Driving performance and value in software investments

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Agenda

- Changing the conversation – software delivery in the real world
  - ▶ Business and organizational trends and dependencies
  - ▶ Impact and realities for software and systems
  - ▶ Evolving software and systems delivery

- Governing software and systems delivery
  - ▶ Practical approaches and examples of success

- From conversation to action

An increasingly intense focus on business outcomes

Align *IT* and business goals enabling greater business flexibility

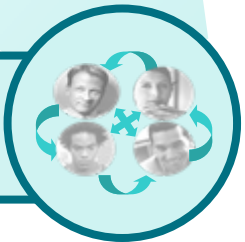**Manage value and mitigate risks by improving project management**

Control costs & improve global operational efficiencies (GDD)

Ensure security and compliance in a changing global environment

Integrate value in organizationally diverse environments

What's different today?

2008 and beyond: Shifts in software delivery

What we're hearing…

"2/3 of our projects span multiple business units"

"Our architecture has to be simpler... we can't afford this cost model anymore"

"We've done two acquisitions in six months and we can't lose customers"

"Our last ERP upgrade took six months… that isn't going to fly next time"

"We have to go where the best talent is, but we have IP and compliance realities"

What we're seeing…

- Increasingly diverse and cross organizational global project teams

- Interest in replicating the proven models of open, community-governed software delivery models

- Popularity of Agile development and social networking models

- SOA, Web-centric and Web 2.0 enabling new business models

These shifts are driving different conversations…

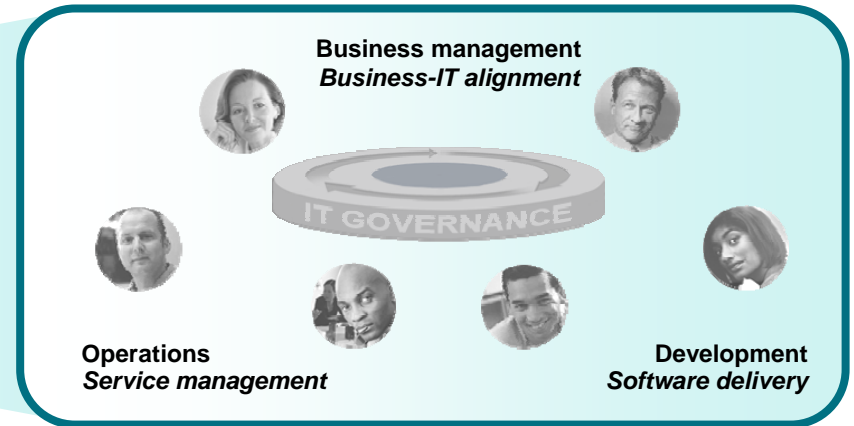# Trends toward geographically distributed teams **_&_** SOA

Impact of modularity and distribution

- More granular service functionality in composite business applications

- Large number of projects and assets including custom, outsourced and packaged

SOA enabled business flexibility

Impact of change

- Effective cross-organizational visibility and synchronization, sharing becomes **an imperative**

- Asset SLAs are impacted by frequent updates and changing interdependencies

Business management
Business-IT alignment

IT GOVERNANCE

Operations
Service management

Development
Software delivery

Drives the need for enabling better performance of organizationally diverse people & assets across the software supply chain
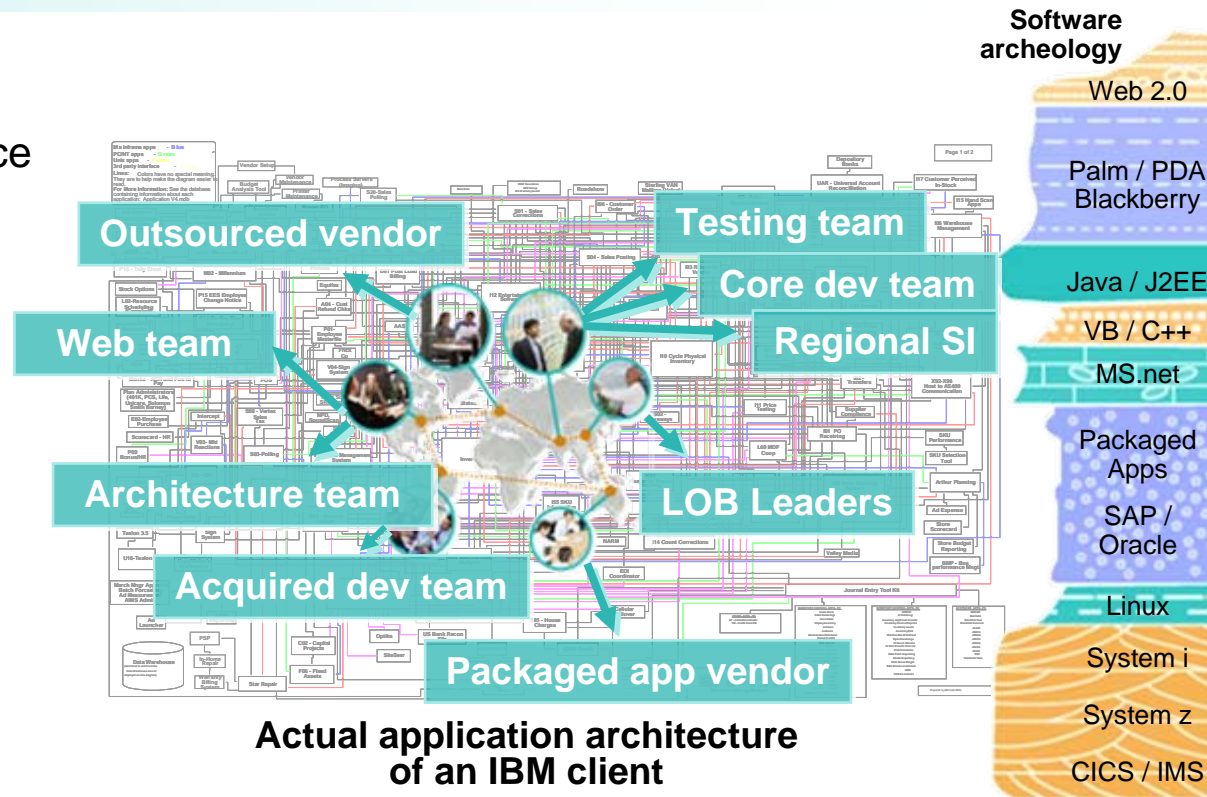
Performance of people & assets in software supply chains

"Whether designing an airplane, assembling a motorcycle [or delivering software]… the ability to integrate the talents of dispersed individuals and organizations is becoming the defining competency for managers and firms."

-- *Tapscott & Williams, Wikinomics, Copyright 2006*

- Lack of architectural governance

- Layers of disjointed, poorly managed software assets

- Contributors are everywhere with diverse skills, roles

- Growing complexity associated with IP & regulatory mandates

- More formal IT & business service level agreements

Software archeology

- Web 2.0
- Palm / PDA Blackberry
- Java / J2EE
- VB / C++
- MS.net
- Packaged Apps
- SAP / Oracle
- Linux
- System i
- System z
- CICS / IMS

Outsourced vendor · Testing team · Core dev team · Regional SI · Web team · Architecture team · LOB Leaders · Acquired dev team · Packaged app vendor

Actual application architecture of an IBM client

Cost-based conversations spiral top down

CONVERSATIONS START HERE

CFO — "We're cutting budgets 8%. Can't you outsource this stuff?"

CIO — "OK. What can we cut or outsource?"

"Great, I see our labor costs are down in your group!"

Program Manager — "If you cut staff, it's going to take 3 more months. If we outsource, call it 6 months just to get it done right."

***Beginning of…* THE END**

LOB Owner — "So, let me get this. You're going to be how late?"

Developer — "Great, another opportunity to be jerked around, I'm out of here!"

Basic efficiency is the cost of entry into changing the conversation, but they only take you so far…

Another way to have a cost-based conversation
Where productive conversations can start anywhere

CONVERSATIONS START ANYWHERE

CFO — *"I've got to cut budget 8% How can we justify the investment we're making?"*

CRO — *"We need to protect the business in an auditable way. Project B can't go live without this coverage."*

CIO — *"You can see the what we've got here…. We're investing in new distribution system for programs for $ return and $ to avoid future security risks and costs…"*

Program Manager — *"So we could move deprioritize P & Q projects to get Q2 to get project B done sooner…"*

LOB Owner — *"Here's what we're delivering to the business on B project"*

Developer — *"I think we can resuse something from Project G to get Project B done faster"*

Changing the conversation: Software engineering metrics

What is a meaningful, practical conversation?

Price of entry
Basic cost efficiency
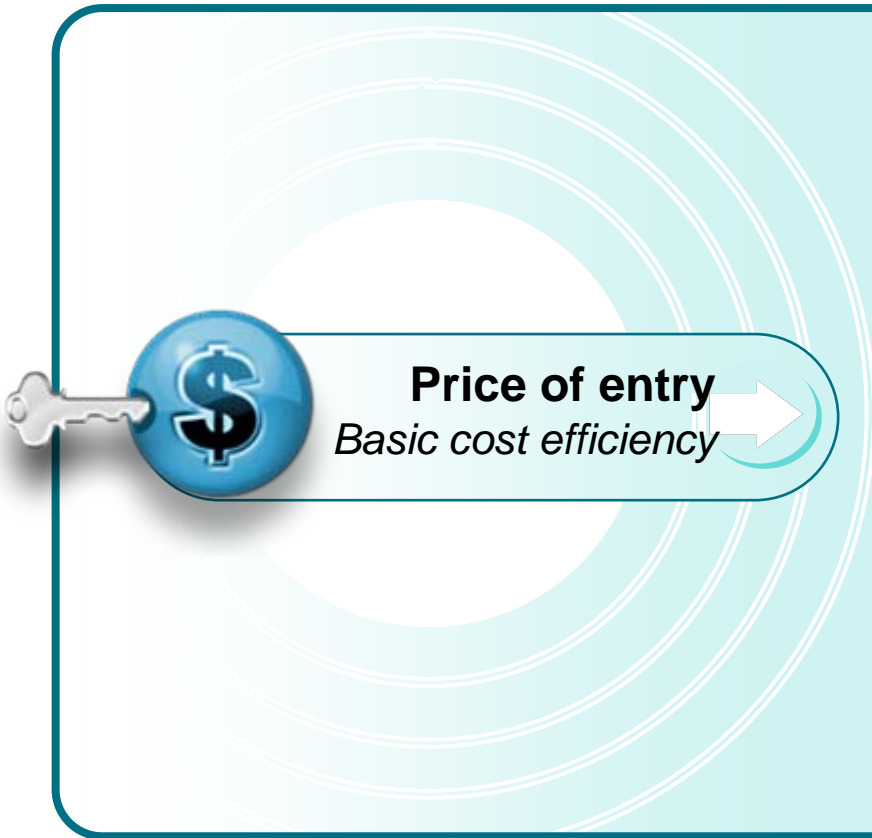
Future cost avoidance

- Investing now to receive future savings, capacity, responsiveness

Operational risk avoidance

- Investing now to avoid future business/IT risks, e.g., security, privacy, continuity…

Business impact

- Investing now to affect future top line

So our focus this week…
1. Getting the basics under control
2. Practical approaches to transformation

Entry points to greater value

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

Control

- Address the risks of development

  - Perceived Quality

  - Time to market

  - Security application failure/hack

  - Failing a SOX audit

  - Privacy exposures

Efficiency

- Address development as a cost center

  - Productivity

  - SE base Quality

  - Global Communication

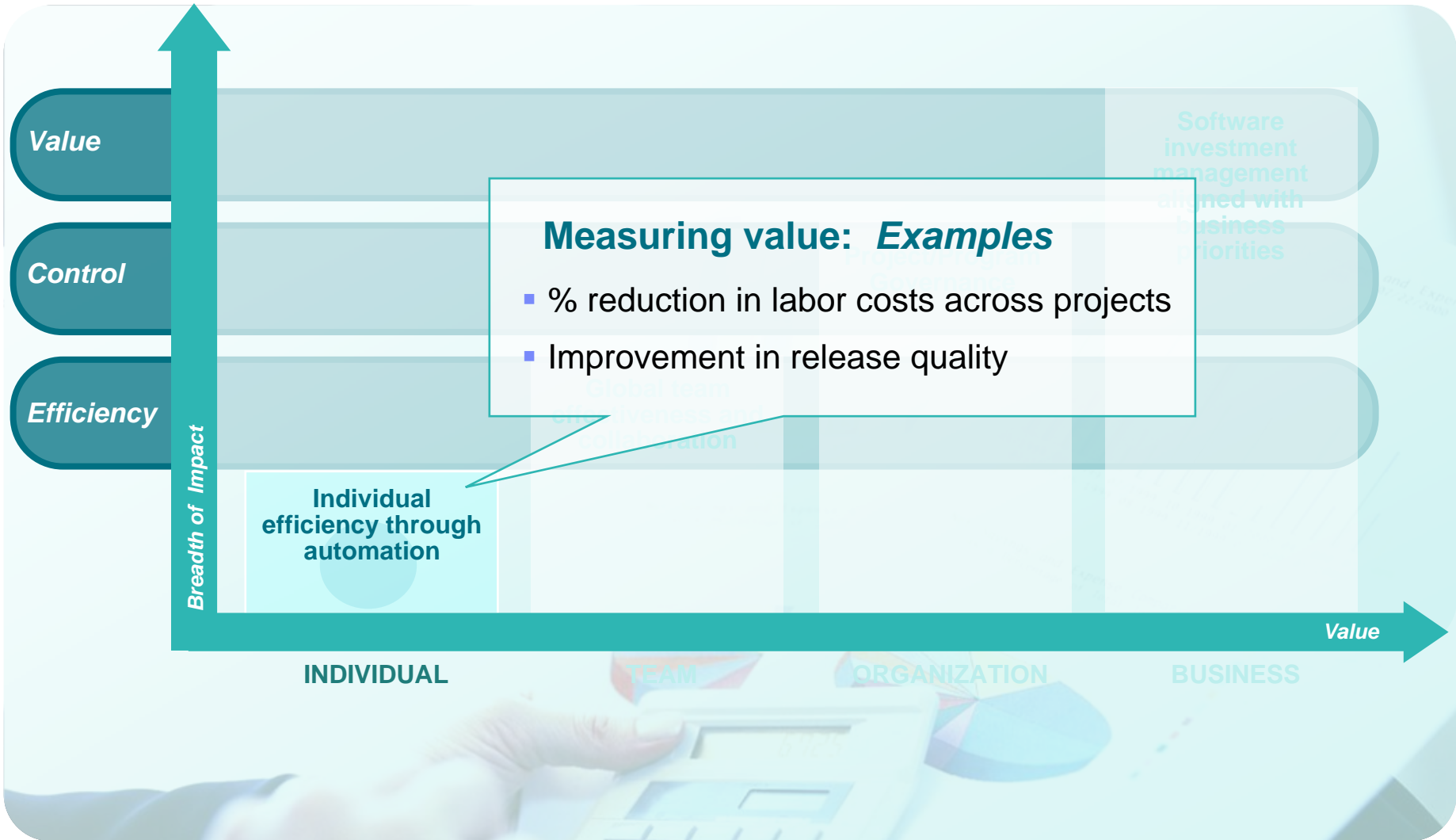# Impact of proactive conversations on business outcomes
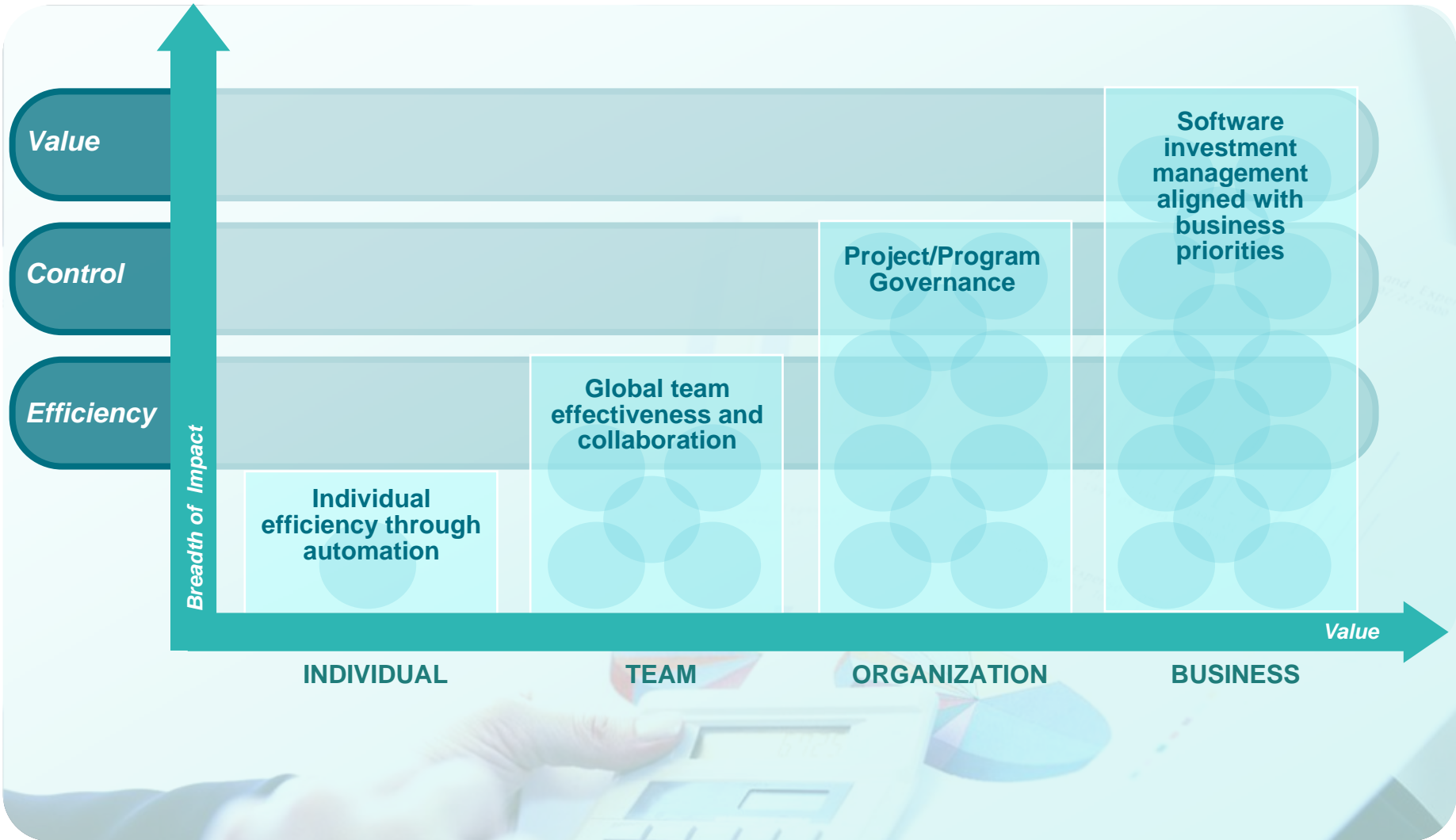
Practical approaches to software delivery
What works – two maturity levels, two examples, two ends of the spectrum

1. **Core Development efficiency**
   Build and release automation

2. **Software investment measurement and planning**
   Continuous, granular investment control

A proactive conversations on core development efficiency

Value

Control

Efficiency

Breadth of Impact

Measuring value: *Examples*

- % reduction in labor costs across projects
- Improvement in release quality

Individual efficiency through automation

Value

INDIVIDUAL   TEAM   ORGANIZATION   BUSINESS

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 efficiency
Impact of improving build iterations and management – across multiple clients
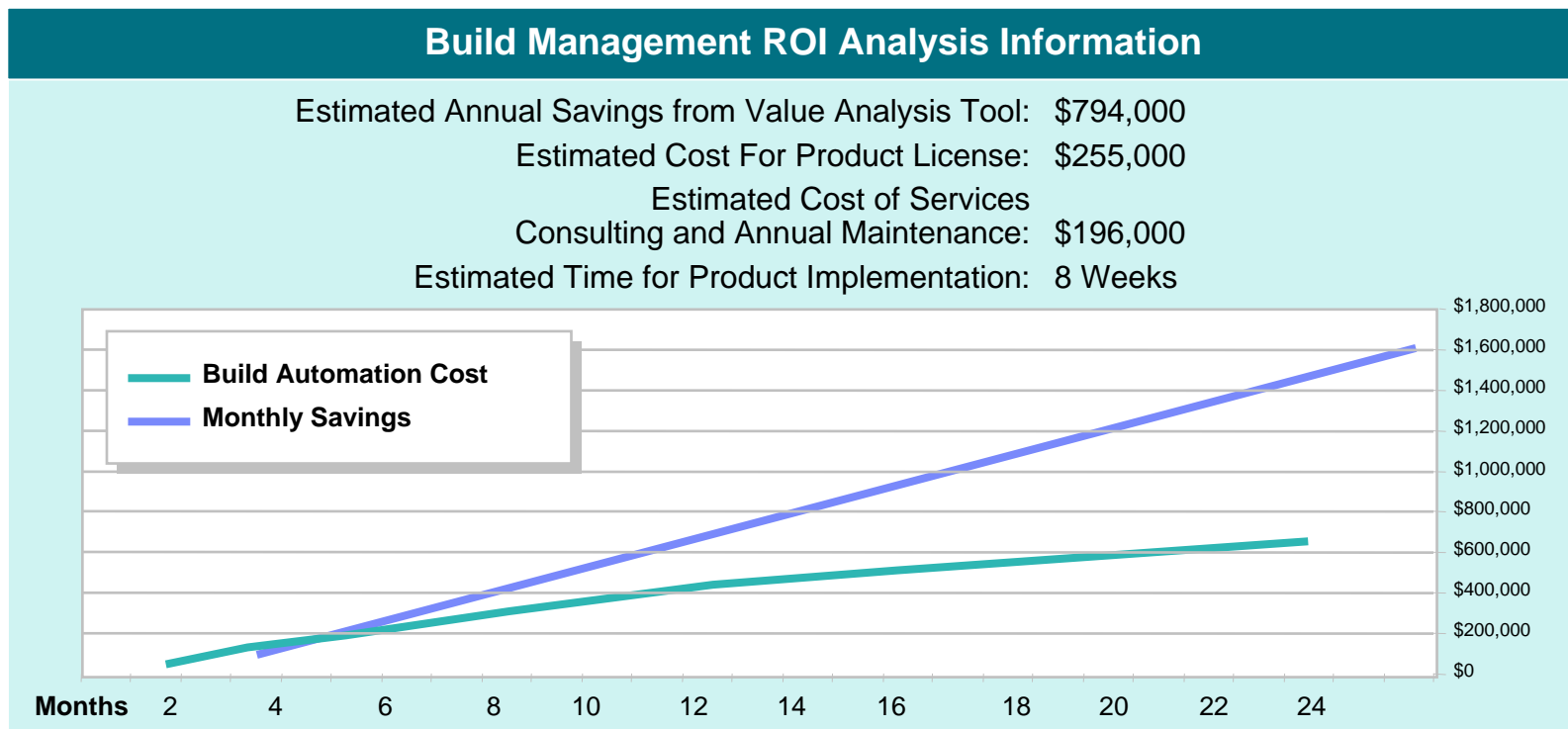
Benefit	Average Improvement	Highest Improvement
Speed of Build and Releases	110%	500-2,000% or (5-20x)
Change Mgmt Team Productivity	42%	90% or greater
Release Frequency	40%	90% or greater
Error Reduction	30%	70-80%
Developer Productivity	28%	81-90%
Development Cost Savings	25%	50-70%

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

Summary of value assessment results

- It is estimated that improving build management at <major healthcare client> will conservatively provide $794K in outage reduction and time-on-task savings for the applications deployed on an annual basis

- Given the combined initial investment of product license, maintenance and support, and consulting services of $450K, this represents a ROI of nine months

Build Management ROI Analysis Information

Estimated Annual Savings from Value Analysis Tool:	$794,000
Estimated Cost For Product License:	$255,000
Estimated Cost of Services Consulting and Annual Maintenance:	$196,000
Estimated Time for Product Implementation:	8 Weeks

Legend:
- Build Automation Cost
- Monthly Savings

Months: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

Y-axis: $0, $200,000, $400,000, $600,000, $800,000, $1,000,000, $1,200,000, $1,400,000, $1,600,000, $1,800,000

Summary of value assessment results

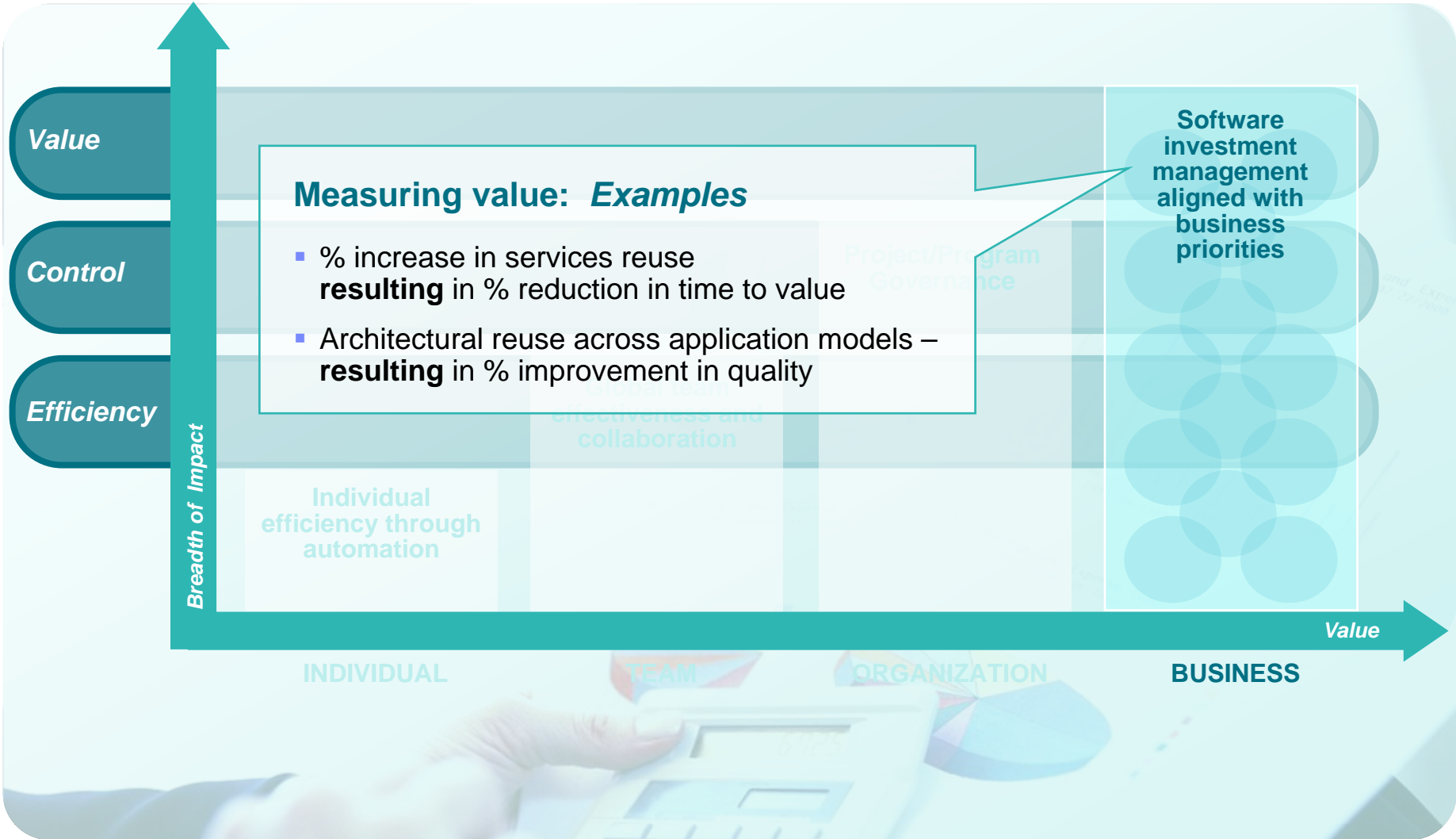- "Hard ROI" results as measured from the interviews and data for specific applications over a one-year period

Application	Decreased Time on Task / Build Time Savings
Web Site Outage Reduction	$600,000
Web Site Failed Build / Recovery Time Savings	$174,000
Application A	$9,000
Application B	$7,000
Application C	$2,500
Application D	$1,200
Totals:	**$793,700**

- "Soft ROI" that can be indirectly measured in productivity improvements

Benefit	Average Improvement
Change Management team productivity	42%
Release frequency	40%
Error reduction	30%
Calculated Configuration Management cost savings	46%

Impact of a proactive conversations on business outcomes

Value

Control

Efficiency

Breadth of Impact

Measuring value: *Examples*

- % increase in services reuse **resulting** in % reduction in time to value

- Architectural reuse across application models – **resulting** in % improvement in quality

Software investment management aligned with business priorities

Project/Program Governance

Global team effectiveness and collaboration

Individual efficiency through automation

Value

INDIVIDUAL   TEAM   ORGANIZATION   **BUSINESS**

Major telecom service provider – continuous, 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."
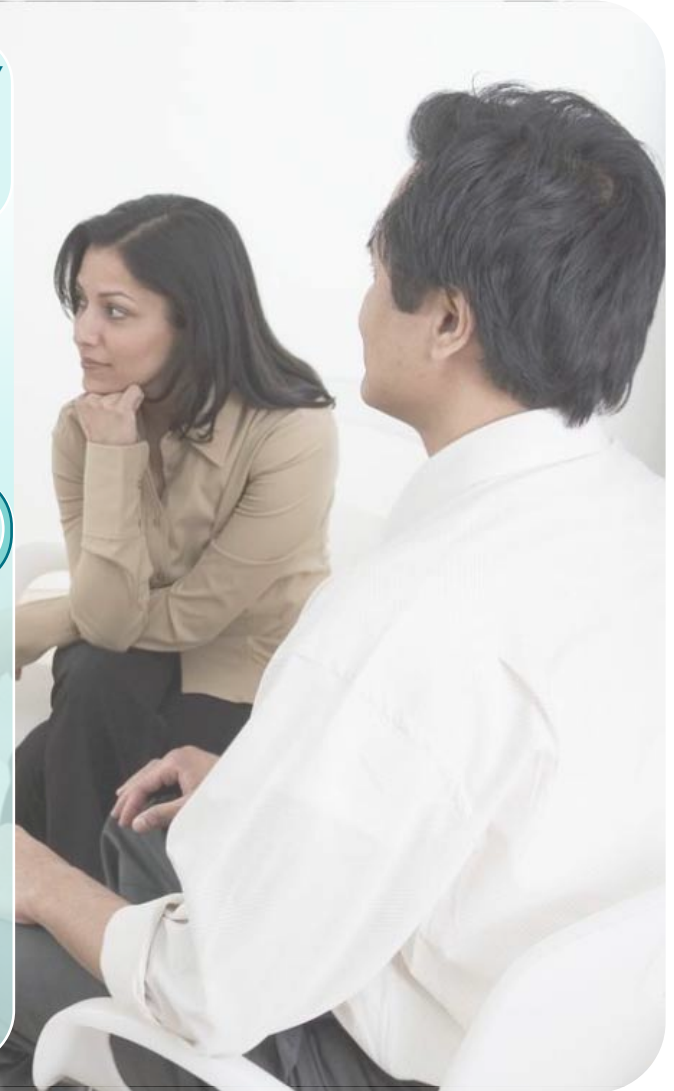
Environment

- 3,800 people across 4 geographies (design, development, test)

- Multi-platform, multi-application

- Highly competitive market with constant demands and business model flux
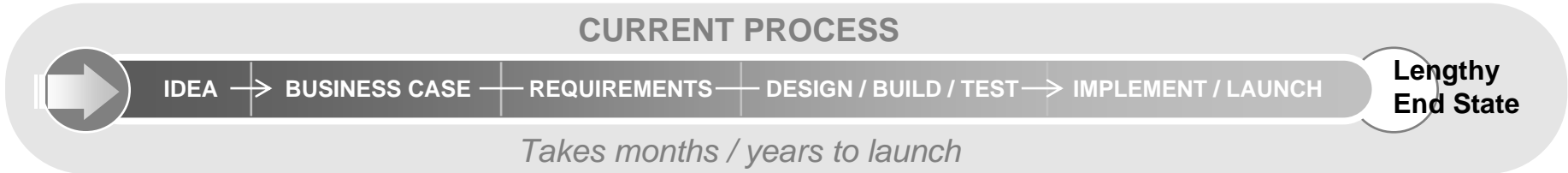
Issues

- 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

CURRENT PROCESS

IDEA → BUSINESS CASE — REQUIREMENTS — DESIGN / BUILD / TEST → IMPLEMENT / LAUNCH

Lengthy End State

Takes months / years to launch

4 Transform
Built-in frameworks of collaboration, governance and processes to leverage leading edge IBM solutions (SOA, Service Assembly) for cycle time

3 Optimize the Software Factory
Fully automated software factories (IBM Rational enabled) 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

MARKET LEADER'S PROCESS

IDEA → LAUNCH

Desired End State

Only takes weeks / months to launch

The value proposition is not…
- Outsourcing
- Fix IT
- SOA
- Business transformation

The value proposition is…
- **Time-to-market!**

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Major telecom service provider – continuous, granular investment control

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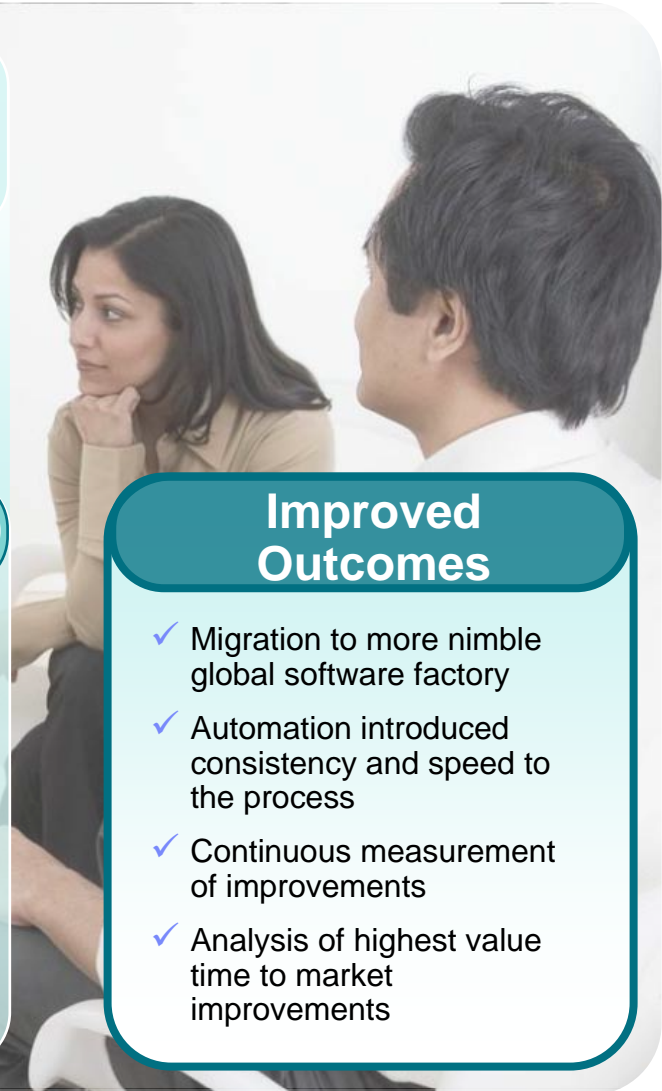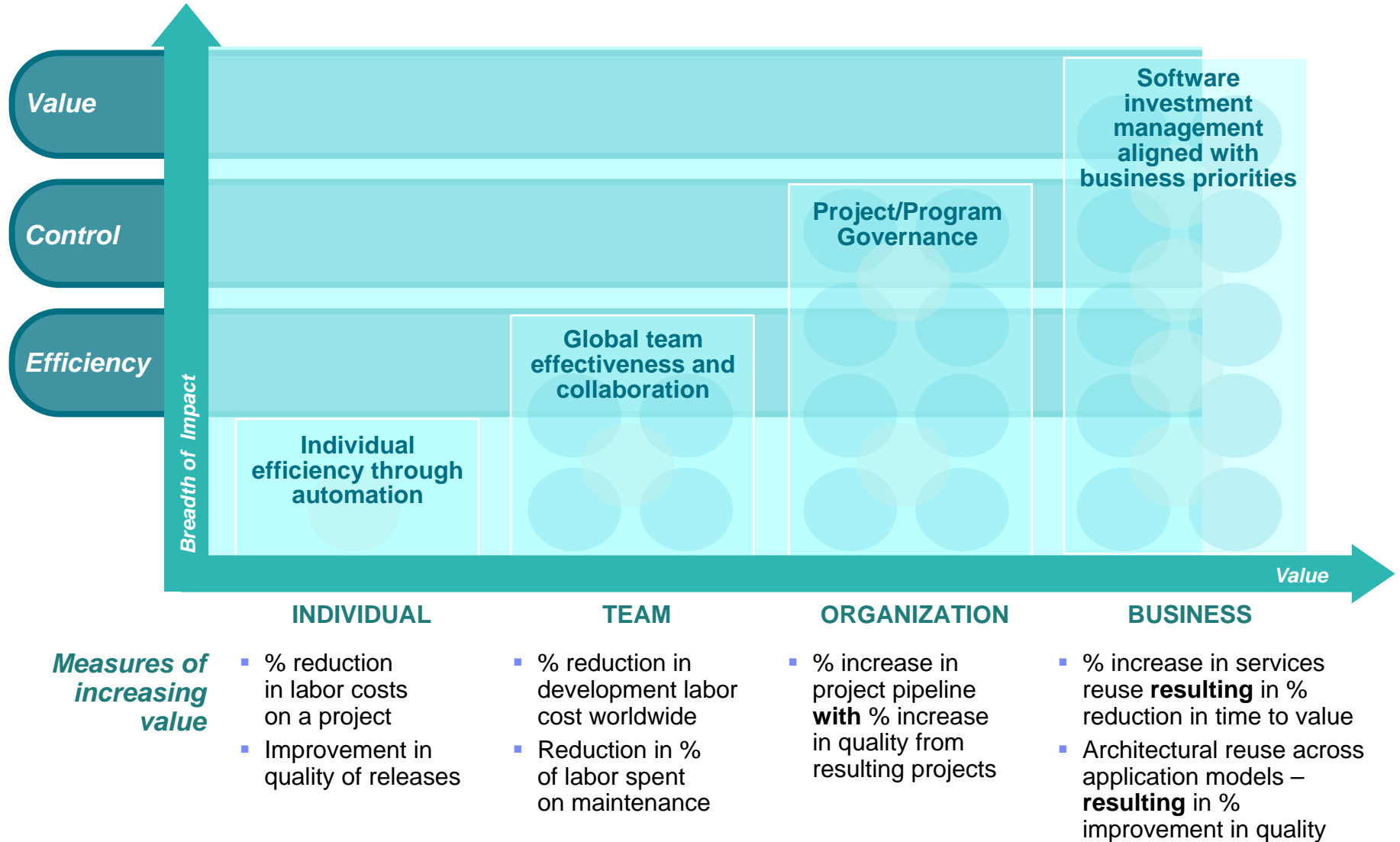
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Improved Outcomes

- ✓ Migration to more nimble global software factory
- ✓ Automation introduced consistency and speed to the process
- ✓ Continuous measurement of improvements
- ✓ Analysis of highest value time to market improvements

Impact of proactive conversations on business outcomes

Value

Control

Efficiency

Breadth of Impact

Software investment management aligned with business priorities

Project/Program Governance

Global team effectiveness and collaboration

Individual efficiency through automation

Value

INDIVIDUAL	TEAM	ORGANIZATION	BUSINESS

Measures of increasing value

INDIVIDUAL
- % reduction in labor costs on a project
- Improvement in quality of releases

TEAM
- % reduction in development labor cost worldwide
- Reduction in % of labor spent on maintenance

ORGANIZATION
- % increase in project pipeline **with** % increase in quality from resulting projects

BUSINESS
- % increase in services reuse **resulting** in % reduction in time to value
- Architectural reuse across application models – **resulting** in % improvement in quality

Practical approaches to software delivery
What works – two maturity levels, two examples, with clear ROI

1. **Development efficiency**
   Build and release automation – ROI of 1-6 months

2. **Software investment measurement and planning**
   proactive, granular investment control – ROI 12 – 24 months

With best practices benefits that extend virally

Making progress that's consumable, incremental and iterative: *Measured Capability Improvement (MCI)*

- **The need:**
  A systematic approach to business value articulation and delivery

- **The approach:**
  A delivery model that accelerates adoption through out-of-the-box assets

- Captures +10 years of Rational and industry experiences in incremental adoption

  ▸ Being used today in agile transformation's of +80 IBM internal projects

  ▸ Process independent – used with RUP, XP, Scrum and other processes

Deployment Evaluation Framework
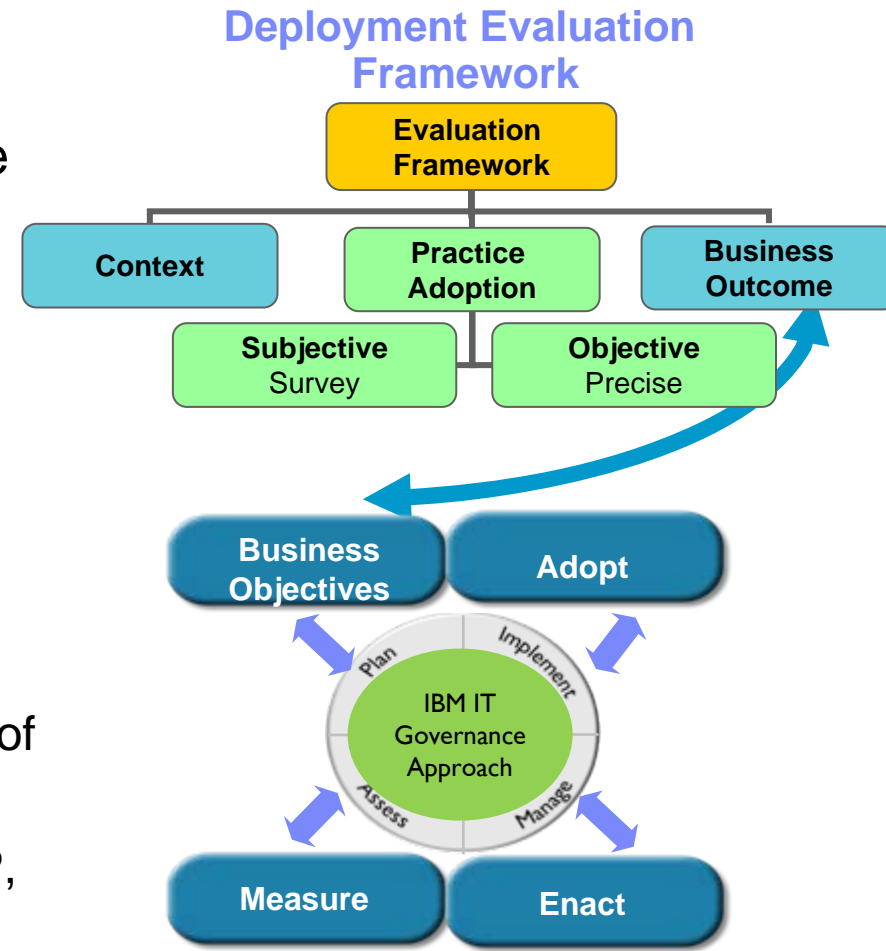
Measured capability improvement
Map business value to software delivery best practices

| Target: Phase 1 |
| Already implemented |
| Outside scope |

Example: Financial Service Company

Customer Business Challenges

- Create financial products more quickly
- Functionality of customer web falling behind competition
- Inconsistencies with integrated financial reporting
- Recent SOX audit failure

Operational Objectives

- Reduce time-to-market
- Improve productivity
- Increase innovation
- Improve consistency/predictability
- Improve oversight
- Enable flexible/global resourcing
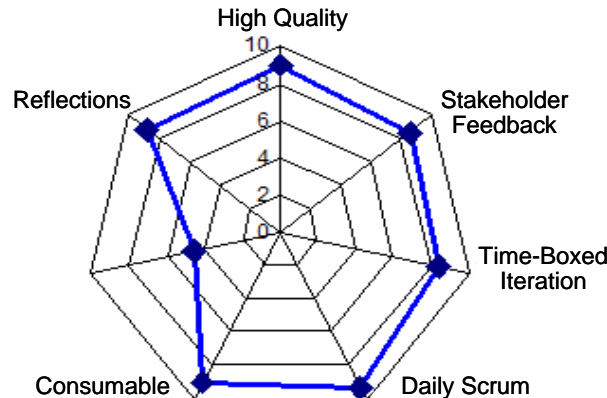- Satisfy compliance mandate

Software Delivery Best Practice

- Use-case driven development
- Continuous integration
- Shared vision
- Whole team
- Staged integration
- Multi-team management
- Risk-value lifecycle
- Asset-based development
- Asset governance
- Iterative development
- SOA modeling
- Enterprise SOA
- SOA governance
- Architecture modeling
- Test driven development
- Functional testing
- Test management
- Structured testing
- …

Business Metrics

Project	Time to Market (M)	Quality (Defect Density)	Productivity (SLOCS / PM)
A	22	2.3	200
B	14	1.4	160
C	18	1.6	180
D	9	0.3	150
E	6	0.4	205

Measured Iterative Practice Adoption

High Quality
Stakeholder Feedback
Time-Boxed Iteration
Daily Scrum
Consumable
Reflections

Engaging to take action

1. **Have a well defined global development delivery strategy that focuses on managing risk**

   ▸ Ensure your plan is realistic

   ▸ Understand and address major barriers to cost savings

   ▸ Define a strategy for global delivery based on increasing your maturity

2. **Organize for early success and ROI to change the conversation**

   ▸ Identify basic efficiency opportunities

   ▸ Use an enterprise architecture strategy to provide a central point of control

   ▸ Use a process improvement framework to continuously measure progress

   ▸ Rational ROI assessments and Proof of Technology engagements focus on short term and long term return with engagement Results Reviews to assess outcomes

Ask yourself during the next two days...
can I?

- Improve efficiency?
  - ▶ Identify ways to improve productivity and automate the mundane?
  - ▶ Leverage distributed development resources?
  - ▶ Gain real-time visibility into projects without creating overhead?

- Control, protect and preserve value?
  - ▶ Comply with regulatory standards?
  - ▶ Am I able to proactively protect my business from application security risks?

- Create value
  - ▶ Quickly extend business processes to third parties and partners?
  - ▶ Enable software teams to innovate, yet be accountable?

Have great conversations!

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