Overcoming Contradictions Through Improved Governance, Risk Management and Compliance

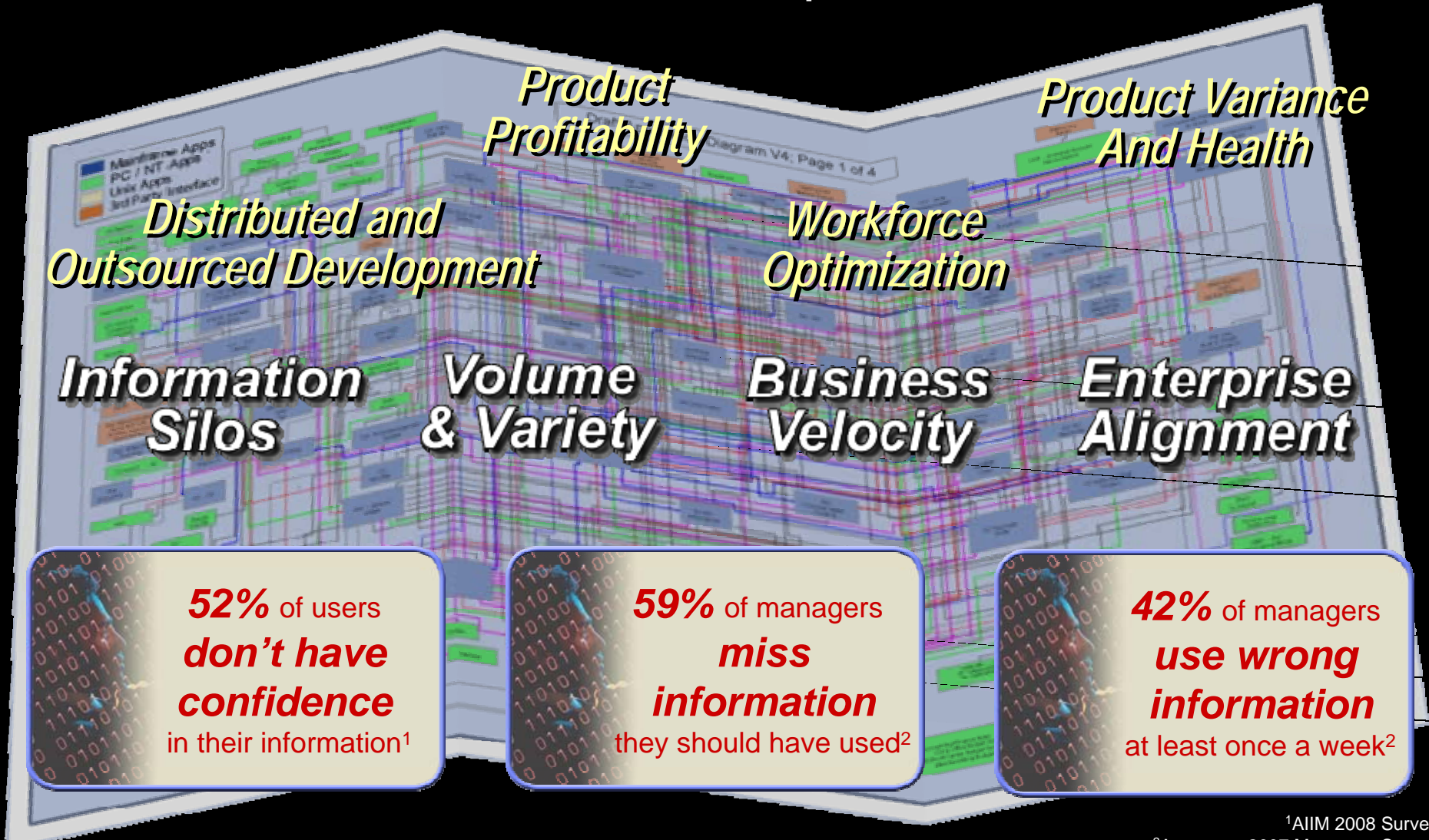**Michael O'Rourke**
Vice President of Development, Rational Software
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Executive Track – EXEC 12

Contradictions result from the quest for information

Product Profitability

Product Variance And Health

Distributed and Outsourced Development

Workforce Optimization

Information Silos

Volume & Variety

Business Velocity

Enterprise Alignment

52% of users **don't have confidence** in their information[1]

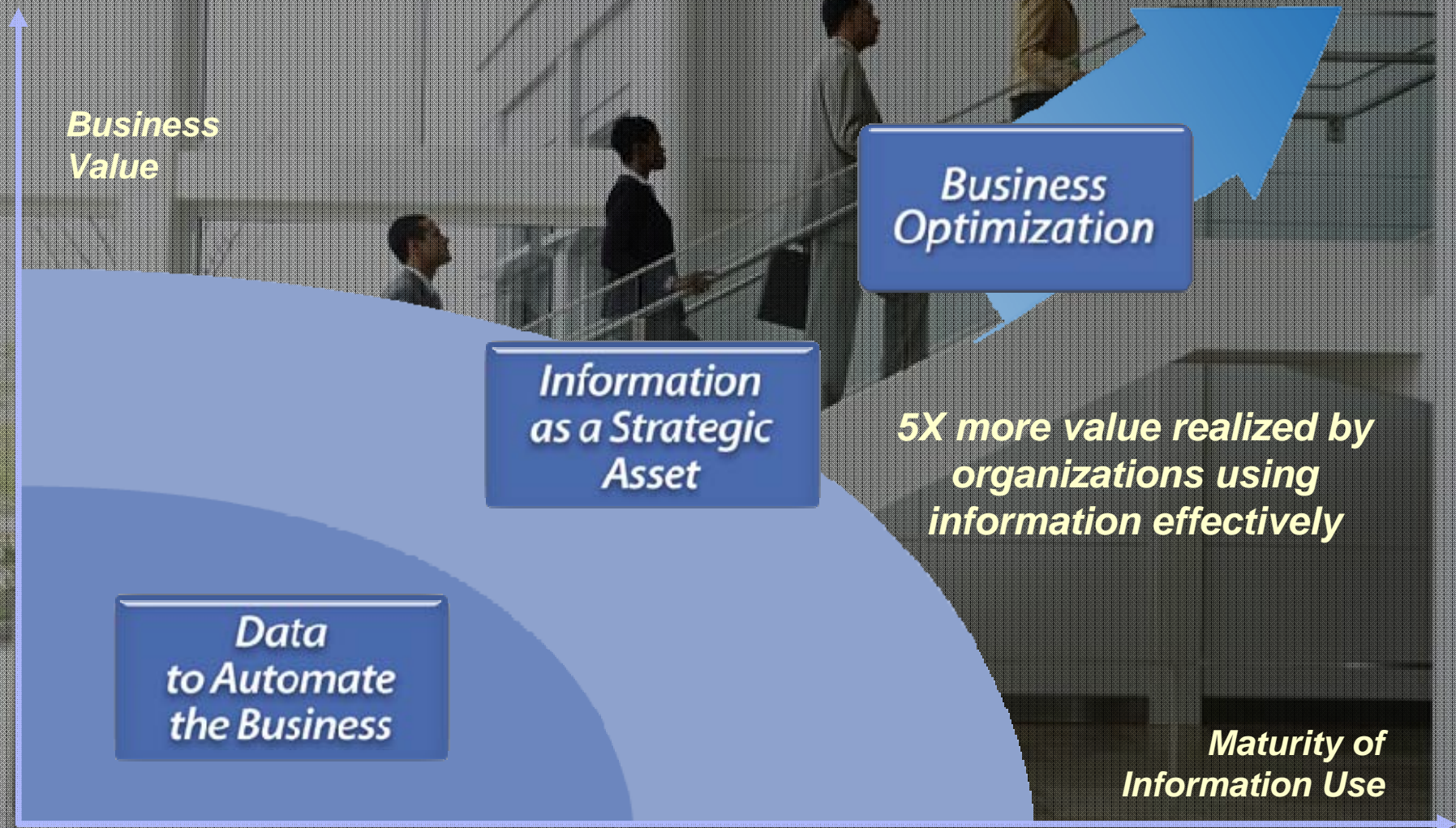**59%** of managers **miss information** they should have used[2]

42% of managers **use wrong information** at least once a week[2]

[1]AIIM 2008 Survey
[2]Accenture 2007 Managers Survey

Move from a cost center to a business value driver

Business Value

Business Optimization

Information as a Strategic Asset

Data to Automate the Business

5X more value realized by organizations using information effectively

Maturity of Information Use

Effective Information comes from proper metrics communicated back to the business

5 Create an Information Agenda
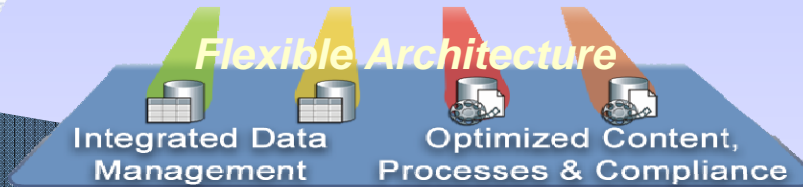
Customer & Product Profitability　*Financial Risk Insight*　*Workforce Optimization*　*Dynamic Supply Chain*　*Multi-channel Marketing*

Business Optimization

Information Agenda

Optimized Business Performance

Trusted Information

Flexible Architecture

Integrated Data Management　Optimized Content, Processes & Compliance

4 *Optimize Business Performance*

3 *Establish, Govern & Deliver Trusted Information*

2 *Optimize Content-based Operational & Compliance Processes*

1 *Manage Data Over its Lifetime*

™

DB2® software　Informix® software　FileNet® software　InfoSphere software　Cognos® software

Software Measurement Status - Today

Fortune 500 companies with productivity measures:　　30%

Fortune 500 companies with quality measures:　　45%

Fortune 500 companies with complete measures:　　15%

Fortune 500 companies with missing measures:　　85%

Number of software measurement personnel:　　5,500

Number of software projects measured:　　160,000

Number of software projects <u>not</u> measured:　　50,000,000

- Capers Jones

Is this REALLY the problem?

Companies that measure:		Companies that don't:	
On-time projects:	75%	On-time projects:	45%
Late projects:	20%	Late projects:	40%
Cancelled projects:	5%	Cancelled projects:	15%
Defect removal:	> 95%	Defect removal:	Unknown
Cost estimates:	Accurate	Cost estimates:	Optimistic
User satisfaction:	High	User satisfaction:	Low
Software status:	High	Software status:	Low
Staff morale:	High	Staff morale:	Low

- Software Productivity Research (2007)

Maybe we should blame the Project Managers?

Less than 25% of project managers have formal training

Less than 20% of project managers have access to cost / project estimating tools.

Less than 10% of project managers have access to validated historical data

- Software Productivity Research (2008)

How about "lesser known" Metrics?

- ❑ **WSR (Work-to-Sleep Ratio)**
- ❑ **DODO (Days On per Day Off)**
- ❑ **HBT (Handbasket Temperature)**
- ❑ **GALB (Going-Away-Lunch Budget) or GAAB (Going Away-Alcohol-Budget)**
- ❑ **Dilbert Barometer**
- ❑ **The Laugh Meter**

- Martin L. Shoemaker

Beware: Metrics Must Be Used Properly

Cost per Defect (Penalizes quality)

Lines of Code (Ambiguous)

Cost per Line of Code (Penalizes new languages)

Lines of Code per Month (Ignores non-code work)

Staff Work Hours per month (Ignores non-work tasks)

Industry averages (Vague and ambiguous)

- Capers Jones

Measurements must be SMART (Simple, Measurable, Actionable, Realistic, and Timely)

How do we succeed using measurement?

Fill in the blank. "The measurement _____."

…is **meaningful** and potentially **benefits** the customer, manager and performer.

…supports a **direct link** between assessments and quantitative data.

…explains **why projects vary** and by how much.

…is supported by **automation**.

…**supports multiple kinds** of software, metrics, activities and deliverables.

…demonstrates **quantifiable correlation** between process perturbations and business performance (e.g. it is as accurate as financial data)

…is a **natural by-product** of the process (no night job).

"Organizations exercising world-class performance management practices enjoy a 2.4 times market returns of typical companies"

BusinessWeek Study:
The Payoff of Pervasive Performance Management

But measurement is difficult amongst the chaos

Executive

Management

Development

Artifacts

Success can only come from a tight linkage from the development and delivery process to the business.

Like an annual report synthesizes the state of the overall business....a development report needs to do the same....

Communicate the relative facts to give all stakeholders insight as to the health of this critical part of their business.

Business Objectives

Operational Objectives

Processes & Practices

requirement *build definition* defect TEST CASE deploy image change set bill of materials STREAM *custom dashboards* design model **WORKSPACE** *Eclipse plug-ins* test script SNAPSHOT *development assets* Demo image

This fidelity mandates a control framework

Performance Measurement

Value

Business Objectives ← measures → **Value Metrics**
e.g., ROI, ROA for SSD

Efficiency

Operational Objectives ← measures → **Operational Effectiveness Metrics**
e.g., Time to market, productivity

feedback

Control

Process Definition / Practices
Rational Method Composer ← measures →

Control Metrics *subjective*

Control Metrics *objective*

Governance Dashboard *compliance*

Process Enactment / Governance Enforcement / Process Awareness
Jazz Platform

4 Fundamentals for implementing a control framework

1. **System definition**: A discriminating C/ALM system for linking, tracing and accessing information across your SDLC.

2. **Best practices**: Best practices for monitoring, measuring and reporting throughout the enterprise

3. **Interpretation**: A capability to interpret your measures correctly and accurately the health of your development practices

4. **Operations**: Guidance to define the right actions, workflows and policies to improve your measured results and be compliant

A Discriminating System
Lets You Measure, Assess and Improve Information Blindspots

Improving

Where You Should Be!

Assessing

Where You Are
- **Productivity Rates**
- **Quality Levels**

Why You Are
- **Process Assess**
- **Product Health**

Measuring

Quantitative and Qualitative Data

Information Gaps

Change & Configuration Management

Rational Definition & Management

Quality Management

Build & Release Management

Architecture Management

Security & Compliance

Project Data

Headcount & Financials

Sales & Pipeline

Customer Support

Manual Data

Software Lifecycle Artifacts

3rd Party Data Artifacts
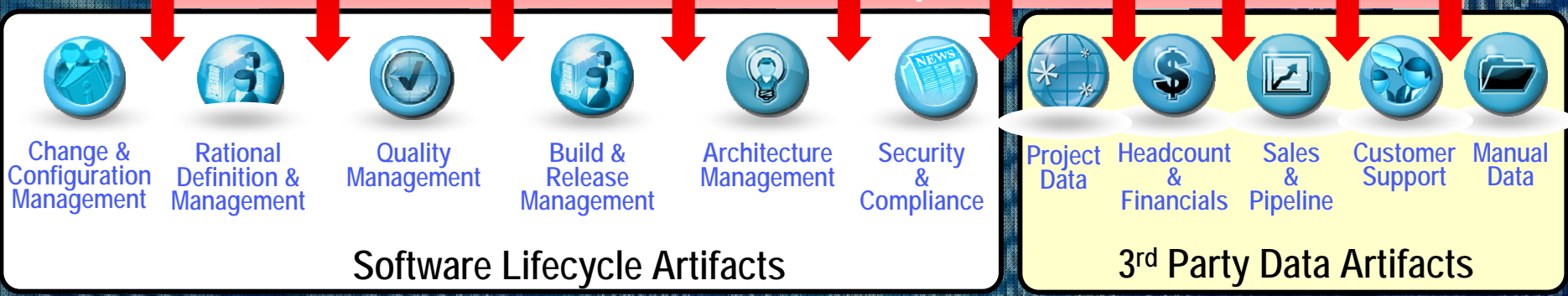
Defining a best practice…

"The likelihood of delivering a product on time, within budget, with acceptable revenue or benefits and an acceptable level of support costs."

- The definition points us to what we need to project
  - ▶ Time to complete
  - ▶ Cost to complete
  - ▶ Expected revenue/benefits
  - ▶ Expected support and ownership costs

- The other indicators (expected effort, probability of on-time completion and percent complete) can be driven from these

And more specifically...

The indicators that impact **time to complete** –

- Critical situations
- Defect density/severity analysis
- Defect repair latency
- Build health
- Velocity
- IPD timeliness
- Iteration status
- Variance in time-to-complete estimates by task

The indicators that impact **expected revenue / benefits** –

- Benefits of requirements
- Benefits of demonstrable capabilities by iteration (iteration status)
- Benefits of RFE 30/90-day SLA

The indicators that impact **cost to complete** –

- Staffing actuals vs. plan (is also an indicator of project size)
- Capital expense actuals vs. plan
- Earned value

The indicators that impact **expected support and ownership costs** –

- APAR backlog
- RFE 30/90-day SLA
- Build health
- Time-to-resolution for internally-found defects and APARs

Best Practice Interpretation: Project Health

Metric	Weight	Source	Measure
Defect Backlog	10	Change Mgmt	3 Months
Enhancement SLA	10	RFE Website	60 Days
Cost of Support	10	Analysis	25% Total
Critical Situations	05	Support DB	<1 Month
Defect Density	10	Analysis	By component
Defect Repair Latency	05	Support DB	By product maturity
Build Health	10	Analysis	90% Clean
Project Velocity	10	SCM Tool	Better than Average
Staffing Actuals	10	Financials	10% Variance
Process Timeliness	05	Process DB	<10% off plan
Milestone Status	10	Agile Planner	90% of plan
Severity Analysis	05	Analysis	Depends on timeframe

Project Health

Best Practice Interpretation: Project Quality

Metric	Weight	Source	Measure
Defect Backlog	10	Support DB	3 Months
Test Escapes	10	Analysis	60 Days
Functional Test Trends	10	Analysis	25% Total
Critical Situations	05	Support DB	<1 Month
System Test Trends	10	Analysis	By component
S-Curve Progress	05	Quality Mgmt	By product maturity
Automation Percentage	10	Analysis	90% Clean
Customer Testcases	10	Quality Mgmt	Better than Average
Consumability Scorecard	10	Spreadsheet	10% Variance
Defect Latency	05	Change Mgmt	<10% off plan
Quality Plan Commitments	10	Spreadsheet	90% of plan
Test Coverage	05	Analysis	Depends on timeframe

Project Quality

Rational Executive Dashboard

DB2

Oracle

SQL Server

Rational Insight

Where You Are
- **Productivity Rates**
- **Quality Levels**

Why You Are
- **Process Assess**
- **Product Health**

REST Open Services / ODBC / XML

Quantitative and Qualitative Data

Rational ClearQuest

Rational Requirements Composer

Rational Team Concert

Rational Quality Manager

Rational Test Manager

Rational Requisite Pro

Rational ClearCase

Rational Data Sources

Project Data

Headcount & Financials

SIEBEL
Sales & Pipeline

Retain
Customer Support

Manual Data

3rd Party Data Sources

IBM Rational User Technologies

Check out the **Executive Dashboard** that allows IBM executives to manage product development and delivery.

Based on MCIF and Rational Insight, the Executive Dashboard pulls in live data from a variety of sources for Jazz-based products, such as Rational Team Concert, Rational Requirements Composer, and Rational Quality Manager.

This is a chance to share your reality with us through direct and specific feedback!

REAL USERS REAL FEEDBACK REAL IMPACT

U1 Users First Lounge
Europe 5 – Dolphin Resort
Mon – Fri: 10am – 5pm

Sign up now!
Amazon.com gift certificates for all participants

Sign up at **tinyurl.com/djoj9b**
or in person at **Europe 5**

Improve Project Health - Cognos Viewer - Microsoft Internet Explorer

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Address

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Project Health

Segment: [All Segments ▼]   Product: [All Products ▼]   Release: [Online Auction ▼]

Segment	Product	Release	Overall Project Health	APAR Backlog	RFE	Support Cost	Critical Situations	Defect Density	Defect Repair Latency	IPD Timelines	Staffing Plan vs. Actual	Build Health	Velocity	Iteration Status
Application Lifecycle Management (ALM)	Jazz Foundation	Online Auction	50%		40%	50%	71%	60%	58%	65%	60%	55%	59%	55%

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Build Health - Cognos Viewer - Microsoft Internet Explorer

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Build Health

(%)

— Percent of build completed successfully

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IBM

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Rational Insight

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→ Welcome   🏠 Executive Dashboard   📁 Project Development Portal   📊 Performance Measurement Practice   🖐 Collaborate
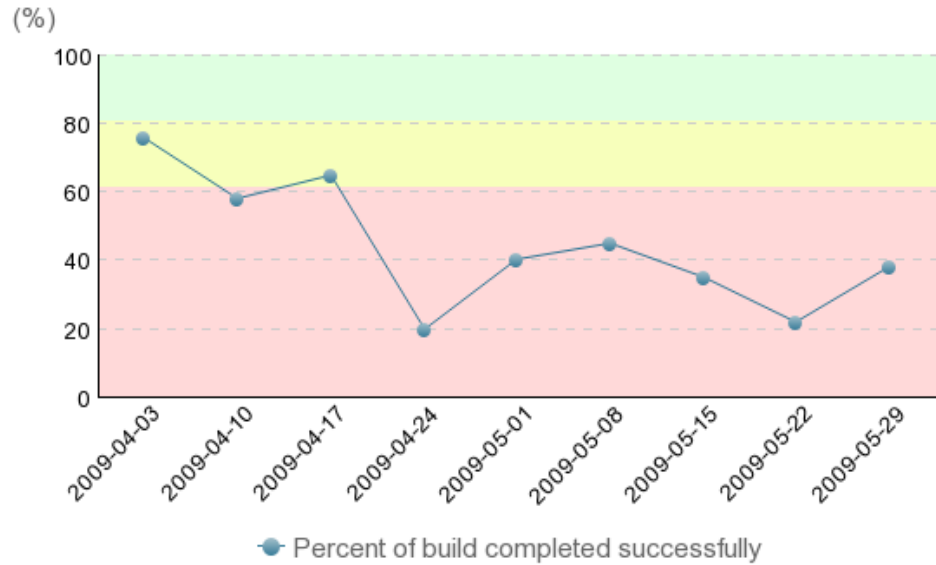
🏠 **Executive Dashboard**

🧑 Headcount

🌡 Improve Project Health

💲 Achieve Profit Margin Objective

🌐 Improve Market Share

Segment: All Segments ˅

Project Health
● ● ●

Headcount
Planned person years
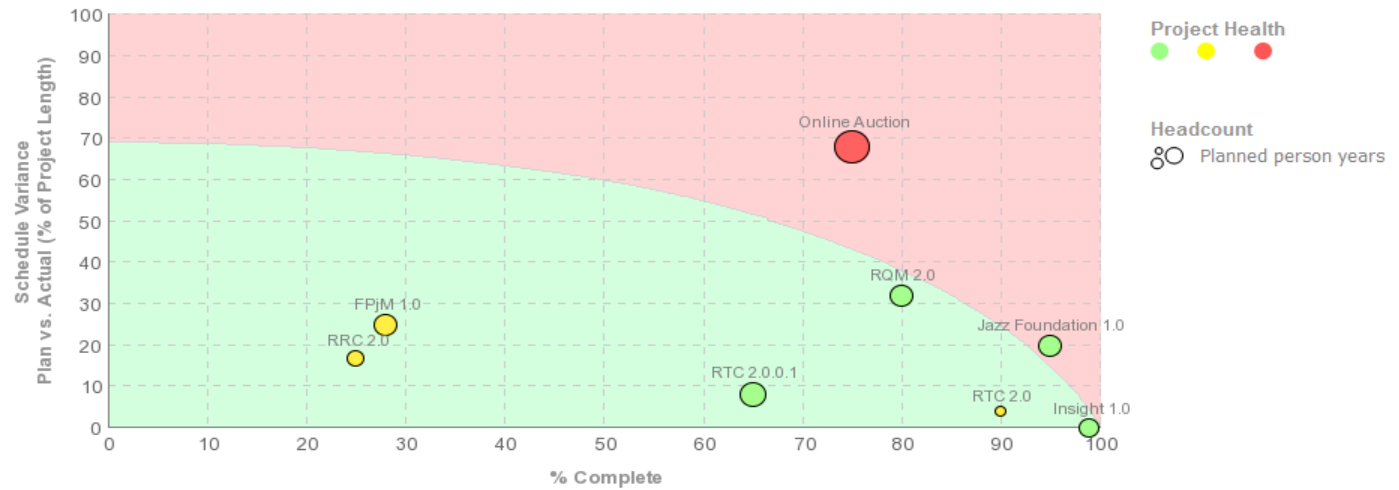
Show Table ⌃

Project Health by Country
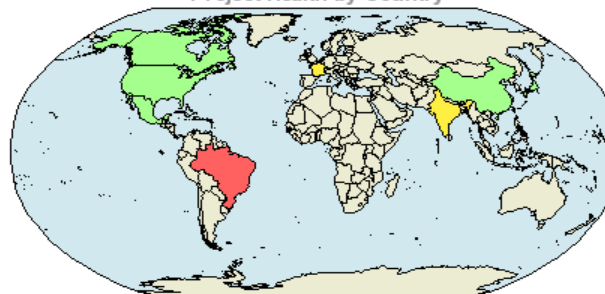
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Headcount Report - Cognos Viewer - Microsoft Internet Explorer

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Headcount

Country: Brazil

Headcount: Actual   Show: [All Roles ▼]

Person Months

■ Development ■ Management ■ Support
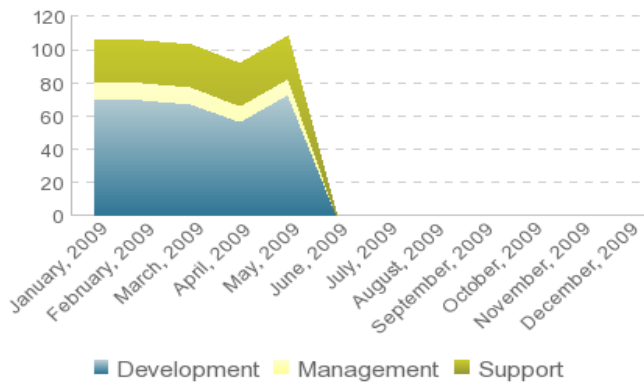
Headcount: Plan vs. Actual

Person Months

● Planned ● Actual
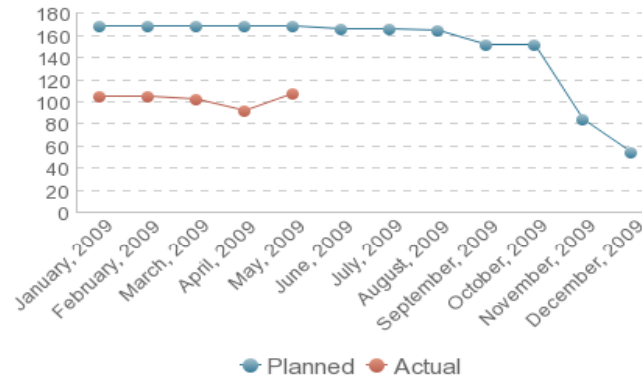
Release Information

Segment	Product	Release	Plan eGA	Outlook eGA	% Complete	Schedule Variance %	Actual Headcount YTD	Headcount YTD Variance %	Overall Project Health
Application Lifecycle Management (ALM)	Jazz Foundation	Online Auction	Mar 31, 2009	Jul 7, 2009	75%	68%	363	26%	50%
	RTC	RTC 2.0.0.1	Sep 22, 2009	Sep 30, 2009	65%	8%	128	42%	86%
Quality Management (QM) Solution	RRC	RRC 2.0	Nov 4, 2009	Nov 24, 2009	25%	17%	24	37%	85%

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Rational Insight

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⊕ Welcome   🏠 Executive Dashboard   📁 Project Development Portal   📊 Performance Measurement Practice   📖 Collaborate

🏠 Executive Dashboard
📋 Headcount
🌡 Improve Project Health
💲 **Achieve Profit Margin Objec**
🥧 Improve Market Share

Profit Margin

Segment: [All Segments]   Product: [All Products]   Release: [All Releases]

| Segment | Product | Increase Revenue | | Release | Overall Profit Margin | Improve Predictability | | | Reduce Costs |
		Revenue % of Plan	Pipeline (M)			eGA Plan	eGA Outlook	eGA Plan vs.Outlook	Headcount (PY)
Application Lifecycle Management (ALM)	Jazz Foundation	96%	$87.9	Jazz Foundation 1.0	🟩	May 28, 2009	Jun 12, 2009	14 Days	171
				Online Auction	🟨	Mar 31, 2009	Jul 7, 2009	97 Days	171
	RTC	99%	$109.6	RTC 2.0	🟩	Jun 15, 2009	Jun 19, 2009	4 Days	84
				RTC 2.0.0.1	🟩	Sep 22, 2009	Sep 30, 2009	8 Days	84
Governance Solution	Focal Point for Project Management	93%	$84.2	FPjM 1.0	🟥	Oct 15, 2009	Nov 17, 2009	32 Days	60
	Rational Insight	98%	$162.7	Insight 1.0	🟩	May 26, 2009	May 26, 2009	0 Days	40
Quality Management (QM) Solution	RQM	112%	$79.6	RQM 2.0	🟨	Jun 15, 2009	Jul 31, 2009	46 Days	56
	RRC	83%	$45.1	RRC 2.0	🟩	Nov 4, 2009	Nov 24, 2009	20 Days	32

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Rational Insight

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⊕ Welcome | 🏠 Executive Dashboard | 🗁 Project Development Portal | 📊 Performance Measurement Practice | 📨 Collaborate

- 🏠 Executive Dashboard
- 👥 Headcount
- 🌡 Improve Project Health
- 💲 Achieve Profit Margin Objective
- 🌐 **Improve Market Share**

Market Share

Segment: [All Segments ▼]   Product: [All Products ▼]   Release: [All Releases ▼]

Segment	Product	Release	Overall Market Share	Develop Transparently						Extend Our Reach				Operating Collaboratively	
				Plans	Beta	Milestones	Defects	Work Items	Content Commentable	Support Enabled	Sales Enabled	Green Threads	Alt Packaging	Energized Community	Engaging Conversation
Application Lifecycle Management (ALM)	Jazz Foundation	Jazz Foundation 1.0	🟩	🟩	🟥	🟩	🟩	🟩	🟥	🟩	🟩	🟩	⬜	🟩	🟩
		Online Auction	🟥	🟥	🟥	🟥	🟥	🟥	🟩	🟩	🟨	🟥	🟥	🟩	🟥
	RTC	RTC 2.0	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	⬜	🟩	🟩
		RTC 2.0.0.1	🟩	🟩	🟥	🟩	🟩	🟩	🟥	🟩	🟩	⬜	🟨	🟩	🟩
Governance Solution	Focal Point for Project Management	FPjM 1.0	🟩	🟩	🟩	🟩	🟩	🟩	🟥	🟩	🟩	🟩	⬜	🟩	🟩
	Rational Insight	Insight 1.0	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟩	🟩	🟩		🟥	🟥
Quality Management (QM) Solution	RQM	RQM 2.0	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	⬜	🟩	🟩
	RRC	RRC 2.0	🟥	🟥	🟥	🟥	🟥	🟥	🟥	🟨	🟨	🟩	🟨	🟥	🟥

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