project manager and project staff resource labor	Project and Portfolio Management	3 - 5%	Project manager and project staff FTEs
Reduced administrative time for project management activities	Automated reporting and facilitation of data and ideas reduces manual project management tasks	Reduction in manual project management tasks	Project and Portfolio Management	5 - 10%	Project management FTEs
Improved project status and coordination	Real-time visualization into current completion rates, business alignment, and resource allocation of projects	Reduction in meeting hours	Project and Portfolio Management	20 - 30%	Project manager and project staff FTEs
Improved portfolio alignment to corporate strategy	Service and project portfolio models are mapped to business strategy and goal criteria to improve value to the business	Reduction in low value projects	Project and Portfolio Management	2 - 3%	Annual project budget
Reduced cycle times through Improved Decision Support	Agile methodologies used allow for reduction in time to release products	Potential increase in revenue due to faster project release cycles	Project and Portfolio Management	1 - 3%	Annual incremental revenue from projects
Improved new product ideation process	Collaboration on ideas for new products drives new innovations	Reduction in cost of gathering and evaluating new product ideas	Project and Portfolio Management / New Product Development	0.20 - 0.30%	Business user collaborator FTEs

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CA Flowdock

Enable team collaboration anytime, anywhere

With **CA Flowdock**, your teams can communicate with context and plan with precision.

CA Flowdock works just like any other email or corporate chat program. But it also links into all your developers' favorite tools, so teams can work faster together—whether they're coding new APIs, doing pre-launch Q&A, or simply planning out the next product sprints.

It's the project manager that acts like an instant messenger.

Read more at
www.ca.com/us/products/plan-prioritize.html

Develop & Test.

Synchronize your efforts to dramatically speed app development and increase quality

Stop waiting. Start winning. Your business runs better when you do them together.

When Your Objectives Include:

Deliver next generation apps faster with higher quality and reduced costs
- Continuous Testing
- Continuous Delivery Director
- CA BlazeMeter®

Speed app development
- CA Service Virtualization
- CA Service Virtualization—for zOS Platform

DevSecOps: Incorporate security testing into your dev practices
- CA Veracode Greenlight

Get end-to-end test data management
- CA Test Data Manager (formerly GridTools)

Create APIs quickly from existing data sources
- CA API Management
- CA Live API Creator

Simplify mobile and IoT app development
- CA Mobile App Services

Get one view when developing mobile-to-mainframe
- CA Application Lifecycle Conductor
- CA Endevor® Software Change Manager
- CA Harvest Software Change Manager

Deliver fully tested software earlier with lower costs
- CA Agile Requirements Designer (formerly CA Test Case Optimizer)
- CA Mainframe Application Tuner

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Continuous Testing

Deliver next-generation applications faster with higher quality and reduced costs
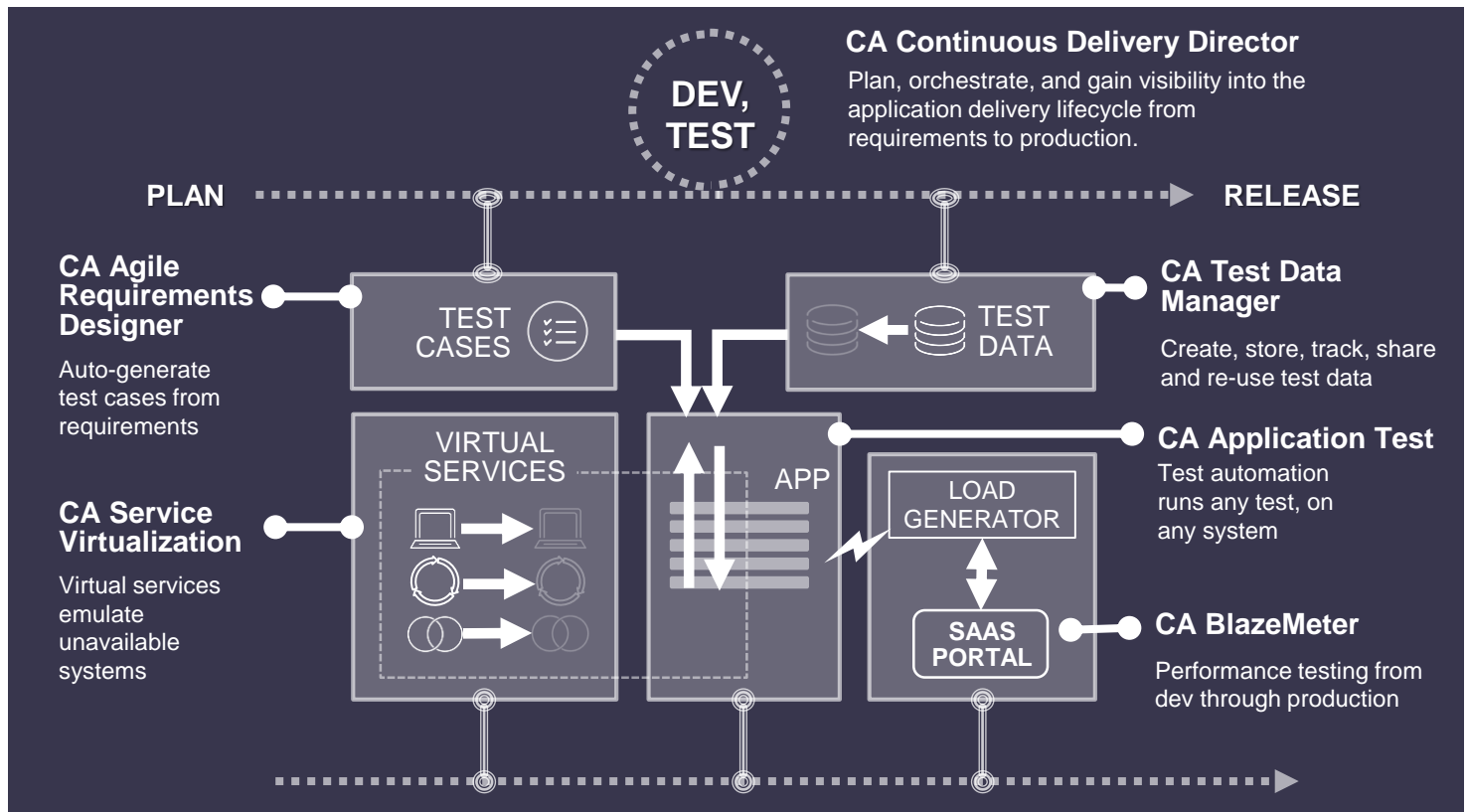
Application Delivery is a strategy for eliminating constraints—It helps organizations accelerate completion of software projects, deliver higher quality, and lower the cost of development. Products include:

- **CA Agile Requirements Designer** enables you to build test cases from the planning stage as user stories are created and developed. You use your business requirements to create the build model-based testing plan. The goal is to create the right number of test cases to cover all the scenarios in the application you're building.

- **CA Service Virtualization** creates a virtual environment that can emulate your production environment, allowing you to test pieces of your application as they're built. It allows you to test earlier in the process, when production systems like the mainframe or third-party services aren't available for testing.

- **CA BlazeMeter** is a SaaS-based performance testing tool that can test the scalability of your APIs, mobile app and more by simulating real world traffic and user conditions. Will your app perform as expected? BlazeMeter can help.

- **CA Application Test** helps you test the application layers below the user interface, so you know your API, MQ and other calls are working properly as they're built and before the UI is ready.

- **CA Test Data Manager:** You have an environment to test and you have tests to run in that environment that you're simulating in Service Virtualization. But you need actual data to see if the application performs. CA Test Data Manager can bring a subset of production data into your testing environment or create synthetic data on demand so you can fully test the performance of your application.

- **CA Continuous Delivery Director** ties the process together by automating and orchestrating the release of new code to staging environments once it's been tested and approved.

Continuous Testing
BUSINESS VALUE ESTIMATIONS

Release apps your customers want at the pace they demand.
Eliminate obstacles—develop swiftly, test agilely, release reliably.

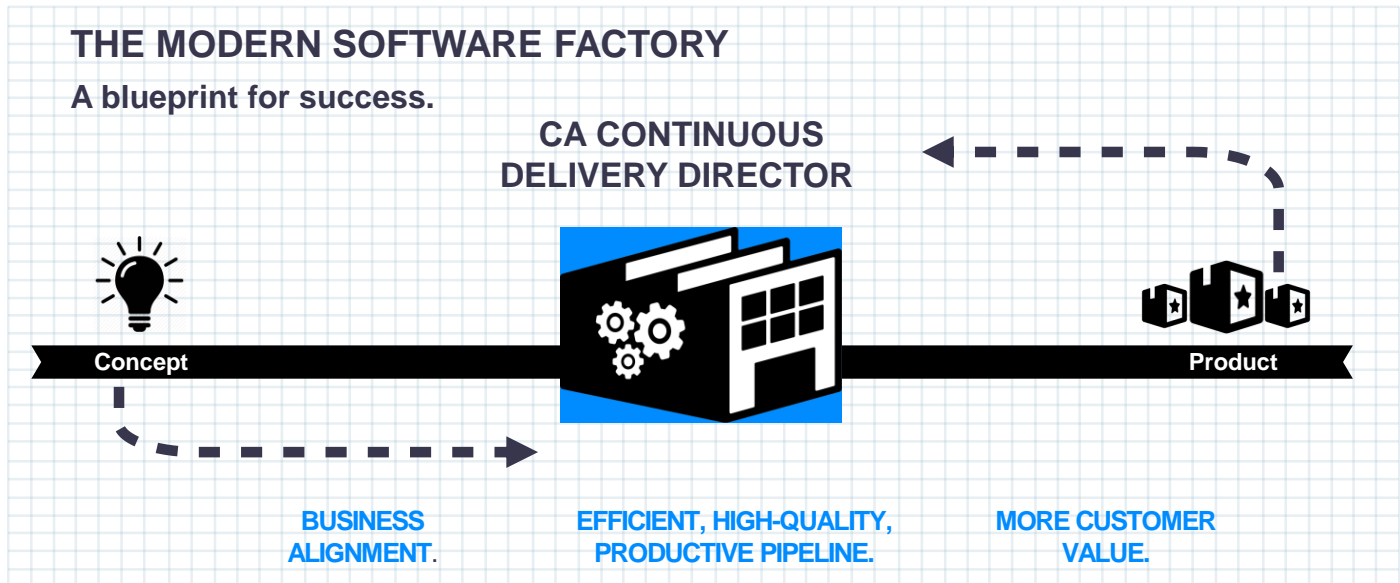| Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in development, test and QA costs	Automation of unit testing without code writing and improved testing through removal of dependency constraints	Cost reduction in development, test and QA resource labor	Service Virtualization	20 - 30%	Developer, testing, and QA FTEs
Reduction in costs of infrastructure environments required for test, development and QA	Reduce or eliminate maintaining multiple environments, testing tools, responders, and external user access fees through virtualization	Cost savings in unnecessary IT infrastructure	Enterprise Performance Testing	10 - 30%	Test and development environment equipment expense
Savings from shifting defects to the left in the SDLC	Auto-capture of traffic during late stage testing cycles provides automation test regressions suites for early stages	Cost reduction in defect remediation	Service Virtualization	30 - 40%	Bug fix support FTEs
Improved time to value for revenue generating applications	Faster development through all phases of the software development lifecycle	Revenue stream from early release	Service Virtualization	90 - 100%	Revenue related to new application releases
Cut release times from days to minutes	Faster deployment of applications into pre-production and production environments	Cost reduction in release management activities	Continuous Application Delivery	50 - 70%	Application release FTEs
Reduction in test data preparation costs	Automation of test data creation and test data masking lessens the cost of creating and maintaining test data	Cost savings in test data management resource labor	Test Data Management	30 - 40%	Test data management FTEs
Reduction in costs of performance testing for mobile applications	Mobile cloud performance testing	Cost savings in mobile devices used to perform mobile application testing	Application Testing	20 - 30%	Mobile device costs for testing mobile apps

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CA Continuous Delivery Director

Manage and Optimize Release Pipeline

Continuous delivery happens when businesses can deliver high-quality apps anywhere, any time, while working toward faster lead times, better quality and greater efficiency. As you cultivate a continuous delivery practice, new pressure points emerge for releasing apps—more dependencies, more contention for the same resources and more teams involved (all owning a piece of the app puzzle and working with their preferred tools).

THE MODERN SOFTWARE FACTORY

A blueprint for success.

CA CONTINUOUS DELIVERY DIRECTOR

Concept

Product

BUSINESS ALIGNMENT.

EFFICIENT, HIGH-QUALITY, PRODUCTIVE PIPELINE.

MORE CUSTOMER VALUE.

Key features

- Robust integrations to open source, commercial and home grown solutions across the DevOps toolchain
- End-to-end testing workflow with automated promotion of builds, feedback loops and risk assessment
- Multi-app, concurrent release planning and scheduling across all phases of the application lifecycle, including dependency/conflict management and coordination of larger release trains
- Cloud-agnostic environment support enabling consistent approach to releases regardless of underlying environments
- Actionable analytics dashboard for identifying bottlenecks, making smarter go/no go decisions and improving releases
- Continuous collaboration capabilities, like dynamic teams, shared comments and workspaces, and automated communications

Benefits and results

- **Efficient Pipeline:** Easily manage multiple, concurrent releases end-to-end, streamlining release processes, reducing errors, managing dependencies, and speeding remediation.
- **High-Quality Pipeline:** Shift left in the testing cycles, improve quality of deliveries and achieve continuous testing with full testing support and integrations.
- **Business Alignment:** Get a real-time view of application content in the pipeline (the who, what, where, when of all features and fixes), providing insight and full business value alignment.
- **More Customer Value:** Become more efficient (reducing rework, failures, manual processes) and reinvest in delivering more value to end-customers.

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CA Continuous Delivery Director
BUSINESS VALUE ESTIMATIONS

CA Continuous Delivery Director is a powerful pipeline planning, orchestration and analytics solution that enables teams to eliminate spreadsheets, automate test processes, work better together and continually improve the delivery of revenue-generating features to end-customers.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Improve release manager productivity	• Eliminate use of spreadsheets and ad hoc methods to manage releases • Reduce release set-up/design time and reuse releases • Streamline release planning, scheduling, approvals, feedback loops • Effectively manage interdependencies and conflicts • Automatically capture an audit trail of release activity for overall compliance and governance • Enable data-driven, go/no-go release decisions	Cost reduction due to improved release manager efficiency	20 - 30%	Release Management FTEs
Improve quality with continuous testing workflow	• Test earlier and in parallel (shift quality left) • Integrate and automate testing in existing release workflows • Improve efficiency of app dev/test cycle • Reduce development rework and effectively end late rework • Avoid environment contention • Automate communications and feedback among dev/test/release teams	Cost reduction in rework, finding issues earlier in the cycle, and eliminating manual testing activities	10 - 20%	Development / Testing FTEs
Eliminate release pipeline friction	• Enable better communication and collaboration across multiple teams • Quickly pinpoint root causes of release errors • Greatly reduce opportunities for human errors and mistakes • Reduce mean time to repair/restore/resolve (MTTR)	Cost reduction in release error remediation and elimination	40 - 50%	Annual Release Errors
Increase flow of value to customers by delivering more, faster	• Create standard, reusable release practices • Manage increased volumes and frequency of releases • Reduce delays in releasing applications • Enforce standard release criteria and release windows • Continually improve app delivery through actionable analytics • Provide complete end-to-end insight and control to prioritize based on business impact	Revenue enhanced by a regular cadence of on-time releases	5 - 15%	Revenue-generating apps delivered regularly and on schedule

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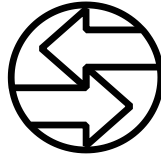
CA BlazeMeter®

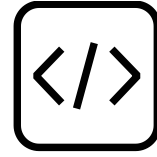Reduce time, risk and cost of delivering new products and incremental changes to customers

SHIFT LEFT TESTING

Approach to software/ system testing where testing is performed in the development phase of lifecycle

Testing performed often & integral part of continuous integration (CI)

Simplified test scripting & automated instant reporting of test results

Key features

- **JMeter performance testing:** BlazeMeter is 100% compatible with Apache JMeter.

- **The Fastest API testing Tool:** API tests are super easy to set up.

- **Run website testing with Real Browsers:** BlazeMeter WebDriver tests drive load traffic from real browsers, using the same interactions as your users, and can even be derived from your Selenium functional tests.

- **Scalable Load Testing from Anywhere:** Scale your virtual user traffic from 2 to 2 Million.

- **Real-time Reporting and Comprehensive Analytics:** Find bottlenecks more quickly using our rich, interactive Timeline Graph. The Aggregate Report provides a clear tabular layout of all the critical metrics for the test and can easily be downloaded as a CSV file for further use.

- **Performance Testing for Developers:** With BlazeMeter, developers can easily create tests in their favorite editor using straightforward YAML or JSON syntax.

Benefits and results

- **Use a SaaS/Cloud based solution** that requires no installation and can be used from anywhere, by anyone

- **Developers and practitioners can help test earlier and often** in the application lifecycle, even for mobile web sites and native apps

- **Conduct performance testing** at the speed of agile

- **Identify bottlenecks that directly affect revenue** by enabling performance engineers to test and analyze system's latency as well as other metrics

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CA BlazeMeter®
BUSINESS VALUE ESTIMATIONS

Developer-friendly load testing solution suitable for managing performance across the entire application lifecycle

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Reduced cost of Dev, Test & QA operations	• Eliminates the work required for setting up the IT for generating load and performance tests • Provisions testing engines on the fly and enables reports to be available anywhere • Dev & QA teams can share and leverage the same tests and reports resulting in shorter turn arounds and more efficient communication	Cost savings in Dev, Test & QA labor resources	4 - 6%	Developer, testing, and QA FTEs
Reduced cost of remediating performance defects by shifting defects to the left in the SDLC	• Developers can write and develop tests as code in domain specific language (DSL) • Developers may instantly run Open Source tests without leaving their favorite application development tools • Developers can run performance tests against web and mobile apps, microservices and APIs	Cost savings in defect remediation labor resources	25 - 45%	Test and development environment equipment expense
Improved revenue assurance due to full-scale production testing under load	• Full-scale production testing with traditional tools requires large standing hardware and software investments • Enables performance engineers to test and analyze system's latency as well as other metrics to identify bottlenecks that directly affect revenue	Revenue at risk due to inadequate testing at production scale	1 - 2%	Revenue touched by developed apps
Reduced costs on infrastructure required for pre- & production testing environments	• Helps avoid hardware, software acquisition, maintenance costs and costs of physical space, cooling, and power, and staff costs for traditional (e.g., LoadRunner) solutions • Permits pay-as-you-go using elastic resources of cloud-based testing	Cost reduction in IT infrastructure for testing environments	50 - 70%	Combined cost of hardware, software, and facilities
Increased savings on cost of Testing Centers of Excellence operations	• Helps transform the Center of Excellence to Center of Enablement with smaller number of player-coach/mentor types who will do less test creation and execution • Creates cost savings from moving from CoE shared services model's queue	Cost reduction in test Coe resource labor	5 - 15%	Performance testing FTEs
Improved customer satisfaction through continuous revenue assurance through dev & test of new features	• Reduces likelihood of disruptions in operations especially forced resignations, separations, or reassignment of staff • Reduces cost of retraining and disruption of replaced staff	Enhanced revenue from continuous app improvement	1 - 2%	Revenue flowing through impacted apps

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Service Virtualization

Reduce development and test cycles and speed time-to-market
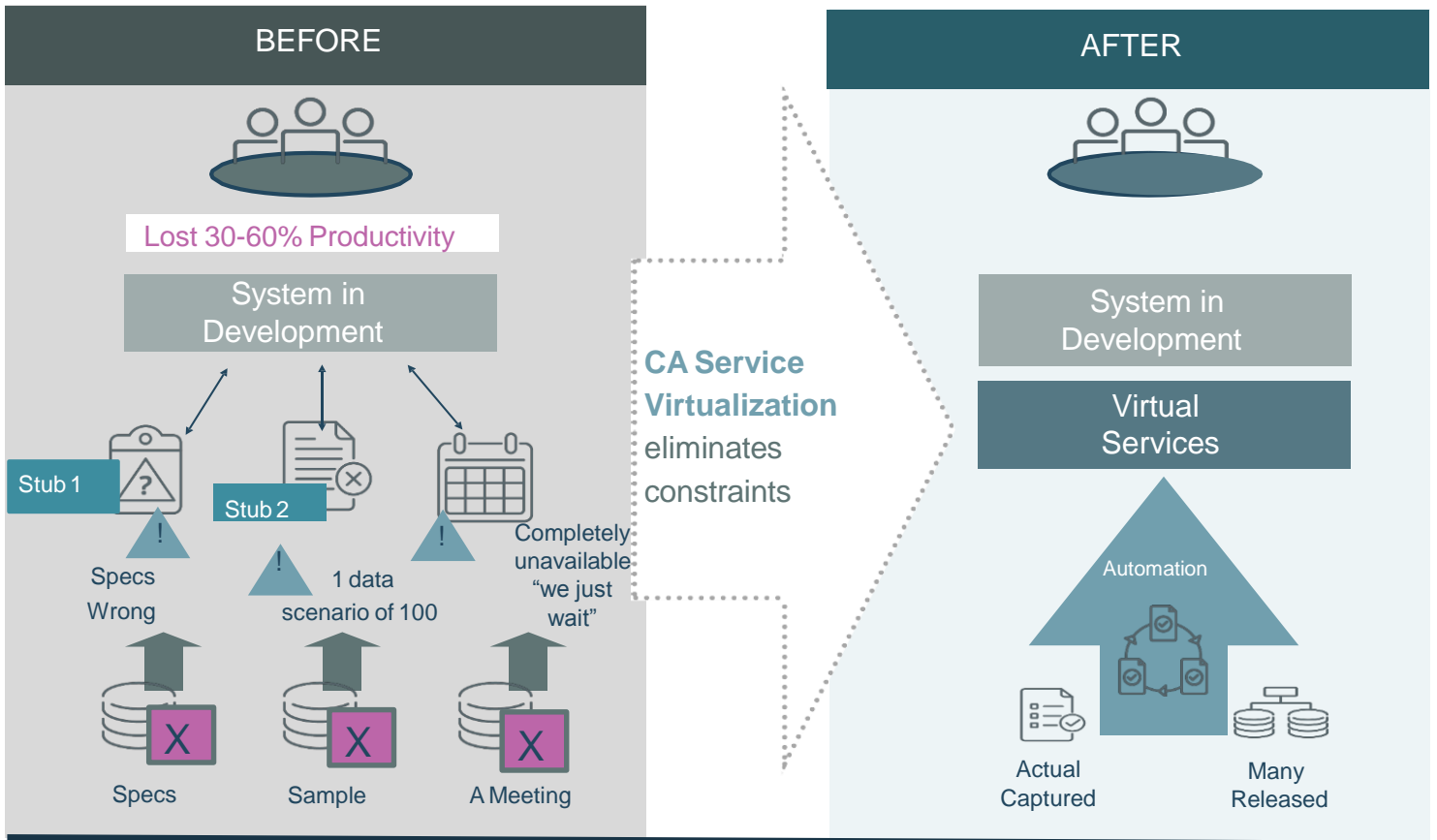
The patented capabilities in **CA Service Virtualization** eliminate constraints through its unique ability emulate a system's dynamic behavior, performance and data so the need for integration with dependent systems during development and testing is eliminated or reduced.

CA Service Virtualization helps overcome:

Infrastructure constraints. Reduce the amount of hardware and software needed for a highly scalable, productive, unconstrained development and testing environment.

External service constraints. Eliminate barriers and streamline development by simulating dependent systems including mainframes, external service providers and ERP systems.

Parallel development constraints. Allow projects to be developed in parallel instead of a classic serial, waterfall model, accelerating development and time-to-market.

Test scenario constraints. Dramatically simplify the creation and management of development and testing processes, such as test data, system configuration, and other non-value-add activities.

CA Service Virtualization
BUSINESS VALUE ESTIMATIONS

Benefits

- Parallel development and testing
- Infrastructure requirement reduction
- "Shift Left" and test more

- Performance readiness
- Elimination of costs for third-party services

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in development, test and QA costs	Automation of unit testing without code writing and improved testing through removal of dependency constraints	Cost reduction in development, test and QA resource labor	Service Virtualization	20 - 30%	Developer, testing, and QA FTEs
Reduction in costs of infrastructure environments required for test, development and QA	Reduce or eliminate maintaining multiple environments, testing tools, responders, and external user access fees through virtualization	Cost savings in unnecessary IT infrastructure	Service Virtualization	10 - 30%	Test and development environment equipment expense
Savings from shifting defects to the left in the SDLC	Auto-capture of traffic during late stage testing cycles provides automation test regressions suites for early stages	Cost reduction in defect remediation	Service Virtualization	30 - 40%	Bug fix support FTEs
Reduction in lab setup and test data setup costs	Eliminating or minimizing the need for real test data and underlying systems, simplifying a complicated process	Cost reduction in test data setup costs	Service Virtualization	40 - 60%	Test data setup FTEs
Improved time to value for revenue generating applications	Faster development through all phases of the software development lifecycle	Revenue stream from early release	Service Virtualization	90 - 100%	Revenue related to new application releases

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Service Virtualization for zOS Platform

Reduced mainframe costs, improved quality, and speed time-to-market

The patented capabilities in CA Service Virtualization eliminate mainframe related constraints through its unique ability to emulate the mainframe's dynamic behavior, performance and data, so the need for integration with mainframe systems during development and testing is eliminated or reduced. It helps overcome:

- Mainframe Infrastructure constraints
- Mainframe service constraints
- Parallel development constraints
- Test scenario constraints

Types of Virtualization in a Mainframe Environment
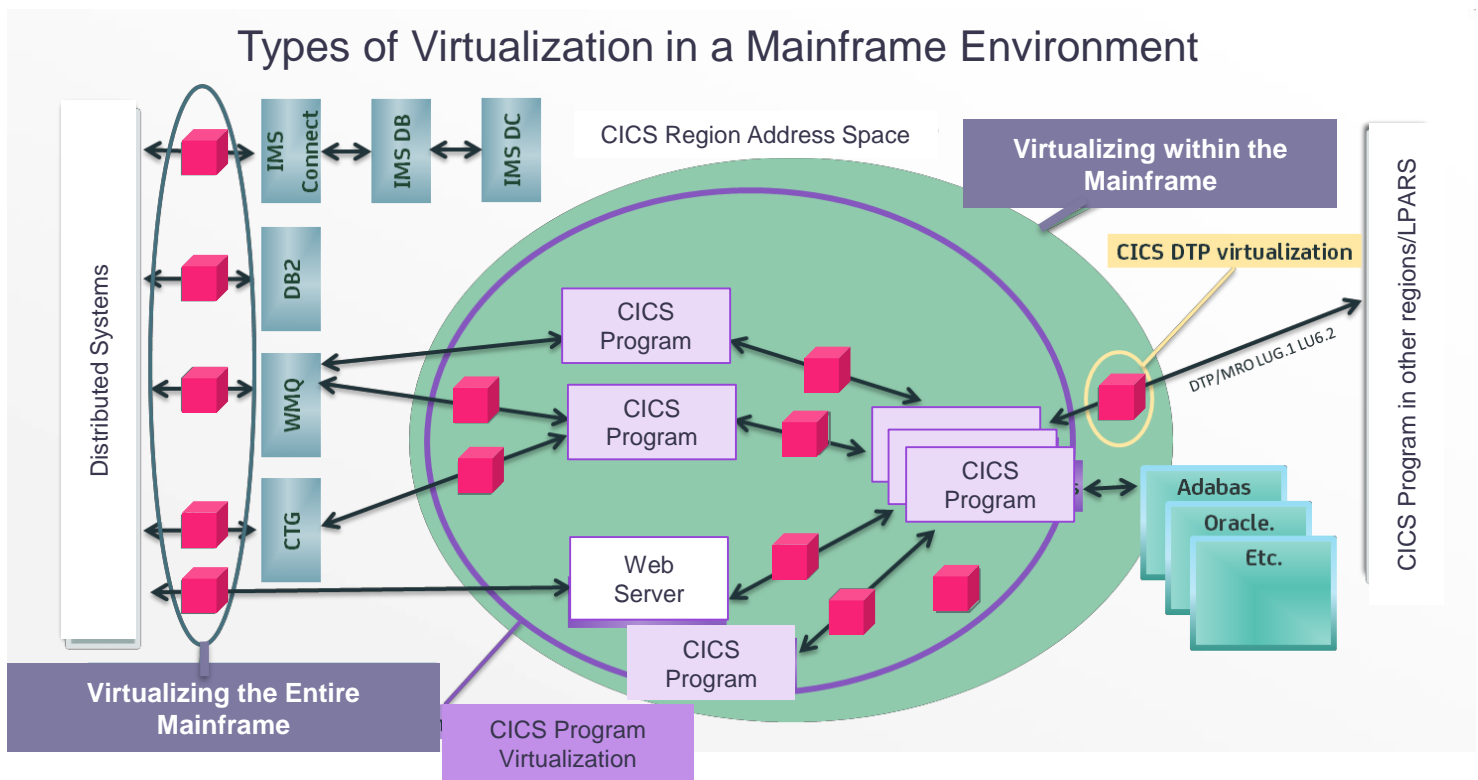
Key Benefits

Parallel development and testing. Enable multiple development and testing teams to work in parallel, eliminating mainframe scheduling bottlenecks and speeding time to market

Mainframe MIPS reduction. Reduced mainframe costs by eliminating the requirement for additional MIPS, disk space, software licenses, etc.

"Shift Left" and test more. Test earlier in the software lifecycle when issues are easier and less expensive to

resolve **Performance readiness.** Load test at the component level with production-level conditions

Elimination of costs for third-party services. Avoid costs by simulating needed third-party services

CA Service Virtualization of zOS Platform
BUSINESS VALUE ESTIMATIONS

- Recording desired mainframe responses to distributed system requests when the mainframe and all back-end systems are available

- "Agent based" virtualization with requests and responses recorded between mainframe components

- CICS DTP connections may be virtualized with no modifications to the program issuing the DTP command, the target program or the CICS configuration

- Ability to use CICS LINK and DTP MRO data as input for building a virtual service

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in development, test and QA costs	Automation of unit testing without code writing and improved testing through removal of dependency constraints	Cost reduction in development, test and QA resource labor	Service Virtualization	20 - 30%	Developer, testing, and QA FTEs
Reduction in costs of mainframe infrastructure required for test, development and QA	Reduce or eliminate maintaining mainframe environments through virtualization	Cost savings in unnecessary mainframe infrastructure	Service Virtualization	70 - 90%	Testing MIPS
Savings from shifting defects to the left in the SDLC	Auto-capture of traffic during late stage testing cycles provides automation test regressions suites for early stages	Cost reduction in defect remediation	Service Virtualization	30 - 40%	Bug fix support FTEs
Reduction in mainframe and distributed environment setup and test data setup costs	Eliminating or minimizing the need for real test data and underlying systems, simplifying a complicated process	Cost reduction in test data setup costs	Service Virtualization	40 - 60%	Test data setup FTEs
Improved time to value for revenue generating applications	Faster development through all phases of the software development lifecycle	Revenue stream from early release	Service Virtualization	90 - 100%	Revenue related to new application releases

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

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CA Veracode Greenlight

Find security defects in your code in seconds

Instant Scanning for Developers – Right in the IDE

Scan code as you write, and get in-context remediation guidance – so you can fix flaws right in your IDE, at the speed of DevSecOps. CA Veracode Greenlight is able to provide results in as little as 3 seconds.

Scan Before You Commit Your Code

CA Veracode gives you the ability to scan your code, right in your favorite IDE, while you are coding. Whether you are coding in Java, JavaScript, C#, or VB.NET, Veracode Greenlight has you covered.

You'll receive positive feedback when you are correctly using secure coding practices, as well as instant insight into any security flaws that are discovered.

Receive instant insights into:

- Severity of the flaw
- Flaw type, like SQL Injection or Cross Site Scripting
- The associated CWE
- Line of code where the flaw is located

Fix Flaws Faster
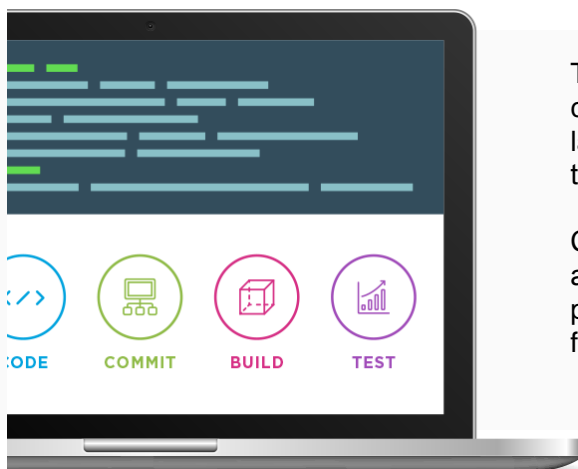
The majority of the scans done with CA Veracode Greenlight complete in seconds (mileage may vary by programming language). This means you are getting feedback before you get too far, that's the speed of DevSecOps.

CA Veracode Greenlight scans files, classes, or small packages and delivers those results back to your IDE in seconds. It's a personal security coach while you code, pointing out security flaws right away so you can fix them immediately

CA Test Data Manager

Improve test data coverage and application quality

Test Data Management Strategy

Short Term Strategy	Medium Term Strategy	Long Term Strategy
• Data Privacy • Governance and Compliance	• Managing complex architectures • SOA development and test • Accelerating app delivery • Reducing cost • Moving to the cloud	• Improving IT-Business communication • Moving to Agile
• Masking, Sub-setting	• Data Analysis and Coverage • Synthetic data creation • Test data repository • Test Matching • Data Design	• Complete Test Data Management across enterprise • Agile Services

CA Test Data Manager

CA Test Data Manager provides the capability to quickly design, find, create and provision 'fit for purpose' test data for the efficient, cost-effective test cycles needed to deliver valuable applications earlier.

CA Test Data Manager can also enhance the quality of your production data, or fill gaps in your coverage, based on the optimal minimum set of test cases to fully cover your requirements. Using innovative functionality to find and match existing data to specific tests, or generate synthetic data, some organizations have reported as much as a 90-95% reductions in the time taken to provision high quality test data.

CA Test Data Manager helps ensure that teams receive the 'right' data, in the 'right' place, at the 'right' time to shift defects to the left in the software development lifecycle (SDLC) and to reduce time-to-market.

CA Test Data Manager
BUSINESS VALUE ESTIMATIONS

Key features include:

- High performance data masking and data sub-setting
- Coverage techniques
- Synthetic data generation
- Test matching
- Central test data repository

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in test data provisioning and creation costs	Capability to quickly design, find, create and provision 'fit for purpose' test data, using both production data and synthetic data	Cost reduction in test and QA resource labor	Test Data Manager	30 -50%	Testing and QA FTEs
Reduction in test data storage and database costs	Synthetic data creation techniques to generate smaller, richer sets of test data	Cost savings in unnecessary storage and database sets	Test Data Manager	10 -30%	Storage and database infrastructure costs
Savings from shifting defects to the left in the SDLC	Production data typically offers 20-30% of the functional coverage required to fully test an application. Access to additional data, including synthetic data, may enhance test coverage	Cost reduction in defect remediation	Test Data Manager	20 -30%	Bug fix support FTEs
Reduction in QA costs from test automation failures	Elimination of bad data conditions, which account for 50% of test failures through better and more accurate test data	Cost reduction in QA and testing costs	Test Data Manager	40 -60%	QA FTEs
Improved time to value for revenue generating applications	Faster development through all phases of the software development lifecycle	Revenue stream from early release	Test Data Manager	10 -30%	Revenue related to new application releases

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA API Management
To securely expose APIs to partners, developers, mobile apps & cloud services

Digital initiatives based on APIs are all about providing scalable, reliable connectivity between data, people, apps and devices. CA API Management helps you solve the challenge of integrating systems, adapting services, orchestrating data and rapidly creating modern, enterprise-grade APIs from different sources.
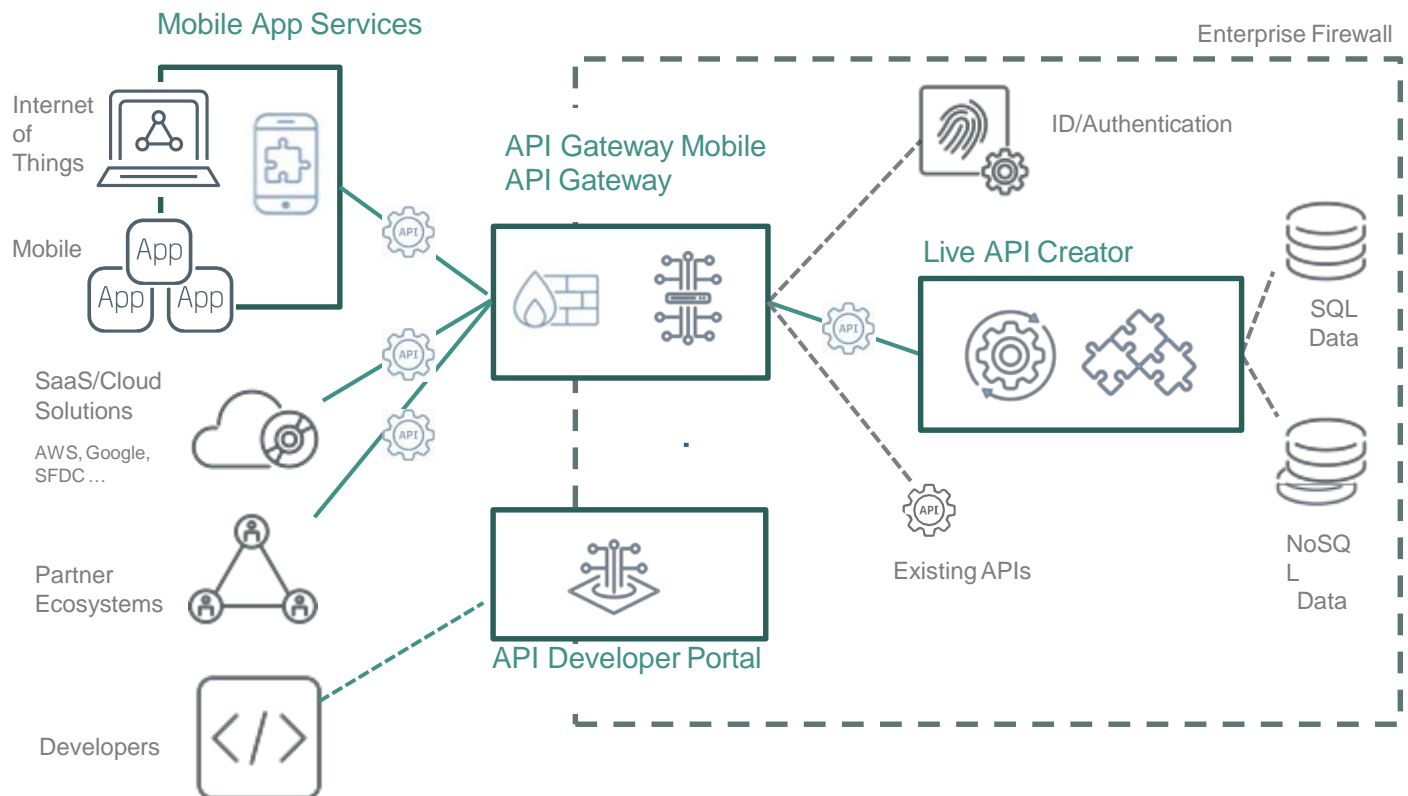
CA Live API Creator lets you rapidly create API connectors from data base sources, such as mongo DB and Oracle SQL databases! What used to take developers three to four weeks to create in API may now be done in fewer than five clicks.

CA Mobile App Services provides core back-end services for building end-to-end enterprise mobile applications.

And **CA API Management SaaS** enables you to combine the convenience of cloud SaaS with enterprise- level security.

Read more at http://www.ca.com/us/products/api-management.html

CA API Management
BUSINESS VALUE ESTIMATIONS

Increasingly, enterprises are opening their data and applications to partners, developers, mobile apps and cloud services. APIs provide a standardized way to open up information assets across the Web, mobile devices, Service Oriented Architecture (SOA) and the cloud. However, to make API information sharing safe reliable and cost-effective, enterprises must deal with critical security, performance management and data adaptation challenges.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Faster time to market for revenue producing applications	Advanced functionality for backend integration, mobile optimization, cloud orchestration and developer management allows for faster deployment of revenue-generating apps	Enhanced revenue from early introduction of new apps	45-55%	Revenue
Reduced cost due to decreased exploitation of vulnerabilities	Delivers unparalleled security capabilities to prevent successful exploits that lead to expensive system damage, system downtime, customer attrition and legal fees	Cost avoidance of security breaches	30-50%	Cost of breaches
Increased revenue protection through improved business services availability	Enables IT teams to expertly manage the performance and availability of mission-critical application infrastructure resources to better assure revenue streams	Revenue loss protection	5-15%	Revenue
Reduced service provider resource cost	Frees up resources by delegating resource-intensive tasks from the application to the Layer 7 Gateway	Cost avoidance of service provider resources	30-50%	Service provider costs
Reduced cost of software maintenance for replaced API management solutions	Allows the IT organization to realize cost savings from consolidating and retiring single purpose or obsolete tools	Reduction in software costs	90-100%	Software
Improved productivity for internal application end-users	Gateways are architected for high performance, scalability, reliability and availability., all of which enable improved uptime for end users	Cost reduction in internal end-user labor	30-40%	End-users
Improved productivity for development staff	Enables 'configure/not-code' approach increases productivity and frees up FTE resources which can now be assigned to other tasks	Cost reduction in internal developer labor	30-40%	Developers
Reduced costs through virtualization	Enables use of virtual appliance form factor which reduces the cost of the hardware infrastructure supporting the solution	Reduction in hardware costs	20-30%	Hardware

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Live API Creator

Create APIs quickly from existing data sources
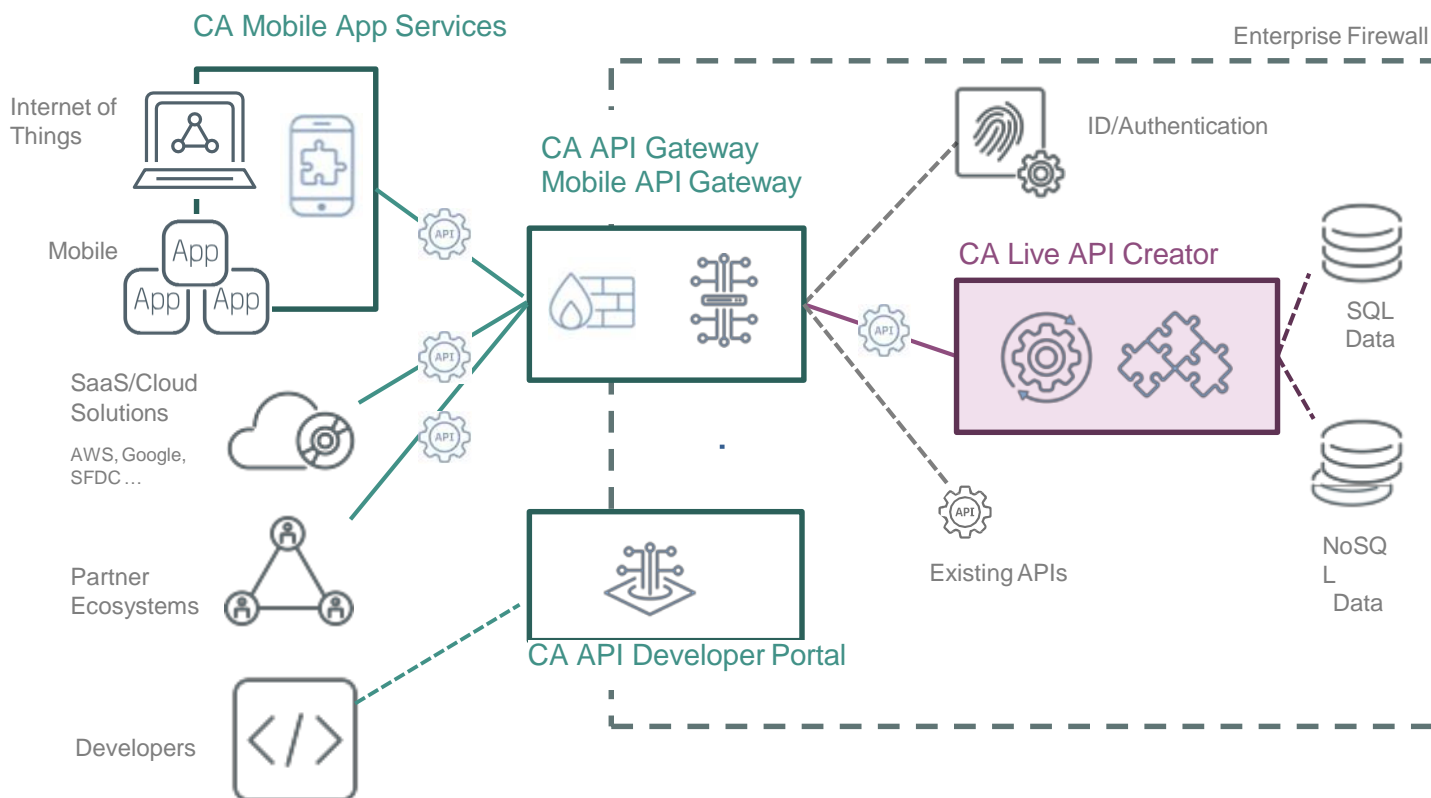
CA Live API Creator lets you rapidly create API connectors from data base sources, such as mongo DB and Oracle SQL databases! What used to take developers three to four weeks to create in API may now be done in fewer than five clicks.

- Point and click exposure of REST APIs integrates SQL, NoSQL and external API resources

- Custom APIs combine multiple data sources with uniform business logic

- Supports JavaScript validation, derivation and logic extensibility

- Reactive programming model for business rules, provides order of magnitude productivity improvement over traditional approaches

CA Live API Creator
BUSINESS VALUE ESTIMATIONS

- Easier integration and mobilizing of information resources
- Creates opportunities for partnership based on reuse of data and application resources
- Expands existing business models by monetizing valuable enterprise data
- Enables secure data access based on user or role

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Reduced cost of development and testing	• Reduce lines of code to be written by using Reactive Logic • Reactive Programming is transparent to Business Users so that issues are found sooner • Lower developer skill sets required	Cost reduction in developer labor	30 - 50%	Typical project expense
Increased security of applications for improved audit compliance	• Provides fine-grained access control over databases, tables, rows, columns, fields and operations • Provides declarative security model that extends to all new APIs / resources without a need for new access control code	Cost reduction in security resource labor	20 - 30%	Security compliance staff
Reduced risk of data breaches	• Avoids exposing more data than is intended • Exposes data only to intended users	Revenue at risk from potential data breaches	3 - 7%	Lost revenue & notification and remediation cost
Improved opportunities for API monetization	• Partnership opportunities based on reuse and increased utilization of data and application resources • More easily integrating and mobilizing owned data and information • Unlock existing enterprise data for data-as-a-service	Value of new revenue streams	4 - 6%	New revenue streams created
Improved Time to Value for Revenue Generating Applications	• Faster development through all phases of the software development lifecycle	Earlier revenue streams from faster app releases	15 - 45%	Revenue from new apps

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CA Mobile App Services

Accelerate IoT and mobile app development with simple and secure SDKs and APIs

In the application economy, APIs are essential for executing ideas quickly and for seizing new business opportunities. APIs are the building blocks of digital transformation, allowing you to deliver exceptional customer experiences, create new revenue streams and to connect employees, partners, apps, and devices to data, anytime, anywhere.

The CA API Management portfolio provides a central launch point for your digital strategy. It enables you to integrate legacy and modern systems, create APIs almost instantly, secure them with industry-leading protection, accelerate mobile and IoT development, and unlock the value of these connections through analytics and monetization.

CA Mobile App Services is a key part of the CA API Management product family, and provides a secure and consistent way for developers to consume APIs and build modern mobile apps by allowing them to offload critical but difficult and repetitive tasks to a proven combination of SDKs and APIs.
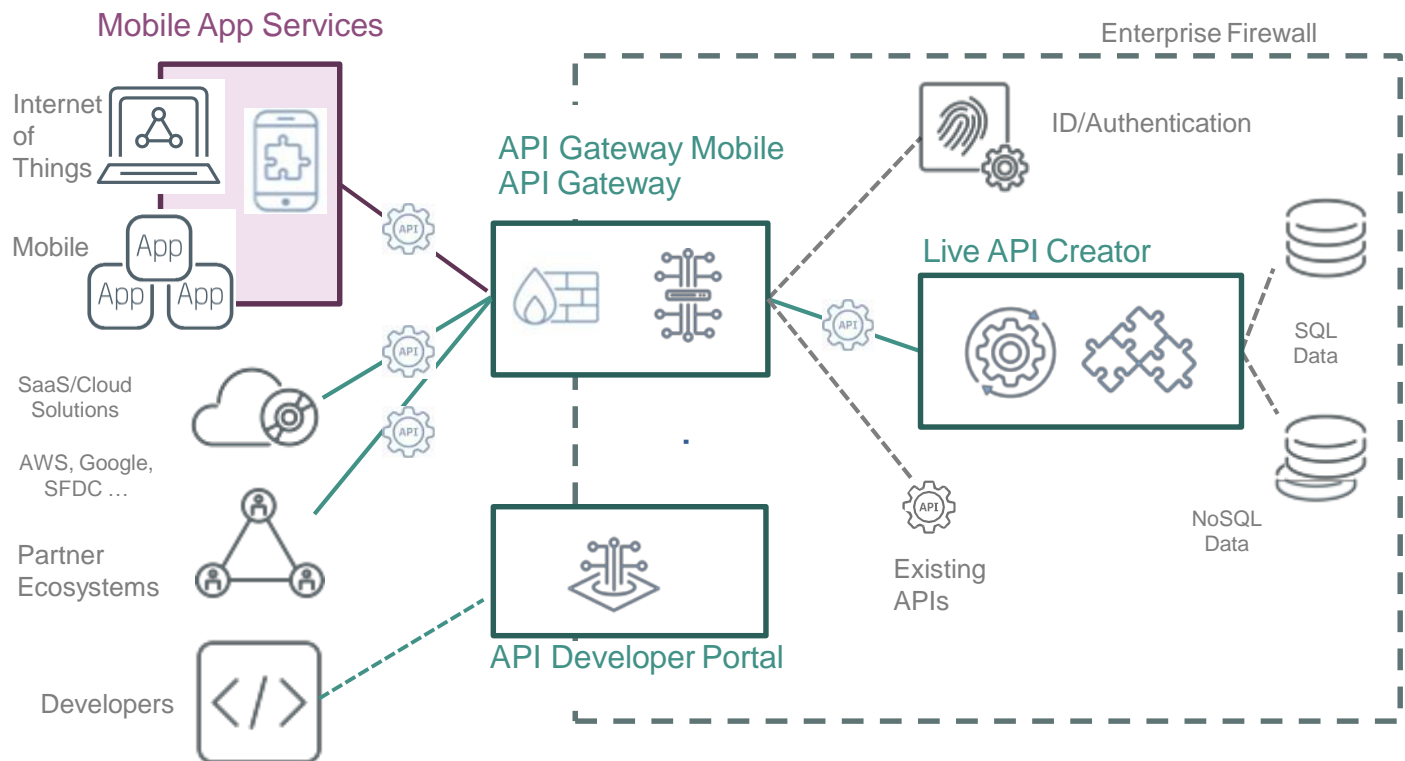
Key Features
- User and identity management with SCIM 2.0 interfaces
- Group management for enterprise, ad-hoc, and virtual groups
- Management of publish and subscribe via MQTT 3.1.1 proxy model support between broker and client
- User to user and user to group messaging for mobile apps
- Local encrypted data and private cloud storage tied to apps, users, or groups

CA Mobile App Services
BUSINESS VALUE ESTIMATIONS

- Write modern apps that can engage with environment through proximity framework
- Write reactive apps that can utilize near real-time propagation of events and data via Pub/Sub
- Create ad-hoc groups that can be used to enhance sharing in collaboration apps
- Security weaved into the app fabric for data at rest and in motion
- Increase developer productivity by providing APIs and SDKs for these functions instead of custom coding

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Faster time to market for revenue producing mobile and IoT applications	Integrated SDKs / APIs for handling core mobile app functionality (security, messaging, pub-sub, secure offline storage) reduces need for ad hoc R&D and Development; from earlier introduction and faster iterations of mobile functionality	Enhanced revenue	45 - 55%	Portion of total revenue impacted
Reduced cost due to decreased exploitation of vulnerabilities	Offload security risks and responsibilities away from front-end developers to proven OAuth 2.0, OpenID Connect, PKI, social login, SSO, mutual SSL, and other security features.	Cost avoidance of security breaches	30 - 50%	Annual cost of breaches
Increased revenue protection through improved business services availability	API Gateway and MAS SDKs and APIs designed to work together to provide enterprise scale and performance to ensure uptime and availability of critical mobile / IoT applications.	Revenue loss protection	5 - 15%	Portion of revenue impacted
Reduced cost of developing, maintaining, securing, and iterating mobile and IoT applications	Allows the IT organization to realize cost savings from leveraging out-of-the-box core mobile app functionality vs. developing and maintaining basic capabilities from scratch throughout the app lifecycle.	Cost reduction in ongoing maintenance labor	90 - 100%	Maintenance FTEs
Improved productivity for internal mobile application end-users	APIM MAS provides modern capabilities that allow for reactive apps that use near real-time propagation of events, publish, and subscribe etc. using back-end data as well as high-demand features like user collaboration, data storage and functionality offline, etc.	Cost reduction in internal mobile end-user labor	1 - 3%	Internal end-user FTEs
Improved productivity for development staff	Provides developers with effective tools to accelerate mobile development through easier data access, easier implementation of security, and easier implementation of core mobile capabilities.	Cost reduction in internal developer labor	20 - 30%	Developers FTEs

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CA Application Lifecycle Conductor
Track and govern the application lifecycle from mobile to mainframe

CA Application Lifecycle Conductor (CA ALC) coordinates the management of interrelated products, processes and functions supporting an enterprise application life cycle. CA ALC provides a control center and dashboard capable of obtaining and delivering comprehensive, traceable information that governs, drives and supports critical management decisions across the application development process. The CA ALC unique connector technology provides insight into the process and tools associated with a particular development activity, offering easier and more efficient use, and helping to maximize the value of best-in-breed products, regardless of vendor, while expediting the delivery of business requirements.
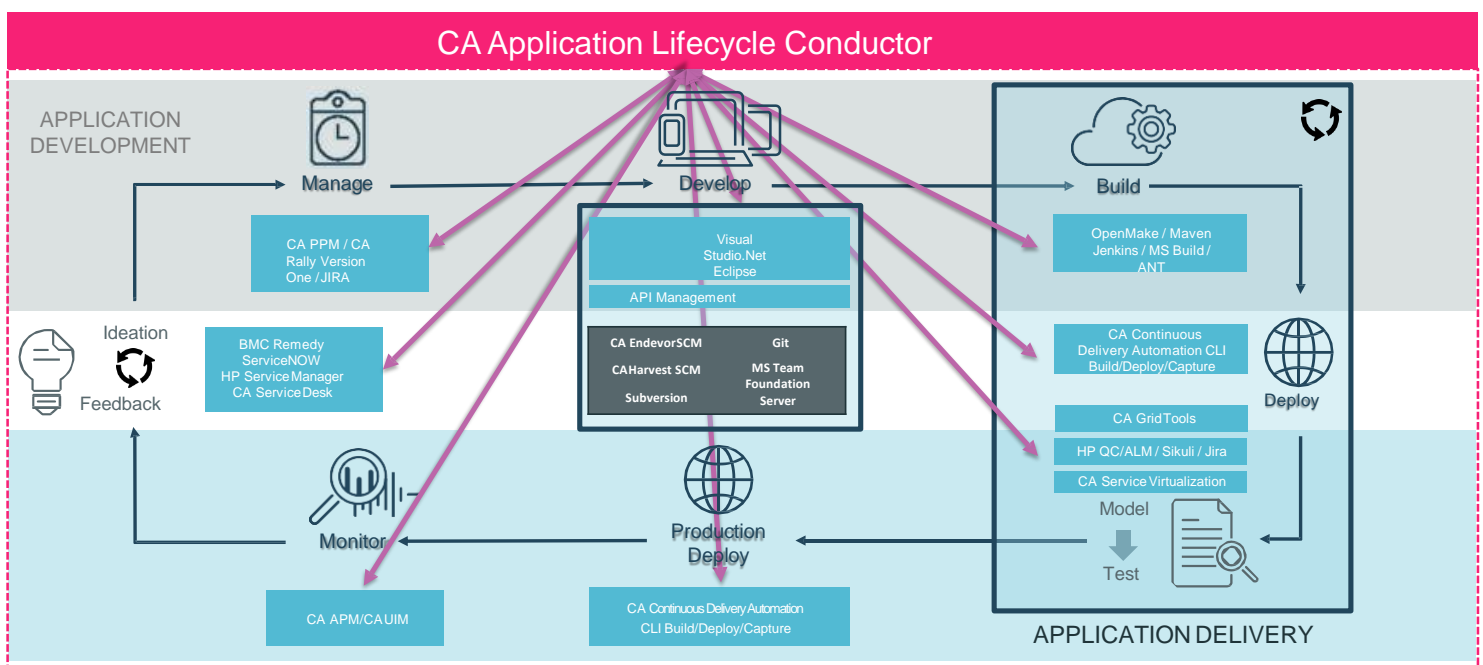
- **Solution-building integration.** Integrates with CA requirements, code generation, SCM, build, test, scheduling, deployment and monitoring products, and best-in-breed third-party software.

- **End-to-end traceability for audit and regulatory compliance.** Platform and product independent; activities, timestamps, and users are captured, stored and available for viewing and reporting.

- **Automated management of mandated, predefined policies.** The workflow engine certifies, supports and enforces standardized, repeatable processes and methodologies.

- **Single, comprehensive dashboard.** Affect, track and view all processes from an enterprise console for rapid development and delivery.

- **Requirements and defect tracking.** Create, build, track and store projects, requirements, tests, binaries, defects and more.

CA Application Lifecycle Conductor
BUSINESS VALUE ESTIMATIONS

Fuel DevOps with CA Application Lifecycle Conductor. Its unique connector technology easily integrates with many CA products, as well as best-in-class, third-party application lifecycle tools to facilitate smooth transitions as activities flow from one stage in the application lifecycle to the next.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduced Costs by Accelerating Collaboration and Orchestration	Reduced effort required for App Dev FTEs to collaborate, communicate, and orchestrate software change management and related activities through ALC's connector technology.	Cost reduction in application development resource labor	Software Change Management	15 - 25%	Application developer FTEs
Reduced Complexity of Development Environment	Reduced effort by App Dev FTEs in managing interrelated products, processes, and functions in the application lifecycle through automation and enforcement processes for tracking & audit	Cost reduction in application development resource labor	Software Change Management	15 - 25%	Application developer FTEs
Improved Development Maintenance Effort	Reduced effort by App Dev FTEs by integrating products through centralized administration and version management features, including software access and retrieval, and tracking bugs and fixes	Cost reduction in application development resource labor	Software Change Management	15 - 25%	Application developer FTEs
Faster Time-to- Market from Faster Application Development	Speed time-to-value of revenue impacting project efforts through improved insight to development activities by allowing users to affect, track and view all SCM processes from an enterprise console	Annual incremental revenue from projects	Software Change Management	5 - 10%	Annual revenue
Reduced Risk of Project Failures	Improved insight to ongoing application development activities helps organizations avoid or reduce project failures through a traceability matrix that provides a unified view of enterprise change as the project moves through its life cycle.	Reduction in cost of project failures	Software Change Management	30 - 40%	Annual Project Costs

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.
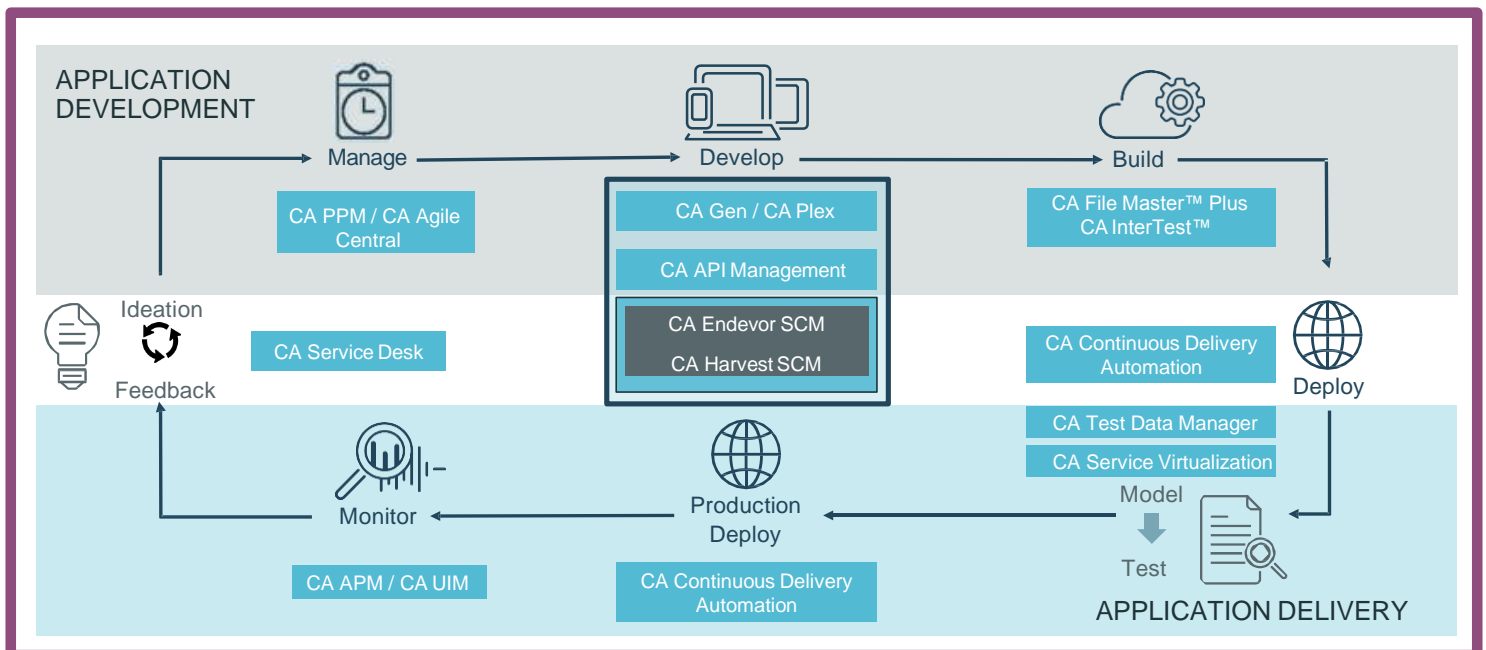
CA Software Change Management
Auditable change control

CA Technologies has decades of experience in software change management. Thousands of developers and administrators rely every day on CA Endevor® Software Change Manager (CA Endevor® SCM) for mainframe change management and CA Harvest Software Change Manager (CA Harvest SCM) for distributed software change management. Your software assets are invaluable to your organization.

Updating them must be done with great care and all changes must be auditable. These SCM solutions provide software lifecycle checkpoint and promotion functionality that includes snapshots of current or prior versions of all files and the promotion of current file versions. And you can drill down into the change history of each file to quickly determine who made what changes and when they made them.

This is especially important for auditing and compliance mandates. With thorough inventory management, business

-driven authorization requirements and electronic approval capabilities, these solutions protect software assets, helping to maintain industry best practices and compliance standards while keeping organizations better equipped to address software change audits.

Software Change Management (SCM) includes:

- **Inventory Management** -- track and manage your source code
- **Change Management** -- provide total audit trail of changes
- **Build Management** -- streamline and mange the build process
- **Configuration Management** -- track the relationships between your components
- **Release Management** -- Control and approve the movement of your code through the life cycle
- **Concurrent Development** -- prevent and regression and maintain code integrity

CA Endevor® SCM and CA Harvest SCM
BUSINESS VALUE ESTIMATIONS

CA Endevor® SCM has the largest user base for mainframe SCM in the industry!

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Improvement in systems management	The Customizable Reporting, Build Management and Version Management features of the CA SCM solution will result in an improvement in CCM activities which can subsequently reduce the company's systems management costs	Cost reduction in application development resource labor	10 - 12%	Application developer FTEs
Reduced complexity of development environment	Reduced effort by App Dev FTEs in managing interrelated products, processes, and functions in the application lifecycle through automation and enforcement processes for tracking & audit	Cost reduction in application development resource labor	4.2 - 4.7%	Application developer FTE
Improved development maintenance effort	Reduced effort by App Dev FTEs by integrating products through centralized administration and version management features, including software access and retrieval, and tracking bugs and fixes	Cost reduction in application development resource labor	2 - 4%	Application developer FTE
Faster time-to-market from faster application development	Speed time-to-value of revenue impacting project efforts through improved insight to development activities by allowing users to affect, track and view all SCM processes from an enterprise console	Annual incremental revenue from projects	2 - 4%	Annual revenue per new application
Reduced risk of project failures	Improved insight to ongoing application development activities helps organizations avoid or reduce project failures through a traceability matrix that provides a unified view of enterprise change as the project moves through its life cycle.	Reduction in cost of project failures	30 - 40%	Application developer FTE
Improved development lifecycle management productivity per CA Quick Edit	CA Endevor SCM Quick Edit enables you to shorten and reduce the steps in your lifecycle management process by providing a direct editing capability into CA Endevor SCM inventory. Using this tool, developers can quickly make their changes and save them instantly into CA Endevor SCM without taking any extra steps.	Cost reduction in application development labor	80 - 90%	Software change edit cycles
Improved productivity in the compare and merge concurrent development process	An extension of CA Endevor SCM capitalizing on its comparison and change reporting capabilities, PDM can be used with CA Endevor SCM or stand alone. It is very easy to use with a short learning curve. It is used to help compare, report, and merge concurrent development back into a single source. When more than one person is working on the same source code, it helps in resolving production abends and preventing code regression.	Reduced time comparing, reporting, and merging concurrent code into single source	78 - 83%	Compare & merge cycles

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CA Agile Requirements Designer

Improve test coverage through complex and changing requirements

DELIVER QUALITY SOFTWARE TO MARKET FASTER and AT LESS COST

Build better requirements	Accurately forecast the time and cost of develop	Auto-generate the smallest set of test cases with maximum coverage	Find or make the data needed to execute tests automatically

Automatically execute the tests, detect more defects earlier	Make a change to the requirements	Update test cases and data automatically	Deliver fully tested software which reflects constantly changing needs	Constantly and iteratively improve the software

CA Agile Requirements Designer

As today's economy forces businesses to grow more software driven, testers find themselves under pressure to deliver fully tested software faster, while also driving down costs. However, application quality is routinely compromised by poorly defined requirements and slow, unsystematic testing. Defects go undetected, leading to late rework, project delays, and ultimately a poor user experience.

CA Agile Requirements Designer can help organizations to automatically generate optimized sets of test cases and test data, linking them to virtual end points and expected results. As a result, they become fully responsive to changing requirements, and can further automatically identify the impact of a change on a system and generating the tests required to fully re-test an application in minutes.

ca technologies

CA Agile Requirements Designer
BUSINESS VALUE ESTIMATIONS

Traditional testing methods are too slow and too manual to keep up with the pace of Continuous Delivery. They are not systematic enough, and up to 56% of defects can be traced back to poorly defined requirements. This leads to the late detection of defects and, ultimately, a poor customer experience.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in test case creation costs	Automatically generate the smallest set of test cases needed for 100% functional coverage, directly from the requirements	Cost reduction in test and QA resource labor	CA Agile Requirements Designer	25 - 45%	Testing, and QA FTEs
Reduction in test case maintenance costs	Identify the exact impact of a change on the system, and remove or repair any broken or redundant test cases, as well as create any new cases needed to retain maximum coverage	Cost reduction in test and QA resource labor	CA Agile Requirements Designer	25 - 45%	Testing, and QA FTEs
Reduction in defect remediation costs	Improve test coverage and mapping new or existing requirements to unambiguous, visual flowcharts helps eradicate requirements defects earlier in the SDLC	Cost reduction in defect remediation	CA Agile Requirements Designer	25 - 45%	Bug fix support FTEs
Reduction in end to end testing costs	Testing may be localized to just the upstream and downstream components affected by a change made to requirements	Cost reduction in end to end testing costs	CA Agile Requirements Designer	10 - 30%	End to end testing costs
Improved time to value for revenue generating applications	Faster development through all phases of the software development lifecycle	Revenue stream from early release	CA Agile Requirements Designer	10 - 30%	Revenue from new application releases
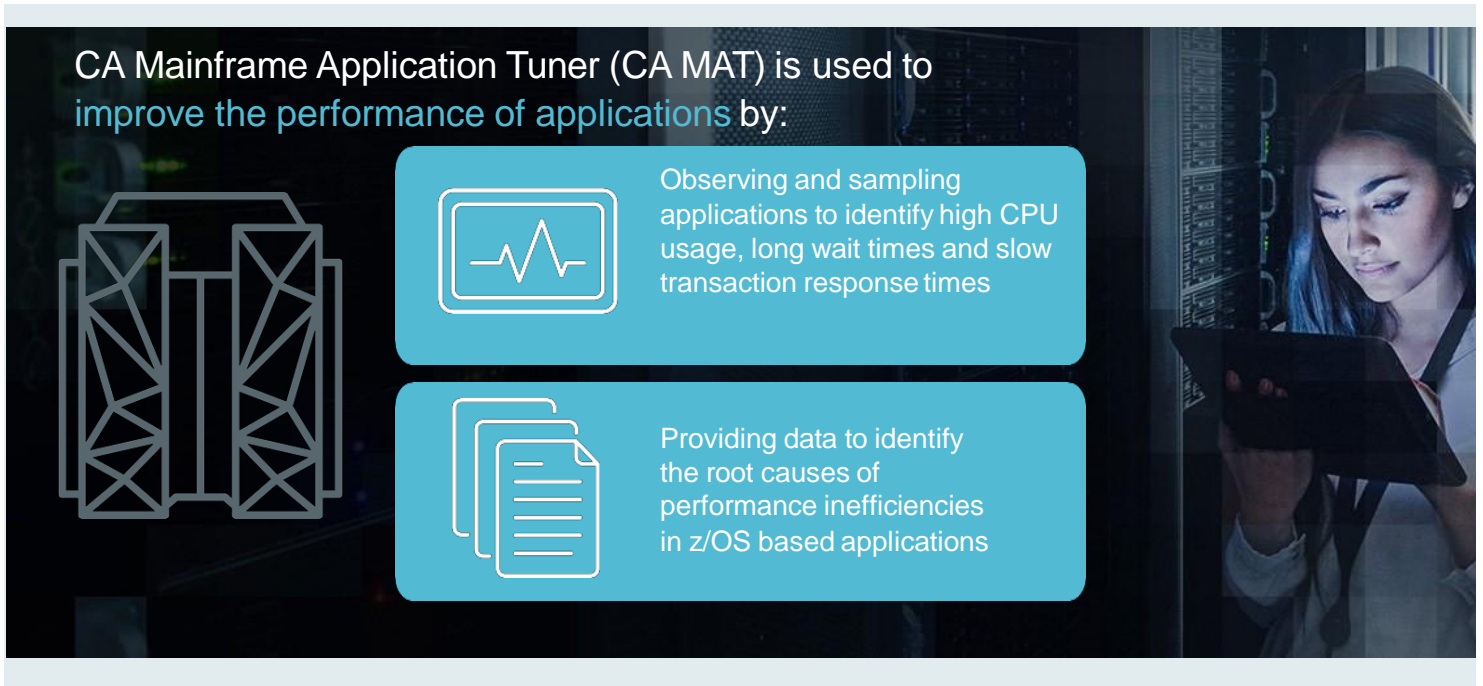
The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Mainframe Application Tuner
Lower your MIPS usage and improve application performance

CA Mainframe Application Tuner (CA MAT) enables performance management teams to more quickly, easily and proactively identify the root causes of application performance inefficiencies in IBM z/OS™ systems to improve response times and lower CPU consumption. This incremental release features ease of use enhancements as well as greater technical currency support.

CA Mainframe Application Tuner (CA MAT) is used to improve the performance of applications by:

Observing and sampling applications to identify high CPU usage, long wait times and slow transaction response times

Providing data to identify the root causes of performance inefficiencies in z/OS based applications

CA Mainframe Application Tuner (CA MAT) Key Features

New graphical user interface (GUI) based on Eclipse. This GUI helps a new generation of performance specialists to diagnose and fix performance issues in your environment and provides a modern interface for the more experienced mainframe generation.

Monitor management features. Monitor definitions can be stored and saved for later use, grouped together to execute at the same time for different address spaces within the sysplex and scheduled for automatic invocation.

Easy analysis. CA Performance Management Assistant (PMA) provides automated discovery of tuning opportunities, with the summary report aggregating top resource consumers across all subsystems.

Detailed analysis of online transactions. An analyst can review online performance at the transaction level by selecting transactions by transaction ID, user ID, terminal ID or a combination of IDs.

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CA Mainframe Application Tuner
BUSINESS VALUE ESTIMATIONS

Key Benefits and Results

- Easy access to detailed performance data
- Quickly fix performance issues and meet service level agreements (SLAs)
- Improved service levels

- Automated discovery of tuning opportunities
- Help improve customer service and reduce resource costs
- Reduction in MIPs costs

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Improvement in revenue protection as a result of increased application availability and performance	Automatically generate the smallest set of test cases needed for 100% functional coverage, directly from the requirements	Cost reduction in test and Qa resource labor	5 - 15%	Annual revenue impacted by downtime
Improvement in application response times resulting in increased business user productivity	CA MAT intelligently triggers measurements when a potential problem is detected, so problems can be resolved before users are impacted	Cost of time saved	.1 - .3%	Users of mainframe applications
Improvement in application tuning productivity and ability to proactively ensure SLA compliance	CA MAT provides automated discovery of tuning opportunities. CA MAT features an intuitive Eclipse-based GUI that you can customize. Group related modules for quicker referencing	Cost of time saved	25 - 35%	System programmers/ performance engineers
Increased availability of processing MIPS due to better use of CPU resources	CA MAT helps pinpoint code inefficiencies and identify areas where CPU consumption can be reduced	Reduction in MIPS costs	3 - 7%	MIPS hardware and software costs
Reduced frequency and duration of triage / crisis management calls	CA MAT helps you quickly determine the root cause of performance issues. It offers best practice guides and serviceability enhancements to speed problem resolution	Cost of time saved	25 - 35%	Crisis management FTEs
Faster time to problem resolution through CA SYSVIEW® Performance Management and Ca Endevor® Software Change Manager integration	When CA SYSVIEW® detects an application performance management issue, it can automatically initiate CA MAT measurements. Then, performance analysts can drill down to the CA Endevor SCM listing of source line of code where problem exists	Cost of time saved	3 - 5%	IT system support FTEs
Reduction in cost of software maintenance renewals for replaced or redundant software	Cost savings from consolidating or retiring tools and thereby avoiding maintenance and renewal cost of replaced software	Licensing and maintenance cost of replaced software	48 - 58%	Software maintenance costs

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Release & Deploy.

Cut your release time by up to 90 percent with CA

Do one great thing after another. Results worth repeating.

When Your Objectives Include:

Release reliably
- DevOps—Continuous Delivery
- CA Continuous Delivery Automation

DevOps—Continuous Delivery

An approach to enabling business agility to keep pace with changing customer needs and meet increasing expectations for quality

Continuous Delivery → **DevOps** ← **Continuous Feedback**
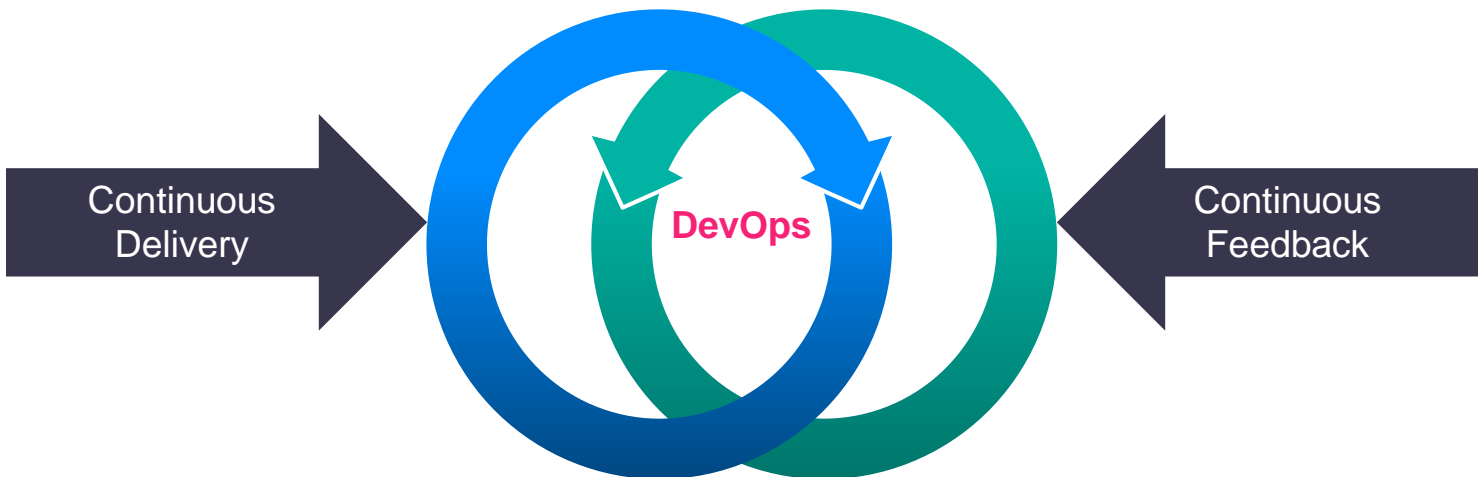
With DevOps, accelerate application development and release cycles, while reducing infrastructure and lab costs.

Continuous Delivery	IT Operations
Application Development Precursors	**IT Operations Precursors**
• Agile Methodologies	• High-Availability Infrastructure
• API-based Integration	• Capacity Planning and Management
• Cloud-based Development and Test Labs	• Cloud Infrastructure
• Rich Browser-based User Interfaces	• SaaS, PaaS, and IaaS deployment options
• IT Governance	• Server and Desktop Virtualization
• Application Lifecycle Management	• Continuous Monitoring
	• Advanced Security Protocols

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CA Continuous Delivery Automation
Execute Faster with Higher Quality Deployments

A Practical Blueprint for Achieving Continuous Delivery

STAGE 1	STAGE 2	STAGE 3	STAGE 4
▪ Automate your scripts ▪ Elimination of manual work ▪ Assessment of DevOps Competency ▪ Roadmap to Continuous Delivery	▪ Model environments, components, and status changes ▪ Create automated deployment processes ▪ Promote and rollback versioned components on demand	▪ Provision full stacks ▪ Orchestrate the entire lifecycle including test, change, and other ITSM processes ▪ Enable self services	▪ Automated Release Management for the Entire Application Portfolio

Manual and Scripting

Automate Deployments

Orchestrate

Continuos Delivery

CA Release Automation Orchestrates the Continuous Delivery Chain

With CA Continuous Delivery Automation, companies can automate and standardize the application release process from development through production—stabilizing releases, reducing errors and improving deployment time. CA Continuous Delivery Automation enables companies to accelerate application releases to market—on demand—with complete control and transparency of the entire deployment pipeline. Enterprises can start small and scale big to manage agile application deployment since CA Continuous Delivery Automation easily handles hundreds of complex, multi-tier applications across thousands of server and cloud platforms. The automated deployment pipeline is expanded to include orchestration – running workflows on cross-platform, multi-stack hosts and against adjacent systems. Application dependent systems such as VMs, Docker containers and continuous configuration tools are on-boarded along with elements of the ITSM stack. Environment lifespans are provisioned and de-provisioned on-demand or by timed lease to reduce virtual sprawl, and provide self-service accessibility to developers, testers, and other delivery personnel.

Features

- Application-centric, model-driven deployment provides reusable and repeatable processes to simplify and streamline application releases.

- Comprehensive set of action packs and plug-ins enables customers to leverage their existing investment and easily automate and integrate leading third-party solutions without scripting.

- Scalable enterprise solution that can handle complex, multi-tier distributed solutions across thousands of servers and multiple data centers.

- Intuitive, powerful graphical Workflow Engine eliminates the need of scripting and quickly allows you to visually create your deployment processes.

- Consolidated release manager and dashboard promotes collaboration and governance to plan, schedule and manage releases across the promotion pipeline.

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CA Continuous Delivery Automation
BUSINESS VALUE ESTIMATIONS

Continuous Delivery is the practice of automating and improving the process of software delivery. It incorporates techniques like continuous integration, automated testing and environment and configuration management to enable software to be developed, packaged and deployed across the SDLC–test through production–resulting in the ability to rapidly, reliably and repeatedly deliver new features and enhancements at a lower risk with minimal manual overhead.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Increase in Dev / Test / QA staff output & operational capacity	* Automate environment provisioning & setup as needed in Dev/Test * Quickly pinpoint root cause of release error * Rapidly develop a fix for release issue * Automate manual & script based release efforts * Creation of standard reusable deployment processes * Faster development through all phases of the software development lifecycle	Cost reduction in Dev / Test / QA labor	3 - 5%	Dev / Test / QA FTEs
Reduction in remediation costs of release errors	* Automate manual & script based release efforts * Reduce human errors & mistakes introduced in pre-production or production * Promote & rollback versioned components on demand * Easily rollback to prior version or restart deployment after error correction	Cost reduction in release error remediation	25 - 35%	Release Operations Errors
Improved Time to Value for Revenue generating applications	* Just in time infrastructure provisioning & support for multitenancy in cloud environments assures timely availability of required resources * Eliminates time consuming effort of managing independent changes across each environment * Eliminates cumbersome tracking application changes & managing application drift across distributed data centers * Reduces time to deploy applications into production	Revenue enhancement stream from early release	2 - 4%	Revenue dollars influenced by a 40 day delay
Increase Release Manager/Engineer staff output & operational effectiveness	* Manage increased volumes & frequency of releases * Deliver real-time actionable intelligence across the release pipeline * Orchestrate & automate end-to-end release pipeline * Enable self services * Construct automated deployment pipelines	Cost reduction in Release Manager / Engineer staff effort	25 - 35%	Release Manager/Engineer FTEs
Reduced costs through just In time orchestration of infrastructure Provisioning	* OOTB functionality & automation mechanics to provision & de-provision platform agnostic cloud-based environments on-demand * Support for modern virtual, cloud or container environments needed for multi-tier app architecture including network & storage services * Provision of environment blueprints allowing complete, full stack app environments * Orchestrate automated testing use cases against newly provisioned & configured app ecosystem	Cost of inefficiency leading to VM sprawl	15 - 25%	Count of virtual machines for Release Management operations
Reduced risk of security breaches	* Server, agents, database & the networked communication between support encryption * ARA objects, app & environment models, properties & workflows are all controlled with RBAC * Supports Separation of Duties concerns, can operate in the DMZ, provides proxy agent to securely broker communications & is firewall friendly * Access to data is only provided to authorized users	Revenue at risk due to security breaches	1 – 3%	Revenue flowing though release management operations

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Manage & Monitor.

Maximize visibility into your apps, services and infrastructure – all the way to the mainframe

Keep track of what matters to your customers with powerful monitoring tools. Get everyone on the same page.

When Your Objectives Include:

Make a great customer experience a competitive advantage
- CA Application Performance Management (CA APM)

Get usage, performance and developer analytics in one.
- CA App Experience Analytics

Get 360-degree visibility into systems and infrastructure performance.
- CA Unified Infrastructure Management (CA UIM)
- CA Unified Infrastructure Management for zOS
- CA Performance Management

Reduce the cost and complexity of managing application workloads.
- CA Automic Workload Automation

Improve management of SLAs and help avoid unplanned spikes in cost.
- CA Dynamic Capacity Intelligence

Take a proactive approach to IT service and asset management
- CA Service Management
- CA IT Asset Manager
- CA Automic Service Orchestration

Create infrastructure flexibility and drive actionable insights for growth
- CA Virtual Network Assurance

Empower IT through embedded intelligence to proactively prevent problems
- CA Mainframe Operational Intelligence

CA Application Performance Management
Balance agility and control with focus on the customer

Managing in silos without a view of the whole service frequently forces IT into reactive fire-fighting mode, as small problems in silo areas add up to significant end-user impact.

★ ★ ★ ★ ★
#1
LARGE ENTERPRISE SOLUTION
IT Central Station
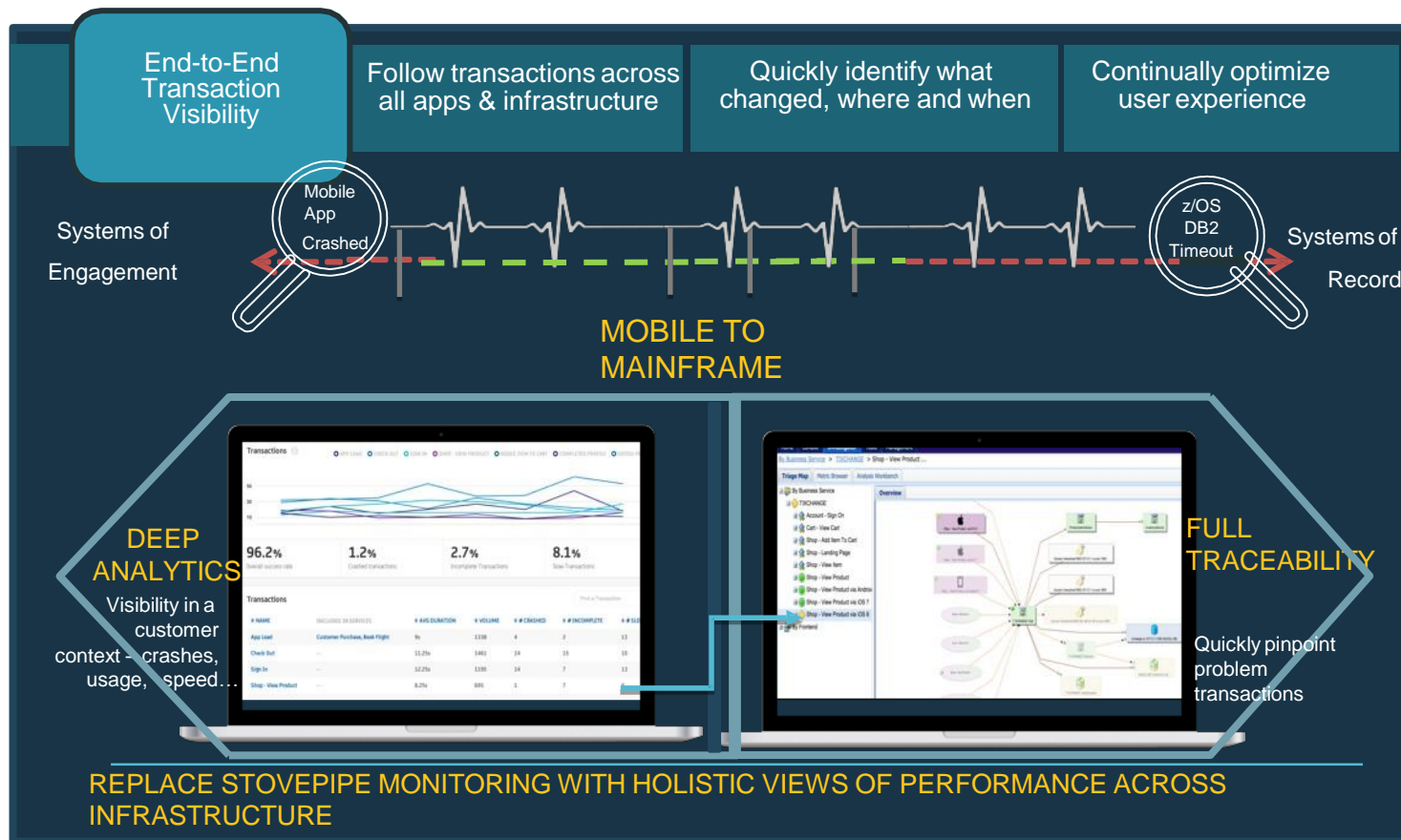
- Mobile-to-mainframe insight providing 20/20 visibility of all your transactions
- Scale is trust with capturing billions of critical metrics/day to verify EVERY transaction
- Analytics redefining triage by correlating multiple metrics automatically to act decisively

- Team Center Perspectives
- Team Center Timeline
- Differential Analysis
- Mobile-to-mainframe APM
- APM Command Center
- Smart Instrumentation
- Modern application support

ca technologies

CA Application Performance Management
BUSINESS VALUE ESTIMATIONS

CA APM proactively performs the application monitoring necessary to stimulate user loyalty and create a competitive edge. Realize measurable cost reduction in dev, test, QA, operations, and support while also potentially improving top line results through improved business services availability. CA APM v10.2 provides even faster installation and configuration.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduced frequency and duration of triage / crisis management calls	Improved visibility into failed application and infrastructure components reducing MTTR	Cost reduction in crisis response resource time	Application Performance Management	30 - 40%	Crisis management FTEs
Improved business services availability for revenue producing customers	Improved management of application infrastructure	Revenue loss protection	Application Performance Management	5 - 15%	Annual operating revenue touched by IT
Proactive SLA compliance prediction and management	Increased management insight into SLA compliance	Reduction in cost associated with SLA compliance	Application Performance Management	20 - 30%	Annual SLA compliance costs
Improved service desk staff productivity	Automation of events, actions, and notifications per ITIL best practices	Cost reduction in service desk management resource time	Service Desk Integrations	15 - 35%	Service desk FTEs
Reduction in development, test and QA costs	Automation of unit testing without code writing and improved testing through removal of dependency constraints	Cost reduction in development, test and QA resource time	Service Virtualization	20 - 30%	Developer, testing, and QA FTEs
Reduction in development costs of pre- and post-production application tuning	Improved visibility into application performance through gathered performance metrics	Cost reduction in development time tuning applications	Application Performance Management	25 - 35%	Developer FTEs
Productivity improvement for business end users	Increased application availability for critical job functions	Cost reduction in end user resource time	Application Performance Management	5 - 15%	End user downtime per event

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA App Experience Analytics

Add a whole new level of visibility with app analytics
A breakthrough in digital experience

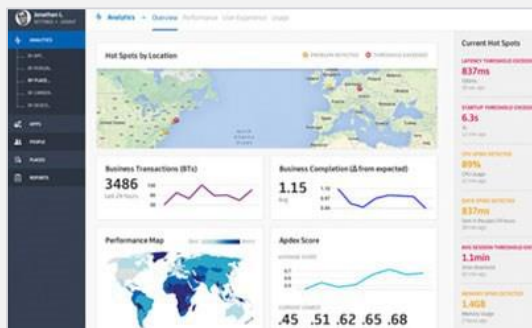**The secret to a successful app?**
A great user experience.

To get your app firing on all cylinders, you need to monitor, analyze and fix your app on the fly. CA App Experience Analytics is the only fully integrated app analytics tool on the market, with app performance management, developer analytics and usage analytics for Web, mobile, and wearable apps, in one complete package.

Solution Summary

Built on an open, flexible SaaS analytics foundation that uniquely combines user behavior with operational performance, CA App Experience Analytics provides intuitive reports to reveal a deeper understanding of customers' overall digital experience. Optimizing the user journey helps you retain and attract new customers, increase revenue, achieve faster resolution times and deliver innovations quickly by boosting development productivity.

FREE TRIAL
In five minutes, you could be up and running with CA App Experience Analytics.
Get free trial >

With visibility throughout the app lifecycle, you can continuously improve quality, design, performance and user experience. Triage and fix performance issues faster by segmenting performance by web performance, user experience, custom events and mobile carrier, geo, OS, network and device type.

Optimize business outcomes by gaining insights into usage metrics about user engagement, activity and retention. Get code-level visibility into issues, activity logs and real user data to improve the next version of the app.

Align to the Customer Experience with Analytics

OPERATIONAL PERFORMANCE
Inside-Out View
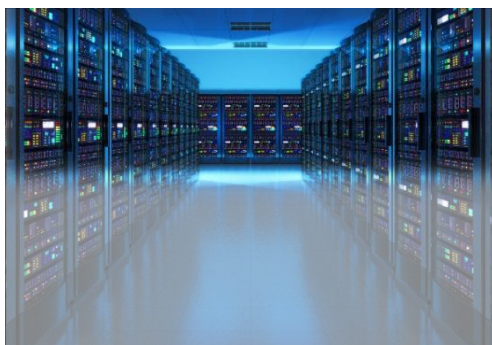
USER BEHAVIOR & EXPERIENCE
Outside-In View

Optimize

customer journey

Design

for the experience

Improve

digital performance

CA App Experience Analytics

ca technologies®

CA App Experience Analytics
BUSINESS VALUE ESTIMATIONS

- Usage and user-experience analytics

- Performance analytics

- Mobile crash analytics
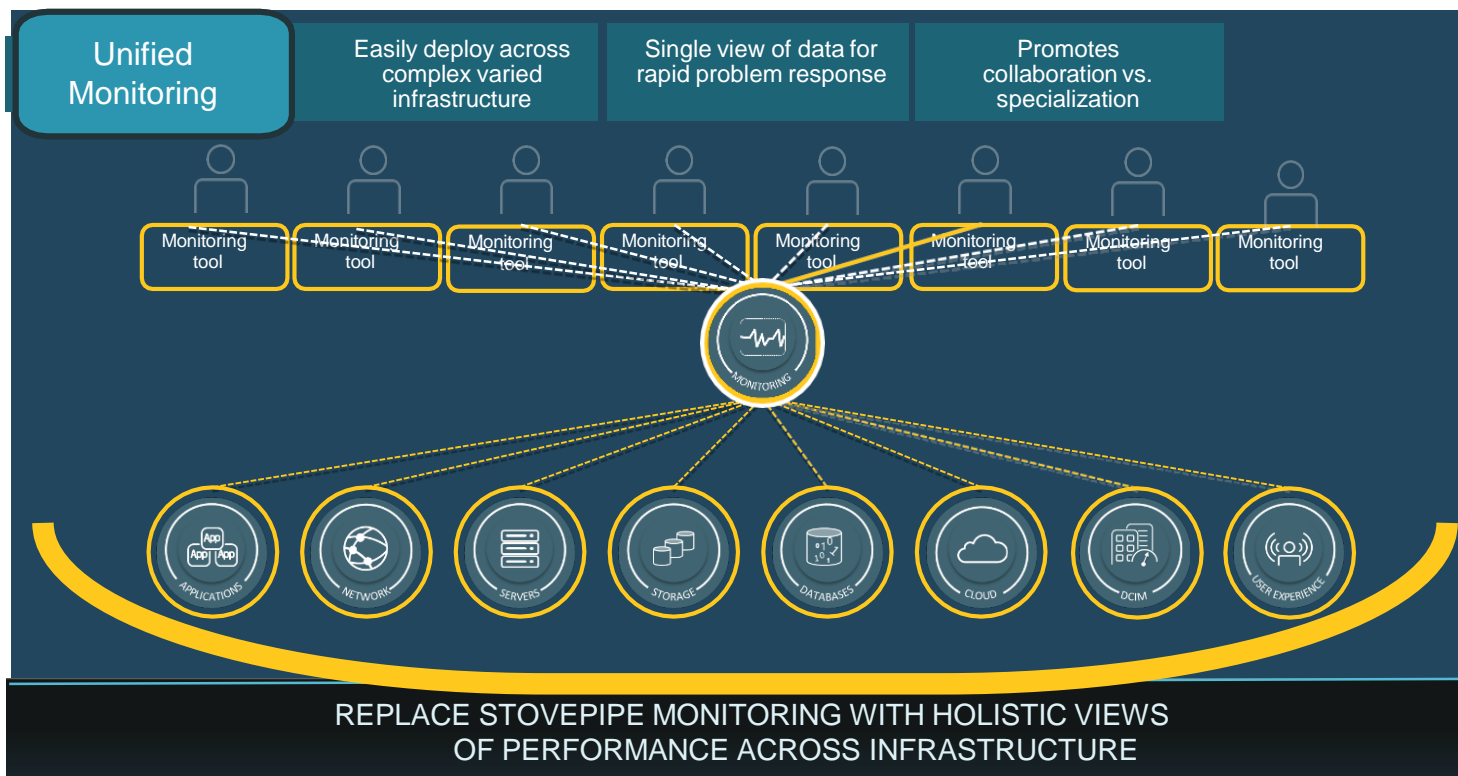
- Customizable, role-based analytics

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Increase customer satisfaction leading to customer retention and attraction of new customers by improving user reviewed customer ratings	• Improves user experience • Delivers continuous innovations that meet user expectations • Rapidly evolves apps with changes in the market • Monitors, maintains and manages customer's on-line transactions for improved experience • Improves digital business operations using data analytics	Revenue at risk due to customer turnover/abandonment	1 - 3 %	Revenue at risk
Increase revenue protection through improved business services and app availability and performance	• Provides proactive real-time insights into real user behavior, buyer trends, and omni-channel performance • Optimizes business outcomes by gaining insights into usage metrics about user engagement, activity and retention • Alerts real-time on threshold violations impacting SLAs, user experience, or revenue for website usage	Revenue at risk due to sub-standard app performance	2 - 4%	Revenue at risk
Enable faster time to market for online customer related revenue producing web, mobile, and IoT apps	• Less cost and complexity with zero coding option • Flexible and extensible through secure APIs • Based on open source ELK Stack	On time (as planned) or earlier revenue inflows due to on time or earlier release	3 - 5%	Revenue enhanced
Reduce frequency and duration of triage/crisis/outage management calls	• Captures mobile analytics and mobile app crashes, and offers code-level visibility for root cause • Provides details on errors and network behavior to identify issues in code or back-end servers • Helps meet service level agreements (SLAs)	Cost reduction in crisis resolution staff resource labor	15 - 25%	Crisis resolution staff FTEs
Improve productivity for development and maintenance staff	• Provides developers with effective tools to accelerate mobile development through easier data access, easier implementation of security, and easier implementation of core mobile capabilities	Cost reduction in internal developer labor	15 - 25%	Developer FTEs

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CA Unified Infrastructure Management

Improve service quality, predictability and efficiency with CA Unified Infrastructure Management

| Unified Monitoring | Easily deploy across complex varied infrastructure | Single view of data for rapid problem response | Promotes collaboration vs. specialization |

REPLACE STOVEPIPE MONITORING WITH HOLISTIC VIEWS OF PERFORMANCE ACROSS INFRASTRUCTURE

FEATURES

- **Unified views and dashboards.** Delivers unified, out-of-the-box dashboards and custom views that deliver visibility into all the IT systems, networks and services that matter to the organization.

- **Predictive analytics.** Helps proactively identify issues before users' experience suffers.

- **Business metric monitoring.** Enables aggregation of IT and non-IT data sources to provide holistic views of critical business services that affect the customer experience.

- **Multi–tenancy support.** Multi-tenant architecture allows you to efficiently scale and personalize service offerings for any number of clients

Options for Mainframe Platform

- CA UIM Operations for z Systems™ probe pack feeds metrics data from the z/OS operating system into CA

- UIM such as Sysplex images, LPARs, z/OS instances, Started tasks, System tasks and channel I/O.

- CA UIM Storage for z Systems™ probe pack feeds metrics data for the mainframe storage environment into CA UIM such as DASD, HFS and NFS mount points and Fibre Channel ports.

- CA UIM for z/VM systems probe pack feeds metrics data from the mainframe z/VM hypervisor into CA UIM such as System CPU, Guest CPU, page volume, spool volume and wait states.

CA Unified Infrastructure Management
BUSINESS VALUE ESTIMATIONS

A single, unified architecture for both traditional and cloud environments enables you to proactively monitor performance and availability while reducing costs for system and network management, level 1 and 2 service desk, and overall crisis management costs. At the same time, keeping your customers are up and running delivers top line benefits of revenue protection.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Improved productivity for sys admins and network management staff	Role based displays along with simplified reporting enables viewing of information from multiple data sources	Reduction in system & network admin labor costs	Unified Infrastructure Management	20 - 30%	System & network management FTEs
Reduction in service desk calls for infrastructure outage or performance issues	Incident detection, notification and correlation of events by the solution leads to quicker root cause identification and faster resolution of service desk outage requests	Reduction in level 1 and 2 service desk labor costs	Unified Infrastructure Management	15 - 25%	Level 1 & 2 service desk FTEs
Reduction in frequency and duration of crisis or triage bridge calls	Quicker root cause identification allows crisis/triage teams to quickly isolate the source of the problem thereby increasing infrastructure availability and performance	Reduction in crisis management labor costs	Unified Infrastructure Management	25 - 35%	Crisis management FTEs
Avoidance of annual WAN bandwidth service upgrade costs	Understanding and management of the network topology and bandwidth utilization details allows network engineers to right-size the circuits thereby deferring typical annual service upgrade costs	Costs saved in WAN bandwidth subscription services	Unified Infrastructure Management	60 - 90%	Network subscription annual upgrade costs
Improved business services availability and performance for revenue generating customers	Increased availability of critical production servers and network components reduces the risk of revenue loss associated with infrastructure availability and performance issues	Reduction in risk of loss of revenue	Unified Infrastructure Management	5 - 15%	Revenue impacted by infrastructure failure at risk

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Unified Infrastructure Management for zOS

Improve service quality, predictability and efficiency with Unified Infrastructure Management

CA Unified Infrastructure Management for z Systems™ (CA UIM for z Systems™) extends the powerful CA UIM solution to provide comprehensive end-to-end visibility of business services that span mobile-to-mainframe environments. It features a single, unified architecture that delivers comprehensive data center coverage to quickly identify and resolve infrastructure problems across distributed and z Systems™ platforms.
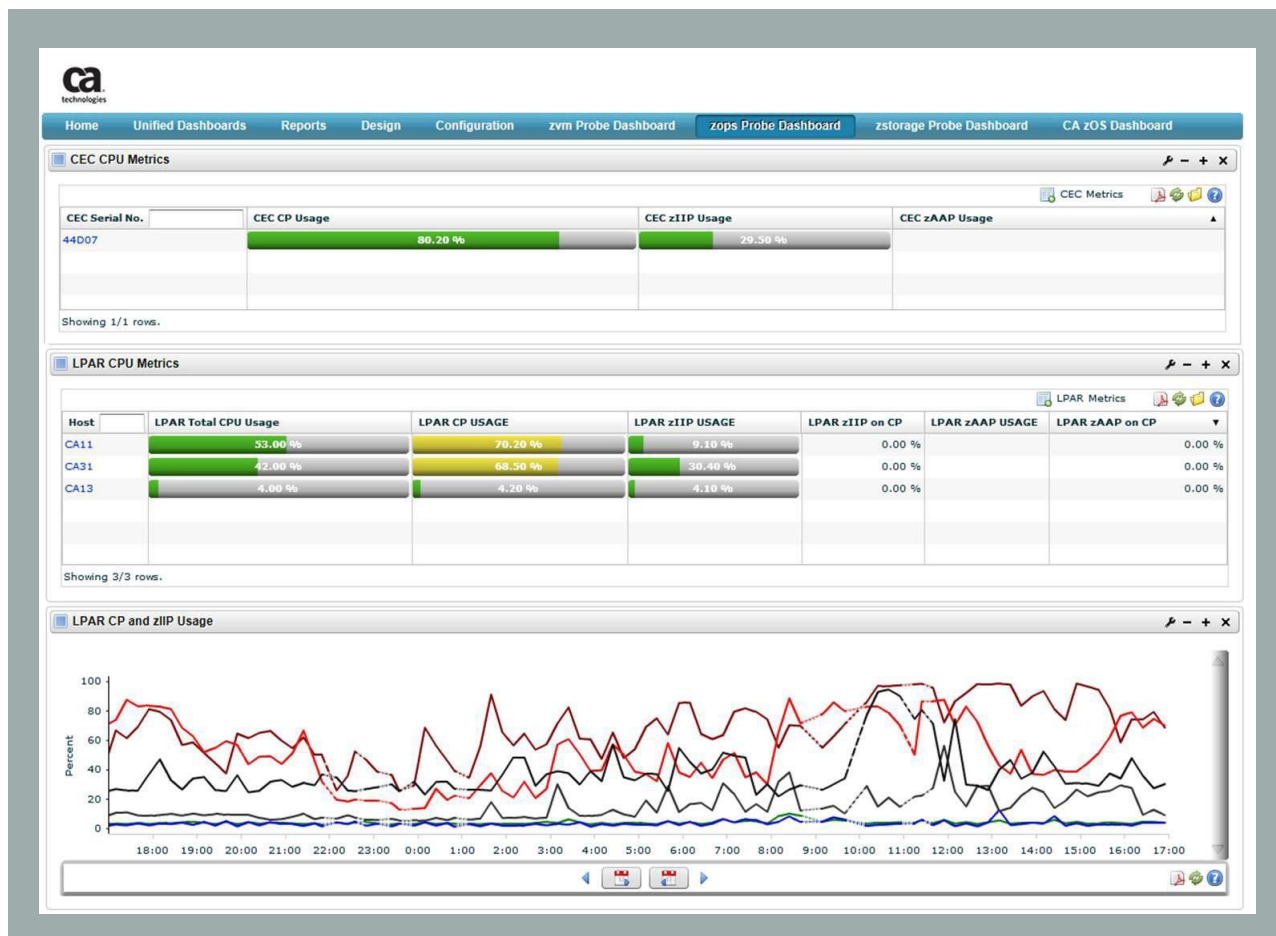
Key Benefits

- **Reduce Downtime** — Quickly identify and resolve infrastructure problems across mainframe and distributed environments.

- **Improve ROI** — Spend less time managing disparate tools and more time focusing on the business to accelerate MTTR, increase efficiency and reduce costs.

- **Simplify Mainframe Monitoring** — Sophisticated, yet simple probe architecture makes it easy to monitor z Systems™ as part of overall IT infrastructure, reducing the need for specialized tools and expertise.

CA Unified Infrastructure Management for zOS
BUSINESS VALUE ESTIMATIONS

- **CA UIM Operations for z Systems™** probe pack feeds metrics data from the z/OS operating system into CA UIM such as Sysplex images, LPARs, z/OS instances, Started tasks, System tasks and channel I/O.

- **CA UIM Storage for z Systems™** probe pack feeds metrics data for the mainframe storage environment into CA UIM such as DASD, HFS and NFS mount points and Fibre Channel ports.

- **CA UIM for z/VM systems** probe pack feeds metrics data from the mainframe z/VM hypervisor into CA UIM such as System CPU, Guest CPU, page volume, spool volume and wait states.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Improved productivity for IT and mainframe monitoring staff admins	Role based displays along with simplified reporting enables viewing of information from multiple data sources	Reduction in IT and mainframe staff labor costs	CA UIM for z Systems	5 - 10%	IT and Mainframe Monitoring FTEs
Reduction in service desk calls for infrastructure outage or performance issues	Incident detection, notification and correlation of events by the solution leads to quicker root cause identification and faster resolution of service desk outage requests	Reduction in level 1 and 2 service desk labor costs	CA UIM for z Systems	5 - 10%	Service desk FTEs
Reduction in frequency and duration of crisis or triage bridge calls	Quicker root cause identification allows crisis/ triage teams to quickly isolate the source of the problem thereby increasing infrastructure availability and performance	Reduction in crisis management labor costs	CA UIM for z Systems	25 - 35%	Crisis management FTEs
Reduction in MIPS Costs	CA UIM for z Systems probes consume less system resources that comparable options, allowing for potential reductions in overall MIPS usage	Costs saved through lower MIPS requirements	CA UIM for z Systems	0.5 - 1.5%	MIPS
Improved business services availability and performance for revenue generating customers	Increased availability of critical production servers and network components reduces the risk of revenue loss associated with infrastructure availability and performance issues	Reduction in risk of loss of revenue	CA UIM for z Systems	5 - 15%	Revenue impacted by infrastructure failure at risk

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Performance Management

Enables Proactive Triage, Capacity Planning and Improved Provider and Customer Experience

CA Performance Management

Mobile Wireless	Transport / Backhaul	Broadband	FTTx	Managed Networks

Scale	Service Oriented	Flexible and Fast
High Quality @ 4 Million Scale	Ready for SDN / NFV	Unlock and Accelerate Value

Scale	Expert in the Box	Speed to Certify
Technical and Economic Advantage	Rapid Time to unlock value in your team	Deliver OnDemand Certifications

Resilience	Quality of Service / OAM	OpenAPI
Highly Available Architecture	Instrument and Measure Quality SLAs	Unlock the App Experience

Key Features

- Unified multi-technology, multi-vendor device monitoring
- Certifications for classic network devices and specialized carrier Ethernet, Wi-Fi offloading and mobile wireless equipment
- Very high-scale monitoring architecture on a platform that scales efficiently
- Intelligent analytics, high-scale visualization and fast processing for instant reporting

- Flexible, easily customizable dashboards and reports
- Extensible architecture for easy integration and automation
- Predictive analytics to give a complete, unencumbered view of the network and business key performance indicators
- Support for SDN and NFV solutions

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CA Performance Management
BUSINESS VALUE ESTIMATIONS

- Highly Scalable and Unified
- Rich Visualization and Predictive Analytics
- Extensible and Open
- Lowers Operational Risk

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Improved click-through efficiencies and rapid root cause identification for proactive triage and remediation impacting MTTR	• Big data-driven troubleshooting advanced analytics provides real-time detection of anomalies to proactively avoid problems • OOTB dashboards for key technology domains, with intelligent metric views and guided workflow based or best engineering practices for efficient triaging • Detects misconfigurations of hosts/servers, network components, bandwidth misuse • Real-time operations view and actionable intelligence to deliver QoS in response to for example increasing video streaming	Labor cost reduction	4 - 6%	CSP/MSE count of NOC, service desk and business operations FTEs
Increased revenue for service provider through improved customer experience and reduced customer churn	• Comprehensive capacity monitoring and management to anticipate variable demand • Predictive analytics correlate events across infrastructure domains • Open multi-tier architecture for integrating data, automating processes & customizing settings • Handles complexity in infrastructure components and applications • Delivers future-proofing of increasing connections and bandwidth with IoT • Continuously improves overall performance of infrastructure • Support for end-to-end monitoring of service delivery due to continued buildout and evolution of mobile wireless infrastructure (LTE, Ethernet backhaul, WiFi offloading)	Revenue protection and enhancement	1 - 2%	Amount of CSP/MSE revenue at risk
Improved monitoring of SLAs to mitigate penalties, service credits, and other allowances	• Improve service management and resolution process involving internal and external vendors and providers (e.g., network services, software applications, hardware manufacturers, etc.) • Improved capacity planning and proactive response to demand • Deliverers increasing bandwidth with expansion of business' customer self-service portals	Revenue protection	1 - 3%	Amount of revenue erosion
Lower cost of ownership of enterprise performance management tools	• Monitoring of 500,000 elements per data collector yields reduced cost of h/w & s/w infrastructure • Open API access and consolidation of tool sprawl provides reduced cost of maintenance • Multi-tenant access control provides system scalability • Reduced cost and rapid deployment through new device self-certification capability • Delivers future-proofing through integration with CA Virtual Network Assurance for NFV and SDN technologies	Hardware, software cost reduction	3 - 5%	Total value of IT infra-structure to support down-stream customers

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CA Automic Workload Automation

Automating complex workloads with maximum flexibility

CA Automic Workload Automation gives you the agility, speed, visibility and scalability needed to respond to the constantly changing technology landscape. It centrally manages the execution of all your business processes across mainframe, cloud or hybrid environments in such a way that it never stops – even when doing an upgrade to the next version.

CA Automic Workload Automation—Agility and Speed End-to-End
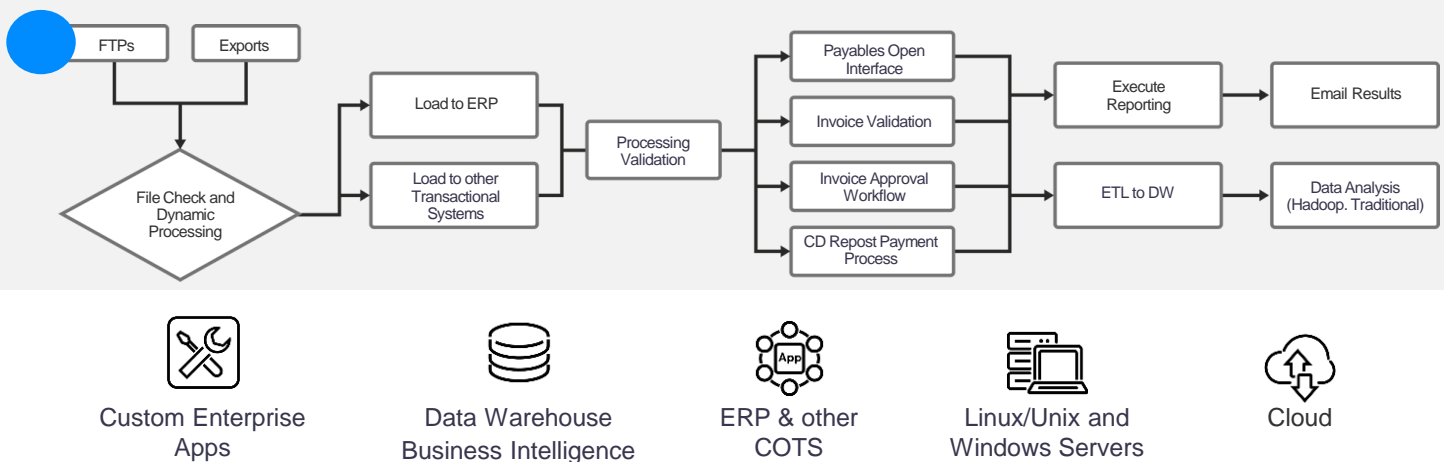
Workload processing and job scheduling once represented a leading-edge way to manage critical data center functions. However, business has evolved such that scheduling simple tasks on a single platform at a specific time and date is not enough. Rather, your enterprise needs a way to manage: thousands of users, thousands of requests for cross-platform processing, stringent SLAs, intricate interdependencies, compliance requirements, across an infrastructure assembled from legacy and emerging technologies, virtualized pool of resources, resource pools in cloud-enabled application infrastructure. Therefore, current strategies for workload processing and job scheduling must evolve into workload automation, to become a critical component of service-driven initiatives.

Key Features

- Data driven event automation
- Scalable, clustered architecture
- Continuous operations, with Zero Downtime
- Out-of-the-box multi-tenancy
- Support for mainframe, distributed, virtual and cloud environments

- Broadest suite of certified application integrations and workflow templates
- REST based API
- Dashboard, filtered view of all workflow activities, for highly granular monitoring
- Integrated file transfer

- Forecasting capabilities based on historical data or hypothetical scenarios
- Comprehensive auditing of all automated processing and user activity
- Combine external data with automation information for analytics and dashboard presentation
- Unified SLA management

CA Automic Workload Automation
BUSINESS VALUE ESTIMATIONS

CA Automic Workload Automation gives you the agility, speed, visibility and scalability needed to respond to the constantly changing technology landscape. It centrally manages the execution of all your business processes across mainframe, cloud or hybrid environments in such a way that it never stops – even when doing an upgrade to the next version.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Improved workload definition staff productivity	• Easily define workload across the enterprise without having detailed knowledge of the operating systems. • Reducing or eliminating the need for multiple iterations of the definition to be maintained.	Cost of time spent defining workload	40-50%	IT operations workload definition FTEs
Incremental revenue protection for revenue generating applications	• Shrinks the batch window thereby providing more availability for revenue generating applications • Helps optimize job schedules and automation of error recovery for business processes • Agents can trigger workload immediately per business needs, versus traditional schedule load concepts	Revenue improvement due to reduced batch window	10-15%	Revenue per increased revenue-generating app availability
Improved workload monitoring staff productivity	• Monitor end-to-end applications on an exception basis using a single pane of glass • Automated notifications can alert the appropriate people • Immediate availability of diagnostic and recovery analysis to help staff successfully continue processing • "Manage by exception" and see all of the workload object types impacting the schedule	Cost of time spent monitoring workload	40-50%	IT operations workload monitoring FTEs
Improved IT administrative staff productivity	• Reduce or eliminate time and resource intensive monitoring and manual system management • Automate the problem remediation process by gathering failure information immediately and making it available to problem solvers	Cost of system administration related to problem remediation	32.5-37.5%	IT system admin support staff FTEs
Reduced compliance costs enabled by more complete audit trail information	• An entire business process may be documented through a secure and complete audit trail • Track who has performed what task and with what outcome • Troubleshooting information may be accessed without having to log into production servers	Cost of audit and compliance related to workloads	20-30%	Compliance audit costs
Reduced development or scripting costs for custom workload requirements	• Reduce the need for custom application development or scripting • May allow direct integration, for example, without the • need for dummy jobs and needless file transfers.	Cost of application development time spent scripting workload reqr.	4-6%	Application developer FTEs

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CA Dynamic Capacity Intelligence

Improves management of SLAs and helps avoid unplanned spikes in cost

CA Dynamic Capacity Intelligence, for z Systems®, provides a proactive, predictable capacity management for optimizing system resources for prioritized workloads. This capacity management tool helps you better manage and utilize mainframe capacity, thus helping drive down Monthly License Charges (MLC).

Optimize Capacity

- **8%** out-of-box savings against total MLC

- Up to **$200K** savings per LPAR

Improve SLA management for critical workloads.

Enable continuous optimization of mission-critical application delivery and operations.

Automatically balance mainframe workloads.
Shift available capacity across LPAR boundaries to address priority workloads.

Avoid unplanned peaks in capacity usage and MLC cost.

Get flexibility to help provide that critical workloads complete per SLAs with minimal impact to MLC.

See how dynamic capacity intelligence can benefit your enterprise. Visit calculators.ca.com/dcibenefits

CA Dynamic Capacity Intelligence
BUSINESS VALUE ESTIMATIONS

CA Dynamic Capacity Intelligence, for z Systems®, provides a proactive, predictable capacity management for optimizing system resources for prioritized workloads. This capacity management tool helps you better manage and utilize mainframe capacity, thus helping drive down Monthly License Charges (MLC).

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Improve SLA management for critical workloads	• Includes more functionality out of the box – without additional purchases • Continually analyzes workload capacity usage and automatically and dynamically moves capacity to where and when it is needed.	Avoided economic impact to revenue from missed SLAs or application downtime	15-25%	SLA penalties and lost revenue due to application downtime
Automatically balance mainframe workloads	• Provides more flexibility through WLM importance levels and subgroups • Single point of control to simplify and automate enterprise-wide deployment, monitoring, and reporting	Reduction in cost of time spent reacting, analyzing data, and deploying capacity	10-20%	Capacity Planners
Avoid unplanned peaks in capacity usage and MLC cost	• Supports automated switching of policies based on date and time • Helps make informed capacity resource actions to identify lower-priority workloads that could otherwise drive up peak usage • Designed to help lower overall Million Service Units (MSUs) usage during peak cost times by automating mainframe capacity balancing, thereby reducing your Monthly License Charge (MLC) and helping complete your time-critical workloads	Reduction in MSU resource utilization	15-20%	MSU costs

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA technologies

CA Service Management

Designed for humans, built for service

- **Service Management:** Align services capabilities with modern user, delivery & business demands
- **Asset Management:** Understand hardware and software assets to better manage IT financials & compliance
- **Management Insights:** Key metrics that inform and guide your service delivery and asset businesses

Decision Makers
- Increase adoption of new services
- Insight into costs & consumption
- Make my decisions faster

Business Users
- Make services easy to access
- Help me serve myself
- Solve my problems quicker

Power Users
- Get me out of firefight mode
- Standardize my process
- Reduce my ticket volumes

CA Service Management suite combines **CA Service Desk Manager**, **CA IT Asset Manager** and **CA Service Catalog** to support all service & asset management personas that include:

- Business Users who expect a consumer experience like they see in the apps they use outside the workplace
- Technical teams supporting the service desk and requests
- Change and Operations Managers who need control and agility delivering services while minimizing risk and disruptions to the business
- Executives and Management who demand transparency into operational and business value and risk as it pertains to services and assets.

CA Service Management solutions enable you to implement automated, measurable processes for defining, transitioning, delivering, and supporting services and assets throughout their lifecycles. By integrating and automating IT and service operation processes, you can better utilize resources and control changes more effectively, while streamlining the workload for your IT staff.

CA Asset Management has the tools you need to effectively address the financial and regulatory needs of asset managers and provide accessibility into assets your business users need. It covers both hardware and software assets with robust software compliance and optimization capabilities.

Management Insights available in CA Service Management give decisions maker's data to make informed service delivery and asset management decisions that better align IT with business objectives. Insights provide a clear picture to the business impacts of issues, services and changes, as well as software license and hardware asset management analysis.

CA Service Management
BUSINESS VALUE ESTIMATIONS

Comprehensive service desk, request, IT asset, and service level management capabilities help improve the experience of how business consumes IT services, empowers users with self-service, collaboration and knowledge sharing, and automates processes and back-office functions to free up resources to focus on innovation & growth. Take advantage of CA Service Management to save up to 50-100% of upgrade expenses of your existing service management solution and up to 85% of administration costs.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Improved service management power user staff productivity	Service catalog, xFlow analyst experience, automated user workflow, and research tools enable power users to deliver what their customers need	Cost reduction in service management power user resource time	Service Management	5 - 15%	Service Management FTEs
Improved efficiency in purchasing of IT assets	Better visibility into IT assets owned, utilized and licensed	Cost reduction in hardware and software asset portfolios	IT Asset Management	1 - 3%	Hardware and software asset value
Productivity improvement for end users	Self-Service, suggested solutions and experts, contextual collaboration, catalog offerings, and online assistance and chat make end users more capable of solving their own problems and eliminating downtime hours lost.	Cost reduction in end user resource time	Service Management	20 - 30%	Lost Hours per End User FTE per year
Productivity improvement for business decision makers	Accessibility, from any device, allows business decision makers to access and make business decisions quickly	Cost reduction in business decision maker resource time	Service Management	1 - 3%	Executive FTEs
Reduced cost of service request to approval to fulfillment process	Greater visibility into service requests status, history, and resource cost for automated fulfillment.	Cost reduction in operations resource time	Request Management	27 - 33%	Service fulfillment FTEs
Proactive SLA compliance prediction and management	Increased management insight into SLA compliance	Reduction in cost associated with SLA compliance	Service Level Management	20 - 30%	Annual SLA compliance costs

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CA IT Asset Manager
Proactively Manage the Asset Lifecycle

CA IT Asset Manager provides enterprises with a solution that enables you to holistically manage your company's IT assets. These capabilities enable your organization to determine what assets are available and in use, improve organizational distribution of those assets and increase productivity around license reporting and audit responses. Unlike manual approaches that expose you to cost overages and license compliance risk, you can determine what hardware and software assets are being used, manage associated costs effectively across the organization and manage the license audit process more effectively. This means you can reduce the risk of license compliance and optimize the cost, management and distribution of existing assets.

Asset Lifecycle Management

License Compliance & Optimization

Contract Management

IT ASSETS

Gain control with
CA IT Asset Manager

Software Asset Management

Hardware Asset Management

Self-service

Financial Management
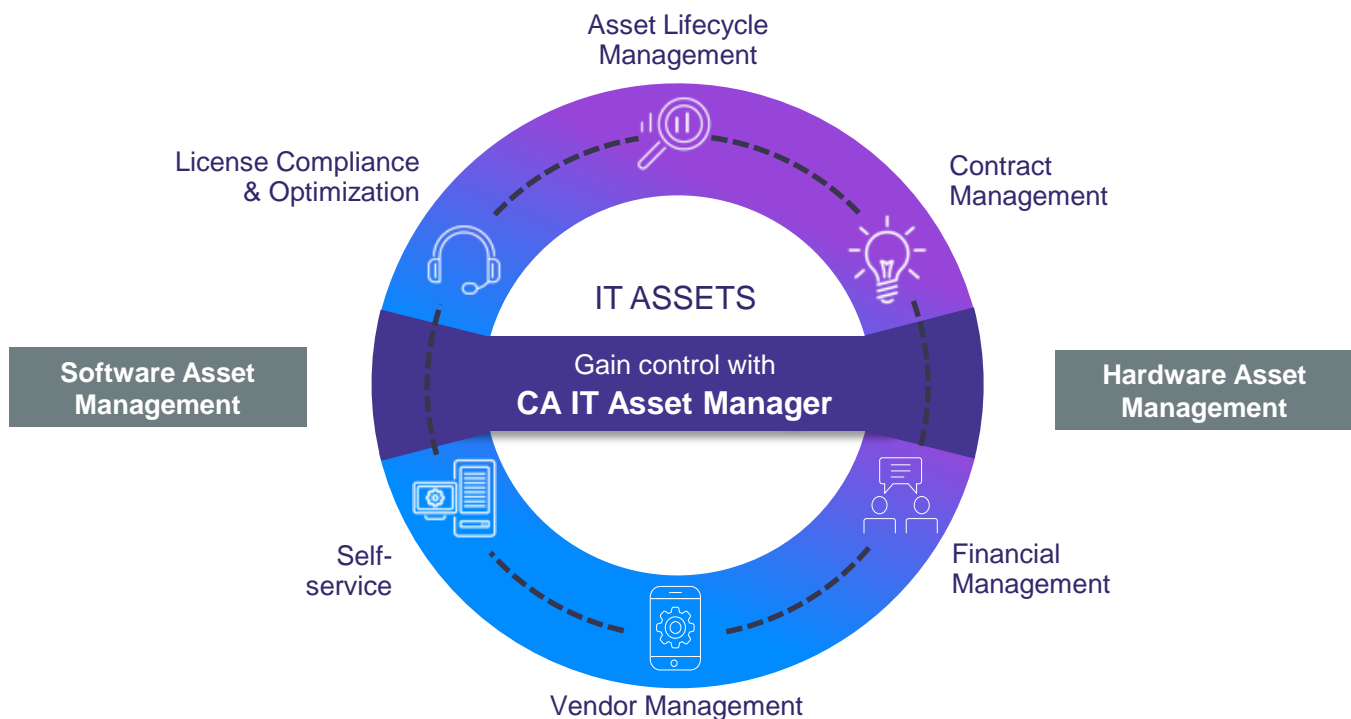
Vendor Management

Key Features

- **Financial management**. Decide what costs are relevant to your business, forecast and manage payment schedules and increase visibility into the financial impact of your assets.

- **Vendor management**. Take control of your vendor relationships by understanding their interdependencies and intricacies.

- **Contract management**. Properly administer the terms of an agreement to help you avoid extra fees and penalties.

- **License management**. Help you to avoid unnecessary purchases and overspending.

- **Asset Lifecycle Management**. Manage your assets from request to disposition.

- **Unified self-service.** Provide users with one social media-based means to view their assets, ask questions and collaborate.

CA IT Asset Manager
BUSINESS VALUE ESTIMATIONS

• **Reduce Risk and Cost:** Improve visibility and control of your IT Asset base with a comprehensive asset lifecycle management system that includes financial, vendor, contract and license management.

• **Maximize the Value of IT Assets:** Determine what you are paying in hardware and software fees, and optimize your cost structure and asset utilization.

• **Streamline Efficiency and Responsiveness:** Enable the automation of review, approval and fulfillment processes for hardware and software requests.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Improved asset management staff productivity	• Eliminate use of spreadsheets and ad hoc methods to manage assets • Reduce time spent on manual reporting and fulfillment activities • Streamline purchase planning and contract management processes • Gain visibility into aggregate data and model requirements based on organization structure • Access readily available demand analytics to allow for efficient decision making	Cost reduction due to improved asset manager efficiency	15 - 25%	Asset Management FTEs
Reduced enterprise IT hardware expenses	• Centralized reporting on usage and cost prevents overspending • Proper asset lifecycle identification provides an opportunity to repurpose hardware assets • Informed asset planning reduces asset acquisition costs	Cost avoidance from eliminating unnecessary IT hardware spending	8 - 15%	Annual Hardware Budget
Reduced cost of over-licensing software	• Model license requirements with simulation and optimization capabilities • Easily understand the highest cost software license to better manage big ticket items • Aggregate views facilitate redeployment of software licenses when hardware is retired • Leverage a holistic view of enterprise needs to help identify less costly license models and simplify upgrades	Cost avoidance from over-licensing software	70 - 80%	Annual Software Budget
Reduced cost of software non-compliance	• Proactively monitor compliance status with graphical and drill-down reporting • Automated alerts allow asset mangers time and insight to perform effective asset analysis • Increased visibility facilitates informed and thorough contract renewal management	Cost avoidance from vendor audits and true-ups	30 – 50%	Compliance and Audit Fees

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CA Automic Service Orchestration

Empower the enterprise through capability to offer complex service offerings

CA Automic Service Orchestration (CA ASO) enables users to request complex service offerings – such as multitier server deployments, Hadoop Cluster & Data Pipelines, Oracle RAC Database Servers, Oracle Weblogic Domains, Disaster Recovery, Employee Onboarding and SAP System Copies – from existing ITSM suites such as ServiceNow or from CA ASO's self service portal. Delivery of these service offerings is fully orchestrated with the provisioning, updating and de-provisioning of service components across business, application and infrastructure layers, whether on-premise, hybrid, or in the cloud. Unlike alternatives which are best suited to greenfield data centers, CA ASO enables you to quickly evolve existing data centers to private clouds by integrating your existing investments in IT tools rather than requiring a rip and replace.

Empower the Enterprise through Capability to Offer Complex Service Offerings

SELF-SERVICE PORTAL INTEGRATION
CA Automic Service Orchestration empowers the agile enterprise through automated self service integration with leading helpdesks (ServiceNow, BMC Remedy, etc.)

REQUEST MANAGEMENT
Self-service portal for the business users, which empowers them to be more agile and includes human workflows and approval processes

CA AUTOMIC ONE AUTOMATION PLATFORM
Open, scalable, reliable, and proven automation platform for thousands of customers with millions of transactions a day on-premise, hybrid or in the cloud

INTEGRATIONS
CA Automic Service Orchestration integrates with ITSM tools, orchestration tools, applications, operating systems, databases, CMDB, web services, and many others to ensure integration of your existing environment

Diagram labels: Self-Service Portal; IT Service Management (Changes, Incidents, Problems); Service request; CA Automic Automation Engine; 3rd party automation products (i.e. Chef, Puppet, SCCM, ...); Interfaces (web services, WMI, SSH, Powershell, CLI, SQL); IT Infrastucture (OS, Storage, VM, Database); CMDB

Key Benefits and Results

- Fully orchestrated service delivery across all departments at the push of a button
- Single point of control for full-stack service delivery
- Rapid, reliable service delivery on-premises, in the cloud or in hybrid environments – without delays or errors caused by manual tasks & handoffs
- Assurance of process and configuration compliance
- Provision, update, change and patch with one solution
- Recover resources to manage expenses by de-provisioning services not in use
- Integration with Open Source and Public Cloud Solutions

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CA Automic Service Orchestration
BUSINESS VALUE ESTIMATIONS

Increasingly, IT users expect the same levels of service in their business lives as they receive in their personal lives. They expect to be able to go online, request a new application or service, and receive it in a matter of minutes or hours, not days or weeks.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Reduction in service request fulfillment costs	• Automated Self-Service deployments • Zero downtime upgrading procedure • Integrations with service request management applications and service catalog applications • Embeds within existing ITSM processes • Ensure compliance with documented approval and change management processes • Creation of standard reusable orchestration processes	Cost reduction due to improved release manager efficiency	20 – 40%	Service Fulfillment FTEs
Improve IT staff productivity	• Quickly trace • Orchestration activities • Automated approvals • Automated notifications	Cost reduction in rework, finding issues earlier in the cycle, and eliminating manual testing activities	2 – 4%	IT Staff FTEs
Reduced audit and compliance costs	• Documented policies and procedures for each step in an orchestrated process • Document policies and procedures across all environments and platforms • Generate comprehensive reports to provide the means to audit data quickly and efficiently	Cost reduction in audit expense and internal compliance costs	25 – 75%	Annual Audit/Compliance Costs
Increase flow of value to customers by delivering more, faster	• Create standard, reusable release practices • Manage increased volumes and frequency of releases • Reduce delays in releasing applications • Enforce standard release criteria and release windows • Continually improve app delivery through actionable analytics • Provide complete end-to-end insight and control to prioritize based on business impact		5 – 15%	Revenue-generating apps delivered regularly and on schedule

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CA Virtual Network Assurance

Extend the visibility and ensure the reliability of SDN/NFV networks

The application economy brings new and unprecedented demands on the network and the business. Software–defined networking (SDN) and network functions virtualization (NFV) are the keys to staying competitive and agile but will undoubtedly introduce complexities and vulnerabilities into operational systems and processes. CA Virtual Network Assurance offers next-generation network performance and fault management capabilities to reduce the risk in SDN/NFV deployments. The solution provides advanced collection, normalization and detection methods to extend network visibility and remove management complexity of the highly dynamic and complex SDN/NFV networks.
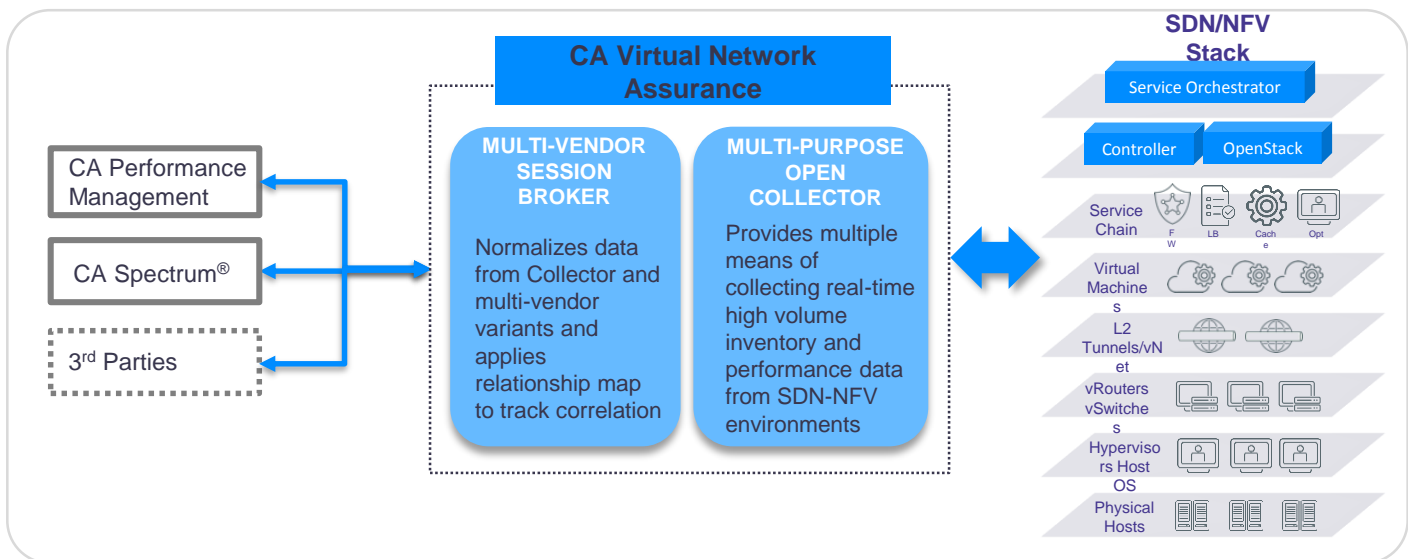
CA Virtual Network Assurance meets your business needs by offering:

- Extended visibility. Bridge the dynamic relationships/dependencies of new SDN/NFV inventory and performance with legacy infrastructure data into a single pane.

- Stack correlation. Minimize the management complexity that breeds bottlenecks and assure all the layers of the SDN/NFV stack.

- Multi-vendor protocol and platform coverage. Support for SDN controllers, orchestrators, OpenStack and vendor agents through advanced API normalization with on-demand certification.

- Integrated metrics. Support for new overlay metrics with SNMP for comprehensive performance analytics.

- Carrier-grade scalability and monitoring. High performance reporting and analytics of scaled SDN/NFV environments alongside legacy networks.

CA Virtual Network Assurance
BUSINESS VALUE ESTIMATIONS

- Accelerate service delivery of revenue-generating services and tailor them in real time
- Gain operational confidence by accurately identify vulnerabilities and bottlenecks that could impact service delivery.
- Boost DevOps by providing the bridge between development and operations to certify new applications on live environments and improve time to market.
- Investment protection. Through integration with CA Performance Management and CA Spectrum extends comprehensive capabilities for performance fault management to support highly scalable SDN/NFV environments.
- Reduce network CapEx/Opex by maximizing infrastructure spend and avoiding over-provisioning of network resources and bandwidth as a means of insurance for service outages.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Reduces costs of managing SDN-NFV environments and legacy networks	• Big data-driven troubleshooting advanced analytics provides real-time detection of anomalies to proactively avoid problems • OOTB dashboards and topology maps for key technology domains, with intelligent metric views and guided workflow based or best engineering practices for efficient triaging • Integrates discovery workflow in hybrid SNMP & NFV environments for large deployments • Reduces complexity managing SDN-NFV networks & devices with full visibility into virtual & physical components & relationships • Provides multiple means of collecting real-time high volume inventory & performance data from SDN-NFV environments • Provides analytics on application routing of Software Defined WAN	Labor cost reduction	1 - 3%	CSP / MSE count of NOC, service desk and business operations FTEs
Reduces MTTR for network outages or performance degradations	• Provides detailed, accurate and up-to-date topology mapping and "network health" • Quicker root cause identification • Provides visibility into self-services usage • Real-time operations view to deliver QoS to respond to increasing video streaming • Detects misconfigurations of hosts/servers, network components, bandwidth misuse • Provides visibility into systems performance and impact on infrastructure • Integrating with CA Spectrum integration, mitigate penalties, service credits, and other allowances by knowing when SLAs cross warning thresholds • Integrating with CA Performance Management, get access to OOTB dashboards with intelligent metric views and guided workflow based on best engineering practices for efficient triaging	Labor cost reduction	8 - 12%	Average # of FTEs on triage / bridge call
Reduces hardware & software acquisitions related to over-capacity provisioning	• Open API access and consolidation of tool sprawl provides reduced cost of maintenance • Multi-tenant access control provides system scalability • Delivers future-proofing through integration with CA Performance Management and CA Spectrum for SDN-NFV technologies • Ability to re-use existing infrastructure management assets • Health and utilization dashboards provides means to get best value from current infrastructure • Avoid over-provisioning and deploy/consume as needed with improved resource efficiency • Improved capacity planning and proactive response to demand	Virtual network hardware, software, maintenance cost	2 - 4%	Virtual network hardware, software, maintenance cost

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CA Mainframe Operational Intelligence
Manage SLA's and Address Skills

Embedded intelligence to proactively prevent problems, fix issues faster and get more done.

Bring Machine Learning and Augmented Intelligence to Mainframe

CA Products	Transactions		Collaboration			
SMF Data	Databases		Anomaly Detection			Augmented
Open API*	Systems		Dynamic Alerting			Intelligence
	Networks		Historical Analysis			
	Storage		Alert Clustering			
	Blockchain*		Incident Predictions			
			Insight Streaming			

MULTI-SOURCE DATA FEEDS   **PREDICTIVE INTELLIGENCE**   **AUTOMATED REMEDIATION**

Data, Sentiment Processing → **Machine Learning Algorithms** → **Automation**

*In development

The next gen of the machine age is upon us. Everything is getting smarter. Data analytics are part of our everyday shopping experience. Netflix learns our preferences and makes real-time suggestions. Cars are on the cusp of driving themselves. In short—machine learning is the next big thing, and CA is bringing it to the mainframe with embedded operational intelligence to help you deliver outstanding customer experiences, improve efficiency and drive down overall IT costs.

Predict Earlier

Take action earlier with embedded analytics which detects abnormal patterns of operation.

Collaborate Efficiently

Get everyone working together to isolate root causes with data insights from multiple sources.

Remediate Faster

Operational Intelligence from CA captures patterns, triggering automated and reliable problem remediation.

Improve Continuously

Machine learning with operational feedback recommends the next best action for future events.

technologies

CA Mainframe Operational Intelligence

Deliver a Self-Driving Data Center

Leverage Experts to Train AI and ML Algorithms

1 **Gather Alerts from Multiple Sources**

2 **Automate Clustering of Alerts into Issues**

3 **Provide Incident Predictions and Insights**

4 **Apply Sentiment Analysis**

Clustered Issue:
Network problem

60 active alerts within 30 minutes

Tribal Knowledge Captured

Refines automatic recommendation
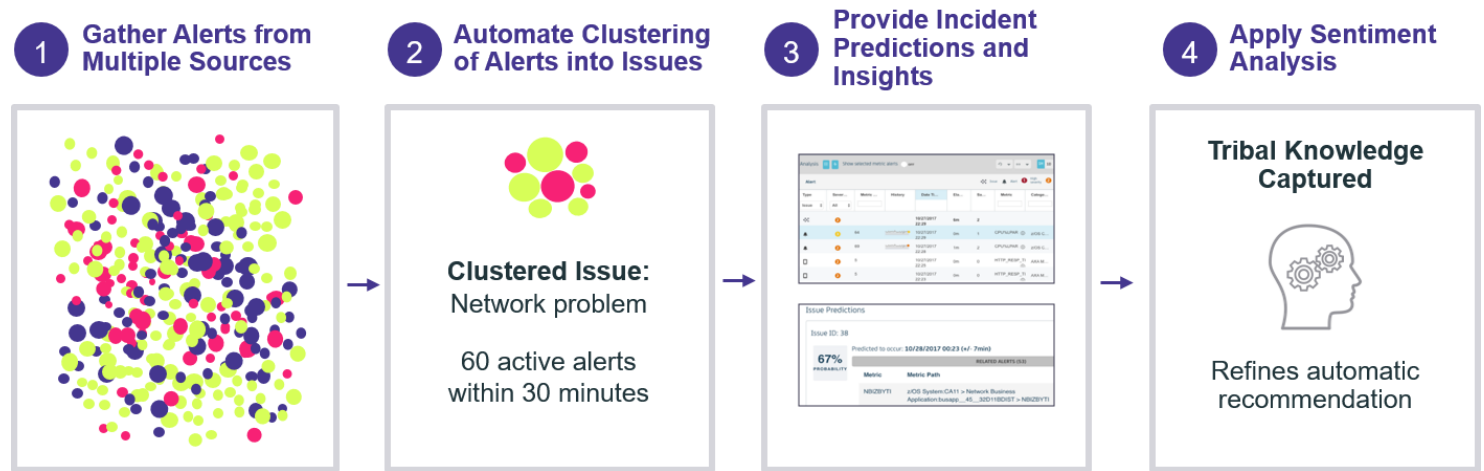
Customer Cases

Predict sooner with augmented intelligence and machine learning
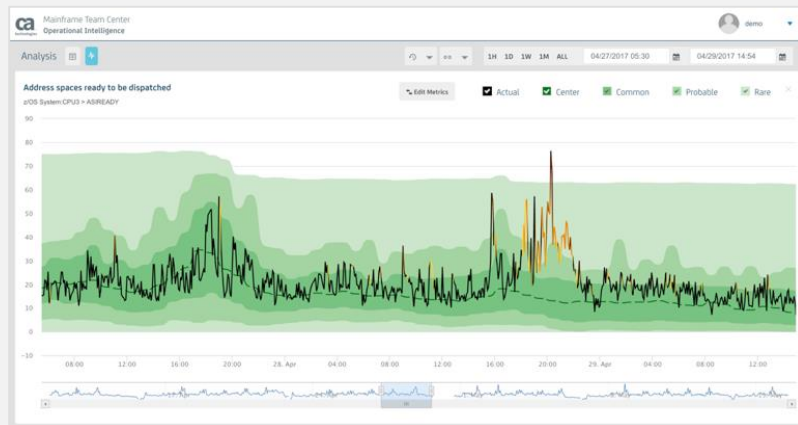
"Would have alerted of issue **2 hours** before we even knew we had a problem."

Assure SLA's with visual analytics and automated data correlation

SOUTHWEST GAS

5X Improvement in Resolution Time

ca technologies

Connect & Secure.

Secure your digital enterprise to win in the application economy

Grow your revenue, not your risk.

When Your Objectives Include:

Simplify access management for your business
- CA Identity Suite
  - CA Identity Portal
  - CA Identity Manager
- CA Identity Governance

Identify legitimate users through contextual risk analysis and multifactor credentials
- CA Advanced Authentication

Deliver essential information seamlessly through secure single-sign-on
- CA Single Sign-On (formerly CA SiteMinder®)
- CA Directory

Secure your applications at every phase of their lifecycle
- CA Veracode Greenlight
- CA Veracode Static Analysis
- CA Veracode Software Composition Analysis
- CA Veracode Web Application Scanning

Provide a hassle-free shopping experience across devices
- CA Strong Authentication for Payments
- Payment Security
- CA Transaction Manager
- CA Risk Analytics

Prevent breaches and protect data at all access points.
- CA Privileged Access Manager (formerly Xceedium Xsuite)
- CA Privileged Access Manager Server Control (formerly CA Privileged Identity Manager)
- CA Trusted Access Manager for z

Find and protect regulated and sensitive data on z Systems™
- CA Data Content Discovery
- CA Trusted Access Manager for z

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CA Identity and Access Management

Securely empower digital business with identity-centric cybersecurity

IDENTITIES • Provisioning & access governance • Self-service • Business-oriented user experience	**ACCESS** • Single Sign-On • Web access management • Web services security, federation
CA Identity Suite	*CA Single Sign-On*
AUTHENTICATION • Strong, multi-factor credentials • Risk analysis and scoring • Behavioral profiling	**PRIVILEGED IDENTITIES** • Fine-grained access controls • Shared account password mgt. • Hypervisor hardening
CA Advanced Authentication	*CA Privileged Access Manager*
PAYMENT SECURITY • Transaction security • Risk Analysis • SSO	**API SECURITY** • API gateway, mobile access gateway • Developer portal
CA Payment Security	*CA API (Mobile) Gateways, CA API Portal*
Directory Services	
CA Directory	

Enterprises face a dilemma today. Digital business demands a high level of connectivity between an organization's systems, data and applications, and a multitude of consumers, employees, partners and third parties that require access. But providing that access opens multiple avenues of attack, which – as headlines show – are continuously exploited with devastating consequences. Organizations need to provide a simple means of enabling appropriate access – while effectively controlling user activity and defending against breaches and other security incidents.

In this new, highly distributed, open enterprise, user access to applications and services comes from many locations and devices. The network perimeter can no longer provide a control mechanism for this access. In fact, there is no network perimeter anymore – people are now the new perimeter and their identity is the single unifying control point across applications, devices, data, and users.

We call this "identity-centric cybersecurity" because security access and policy enforcement is based on the user's identity, along with a number of other contextual factors. The result is a highly flexible security model that uses risk analysis to make effective decisions about granting access to corporate resources to a specific user – and protecting against unauthorized access, whether originating from an insider or external attack.

CA Identity & Access Management provides the most effective cybersecurity access platform to enable both protection from threats and business enablement in the application economy. The CA security portfolio enables organizations to:

• Provide strong protection against breaches and improper access so you are "closed to threats"
• Provide a frictionless and secure user experience that keeps you "open for business"
• Manage and govern users' identities across their entire lifecycle
• Achieve and simplify compliance to external mandates and internal policy
• Protect assets in constantly evolving cloud and hybrid environments

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CA Identity Suite

Simplify identity management and access governance across the extended enterprise

The CA Identity Suite provides comprehensive identity management and governance capabilities along with a simple, intuitive user experience. This user experience can dramatically simplify processes such as user access requests and access certifications, resulting in improved productivity and user satisfaction. In addition, the CA Identity Suite performs risk analysis and certification and enables remediation actions in real-time during the access provisioning steps, thereby improving audit performance and risk posture with preventive policy enforcement.

While providing this outstanding user experience, the CA Identity Suite also delivers core identity management and governance capabilities, including broad provisioning support for on-premise and cloud apps, extensibility and flexibility to integrate with other identity management/security solutions, other IT systems, and consumer- grade scale. The CA Identity Suite provides organizations with deep functionality, high scalability, and most importantly, an outstanding user experience.
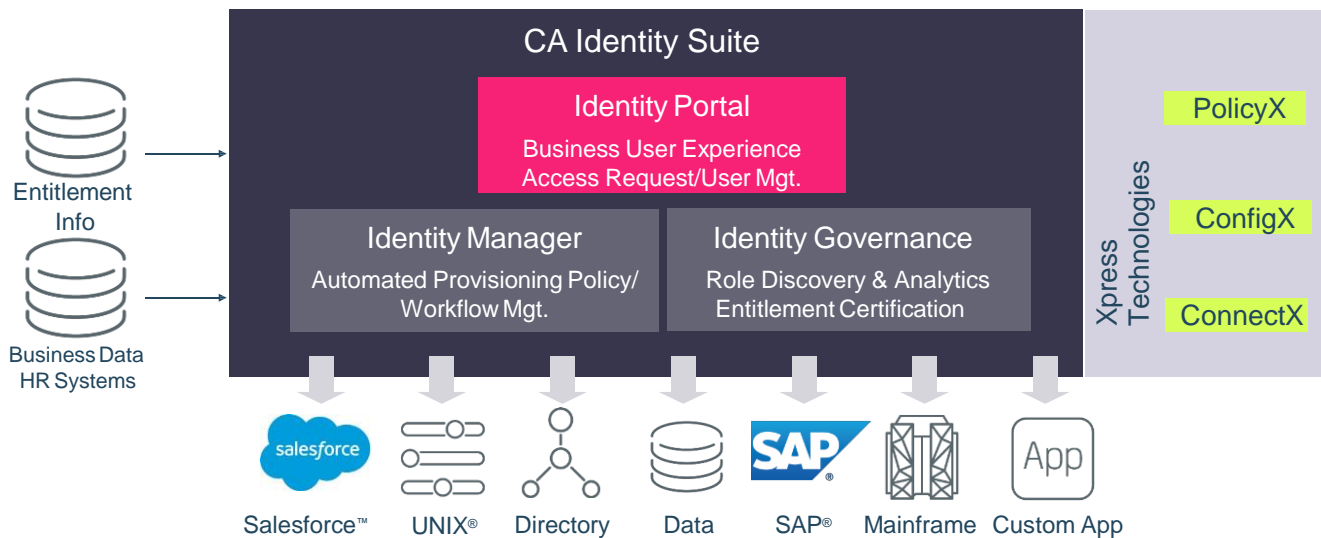
Key Features

- A simple, intuitive user experience improves productivity and user satisfaction while reducing total costs.

- User provisioning and de-provisioning. Automates account provisioning, removal, and approval processes throughout the user's entire lifecycle. Customizable workflows support the unique way each organization approves, alerts, and schedules these activities.

- Customization without custom code. Powerful features such as ConfigXpress, PolicyXpress, and ConnectorXpress let you customize your identity management infrastructure without custom code.

- Securing on-premise and cloud applications. Provides centralized control of identities, users, roles and policies across on-premise and cloud applications.

- Role discovery and analysis, and privilege cleanup brings order to your role definitions, and reduces risk of improper user access.

CA Identity Suite
BUSINESS VALUE ESTIMATIONS

Increase user productivity and business flexibility with user provisioning and identity governance.
Read more at http://www.ca.com/us/products/identity-management.html

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in IT time required to onboard or offboard users	Automates the provisioning and de-provisioning of user accounts and access entitlements across managed IT systems /applications; thereby reducing the time currently spent by IT administrators manually performing these activities.	Reduction in IT security admin labor costs	CA Identity Manager	70-80%	Security admin FTEs
Reduction in Operations Costs thru Software License Recycling	Automates the de-provisioning of user accounts and access entitlements across all managed IT systems/applications; thereby reducing the orphaned accounts and allowing the organization to reuse/recycle these software licenses.	Cost savings from reduction of business time	CA Identity Suite	40-60%	System admin / business user
Reduction in External Auditor Fees	Streamlines the user access attestation process, can detect out-of-pattern access assignments, and automatically remediate rejected access and violations; thereby reducing the time spent by external auditors on these issues.	Cost savings from reduction in operating and support costs	CA Identity Suite	50-75%	IT operations budget
Reduction in Service Desk Calls for Self-Service Enabled Activities	Provides self-service capabilities that enable internal and external users to manage their own profile data, reset a forgotten password, retrieve a forgotten ID, etc.; thereby eliminating the need for these users to contact the service desk for assistance with these tasks.	Cost savings from reduction of IT Service Desk calls for identity issues	CA Identity Suite	70-80%	Service Desk FTEs
Reduction in IT Time Required to Manually Fulfill User Access Requests	Provides an access request system and business catalog that allows users to view additional access roles and permissions that they can request based on their existing job function. This includes a dynamic risk rating indicator, a preventive policy checker, and shopping cart experience.	Reduction in IT security admin labor costs	CA Identity Suite	25-75%	Security admin FTEs
Reduction in Time Required to Build and Deploy New Connectors	Provides Connector Xpress, which can be used to develop and deploy new LDAP/ODBC and web service connectors without any custom coding; thereby reducing the time required by the IT department to custom code these connectors (as compared to other IAM solutions).	Increased number of connectors deployed	CA Identity Suite	60-70%	User access requests

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CA Advanced Authentication

Reduce online identity fraud and inappropriate access using transparent, contextual risk-based evaluation and a flexible set of easy-to-use, multi-factor credentials.

CA Advanced Authentication provides greater assurance that the user is whom they claim to be through a frictionless, intelligent risk analysis and user behavioral profiling, and when risk is deemed too high, it can automatically initiate an out-of-band step-up authentication challenge. In addition, the solution also provides several easy-to-use, software-based two-factor credentials to help organizations address regulatory compliance requirements.

CA Advanced Authentication

Contextual Authentication	Versatile Authentication
Where is the user?	What device is being used?	CA Auth ID	CA Mobile OTP
What is the user trying to do?	Is the action consistent with history?	Q&A	OTP-Out of Band	OATH Tokens
CA Risk Authentication™	**CA Strong Authentication™**

Two best-of-breed components that can be deployed individually or together

Key Features

- Performs real-time, contextual risk assessment
- Provides default, best practices risk rule sets
- Enables quick and easy configurable rules engine
- Integrates data from Web and mobile channels
- Learns user behavior automatically
- Converts phone-as-a-token authentication mechanisms
- Includes two software-based strong authentication credentials

Key Benefits

- Provides frictionless user experience through transparent risk analysis
- Reduces exposure to data breaches, inappropriate access and identity theft
- Lowers cost of operations
- Helps meet government regulations and industry guidelines for stronger authentication
- Implements two-factor credential without altering users' login experience

For more information, please visit ca.com/Advanced_Authentication

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CA Advanced Authentication
BUSINESS VALUE ESTIMATIONS

Get real-time protection for your online and mobile applications. Our leading-edge solution can authenticate an employee, partner or contractor while providing a frictionless login experience. This ensures that legitimate users have anytime, anywhere access from any device, which builds trust and brand loyalty.

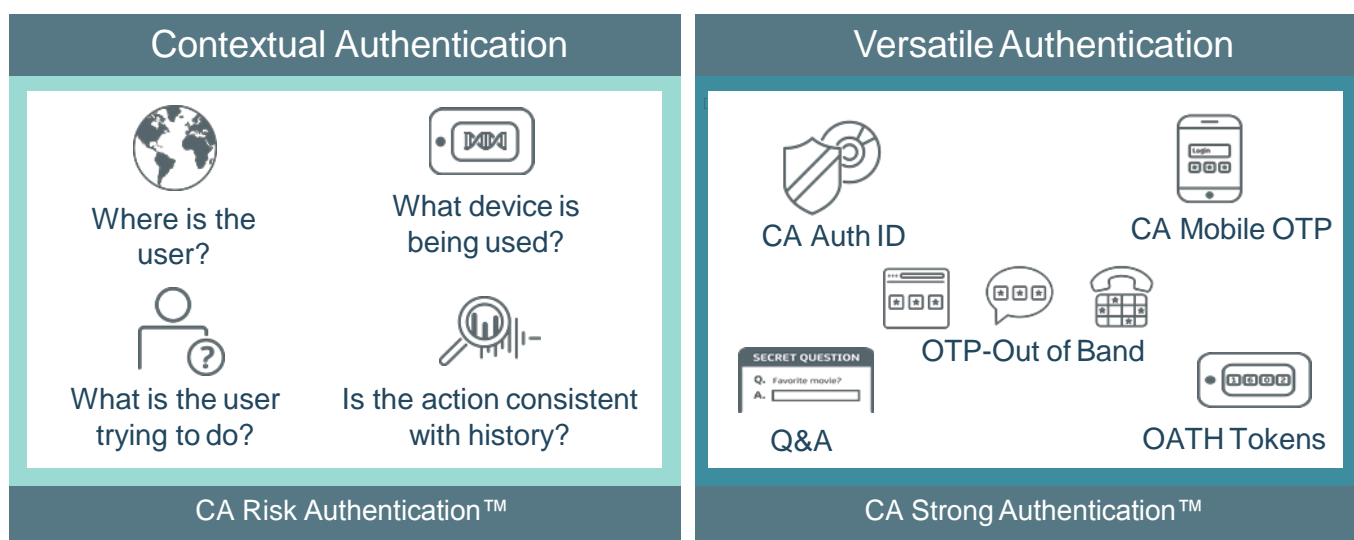| Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in fraud or breach losses due to fraudulent access	The solution reduces fraudulent access via risk analysis, behavior profiling, and step-up authentication	Reduction in financial or breach losses	Advanced Authentication	60-80 %	Customer accounts & data
Enhanced revenue due to faster time to market	The solution provides mobile SDK that allows customers to launch more secure apps much more quickly	Revenue gains	Advanced Authentication	20-40%	New revenue streams
Enhanced revenue due to customer retention	The solution implements stronger security without impacting user experience	Revenue protection	Advanced Authentication	40-60%	Customer loyalty
Reduced costs for forgotten password service desk calls	The solution supports out-of-band OTP, which will reduce the password reset calls	Service desk costs	Advanced Authentication	30-50%	Service desk costs
Reduced costs for out-of-band step-up authentication	The solution provides risk analysis and behavioral profiling, which reduces the number of text messages that need to be sent.	Operations costs	Advanced Authentication	70-90%	Operations costs

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CA Single Sign-On

Improve user experience across apps while helping to protect against password attacks, data breaches and session hijacking

CA Single Sign-On provides secure single sign-on and flexible access management to applications and Web services on-premise, in the cloud, from a mobile device or a partner's site. With CA Technologies, integrated access control extends to API access and native mobile applications – thereby improving the user experience. It's recognized worldwide as an industry-leading solution.
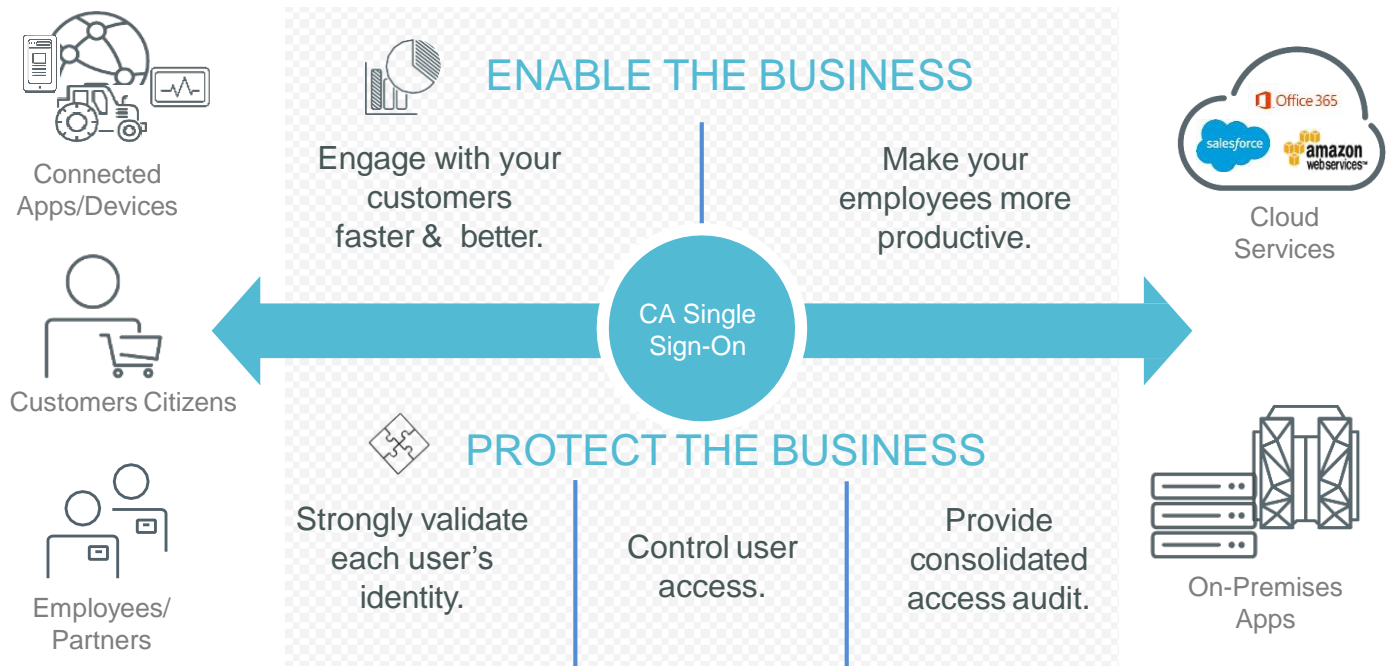
Key Features

- Secure Single Sign-On
- Support for open standards
- Social media login convenience.
- Enhanced Session Assurance with DeviceDNA™
- WS-Fed 1.2 active profile
- Policy-based authorization
- Centralized session management

CA Single Sign-On
BUSINESS VALUE ESTIMATIONS

BENEFITS

- **Facilitates business growth, innovation and collaboration.** Helps you efficiently deploy and provide secure access control to applications.
- **Improves user experience and productivity.** Allows users to sign on once, providing them a secure and unified online experience.
- **Drives operational excellence.** Delivers consistent, centralized security management supporting multiple access methods and heterogeneous applications.

| Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Savings in time to manage multiple passwords for internal end-users	Reduced costs for internal end-users to maintain multiple passwords requiring user access and losing productive time logging into business applications and resources or waiting for forgotten passwords to be manually reset	Reduction in end-user labor costs	Single Sign-On	1 - 2%	User FTEs
Costs savings in service desk effort	Self-service capabilities enables internal and external users to manage their own profile data, reset or retrieve forgotten passwords, thereby reducing the number of calls to the service desk	Reduction in service desk labor costs	Single Sign-On	20 - 30%	Service desk FTEs
Enhanced revenue through access to new social media channels	User authentication based on social media credentials enables the capture of new customers via social media marketing campaigns	Revenue enhanced	Single Sign-On	2 - 6%	New revenue
Enhanced revenue due to faster time to market	Reduced new application delivery through shortening of timeframes for web and mobile applications via seamless authentication, authorization, federation and integration of apps and back-end data sources	Revenue gains	Single Sign-On	25 - 35%	New revenue
Reduction in audit compliance related costs	The solution provides a detailed audit trail to track and report web activity back to the original user therefore reducing cost to manually audit user access activity on protected endpoints and servers	Reduction in audit preparation labor costs	Single Sign-On	25%	Administrator FTEs

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CA Veracode

Securely develop and deploy the software that powers the application economy

CA Veracode's unified platform assesses and improves the security of applications from inception through production so that businesses can confidently innovate with the Web and mobile applications they build, buy and assemble as well as the components they integrate into their environments.

DevSecOps
Secure applications throughout the application lifecycle

1 Enable continuous development by finding security defects in your code right in your IDE with **CA Veracode Greenlight.**

2 Enable continuous testing by quickly identifying and remediating security flaws through scanning the code using **CA Veracode Static Analysis**

3 Speed up development, without the downside risk of open source vulnerabilities. Use **CA Veracode Software Composition Analysis**

Integrations and APIs

CA Veracode Greenlight

CA Veracode Static Analysis

DevSecOps powered by CA Veracode

CA Veracode Dynamic Analysis

CA Veracode Software Composition Analysis

4 Identify and remediate security issues in running web applications with **CA Veracode Dynamic Analysis**

5 Integrate with leading IDEs, code repositories, bug tracking systems and build systems

CA Veracode's unified platform assesses and improves the security of applications from inception through production so that businesses can confidently innovate with the Web and mobile applications they build, buy and assemble as well as the components they integrate into their environments.

The CA Veracode platform can scan all of the applications and components you build or buy, covering all major languages, frameworks and application types. It gives you a central repository for your applications and components, so you have full visibility into your risk posture. Detailed reports and executive-level views help you to prioritize fixes, show reduced risk over time or compare progress across different teams. You have the flexibility to leverage existing policies or create custom policies and then centrally view policy compliance.

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CA Veracode
BUSINESS VALUE ESTIMATIONS

CA Veracode customers have asked: how can we...

- Cost-Effectively Scale Secure Software Delivery?
- Meet the Compliance Needs of My Regulators and Customers?
- Rapidly Reduce the Risk of a Breach from Insecure Software?
- Make Software Security a Competitive Advantage?

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduction in unplanned work caused by security defects	Find security defects at all stages of development, especially coding and testing, to reduce unplanned work after the policy scan gate before production deployment. CA Veracode Greenlight finds security defects in your code and provides contextual remediation advice to help you fix issues in seconds, right in your IDE and it leverages our proven, and highly accurate static engine.	Reduction in policy affecting flaws per app per year	CA Veracode Static Analysis; CA Veracode Greenlight	80% - 86%	Apps Addressed by Developers, QA & Ops Engineers
Cost avoidance due to significantly lower false-positive rate than competing solutions	CA Veracode Static Analysis delivers a customer-verified 5% false-positive rate, compared to 32% by the closest competitor. The high level of accuracy reduces wasted time triaging flaws. No engine tuning required.	Hours avoided triaging or addressing false positives	CA Veracode Static Analysis	80% - 90%	False Positives
Avoided hardware, setup and operations effort required for on-premise scanners	No need to set up, install, and maintain software & hardware. Scans in the background and provides accurate and actionable results, without taking up resources on your machine. Can process binaries, so you don't have to disclose your source code.	Expenses for hardware and time saved from deploying & maintaining hardware & OS	CA Veracode Application Security Platform	95% - 100%	Infrastructure Costs for On-Premises Solutions
Reduced costs by automating the discovery of open source components and security risks	Enables IT teams to discover open source components used in all applications. Flags security issues and software licenses that cause concerns.	Development, security, and legal team labor costs avoided	CA Veracode Software Composition Analysis	85% - 95%	Open Source Apps
Revenue enhancement due to confirmation that your software has been reviewed for security issues	Get an attestation letter or CA Veracode Verified seal that confirms that your software has been checked for security issues. Increase win rate and shorten sales cycle because software does not have to be tested by every customer.	Increased win rate; shortened sales cycle; increase in new revenue generating projects	CA Veracode Verified	2% - 4%	New Revenue

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

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Payment Security

Reduce card-not-present fraud while providing a frictionless customer online shopping experience; we call this "Zero-touch Authentication"

Payment Security from CA Technologies

Boost Revenue and reduce fraud while delivering a frictionless online shopping experience for your cardholders. Build trust and brand loyalty with leading-edge Payment Security solutions from CA Technologies, protecting over 13,000 portfolios and 165 million cardholders worldwide. We provide you with the payment security you need to defend against fraud and ensure a frictionless, hassle-free online shopping experience for your users.

Payment Security solutions from CA Technologies can help reduce cardholder friction and decrease abandonment in Card Not Present (CNP) transactions by identifying legitimate cardholders and allowing them to proceed directly to checkout. Transactions that are deemed risky can be denied or subjected to step-up authentication.

Zero-Touch Authentication is key

CA Risk Analytics transparently assesses the fraud risk of an eCommerce transaction in real-time during authentication. It identifies legitimate transactions allowing the majority of cardholders to continue their purchase without impact. Using sophisticated advanced analytics, a behavioral neural network model and a flexible set of dynamic rules, it examines current and past transactions, device characteristics, location, user behavior and historical fraud data to evaluate risk. The calculated risk score is then used by your policies to decide whether to allow the purchase, request step-up authentication, send an alert or deny the purchase. A comprehensive case management system allows immediate access to fraud data so that analysts and customer support representatives can prioritize and take action on cases, query fraud data and manage alerts.

Key Benefits:

- Measure fraud risk in every transaction
- Reduce friction in the cardholder's online shopping experience
- Provide customized protection for existing portfolios
- Integrate with external fraud management systems
- Aggregate fraud data from multiple channels

Cardholder behavior patterns, devices used, location and many other factors can be analyzed in real time allowing the majority of legitimate transactions to continue without any change to the user experience during checkout.

Read more at http://www.ca.com/us/products/payment-security

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CA Payment Security
BUSINESS VALUE ESTIMATIONS

CA Payment Security solutions use a multilayered security approach to helping issuers reduce fraud and improve the online shopping experience for CNP transactions no matter where, when or on what device your cardholders use to shop.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Increase revenue and acceptance rates	• By identifying legitimate cardholders and allowing them to proceed directly to checkout, issuers can create frictionless customer experience, which translates into lower abandonment and failure rates • This is enabled through the ability for issuers to write custom rules, choose from a set of pre-defined rules and leverage neural-network authentication models to accurately separate fraud from non-fraud, allowing only low-risk transactions to proceed directly to checkout	Reduction in failed or abandoned transactions	80-90%	Interest revenue and interchange Fees
Deny fraud attempts	• Combining CA's neural-network authentication models with issuer defined rules give issuers the ability accurately identify true fraud and outright deny or enforce step-up authentication. • By denying transactions that are accurately identified as high-risk, issuers can stop fraudsters without giving them the opportunity to attempt to pass a challenge request. This reduces the risk of many types of fraud that lead to revenue loss, including account takeover, while impacting fewer legitimate customers	Improvement in fraud attempts denied	45-55%	Fraud denied
Challenge fraud attempts	• For transactions that are deemed medium-risk by CA's neural-network authentication models combined with issuer-defined rules, issuers have the ability to challenge a fraud-rich pool of transactions • By challenging those transactions that are accurately identified as medium-rick, issuers can require authentication by the "cardholder," stopping many fraudsters while allowing through legitimate cardholders who pass authentication. This can reduce the risk of many types of fraud that lead to revenue loss, while impacting fewer legitimate customers	Improvement in fraud attempts challenged	25-35%	Fraud challenged
Reduction in helpdesk costs	• Frictionless cardholder experience translates into lower abandonment and failure rates; this leads to fewer inbound calls for transaction issue resolution. • Sophisticated case management and highly customized queue management workflows allow CSRs to review authentication history and match case processing to available agent capacity • Issuers can prioritize cases for outbound fraud investigation and focus on the highest priority cases, reducing the cost of fraud investigations • Fraud marking within case management enables managers and analysts to see rule efficacy and use reporting capability to optimize rules and workflow	Reduction in in-bound call volume for transaction issue resolution	80-90%	Customer call volume

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CA Privileged Access Manager

Control, monitor and audit privileged user activity

Quickly deployable and delivering fast time-to-protection, CA Privileged Access Manager is designed to secure all IT resources, facilitate compliance and minimize costs. Available as either a hardened hardware or virtual appliance, CA Privileged Access Manager is designed to prevent security breaches by consistently protecting sensitive administrative credentials, such as root and administrator passwords, controlling privileged user access, proactively enforcing security policies and monitoring and recording privileged user activity across virtual, cloud and physical environments.

HYBRID ENTERPRISE

Traditional Data Center	Software Defined Data Center	Public Cloud—IaaS	SaaS Applications
Mainframe, Windows, Linux®, Unix®, Networking			
Enterprise Admin Tools	SDDC Console and APIs	Cloud Console and APIs	SaaS Console and APIs

A New Security Layer - Control and Audit All Privileged Access

- Vault Credentials
- Centralized Authentication
- Federated Identity
- Privileged Single Sign-on
- Role-Based Access Control
- Monitor and Enforce Policy
- Record Sessions and Metadata
- Full Attribution

Unified Policy Management

CA Privileged Access Manager

Identity Integration	Enterprise-Class Core
Hardware Appliance	OVF Virtual Appliance AWS

With an increasing number of organizations experiencing damaging and costly data breaches involving stolen administrative credentials, the exploit of compromised credentials and unmanaged access to systems by privileged users are now the leading threats against enterprises and government establishments. Failure to prevent breaches can lead to data loss, reputational damage, interruptions in operations and other costly repercussions.

Controls over privileged users are not only a business imperative, they are also mandated in a host of regulations, and standards spanning multiple industries and sectors. Failure to achieve and demonstrate compliance with privileged access regulatory mandates can lead to audit findings, fines and additional costs.

Without effective Privileged Access Management, many organizations not only fall short in minimizing their risk exposure to breaches and attacks, they also struggle to meet various regulatory compliance mandates.

CA Privileged Access Manager has LOWER TCO!

- An alternative product supports only 400 concurrent recorded users sessions per server, with a pair of load-balanced servers, for a total of 800 concurrent recorded sessions. Whereas a single CA Privilege Access Management appliance can support 2000 (or more) recorded sessions - a 5 to 1 ratio!

- For the competition to scale to the same 4000 sessions as the pair of CA PAM appliances provides, you would be required to stand up 10 servers.

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CA Privileged Access Manager
BUSINESS VALUE ESTIMATIONS

- Reduce risks from breaches
- Simplify compliance
- Get better, faster security operations

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Reduction in cost of breach prevention and risk mitigation efforts	CA Privileged Access Management (CA PAM) controls access to privileged account credentials and to protected devices using a zero- trust model, and rotates the privileged credentials according to customer's policies. CA PAM ensures user accountability by auditing all privileged activity and by recording videos of user sessions.	Avoidance of cost of security and data breach events	60-80%	Data breach events
Reduction in external auditor fees and penalties due to fewer audit exceptions	CA PAM can help reduce the time required to prove adequate protection and management of passwords and monitoring of privileged users and accounts, thus reducing external auditor fees due to streamlined & automated remediation while achieving & maintaining standards compliance (PCI DSS,HIPAA,NERC-CIP,FISMA).	Reduction in audit fees and compliance penalties	40-60%	External audit costs
Reduction in time required to address password management	Automating password changes and the task of enforcing strong passwords as part of an organization's security best practices decreases both security and operational risks, while increasing staff productivity. With credential management features like automated or facilitated discovery, secure storage/vaulting, automated policy enforcement, secure retrieval and automated log-in, CA PAM can simplify and speed day-to-day tasks of providing authenticated privileged users with quick access to resources.	Savings in labor costs	20-30%	System administrator FTEs
Reduced business and IT costs of unscheduled outages	Tightly controlling access and privileges in Hybrid Enterprise environments reduces the occurrences of unscheduled system downtime related to unintentional errors and malicious activity. Privileged users gain access only to authorized hybrid-cloud infrastructure, with all activity fully monitored and recorded.	Reduction in cost of downtime	30-50%	Network and system availability
Cost avoidance through ease of implementation and scalability	CA PAM is delivered as a single appliance which can be quickly deployed in hours as a hardened device or a virtual machine, protecting your enterprise resources with one scalable, agentless solution. A single appliance protects thousands of resources and also supports a larger number of concurrent sessions with fewer appliances, thus providing for a savings in IT labor costs as well as the avoidance of costs associated with the total cost of ownership (TCO) for servers and licenses, as result of solution configuration transparency.	Lower cost to implement and scale	50-80%	Total cost of ownership

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CA Privileged Access Manager Server Control

Help protect high-value privileged accounts from insider and external threats with strong risk containment and breach protection

CA Privileged Access Manager Server Control provides a comprehensive solution for protecting the most critical business assets—your mission-critical servers—with powerful fine-grained protections over operating system-level access and privileged user actions. CA Privileged Access Manager Server Control is a system-level, host-based solution that controls, monitors and audits privileged user activity to improve security, reduce administrative costs and simplify audit and compliance processes across physical and virtual environments.

CA Privileged Access Manager Server Control
Fine-grained access controls and host system protections enhance the benefits delivered by the privileged access management solution from CA Technologies.

Stop Targeted Attacks

Enable Compliance

Mitigate Insider Threats

Privileged Access Management

Secure the Hybrid Enterprise

Enhance Operational Efficiency

Key Features

- In-depth protection for critical servers
- Highly-granular access controls, even for users with "superuser" privileges
- Delegated superuser privileges to named users
- Controlled access to system resources, including files, folders, processes, registries and more.

- Secured task delegation (sudo utility)
- Monitors files and alerts when changes occur
- Monitors programs and alerts in cases of tampering, optionally block tampering programs
- Authenticates UNIX® and Linux users using active directory and Kerberos credentials
- User activity reporting

CA Privileged Access Manager Server Control
BUSINESS VALUE ESTIMATIONS

- Enable accountability for privileged users. Control how privileged users access and use systems and data.

- Secure both physical and virtual environments. Control privileged identities on physical systems, virtual machines and the hypervisor.

- Facilitate compliance. Address requirements such as PCI and ISO 27002.

Business Value Proposition	Business Value Enabler	Measurable Impact	Solution Area	Impact Range	Key Resources Affected
Reduced cost for system administrators to fulfill user requests	The solution provides self-service capabilities that enable users to request access to privileged or shared accounts. In addition, the system can gather necessary approvals to grant access to these accounts.	Savings in system administrator labor cost	CA Privileged Access Manager Server Control	20 - 30%	AdministratorFTEs
Reduction in service desk call through reduction in password reset calls	Self-service capabilities enable users to request access to privileged or shared accounts. The system can also gather necessary approvals and grant access to these accounts.	Savings in service desk labor costs	CA Privileged Access Manager Server Control	20 - 30%	Administrator FTEs
Reduction in operations costs for legacy PIM system	The solution provides the opportunity to retire legacy identity and/or role management systems, thereby avoiding any enhancement costs associated with these systems.	Savings in labor costs for operations and support of legacy systems	CA Privileged Access Manager Server Control	90 - 100%	Software developer FTEs
Reduction in time for security policy and UNIX account administration	Reduction in time spent by system administrators manually performing account admin role through centralized management and automatic distribution of security policy changes. Active Directory for the management of UNIX accounts and users via the UNIX Authentication Bridge are leveraged.	Savings in UNIX system administrator labor costs	CA Privileged Access Manager Server Control	30 - 40%	UNIX administrator FTEs

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CA Directory

Meet demanding Web-scale application needs with highly reliable and scalable directory services

CA Directory provides you with the performance, scalability and reliability needed to support your most demanding online applications. CA Directory can provide high performance for read and write operations and transparent distribution and replication to scale to any number of servers. Unlike common LDAP servers that cannot efficiently communicate with one another, CA Directory is architected to perform and scale in distributed environments with reduced hardware costs.

CA Directory provides you with a high-performance directory foundation for online applications. This lets your organization:

- Provide scalability without exorbitant hardware costs
- Meet the needs of new and future dynamic business applications
- Improve operational efficiency by consolidating islands of data into a single information backbone
- Provide a highly responsive and always available experience for your online application users
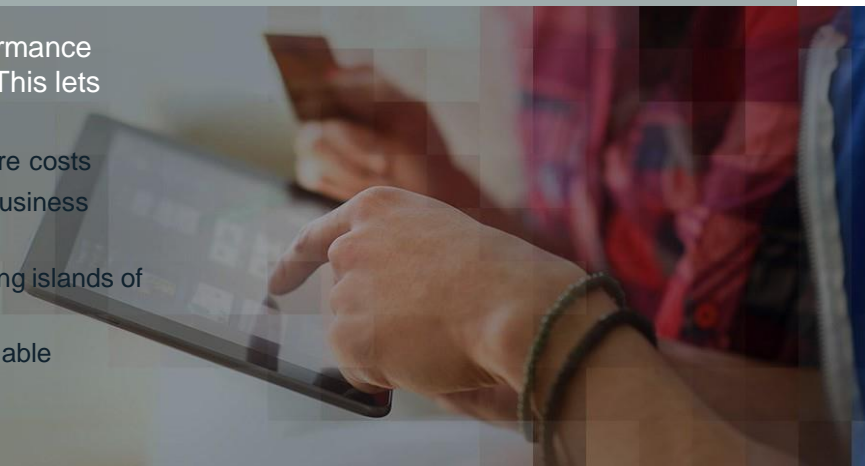
Scalable	Performant	Secure
Reliable	Flexible	TCO
Battle-Tested	Easy-to-Manage	Time-to-Value

Key Features

- **Exceptional read and write performance.** Ability to perform operations at rates of up to 20,000 modifications or searches per second on entry level hardware.

- **High scalability.** Scales to millions of users and a billion entries by distributing data across any number of servers.

- **Strong security.** Support for strong authentication; Hardware Security Modules (HSMs); rich password policies; fine-grained, rule-based and role-based access controls; SSL and TLS link encryption and all common password hashing standards including SHA-2.

- **Extreme reliability.** HA and DR with built-in load balancing and seamless failover and failback; configurable write-through and write-behind replication for cross-datacenter data consistency/integrity.

ca technologies

CA Directory Services
BUSINESS VALUE ESTIMATIONS

BENEFITS

- Provides scalability and performance without exorbitant hardware costs.
- Meet the needs of new, dynamic cloud-scale business applications.
- Improves operational efficiency by consolidating islands of data into a single information backbone.
- Delivers a highly responsive and always available experience for your cloud and on-premise
- application users.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Increase in user productivity through instantaneous failover capability	• The only directory that supports n-way multi-master real-time replication. • Intelligent failover and failback capabilities means that if a server goes down, other servers can automatically and transparently take over with no loss of service	Staff productivity	.1-.3%	Impacted enterprise SSO users
Reduction in security audit compliance related costs through enhanced access control policy management	• Includes many security features necessary to support secure applications, such as identity and access management systems, single sign-on servers, web portals and large-scale UNIX authentication. • Support for strong authentication; Hardware Security Modules (HSMs); rich password policies; • fine-grained, rule-based and role-based access controls; • SSL and TLS link encryption and all common password hashing standards including SHA-2. • Strong security auditing requirement support of distributed security environments.	External auditor fees	45-55%	Annual audit compliance issue volume
Reduction in service desk calls for self-service enabled activities	• One of the fastest directories on the market and is the only directory that combines the power of LDAP V3 for access and X.500 for distribution and replication. • A backbone directory for large-scale applications, as well as a key component underpinning many of CA's leading products, such as the components of the CA Identity and Access Management Suite.	Service desk labor costs	70-80%	Service desk call volume
Reduction in network service interruptions	• Ability to support large-scale distributed and replicated backbone infrastructures • Provides intelligent and transparent chaining of queries to distributed servers which allows applications to view the directory as a single logical federated backbone directory system regardless of the number of servers.	Downtime impact on revenue	15-25%	Cost of unplanned downtime

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Data Content Discovery

Find and control regulated mainframe data and classify for compliance

Mainframe data is at the heart of the data center and critical to the success of your business. With the mainframe collecting data for over 50 years, there is a vast amount of data on the platform and locating regulated or sensitive data is time consuming and often impossible. Couple that with the constant motion of data for testing and support, unwanted copies of data are landing up in unpredictable places with inappropriate access controls.

CA Data Content Discovery helps you identify data exposure risks on z Systems by scanning through the mainframe data infrastructure. Data that is scanned includes data that may be highly regulated in multiple vertical sectors or other non-public data sources deemed critical to your business. By discovering where the data is located, classifying the data to determine sensitivity level and providing comprehensive reporting on the scan results, data can be protected and exposure risks can be mitigated.
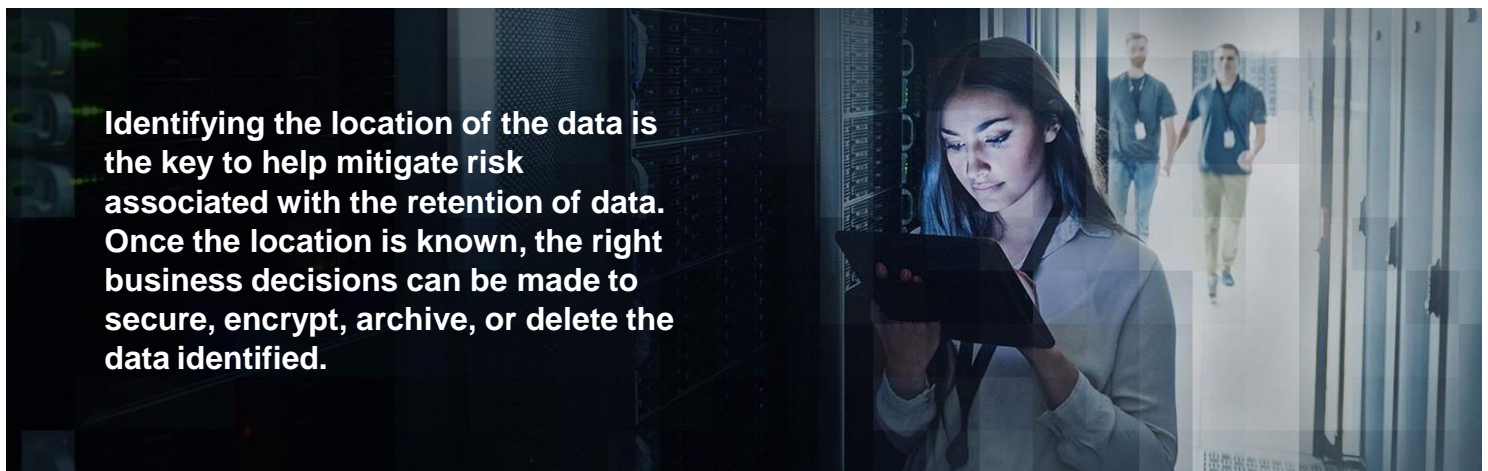
Identifying the location of the data is the key to help mitigate risk associated with the retention of data. Once the location is known, the right business decisions can be made to secure, encrypt, archive, or delete the data identified.

CA Data Content Discovery helps you identify data exposure risks on z Systems™ by scanning through the mainframe data infrastructure. Data that is scanned includes data that may be highly regulated in multiple vertical sectors or other non-public data sources deemed critical to your business. By discovering where the data is located, classifying the data to determine sensitivity level and providing comprehensive reporting on the scan results, data can be adequately protected and exposure risks can be mitigated.

€20M	**Potential Fines for Compliance Failure**[1]
86%	**Tougher Regulations Incentivizing Mainframe Security Initiatives**
93%	**Need for Improvement in Mainframe Security**
5%	**Initial Scan of Data Revealed PII**[2]

For more information, please visit http://www.ca.com/us/products/ca-data-content-discovery.html

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[1]Infosecurity Magazine
[2]Sample customer results

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CA Data Content Discovery
BUSINESS VALUE ESTIMATIONS

BENEFITS

- Find it. Help reduce IT staffing costs associated with manual detection of regulated or sensitive data on the mainframe.
- Classify it. Helps detect highly regulated and sensitive data so that it can be categorized and secured to facilitate regulatory compliance.
- Protect it. Helps simplify risk mitigation. Once CA Data Content Discovery identifies location of sensitive data, the user can review security and/or determine to encrypt, archive or delete the data to prevent misuse or duplication of data elsewhere.

Business Value Proposition	Business Value Enabler	Measurable Impact	Impact Range	Key Resources Affected
Reduces revenue losses caused by damages to brand identity resulting from breaches and related disruptions	• Locates unprotected sensitive data thereby allowing for a defense against both internal and external malfeasance • Reduces the number of lost, orphaned, abandoned, hidden, or under-protected regulated or sensitive records that may be compromised	Lost revenue from existing and future customers	.1-.3%	Revenue at risk due to customer loss
Reduces or limit cybersecurity liability insurance premiums	• Through comprehensive discovery, demonstrate that controls and safeguards are in place to reduce underwriter's risk • Reduces risk of being breached by both internal and external actors during testing by ensuring production does not exist in a test environment	Cost avoidance in escalation of annual cybersecurity premiums	25-35%	Cost of cybersecurity premiums
Decreases cost of fraud credit/ID monitoring protection and related costs	• Risk reduction in cost of remediating / paying for credit/ID monitoring • Identify regulated or sensitive records through rapid search • Reduce unmanaged unprotected records subject to compromise	Reduction in cost of fraud protection and related costs	20-30%	Number of customers compromised
Improves security audit preparation for compliance with regulated data mandates	• Automated processes to reduce prep time for internal/external audit • Scanning does not require transfer of data to distributed architecture due to processes that run 100% on mainframe • Reduce PCI DSS audit costs of regulated payment card industry data • Permits adherence to policies for retention periods for sensitive data	Cost reduction in high cost FTE labor	40-50%	Labor cost reduction
Reduces audit fines and other costs involved in not protecting regulated and sensitive data	• Easily visible display of who has access to discovered data • Easily confirm appropriate data protection controls are in place • Reduces opportunity for fraudulent Medicare and Medicaid claims by identifying private health information	Cost reduction in Audit non-compliance fines	40-50%	Fines generated by non-compliance
Reduces potential for disruptions in staffing and IT operations due to ensuing and required investigations	• Reduce likelihood of disruptions in operations especially forced resignations, separations, or reassignment of staff • Reduce cost of retraining and disruption of replaced staff	Cost reduction in recruitment and training of replaced staff	10-20%	Reduction in search fees, training and other related costs

The impact ranges shown above are estimations derived from the analysis of benchmark data which is a composite of data derived from industry analyst published information, interviews with subject matter experts and experiential data from prior projective analyses with CA Technologies customers. These values are not a guarantee of achievable results and will vary depending upon your current infrastructure, people and processes, as well as the appropriate, effective implementation, adoption, and use of the CA Technologies solution.

CA Trusted Access Manager for z

Increase your business efficiency by delivering trusted mainframe services through privileged access management.

CA Trusted Access Manager for Z helps deliver trusted systems and improve business efficiency by providing comprehensive privileged access management for your mainframe. The solution eliminates the need for shared privileged credentials, works directly with your mainframe security best practices, and produces forensics on all privileged user activity so you can stay in complete control over mission-essential mainframe data.

Reduce the risk of **insider threats**, from malicious attacks to inadvertent threats, by operating with tighter management of privileged access to mainframe resources.

Privileged access management, operating 100% on the mainframe	**Elevate existing users with existing tools to reduce password sharing and simplify administration**	**Stay in complete control to deliver trust, streamline audits and mitigate fines**

Challenge

Privileged identities on the mainframe have extensive access to the most sensitive resources in the entire data center. These identities are essential for business emergencies, but often privileged identities with shared credentials are created, which violates many policies and causes failed audits. Today's approach requires manual management, which is prone to error, but when privileged identities aren't managed securely, the business is exposed to a significant risk of insider threats—some of which can take months and even years to discover.

Opportunity

Digital trust is the cornerstone of the application economy. Without it, all business processes grind to a halt. CA Trusted Access Manager for Z helps organizations build trust and improve business efficiency by providing streamlined and secure management of privileged user identities on the mainframe, helping to make sure that only the right users have the right access at the right time.

Benefits

CA Trusted Access Manager for Z runs 100 percent on the mainframe, tightly integrated into external security manager (ESM) solutions CA ACF2™ and CA Top Secret®, to enable security teams to more easily administer privileged identities using existing processes and best practices. The solution can both promote and demote permissions and rules for existing users to greatly reduce the threat surface of sharing privileged credentials.

Mainframe Solutions
Build your Digital Enterprise Mobile to Mainframe

Why CA Mainframe
Strategic Partner for Digital Transformation & Business Agility

Innovation

- Continued investment in mainframe and agile development
- Delivered leading-edge solutions in DevOps, analytics and security
- Founding Member: Linux Foundation Open Mainframe Project

Leadership

- #1 ISV by Market Share[1]
- Top 1 or 2 in 11 Mainframe Software Markets[1]
- Thriving advisory board and 10K + user community
- "CA Mainframe is the gold standard" – Voice of the Customer Survey 2016[2]

Expertise

70%	**Fortune 30[3]**
21 of 25	**Largest global banks[3]**
13 of 15	**Largest financial services companies[3]**
7 of 10	**Largest U.S. Federal agencies[3]**
9 of 10	**Largest insurance companies[3]**

Desired Outcome of a Digital Enterprise
Optimize and Transform the Mainframe

Protect Data and be compliant with regulations

Verify People and access to critical systems

Concept

Delivery Digital Experience for mission critical apps

Security   Insights   Agility   Automation

ENSURE RESOURCES FOR DIGITAL BUSINESS TRANSFORMATION

Assure Systems to work always, anytime, anywhere

Product

Establish Digital Trust as the foundation of Digital Enterprise

1 – Source: CA Technologies Global Market Analysis
2 – VoC survey conducted by IDC in March 2016
3 – Information based on Fortune 500 published October, 2016, compared to CA Mainframe customers that have licensed one CA product and have z Systems platform as of October 2016.

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Mainframe in the Modern Software Factory
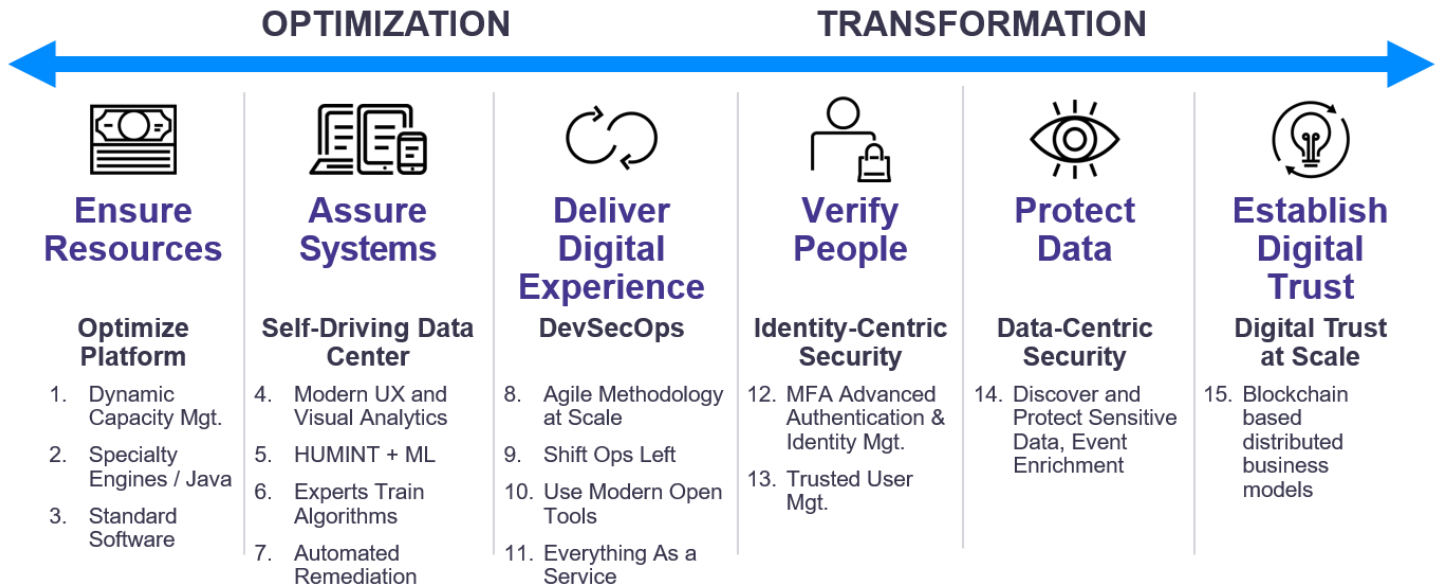## Eliminate the Barriers Between Ideas and Outcomes

The Top 15 Best Practices for Digital Transformation

OPTIMIZATION   **TRANSFORMATION**

Ensure Resources
Optimize Platform
1. Dynamic Capacity Mgt.
2. Specialty Engines / Java
3. Standard Software

Assure Systems
Self-Driving Data Center
4. Modern UX and Visual Analytics
5. HUMINT + ML
6. Experts Train Algorithms
7. Automated Remediation

Deliver Digital Experience
DevSecOps
8. Agile Methodology at Scale
9. Shift Ops Left
10. Use Modern Open Tools
11. Everything As a Service

Verify People
Identity-Centric Security
12. MFA Advanced Authentication & Identity Mgt.
13. Trusted User Mgt.

Protect Data
Data-Centric Security
14. Discover and Protect Sensitive Data, Event Enrichment

Establish Digital Trust
Digital Trust at Scale
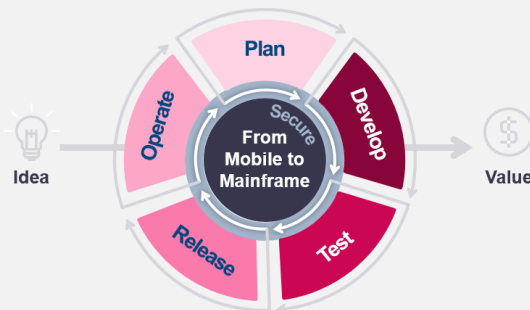15. Blockchain based distributed business models

CA Mainframe Products Summary

CA Mainframe DevOps
- CA Agile Central
- CA Application Lifecycle Conductor
- CA Development Environment for z Systems
- CA Endevor SCM
- CA Harvest SCM
- CA Testing Suite (CA InterTest, CA Symdump, CA Mainframe Application Tuner, CA FileMaster Plus)
- CA Service Virtualization
- CA Continuous Delivery Automation
- CA Test Data Manager for z/OS
- CA Easytrieve

CA Mainframe Workload Automation
- CA Workload Automation ESP
- Automic ONE Automation

Ensure performance of mission-essential infrastructure & services

Idea

Plan
Develop
Secure
Operate — From Mobile to Mainframe
Test
Release

Value

Agile
Inspect, adapt and optimize continuously

DevOps
Create and deliver quality apps faster

Security
Enable and protect the enterprise

CA Mainframe Economics
- CA Dynamic Capacity Intelligence
- CA Conversion Service
- CA Core Systems Consulting Program

CA Mainframe Intelligent Management
- CA MOI
- CA Sysview
- CA DB2 Tools
- CA View, CA Deliver
- CA OPS/MVS
- CA Vantage

CA Security & Compliance
- CA DCD and CA CEM
- CA Trusted Access Manager for z
- CA ACF2 and Top Secret
- CA Privileged Access Management
- CA Cleanup and CA Auditor

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Accelerate your success in the Application Economy with CA Services

Best practices developed from more than 35 years of experience

CA Services is a specialized, global team of experts with unmatched domain experience within agile management, DevOps and security. Our goal is not to just install software, but to take the time to listen and truly understand your business drivers and goals, prescribe the best course of action based on our experience and best practices, deliver value, and become your trusted advisors.

CA Services will work with you to install, configure and deploy your CA Technologies solution, helping you go live quickly with the core solution while preparing for additional capabilities. We also work with you to drive adoption, simplify upgrades and streamline maintenance, helping you realize additional solution value by expanding usage to help you continuously innovate an d improve over time, all while staying focused on aligning IT with desired business outcomes.

Services Offerings

Implementation Services	Provide highly configurable solutions that can be quickly adopted. Composed of Foundation Services and optional configurable Acceleration Services, this model provides flexibility without extensive customization and follows an established, prescriptive approach supported by proven best practices.
Upgrade Services	Structured approach to upgrading your CA solutions that includes an assessment of the existing implementation and its functionality, as well as recommended improvements to the environment before executing the upgrade itself and post-upgrade work.
Application Management Services	Application Management Services provide a versatile engagement model that enables you to focus on what's important to your business by providing administration, management and continuous enhancement of your implemented CA product. We take a holistic, tiered approach that can help align IT with business outcomes delivered in an "as-a-service" consumption model; so you can buy what you need to ensure success. CA can deliver a wide range of services, from production support to value- driven solution enhancements – backed up by the flexibility and service level objectives you require.
Consulting Services	Pragmatic and flexible solutions and assessments and that address the adoption lifecycle and provide enterprises and service providers with the agility and operational benefits that can be derived from CA Technologies solutions. Assessments provide an evaluation of your existing environment with recommendations for a successful solution deployment in a short, fixed-price, engagement.
Healthchecks	Short, fixed price, post-deployment engagements that deliver recommendations to enhance the value of your existing CA Technologies product investment through process and technology improvements.
Packaged Work Products	Pre-built and tailored offerings extend CA solutions with additional functionality, new integrations and powerful analytic capabilities which can be quickly implemented and easily adopted by business and IT users.

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Proven, repeatable success

Helping you achieve your business and IT objectives is the primary focus of our delivery methodology which can utilize an agile approach designed with an agile principles with techniques or a waterfall approach. Since implementations can vary for a variety of reasons, including the desired size, scope and timeframe, a flexible and collaborative framework is required to deliver the results and business value you expect.

The CA Services Solution Delivery Methodology balances the benefits of proven best practices with the need for speed, efficiency and flexibility for properly scoped, well-executed engagements.

CA Services helps select the best implementation approach for your situation, collaborates with you to prioritize and deliver solution key capabilities that align to your requirements and drives solution adoption throughout the engagement. Your organization benefits from strong governance and transparency during the project, rapid engagement between client and vendor teams, and continuity from working with the CA Services teams as a liaison with CA Education, Support and Development.

Solution Delivery Methodology

Agile Approach

Both approaches balance the benefits of proven best practices with the need for speed, efficiency and flexibility

Waterfall Approach
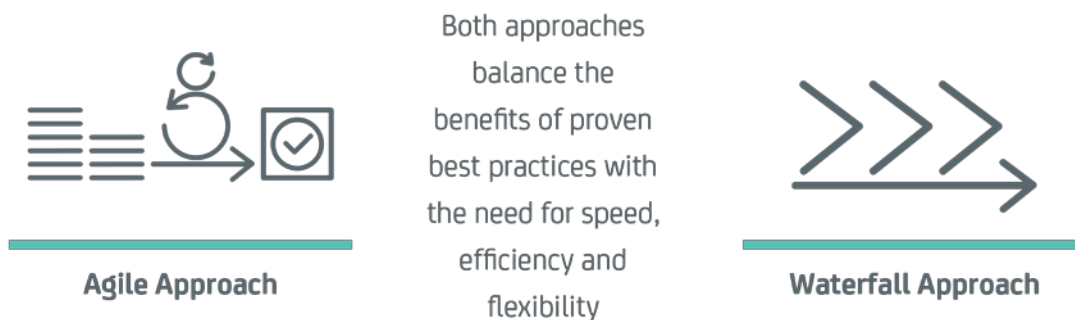
CA will work with [Customer One] to understand and document the following for the proposed solution:

- Project initiation and setup: select implementation approach
- Review and verify functional and technical requirements
- Prepare functional and technical designs
- Document and execute test plan
- Review solution impact on processes and people
- Deploy solution in production environment; provide final project documentation, operational procedures and adoption assistance

CA Education

Maximize the ROI of your
CA software investment with CA Education

1 hour of training saves
5 hours of lost productivity.
Source: IDC's Market Analysis Perspective, 2014

CA Education helps speed the learning process to help you achieve measurable results in productivity, service availability, software optimization and cost reduction.

Education the way you need it, when you need it

Committing to time away from the office for training can be challenging, especially when teams and budgets are already stretched thin. To ensure your team can get the training they need when they need it, we offer several training solutions and a robust calendar of training courses delivered around the globe in several convenient formats:

Self-Directed Learning
- Web Based
- OnDemand & ILT In A Box
- CA Dynamic Labs & Sandboxes
- "Office Hours" with CA Experts
- Media Assets & Pre-Recorded Material

Traditional Instructor-led
- Public Schedule
- Virtual Classes
- Private Classes
  - Delivered at your site
  - Customized to meet your needs

CA Productivity Accelerator
- 13 types of output
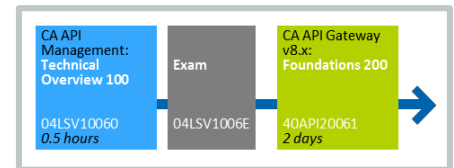- Create training, documentation, and support materials

Reap the Benefits of Training:
- ✓ Lower the risk of project failures
- ✓ Improve adoption and productivity
- ✓ Use software to full benefit
- ✓ Accelerate and maximize the return on CA investments
- ✓ Reduce reliance on external support

Customers who invest in training make 35% fewer calls to CA Support.

Learning Paths
Directing your team with relevant, role-based training, Learning Paths give you tools to help improve performance—so you get the most from your CA solution.

CA API Management: Technical Overview 100	Exam	CA API Gateway v8.x: Foundations 200
04LSV10060 *0.5 hours*	04LSV1006E	40API20061 *2 days*

Sample Learning Path

Full list of learning paths available at ca.com/ca-learning-paths

eLearning Libraries
CA Education's eLearning Library subscriptions offer an all-access pass to self-paced courseware for either our distributed products or for mainframe. eLearning Libraries enable users to cost-effectively access the training content they need whenever they need it and as often as they would like.

Certification
Certification with CA Technologies is role-based and measures an individual's skills, knowledge, and expertise in managing, administering, installing, configuring and implementing CA Technologies products.

ca technologies | Proven **Professional**

For more information, speak with your CA representative or **visit www.ca.com/education**

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CA Support
The foundation of your maintenance program

CA Support includes access to self-service content, online case management and more. Companies interested in expanded, customized support solutions have many choices. The chart below is a sample of Support Case Management offerings. Go to ca.com/support for detailed information on more support features such as account management, self-service support, extended value programs, education and product notifications.

CA Support Feature	No CA Support Maintenance	Standard CA Support Maintenance	EOL, EOS Extended Support	Optional Upgrade Support Services	Optional Enhanced Support Services	Optional Customer Success Advocate
Support Case Management	Self Service Support	Standard	Extended Support	USS	ESS	CSA
Chat Support (select products)		✓	✓	✓	✓	✓
Technical Support – Open a case, manage a case online		✓	✓	✓	✓	✓
Technical Support – Open a case via phone		✓	✓	✓	✓	✓
Technical Support – Open a case, manage a case on my behalf				✓	✓	✓
Direct dial to named support engineer				✓	✓	
Direct dial to named support engineers after hours					✓	
Priority response to Sev 1 and Sev 2 technical issues				✓	✓	
Priority response to Sev 1 and Sev 2 issues related to upgrades				✓	✓	
Proactive support issue monitoring and trend analysis						✓
Technical guidance during upgrades and patches with optimization				✓	✓	
Comparative assessment of CA product deployment and usage					✓	
Single point of contact to manage escalations						✓
Escalation status and analysis						✓
Scheduled Onsite Visits					✓	✓
Response Level Objectives Standard		✓	✓			
Response Level Objectives Priority				✓	✓	✓
Remote problem analysis and assistance		✓		✓	✓	✓
Local Language Support						✓

NorthFace ScoreBoard Award — World Class Excellence in Customer Service

Australian Service Excellence Awards — CSIA CUSTOMER SERVICE INSTITUTE OF AUSTRALIA

Top Learning Organization 2011 Group — Learning! 100 — By Elearning! Media Group

TSIA STAR AWARD — SUPPORT SERVICES

Award-winning support organization with year-over-year customer satisfaction trend

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CA Customer Success and Support

Resources available to help you achieve maximum value and performance with your software solutions from CA Technologies

One Team. Countless Resources.

The Global Customer Success organization is dedicated to ensuring our customers and partners achieve their identified outcomes and expected business value. Simply stated, our job is to make you successful and we won't quit until you are. We offer a flexible range of services that allow you to decide, how, when and where you receive award-winning support and services from CA Technologies.

TSIA certification recognizing CA Technologies for Excellence in Global Service Operations in global support, from agent-based and electronic self-service.

We power the global innovation leaders that power the global economy.

1200+
EMPLOYEES AROUND THE GLOBE.

20+
YEARS AVERAGe TENURE

24
WORLDWIDE SITES WITH 9 MAJOR LANGUAGES

When you choose to partner with CA Technologies, you are choosing to be supported by a world-class support organization dedicated to making each one of our customers successful. The CA Support team offers proven methodologies and established diagnostic processes from experienced, highly trained professionals, supporting hundreds of products across multiple platforms globally. Dependable, accurate, consistent and straightforward guidance is what you can expect from our professionals. We bring deep technical knowledge and worldwide experience to assist with your technical support and customer care questions. We focus on:

- **Our people.** Technical expertise, consistent education and culture programs have led to an average 20-year tenure among our support engineers.
- **Foundational maintenance.** Our technology and methodologies are in constant evolution and are the core of every maintenance agreement.
- **Omni-channel support.** CA Communities, knowledge articles, documentation, product notifications, and chat support are part of the multiple choices you have when it comes to seek product support.
- **Optional support services.** Comprehensive offerings of optional support services such as Customer Success Advocate, Enhanced Support Services or Upgrade Support are available to customers with critical business systems closely aligned with CA Technologies solutions.
- **Customer experience.** Our team is dedicated to helping create a positive customer experience with CA Technologies and for creating a history of customer satisfaction to win your repeat business.

Global Customer Care

Customer Care representatives are your first line of contact non technical questions before and after the sale.

- Inquire about compatibilities, download access, licensing, education, directory assistance, new products and more.

Global Support Sites

We operate from 27 centers world wide and support 47 major product lines in multiple languages with 24x7 coverage.

- North America: Plano, Fort Collins, Vancouver, Santa Clara, Framingham, Lisle, Portsmouth, Islandia, Ewing, Herndon, Pittsburgh, Tampa
- Latin America: Sao Paulo, Brazil; Santiago, Chile
- Europe: Cornella, Spain; Prague, Czech Republic; Slough, UK; Herzliya, Israel; Basiglio, Italy; Darmstadt, Germany; Paris, France
- India, Asia Pacific, and Japan: Hyderabad, India, Bangalore, India; Tokyo, Japan; Osaka Japan; North Ryde, Australia; Singapore

Why

CA Technologies?

35+   YEARS MANAGING COMPLEX ENVIRONMENTS

$4.26   BILLION ANNUAL REVENUE AND STRONG PROFIT

Experience

For more than 35 years, we have been exclusively focused on software, and working with our customers – from the Fortune 500 to the digital innovators – to help them deliver high-quality applications and services to their customers.

Scale

We are experts in helping the world's largest companies deliver incredibly reliable performance. We have been on the cutting edge of every major technology wave from mainframe to cloud to mobile.

Breadth & Depth

CA offers market-leading solutions that span the entire application lifecycle to support your company's digital transformation – from planning to development to ongoing operations, and with security incorporated at every stage.

CA Technologies

- $4.3 billion in revenue and strong profit
- hold more than 1,050 patents worldwide and more than 950 patents pending
- Approximately 5,100 employees dedicated to design and support of software solutions
- Generated more than $1 billion in cash flow from operations in each of the past 10 years
- Approximately 11,600 employees in 40 countries

Business, rewritten by software™

CA Technologies (NASDAQ: CA) provides IT management solutions that help customers manage and secure complex IT environments to support agile business services. Organizations leverage CA Technologies software and SaaS solutions to accelerate innovation, transform infrastructure and secure data and identities, from the data center to the cloud. CA Technologies is committed to ensuring our customers achieve their desired outcomes and expected business value through the use of our technology. To learn more about our customer success programs, visit ca.com/customer-success. For more information about CA Technologies go to ca.com.

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