



IBM Software Group

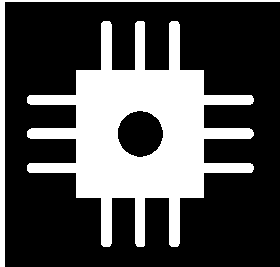
Maximising software investments in uncertain times

Steve Robinson
Vice President, Worldwide Sales
IBM Rational software

Rational. software

→ Go to **IBM**

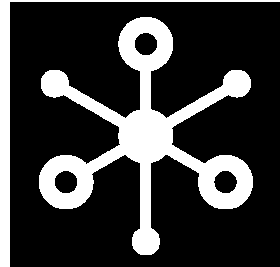
The world continues to get a whole lot *smarter*



INSTRUMENTED

We now have the ability to measure, sense and see the exact condition of everything.

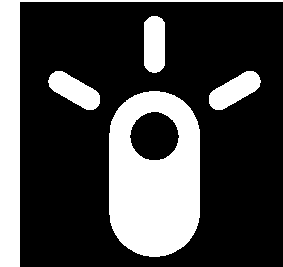
- Today, there are 1 billion transistors for each person on the planet.
- By 2010, 30 billion RFID tags will be embedded into our world and across entire ecosystems.



INTERCONNECTED

People, systems and objects can communicate and interact with each other in entirely new ways.

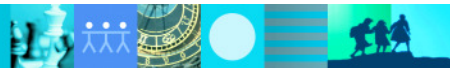
- The internet of people is 1 billion strong. Almost one third of the world's population will be on the web by 2011.
- There will be nearly 4 billion mobile phone subscribers worldwide by the end of 2008.



INTELLIGENT

We can respond to changes quickly and accurately, and get better results by predicting and optimizing for future events.

- Every day, 15 petabytes of new information are being generated. This is 8x more than the information in all U.S. libraries.
- An average company with 1,000 employees spends \$5.3 million a year to find information stored on its servers.



Fleet Management

Daimler FleetBoard



“Focal Point helps us discover the optimal set of customer features and balance those against the needs of our business, allowing us to deliver continual enhancements to our telematic solution.”

What's Smart?

- Smart end-to-end system optimizing vehicle usage and routing
- Innovative technology for advanced telematic solutions

Smarter Business Outcomes

- 5-10% reduction in fuel consumption due to optimized vehicle management
- 10% reduction in telecommunications costs due to increased automation

How Rational Software Enables Smarter Products

- Improved collaboration in the product portfolio planning process
- Automated release planning balancing cost, risk and reward



Mobile Access to Medical Images

Merge Healthcare



“We rely on Synergy and Change to manage the complexity of the software and to ensure that our global development teams operate as one, for the best result to our customers. This software from IBM is part of our livelihood; it's our DNA.”

What's Smart?

- Provides medical professionals access to complex medical images on mobile devices
- Helps ensure prompt emergency diagnosis – anytime or anywhere

Smarter Business Outcomes

- Reduced hospital operations costs
- Reliable, secure, scalable delivery of medical images and reports

How Rational Software Enables Smarter Products

- Collaboration across globally distributed development teams
- Change management across the end-to-end software lifecycle

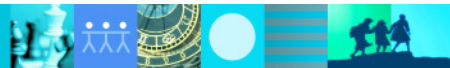


A smarter planet will require a significant investment in ***software and systems***

- For businesses and institutions everywhere, there have never been so many ***new possibilities***
- Imagine the amount of ***software*** necessary to:
 - ▶ Leverage a wealth of information to make more intelligent choices
 - ▶ Take action on energy, the environment and sustainability to deliver a greener world
 - ▶ Manage a dynamic infrastructure with billions of devices
- Leaders everywhere are deploying increasingly ***instrumented, interconnected and intelligent products and systems***
- Success in building a smarter planet is highly dependent on our ability to ***manage effective software delivery***



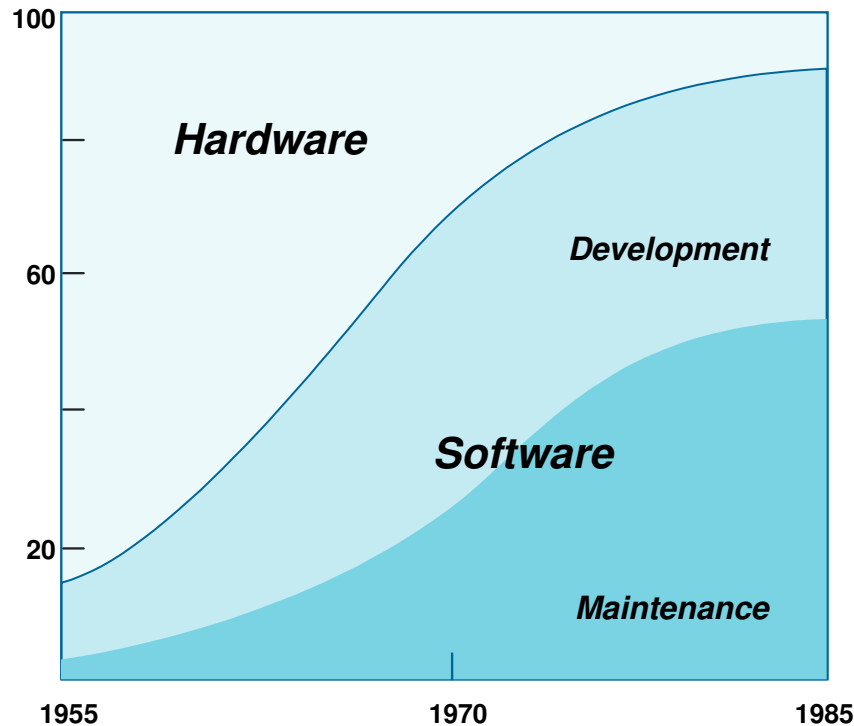
Let's build a smarter planet



Many industries already have seen this software shift

In aerospace and defense, software content has increased 10X

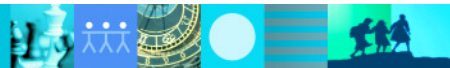
Relative Distribution of Software/Hardware Costs
(Percent of total cost)



Source: Software Engineering, IEEE Transactions on Computers December 1976

Platform	Year	Percent of Specification Requirements Requiring Software Control
F-4	1960	8%
A-7	1964	10%
F-111	1970	20%
F-15	1975	35%
F-16	1982	45%
B-2	1990	65%
F-22	2000	80%

Source: The Australian Software Acquisition Management Course, Defense Systems Management College, March 2000



Challenges to the effective delivery of software

A history of cost overruns, schedule slips and quality issues



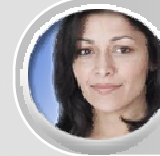
“62% of projects failed to meet their schedules”



“50% of outsourced projects are expected to under perform”



“49% of projects suffered budget overruns”



“Only 42% of users are satisfied with project quality”



“41% of projects fail to deliver the expected business value and ROI”



“Only 37% are satisfied with the speed of software development”



“Only 34% of software projects are deemed successful costing over \$300B annually”



The software challenge in *systems* is even greater

Software failures can be dramatic for complex systems

Aerospace Agency

\$1B prototype rocket self-destructed just 40 seconds after takeoff due to a software bug in the on-board guidance system



Microsoft Zune

1 million owners of the 30-gigabyte device woke up one morning to find their devices inoperable due to poor leap year handling



Ford Super Duty Pickup

Sales interrupted until engine control software could be updated to recognize improper levels of heat in the exhaust system



Old methods of measuring software engineering are inadequate and incomplete considering today's complexity and scale

	1960s-1970s	1980s-1990s
Complexity	100% Custom	30% Reused Assets 70% Custom
Process	Ad-hoc	Repeatable
Teams	Collocated On the job training	Collocated Software skills
Tools	Proprietary Not integrated	Mix of Proprietary & Commercial Not integrated
Project Performance	Predictable Over budget, over schedule	Unpredictable Infrequently on budget, on schedule
Success Rate	10%	25%-33%



Challenges to effective software delivery today

Complexity Challenges

- More granular service functionality in composite business applications
- Large number of projects and assets including custom, outsourced and packaged

Team Challenges

- Geographically dispersed teams that often include business partners
- Effective cross-organizational visibility and synchronization, sharing becomes an imperative

Process Challenges

- Need for market experimentation
- Blind adherence to process insensitive to potential business trade-offs
- Need for agility *at scale*

Tools Challenges

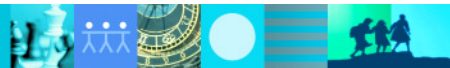
- Lack of standards impacts ability to collaborate, automate and report across teams and assumptions
- Frequent asset updates and changing interdependencies



How do I control this new world to gain advantage?



Software engineering metrics that measure absolutes can provide the wrong incentives to your team



Software engineering metrics must align with desired business outcomes



Control

- Address the risks of development
 - ▶ Perceived quality
 - ▶ Scope uncertainty
 - ▶ Security failure
 - ▶ Failing an audit



Efficiency

- Address development as a cost center
 - ▶ Productivity
 - ▶ Software engineering base quality
 - ▶ Process agility
 - ▶ Global collaboration platform



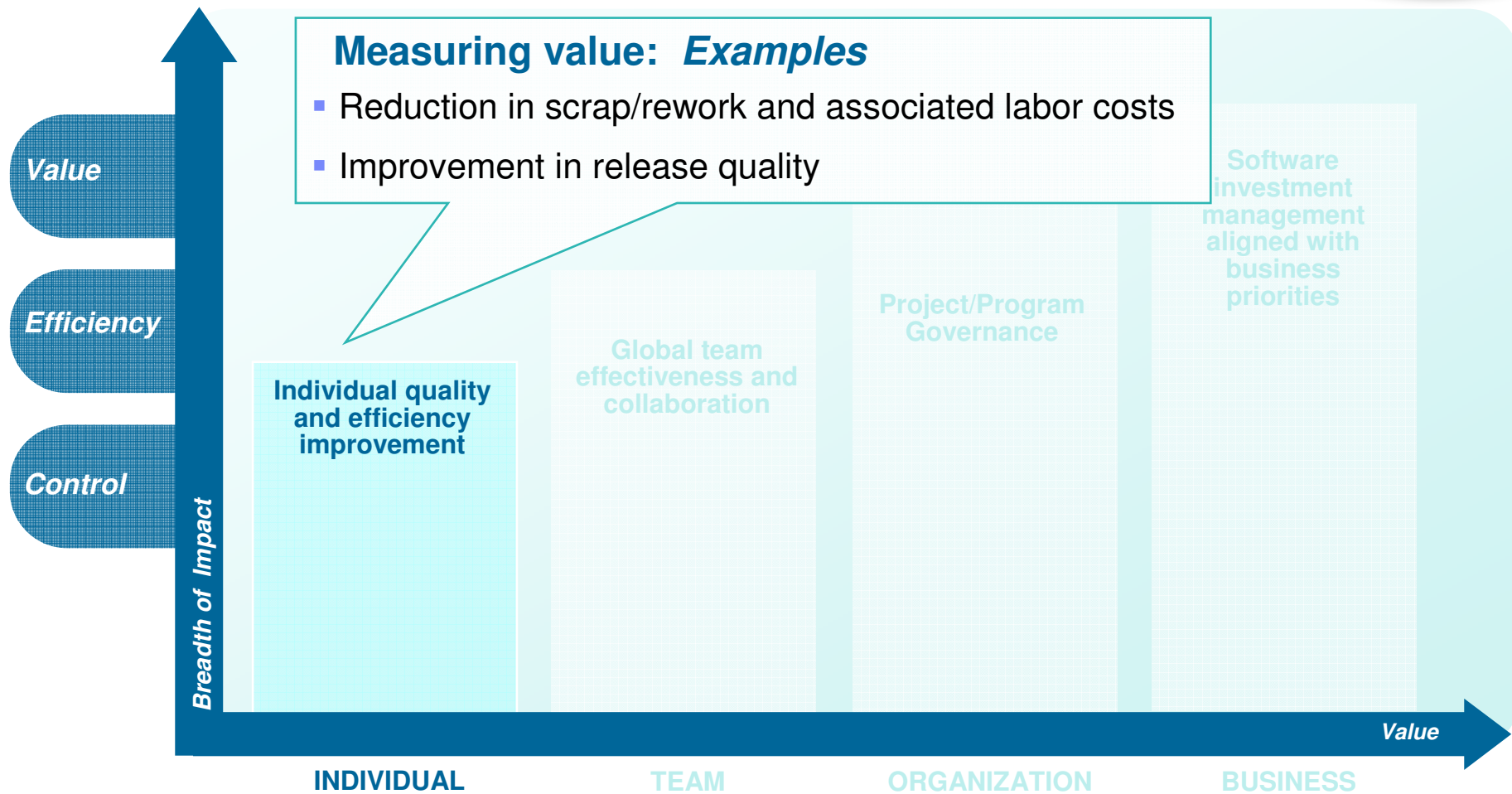
Value

- Address development as a value creation center
 - ▶ Foster innovation and reuse across organizational and geographical boundaries
 - ▶ Enterprise application modernization
 - ▶ Speed merger and acquisition absorption
 - ▶ Reduce traditional development in favor of smart package software integration and SOA





A focus on core development efficiency



Major healthcare company - development efficiency

“Our site downtime was costing us \$200K per hour. Simply figuring out why was an error-prone process with no audits to know who changed what.”

Environment



- 40 people involved in design, test and implementation of Web commerce site
- Multi-platform, multi-application dependent (custom, SAP, partner)
- Over 150 products online with plans for growth
- Broad range of development infrastructure and process

Issues



- \$1.2 million in annual site outages for commerce site
- Order flow application process bottlenecked by inaccuracies in releases
- Lack of auditable process
- Increasing business demand on core applications

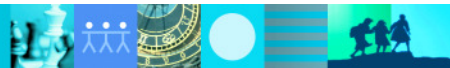


Measuring improvements in development efficiency

Impact of improving build iterations and management – across multiple clients

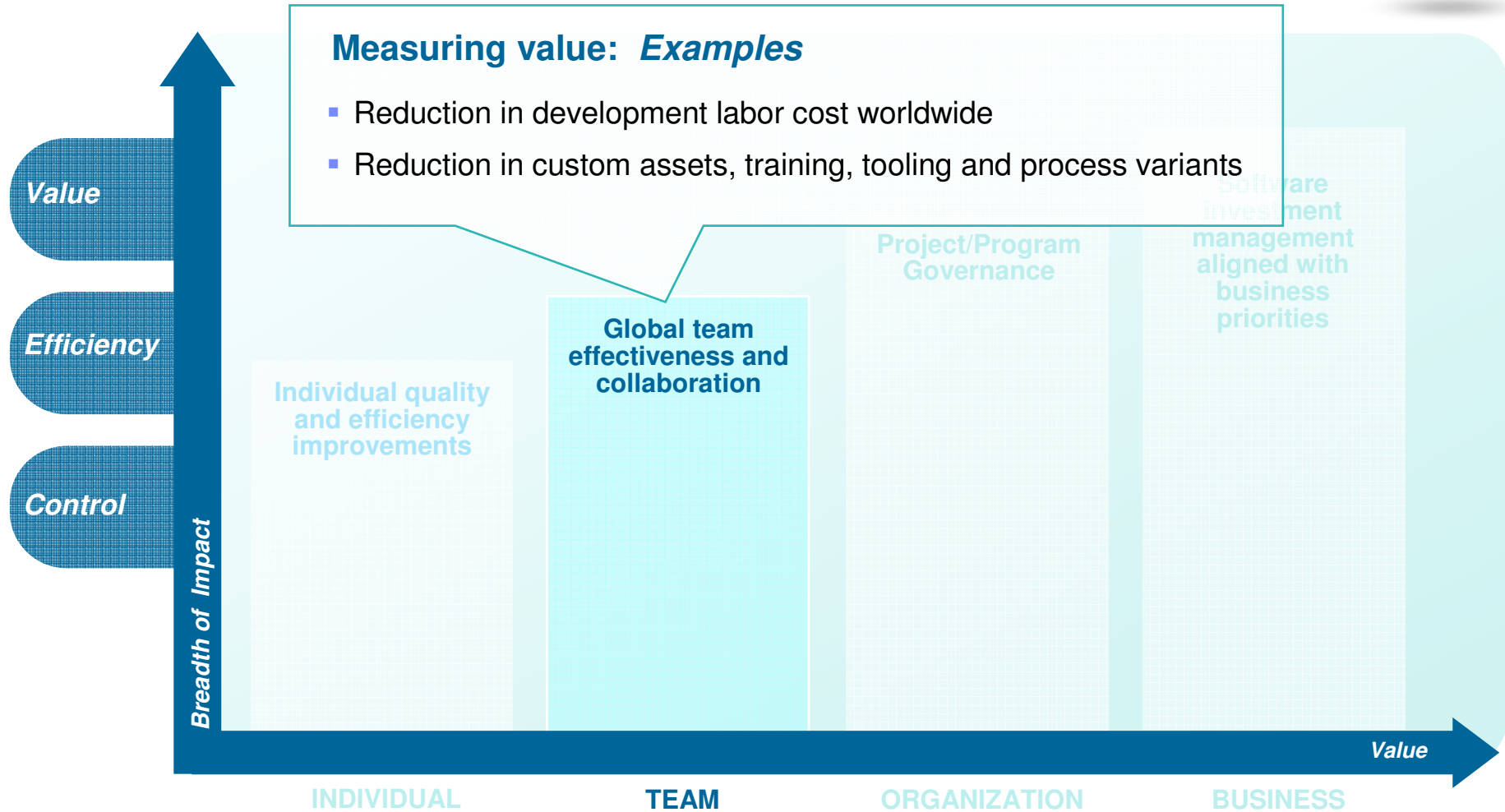
Benefit	Average Improvement	Highest Improvement
Speed of Build and Releases	110%	500-2,000% or (5-20x)
Change Management Team Productivity	42%	90% or greater
Release Frequency	40%	90% or greater
Error Reduction	30%	70-80%
Developer Productivity	28%	81-90%
Development Cost Savings	25%	50-70%

Source: Hurwitz & Associates Research report on Rational customer improvements in build and release management





Adding collaboration and team efficiencies



Medical device company – improving global collaboration

“We were interested to adopt Agile Development, but were limited by an inflexible, non-standard process. Each team did their own thing, and there were multiple points of failure on each project.”

Environment

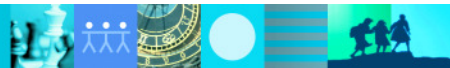


- 1000+ users worldwide
- 3 development sites (US, Europe, India)
- Continuous unit testing required with strong auditing
- Heterogeneous development infrastructure

Issues

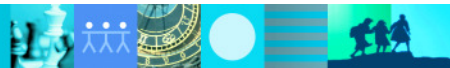
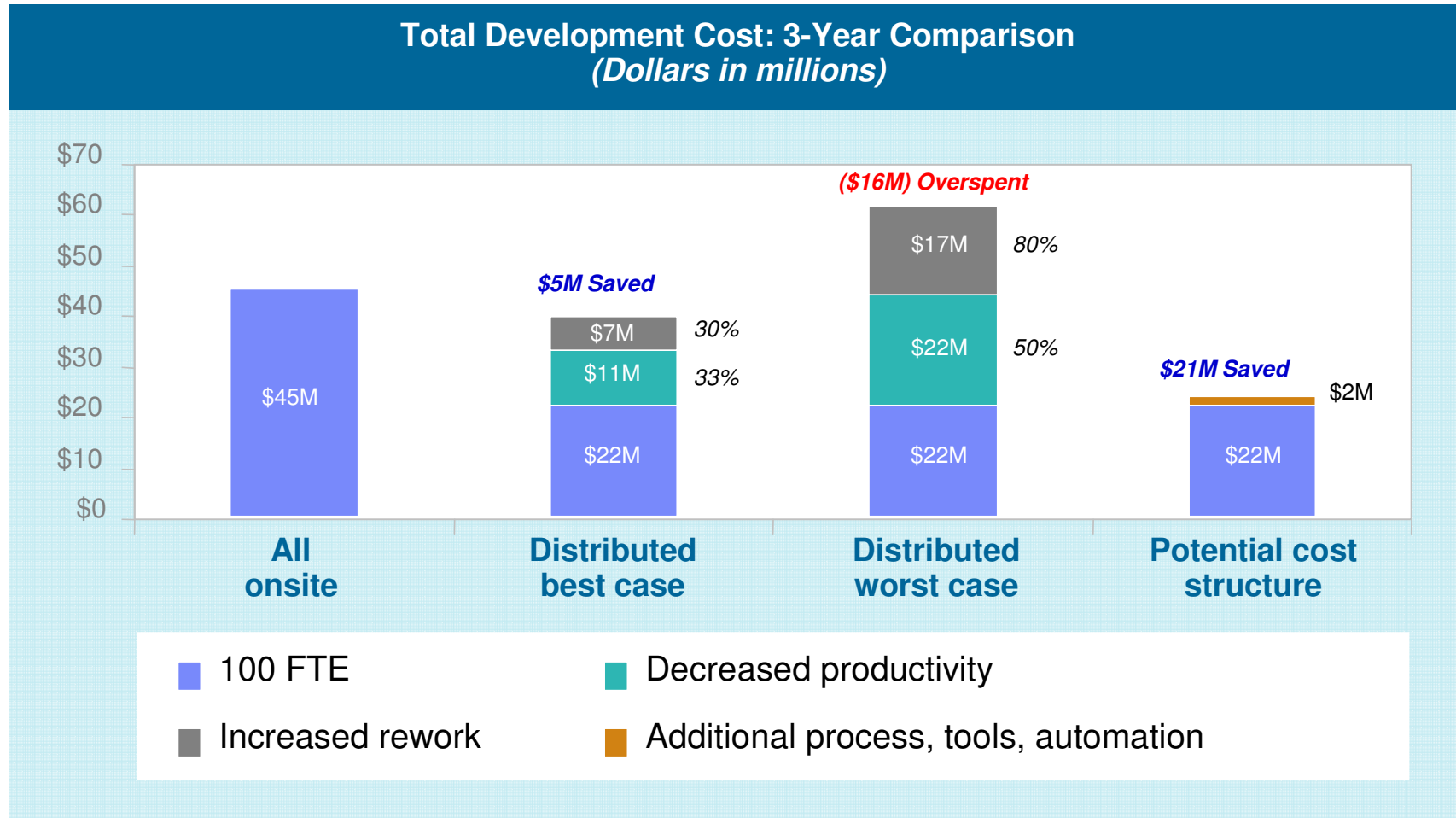


- Desire to use Agile techniques thwarted by internal process overhead
- No global access to assets
- Poor change management support for parallel development
- Multiple points of failure
- No continuous integration
- Lack of compliance support



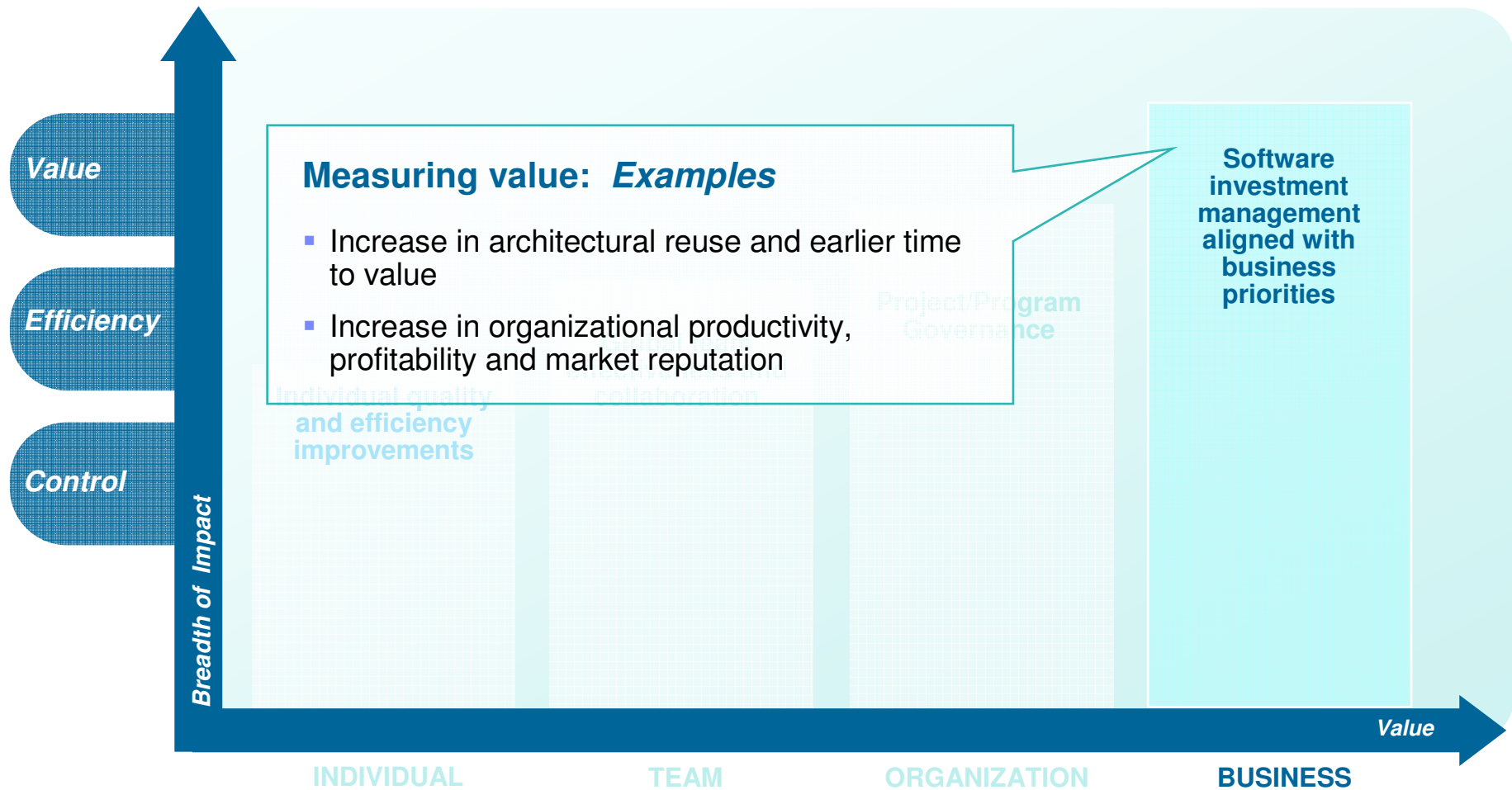
Cost in a global context

Analysis of offshore development costs





Software investment measurement and planning



Major telecom service provider – continuous and granular investment control

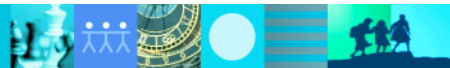
“Our products are late – our delivery cycles are many months to years instead of weeks to months – the fundamental need is faster time to market.”

Environment

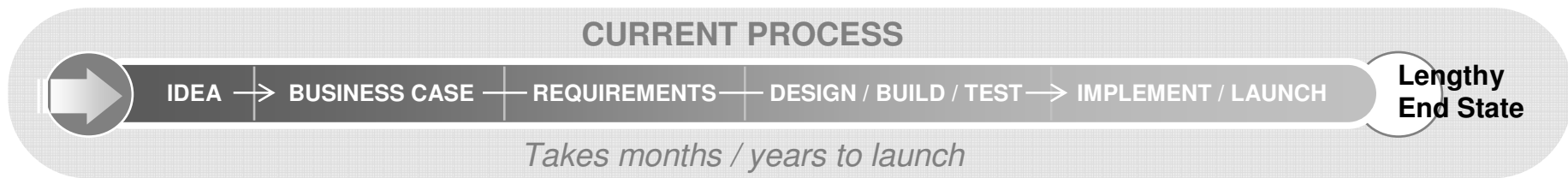
- 3,800 people across 4 geographies (design, development, test)
- Multi-platform, multi-application
- Highly competitive market with constant demands and business model flux

Issues

- Telecom Service delivery unable to keep pace with the business demand
- Multi year service and product development cycles
- Multi Geo coordination and handoffs problematic



Maturity and control to reduce cycle time focused on business outcome



- 4 Transform**
 Built-in frameworks of collaboration, governance and processes to leverage leading edge solutions (SOA, Service Assembly) for cycle time
- 3 Optimize the Software Factory**
 Fully automated software factories with contractual commitments for cycle time, quality and productivity
- 2 Innovate, Collaborate and Govern**
 Innovate with collaborative tools, processes and methods that focus the entire enterprise (product management, marketing, IT, customer care, etc.) on reducing end-to-end cycle time
- 1 Analyze**
 Methodologies and approaches that uncover true root causes of systemic cycle time issues



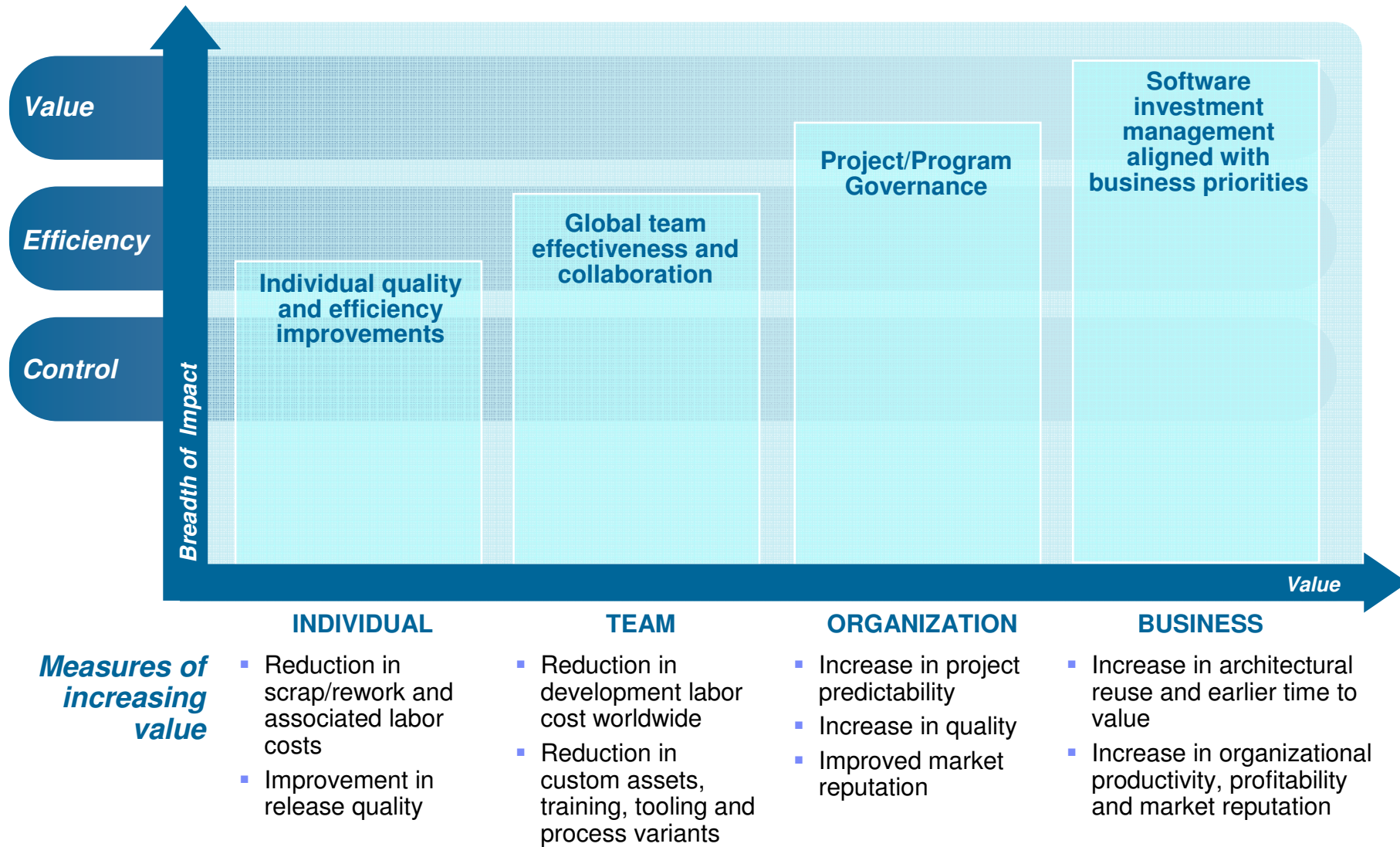
The value proposition is not...

- Outsourcing
- SOA
- Fix IT
- Business transformation

The value proposition is...

- **Time-to-market!**

Effective software delivery enabled by measurement



How can I get to more effective software delivery from where I am today?



*“How do I further **automate** software delivery within my organization?”*



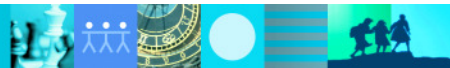
*“How can I enable **collaboration** throughout the software delivery process?”*



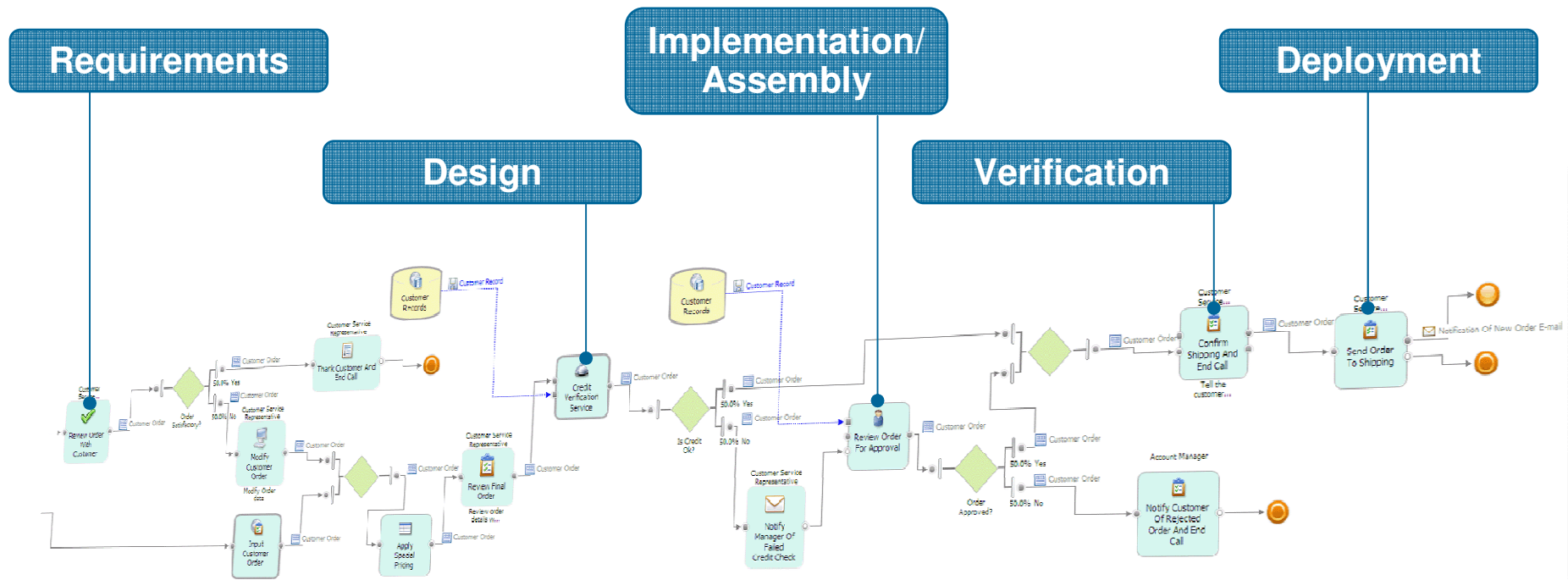
*“How can I **unobtrusively gather measurements** to ensure progress towards desired business outcomes?”*



*“How do I make **incremental, iterative progress** towards more effective software delivery?”*



Software delivery is a business process that *must* be continuously improved



CIO's top priority on behalf of the CEO over last three years:
“Improving Business Processes”

Source: Gartner, “Making the Difference: The 2008 CIO Agenda,” Jan. 2008

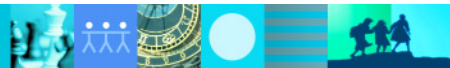
To improve coordination and visibility, look for ways to *collaborate* across the software delivery process



Collaborate

Drive organizational consensus on priorities and improve workforce productivity

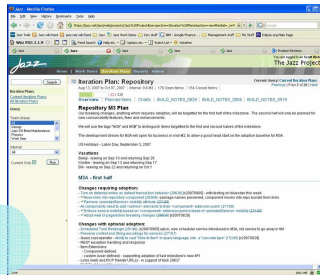
- Leverage social networking capabilities to enable broader and richer participation in software projects
- Virtualize "team memory" to overcome geographic and temporal gaps in the software lifecycle
- Enable flexible, global resourcing and energy-saving workplace models



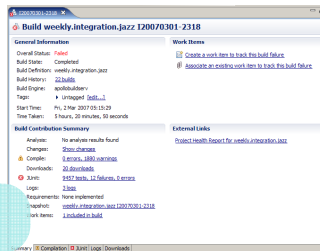
In Context collaboration



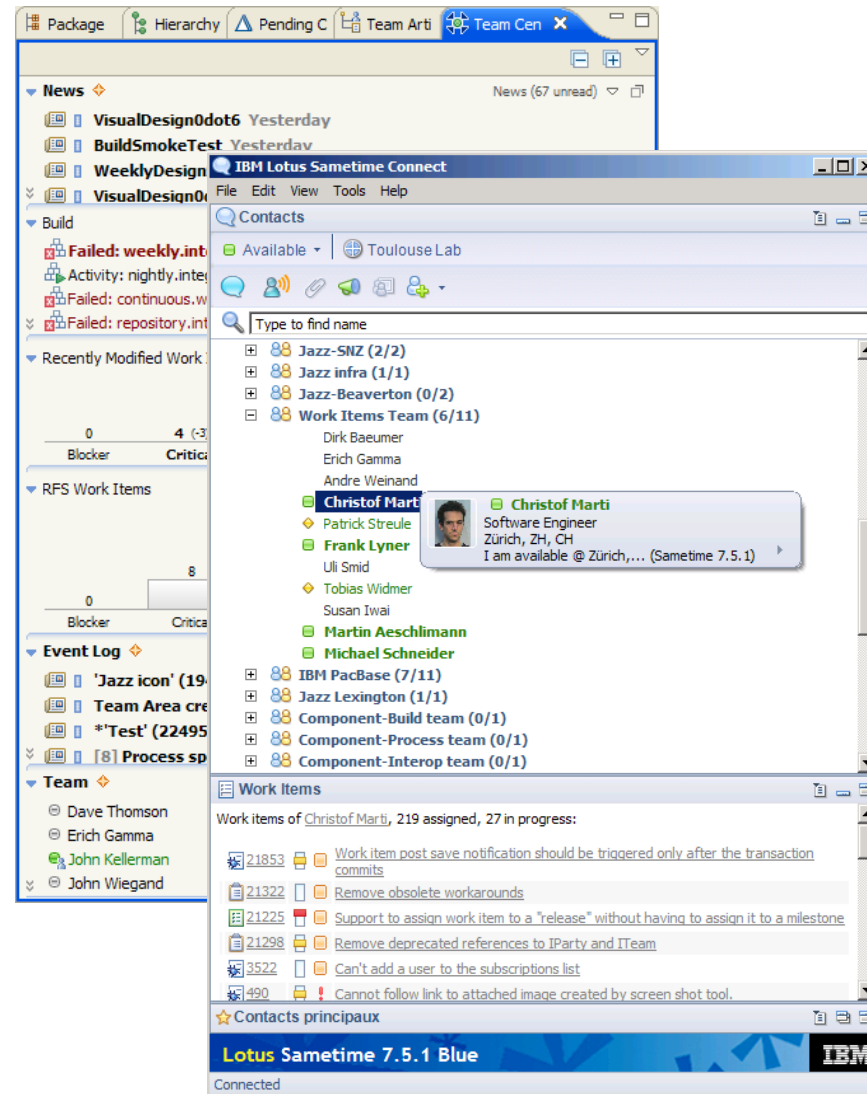
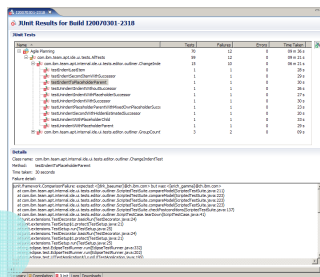
Project Manager



Developer / Build Engineer



Tester



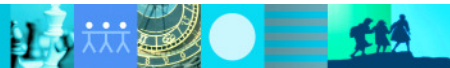
To increase efficiency, look for ways to *automate* the business process of software delivery



Automate

Lower costs and improve quality by automating workflow based on real-time information

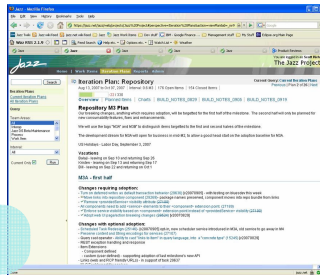
- Improve productivity and reduce headcount
- Standardize processes and automate repetitive tasks to improve team efficiency while reducing time to value
- Enhance regulatory compliance through self documenting data and workflows



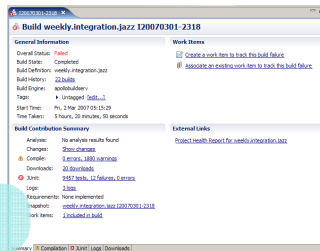
Process Awareness



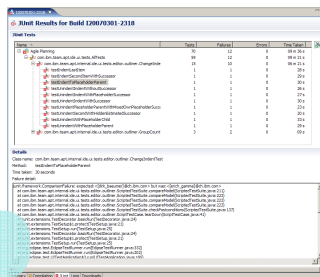
Project Manager



Developer / Build Engineer



Tester



Change set missing required comment or work item.

Change set missing required comment or work item.

Unreviewed Changes

Changes without an associated review task cannot be delivered to Process.

Quick Fix:
Submit Changes for Review

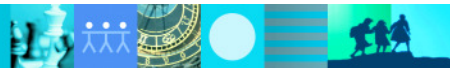
To ensure progress towards business outcomes, look at how to *report* on the software delivery process



Report

Continuously improve by measuring progress against desired business outcomes

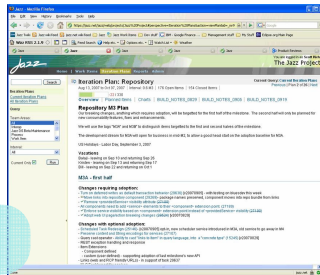
- Make better informed decisions by leveraging the real-time instrumentation of the software delivery process
- Leverage metrics for continuous individual and team capability improvement
- Gain insight into a projects which span organizational and geographic boundaries with minimal disruption



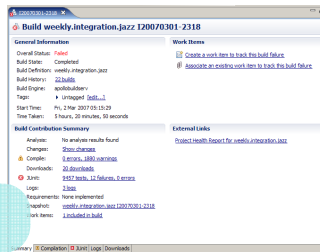
Iteration Planning and Execution



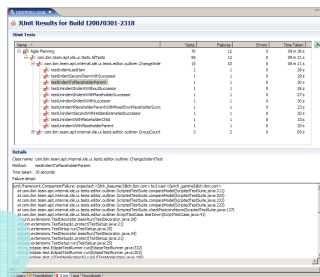
Project Manager



Developer / Build Engineer



Tester



Iteration Plan: SCM
 Feb 5, 2007 -99% Feb 23, 2007 3%

Category: Source Control | Iteration: 0.5 RC2 | 235 Closed Items 6 Open

Work Items for Source Control (0.5 RC2)
 Report Generated Mar 2, 2007 1:19:55 PM
 Last Data Snapshot: Mar 1, 2007 9:13:14 PM

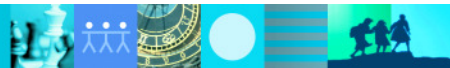
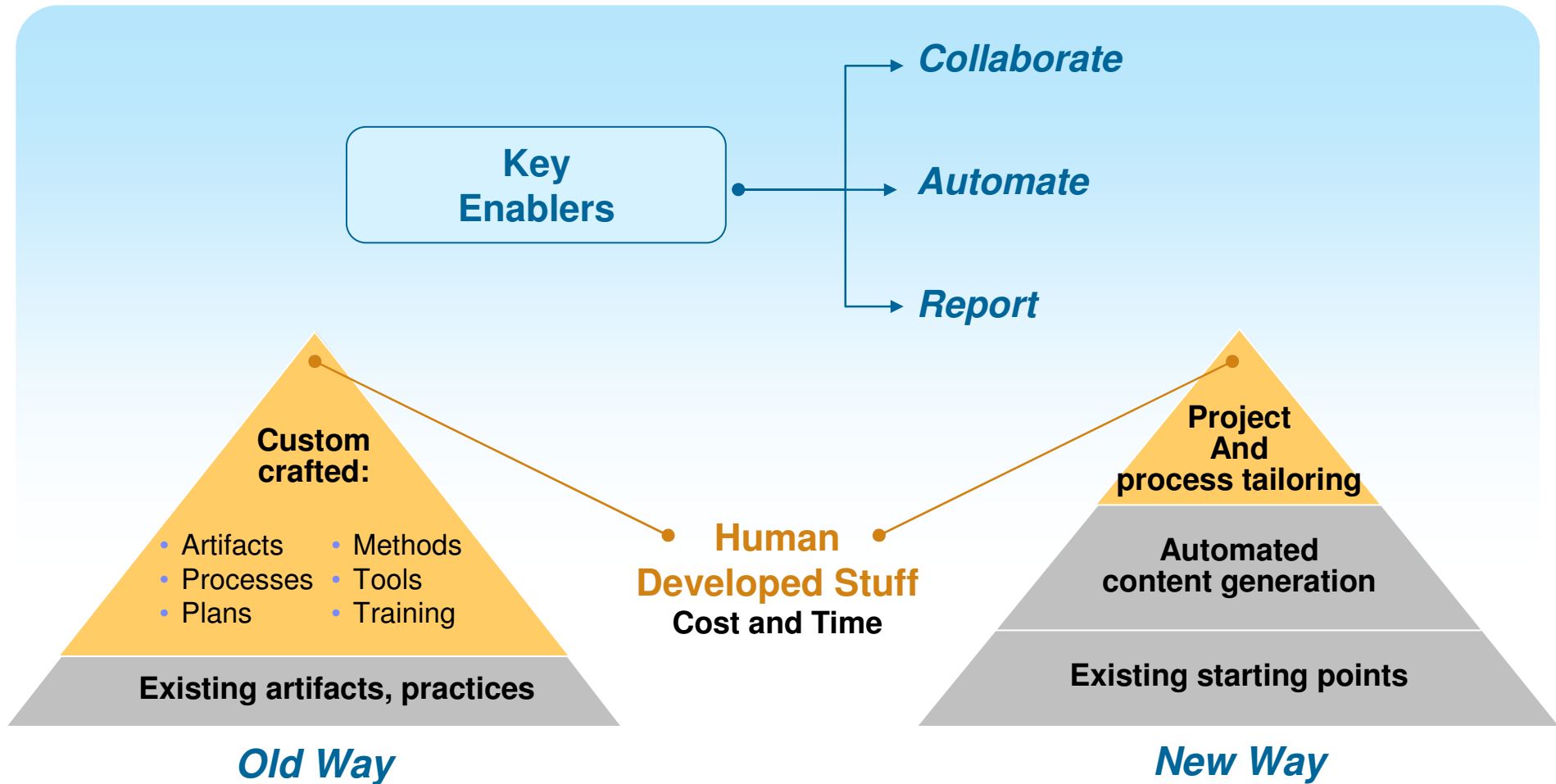
Open Work Items By Type

Tasks Enhancements Defects

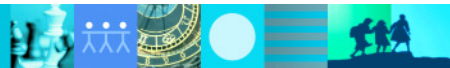
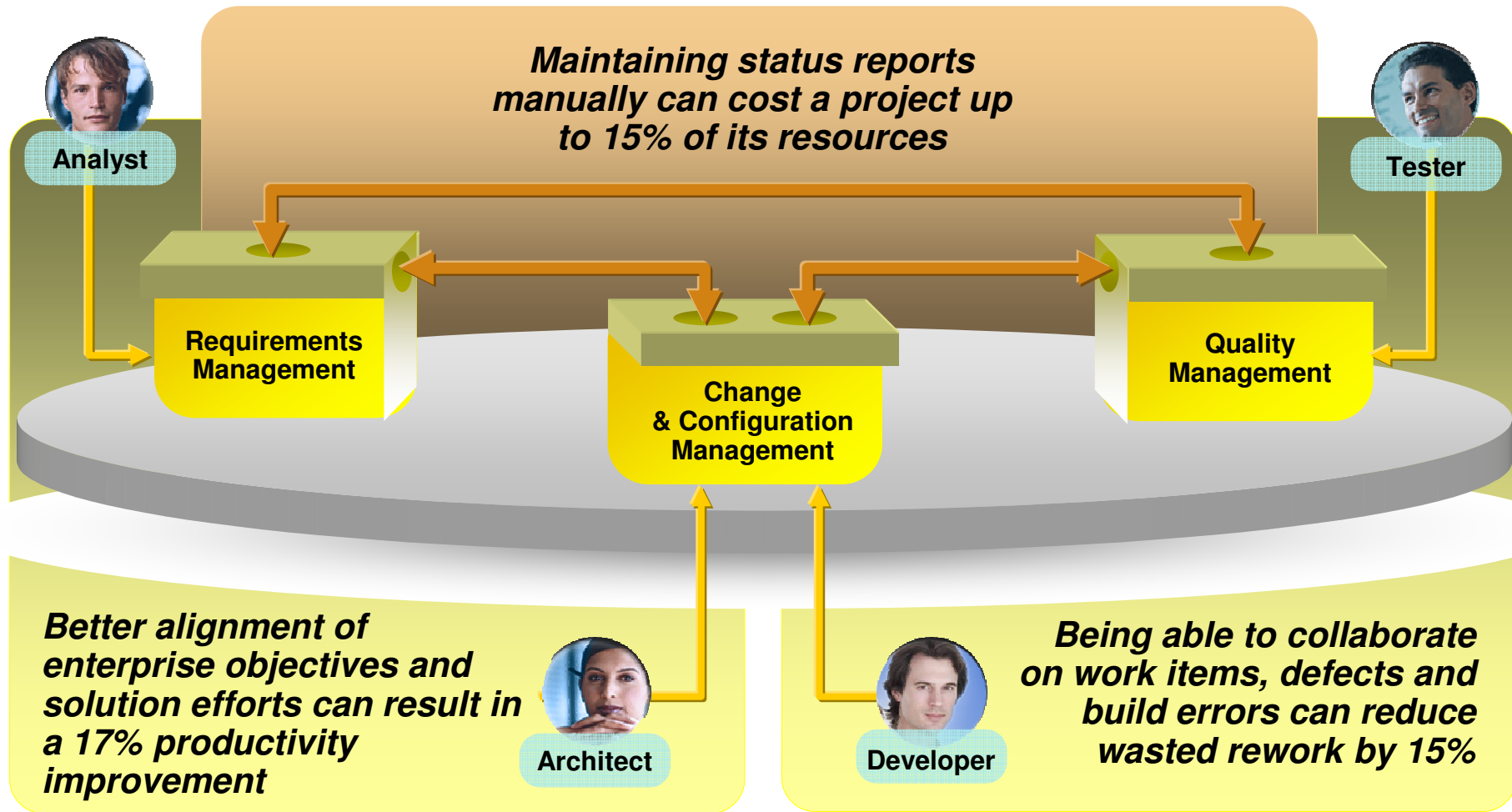
Work Items By State

Closed Open

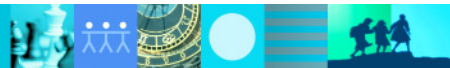
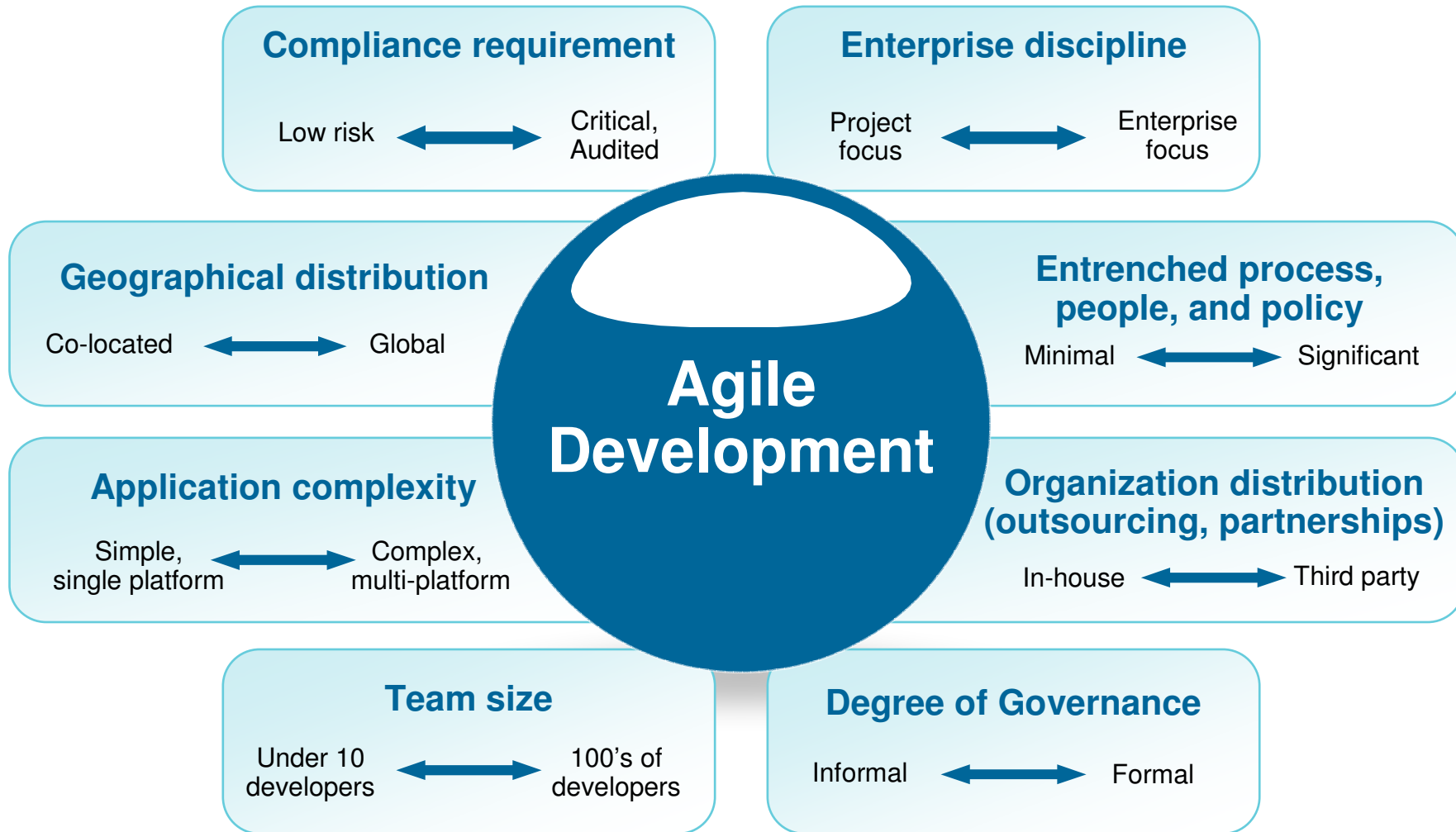
A unified platform can dramatically improve the business process of software delivery



The benefits of a unified software delivery platform

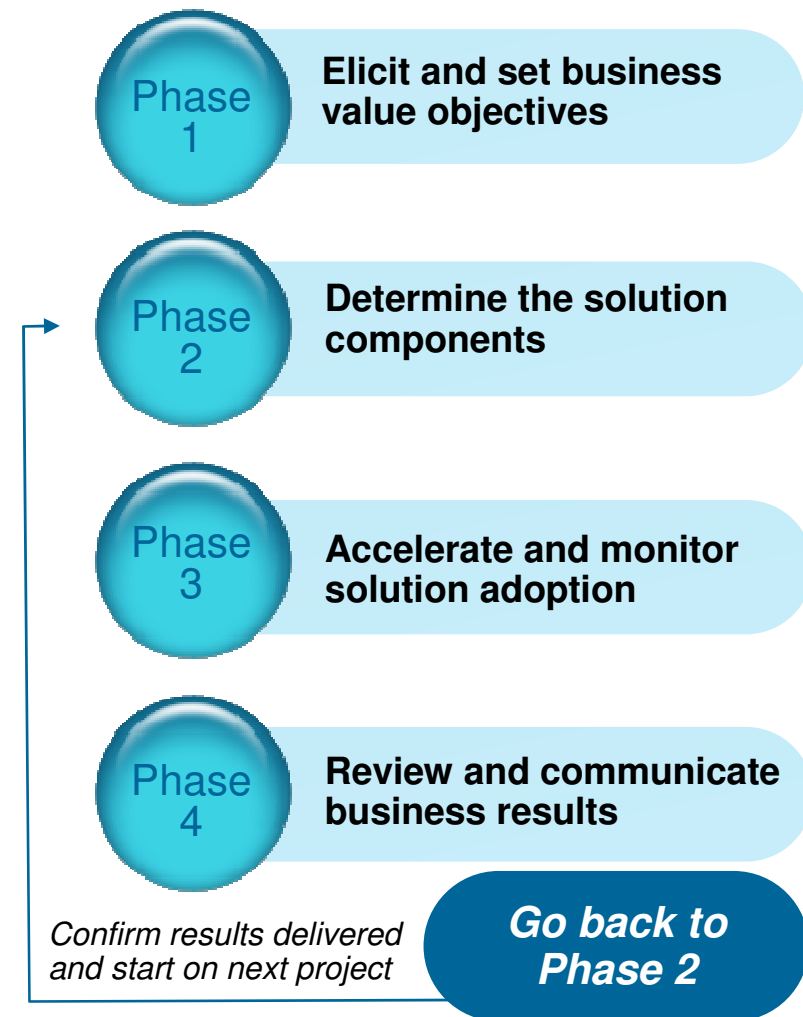


Agility at scale demands a standardized, unified platform



To ensure progress towards effective software delivery, look for an incremental improvement framework

- A framework aids in the systematic approach to excellence in software and systems development and delivery
- An industry leading delivery model:
 - ▶ Enables incremental, measured transformation of software delivery
 - ▶ Accelerates adoption through out-of-the-box assets
 - ▶ Provides flexible feedback on the business process
 - ▶ Captures industry experiences in incremental adoption



To realize the potential of a smarter planet, organizations need to do three things



FOCUS ON VALUE

A smarter planet will require a large investment in systems and software

Recognize software is at the heart of competitive differentiation today

- Business model innovation
- Product innovation



EXPLOIT OPPORTUNITIES

Systematically review your existing software investment

- Align investments with business outcomes

Using IT to stand out in the crowd

- *Mike O'Rourke* will present on this topic



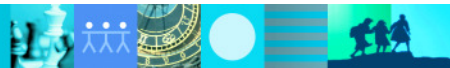
ACT WITH SPEED

Look for ways to enhance software delivery effectiveness

- Improve collaboration
- Automate tasks
- Increase reporting

Agility at scale: Improving software economics

- *Walker Royce* will present next on this topic





Learn more at:

- [IBM Rational software](#)
- [Rational launch announcements](#)
- [Rational Software Delivery Platform](#)
- [Accelerate change & delivery](#)
- [Deliver enduring quality](#)
- [Enable enterprise modernization](#)
- [Ensure Web security & compliance](#)
- [Improve project success](#)
- [Manage architecture](#)
- [Manage evolving requirements](#)
- [Small & mid-sized business](#)
- [Targeted solutions](#)
- [Rational trial downloads](#)
- [developerWorks Rational](#)
- [Leading Innovation](#)
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- [IBM Rational Case Studies](#)

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