

Aligning IT Investments with Business Priorities

Do the Right Things Right

Mark Best – Client Technical Consultant

Rational. software





Agenda

- The business challenge
- Do the Right Things Right – The 4 ‘Ares’
- The role of Enterprise Architecture
- Setting the business priorities
- The role of Requirements Management
- Q&A



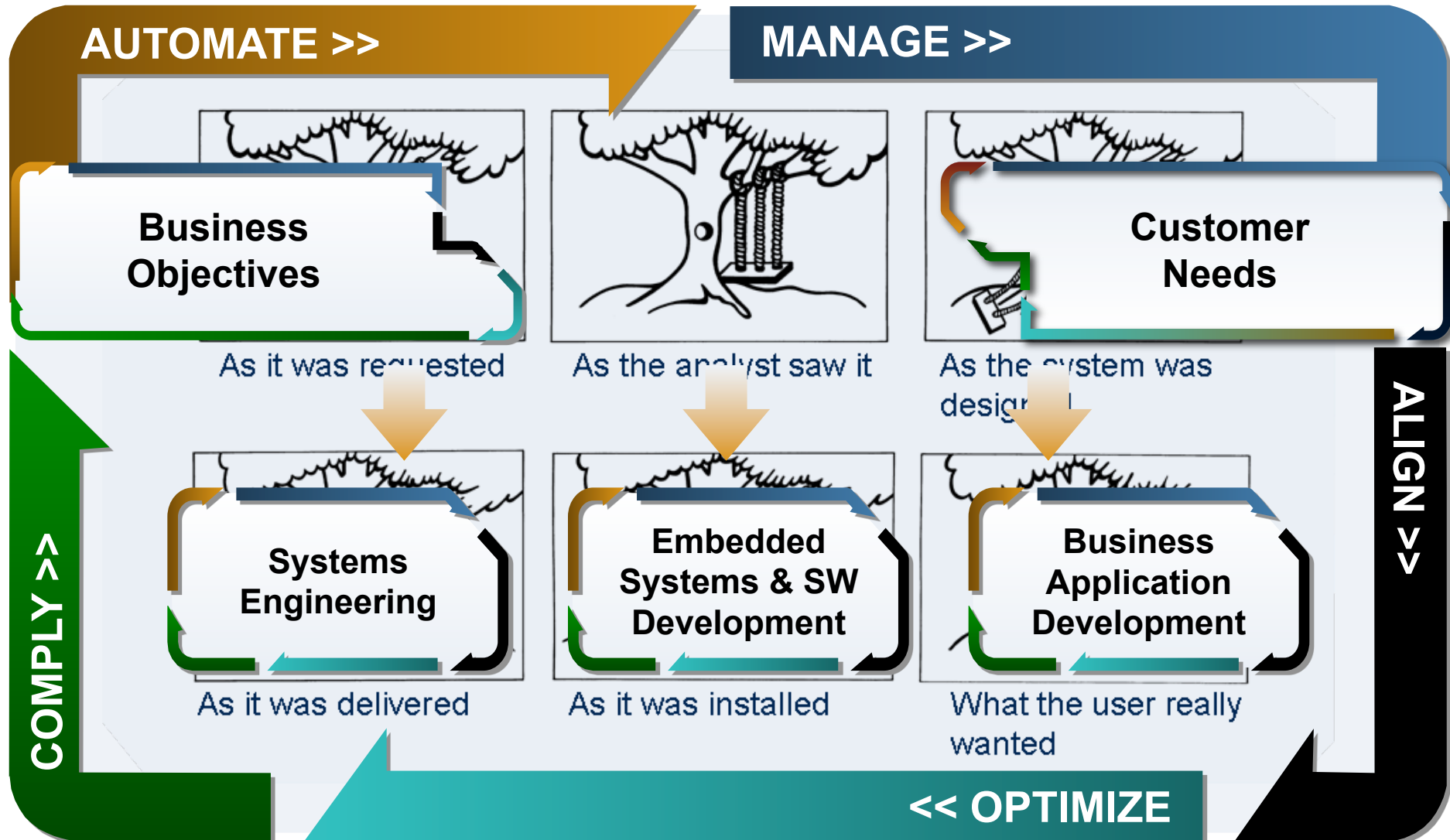


The business challenge



It's Critical that the IT and the Business understand each other

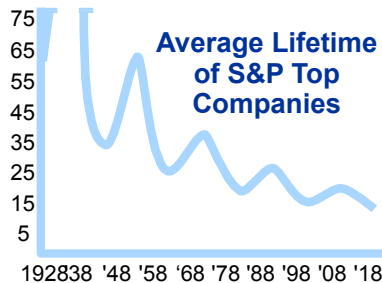
Flexible and Focused



...and at the same time...

The landscape facing business leaders means “we need to innovate with less”

Enable Innovation & Change



Increased competitive & economic pressures to deliver differentiation and move quickly

What the business wants to do!

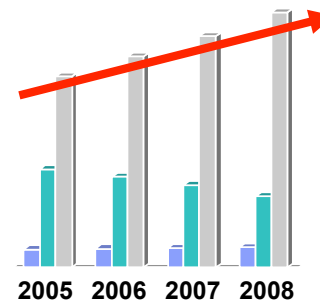
Lower Cost & Risk



Globalization and regulatory oversight driving improved efficiencies, security & compliance management

What the business must do!

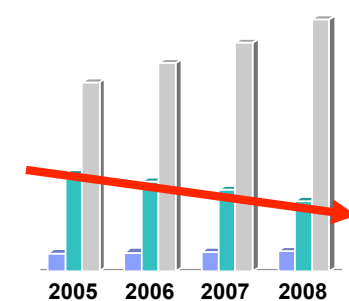
Rising Cost of Operations



Operational & maintenance costs continue to grow

The cost of failed projects & rework compounds the problem

Inability to Innovate



Budgets are shrinking at a time when investment is needed in strategic business assets



...Forcing Companies to revisit how they manage their infrastructure

Dynamic Infrastructure



**IT
Infrastructure**

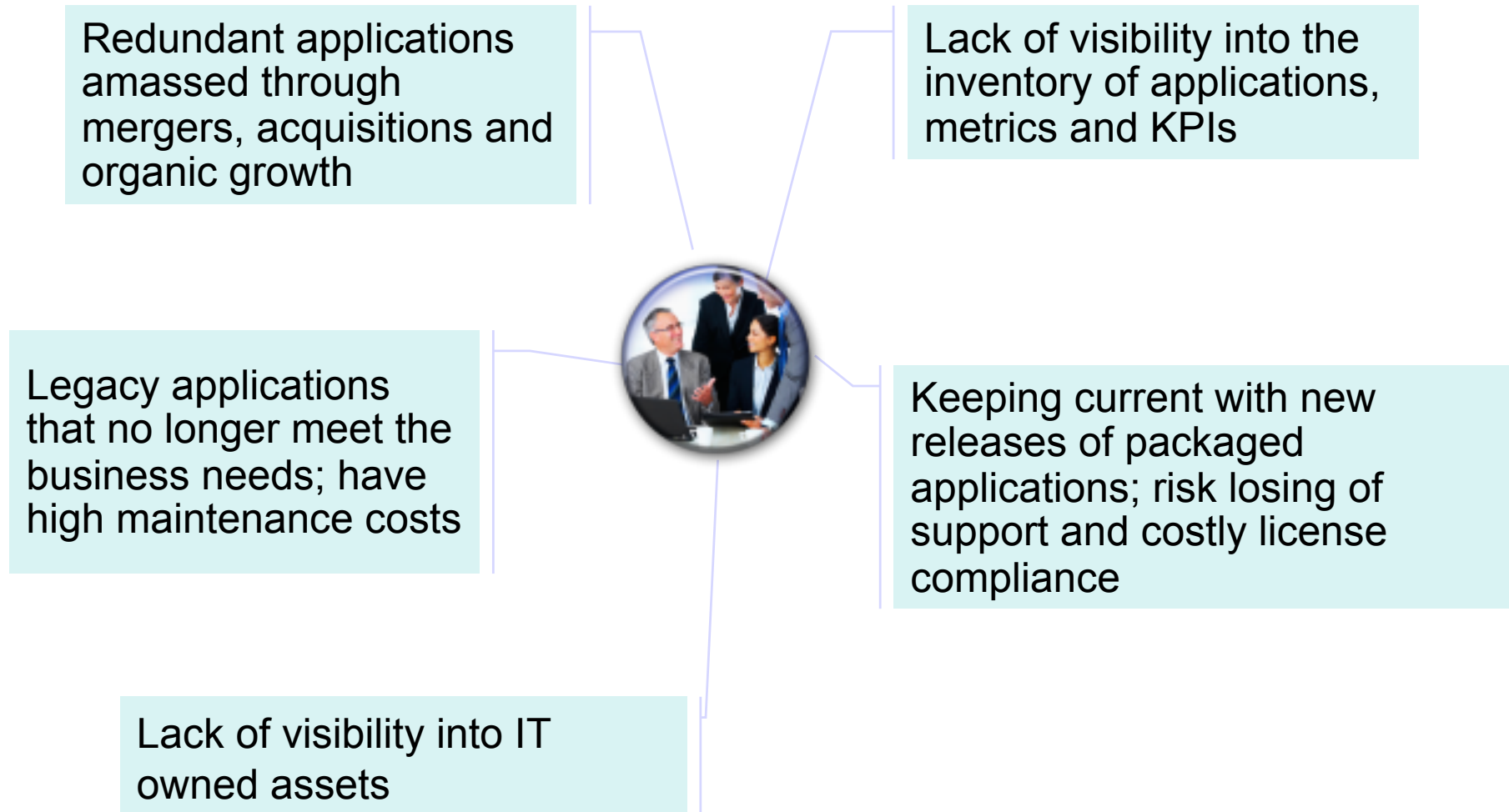
**Business
Infrastructure**

- **Three client imperatives:**
 - ✓ Improve Service
 - ✓ Manage Risk
 - ✓ Reduce Cost
- **Seven primary initiatives:**
 - ✓ Service Management
 - ✓ Virtualization
 - ✓ Energy efficiency
 - ✓ Asset Management
 - ✓ Security
 - ✓ Business Resiliency
 - ✓ Information Infrastructure



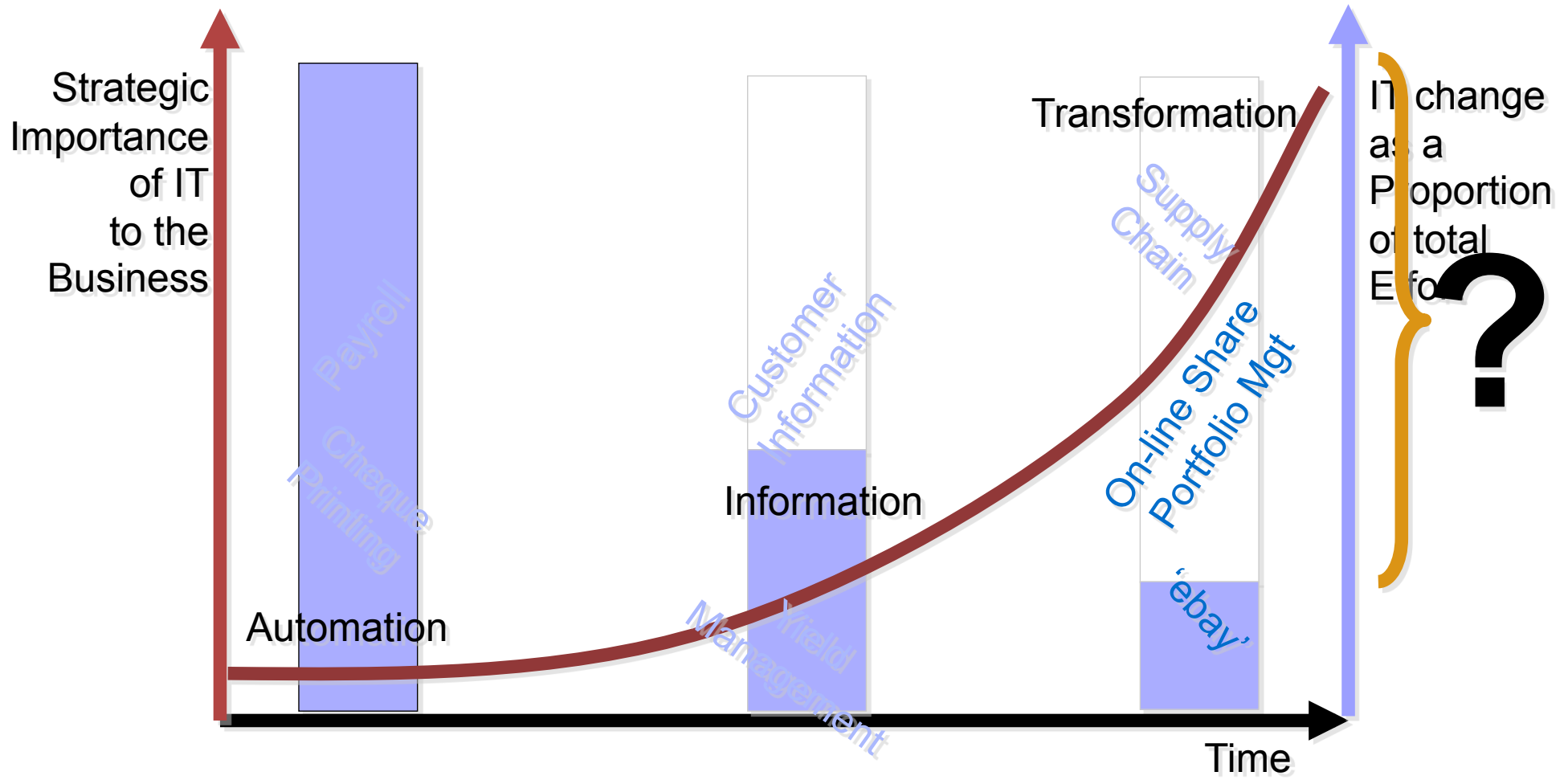
Organizations face challenges optimizing their application portfolio

Complex application portfolios with unclear total cost of ownership & business benefits



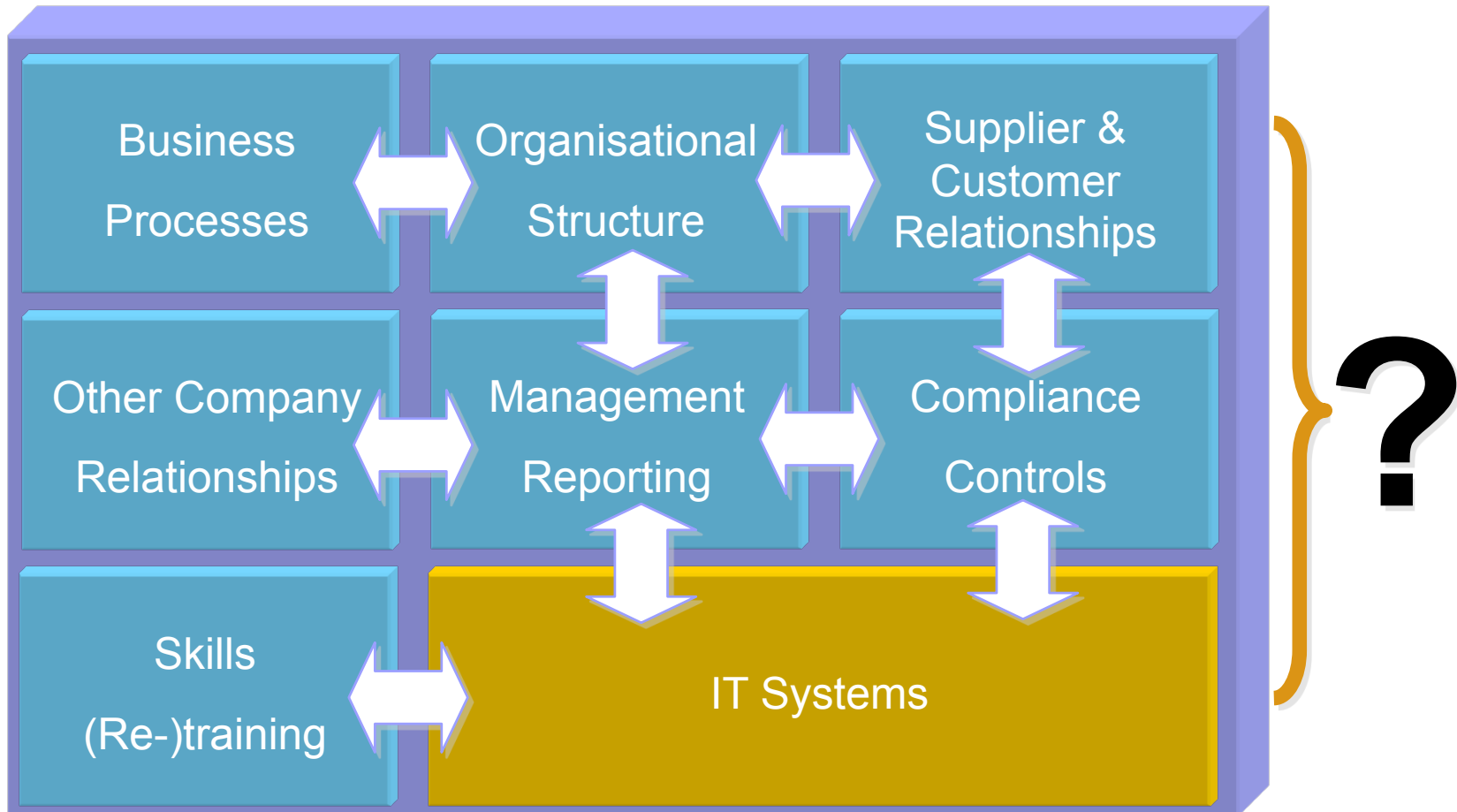


The Evolving Role of IT





Organisational Transformation





The Four “Ares”

- **Are we doing the right things?**
 - ▶ The Strategic Question - Alignment
- **Are we doing them the right way?**
 - ▶ The Architecture Question - Integration
- **Are we getting them done well?**
 - ▶ The Delivery Question - Capability & Efficiency
- **Are we getting the benefits?**
 - ▶ The Value Question - Benefits realisation

These apply at many levels

- Program
- Project
- Activity
- Task



Source – The Information Paradox, John Thorp





Are we doing the right things?

The Strategic Question



Are we doing the right things?

- **As a business?**
 - ▶ What are the opportunities at present?
 - ▶ Do they align with our organisational directions?
 - ▶ Do we have the skills to take advantage of them?
- **As an IT organisation?**
 - ▶ Is everything we are doing continually aligned to the imperatives of the rest of the business?
 - ▶ Do we always know how business requirements translate into IT investments?
 - ▶ Have we stopped doing stuff that is no longer needed?!
- **How do we make such decisions?**
 - ▶ With transparency?
 - ▶ In a reviewable way?



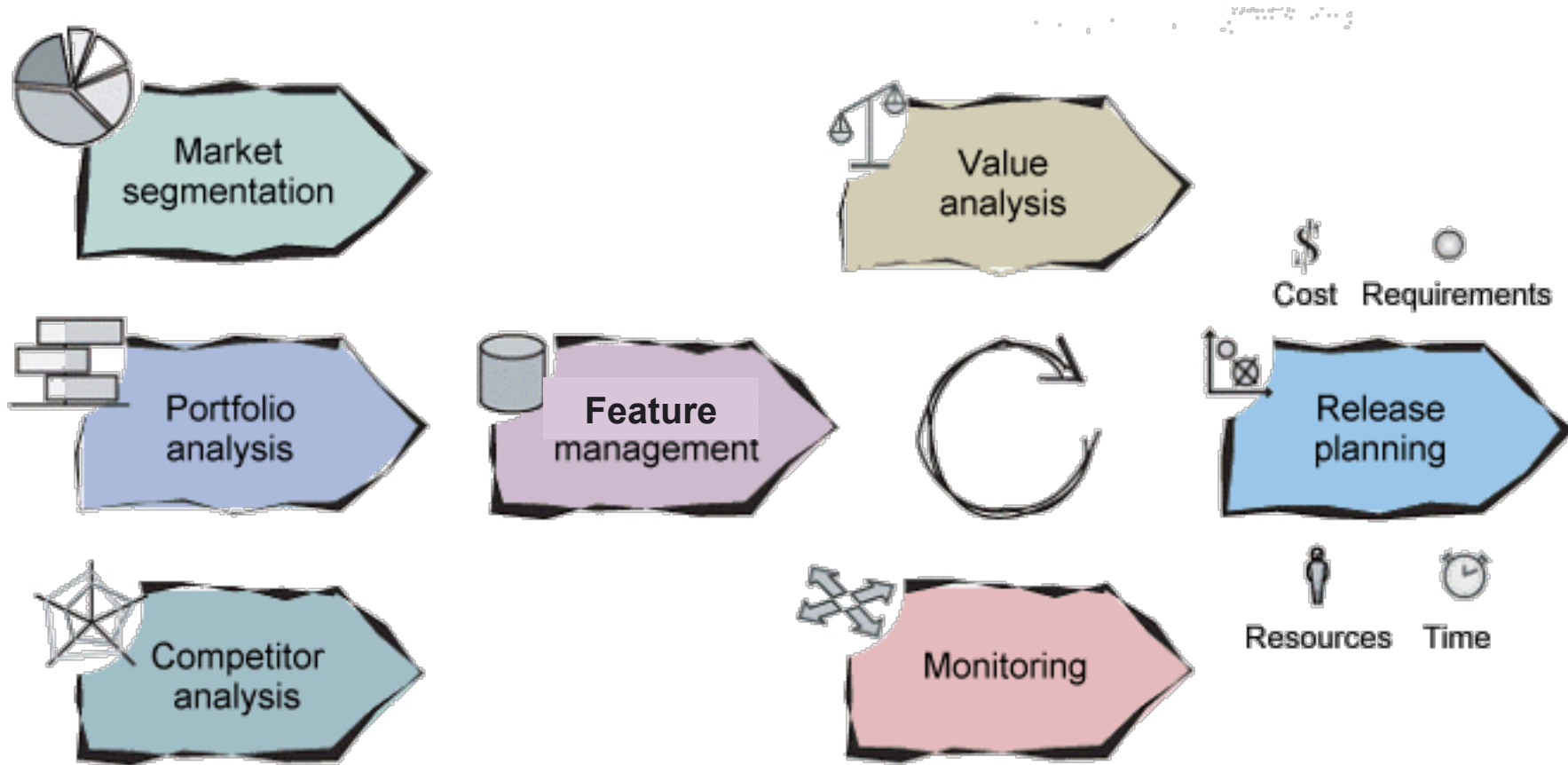
“There is nothing so useless as doing efficiently that which should not be done at all.”

Peter Drucker



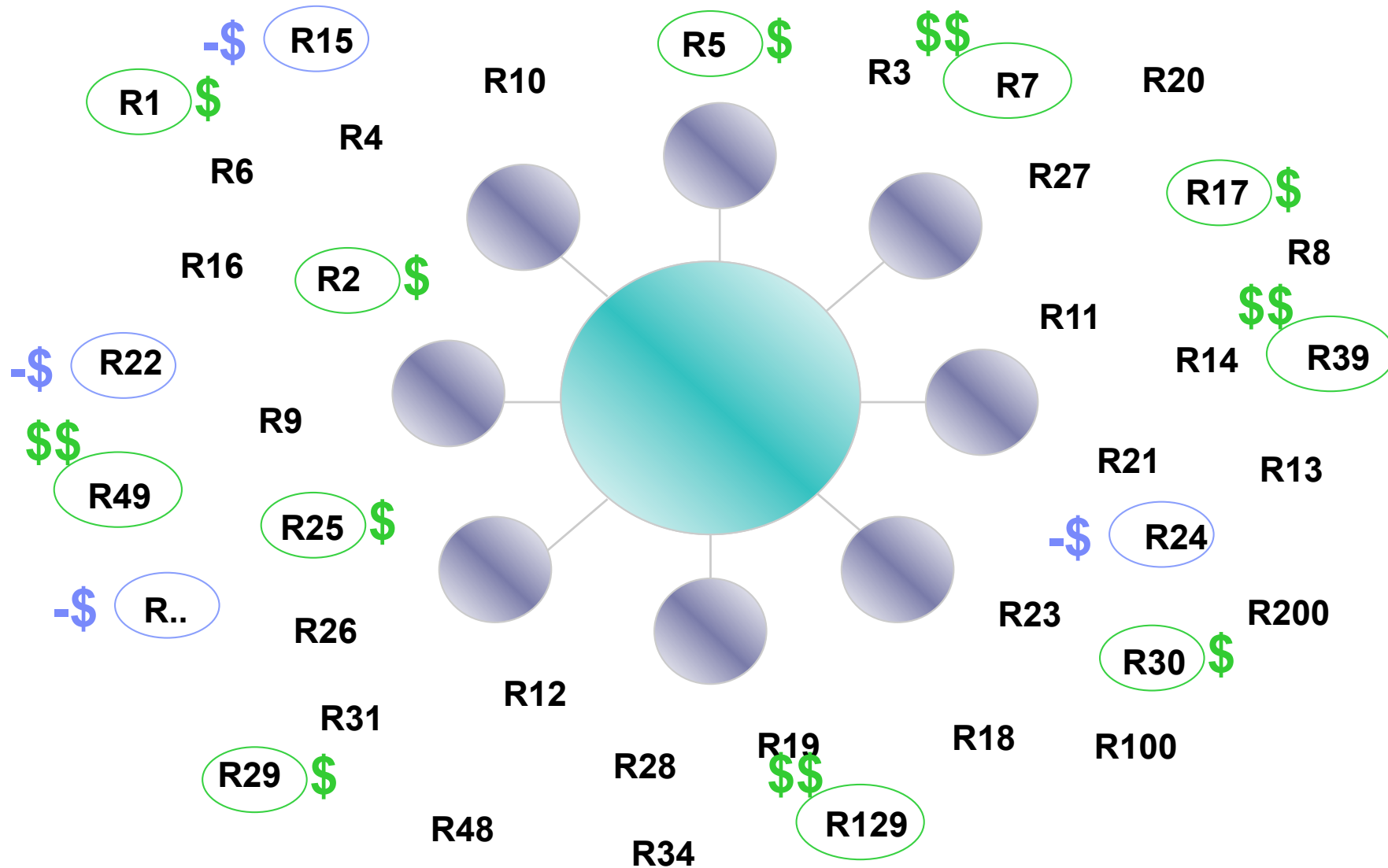


Decisions Through the Lifecycle





Value-Based Selection



"Management is doing things right, leadership is doing the right things" Peter Drucker





Are we doing things the right way?

The Architecture Question





Are we doing them the right way?

- **Do we have a shared understanding of all the organisational changes needed to deliver the value?**
- **Are our investments aligned with the organisation's enterprise architecture?**
 - ▶ Will they mesh with existing processes and systems?
 - ▶ Are the right organisational structures in place to benefit from them?
- **Are they consistent with our architectural principles?**
 - ▶ Is this function something we intend to continue to execute in-house or should we outsource it?
 - ▶ Is it compliant with our IT architectural direction?
- **How do we make such decisions?**
 - ▶ From a reliable, shareable repository of up-to-date information?
 - ▶ From a collection of spreadsheets, presentations and diagrams?

IT Architecture

... **Enterprise Architecture** ... is the description of current and/or future and behaviour of an organisation's processes, information systems and organisational structures aligned with the organisation's core goals and strategic direction.





Change and Conversation

- Change cannot be effected without effective conversations
- These are complex conversations and require Tools and Technology support
- Too much knowledge is 'walking out of the door'
- Knowledge needs to be captured and treated as business assets





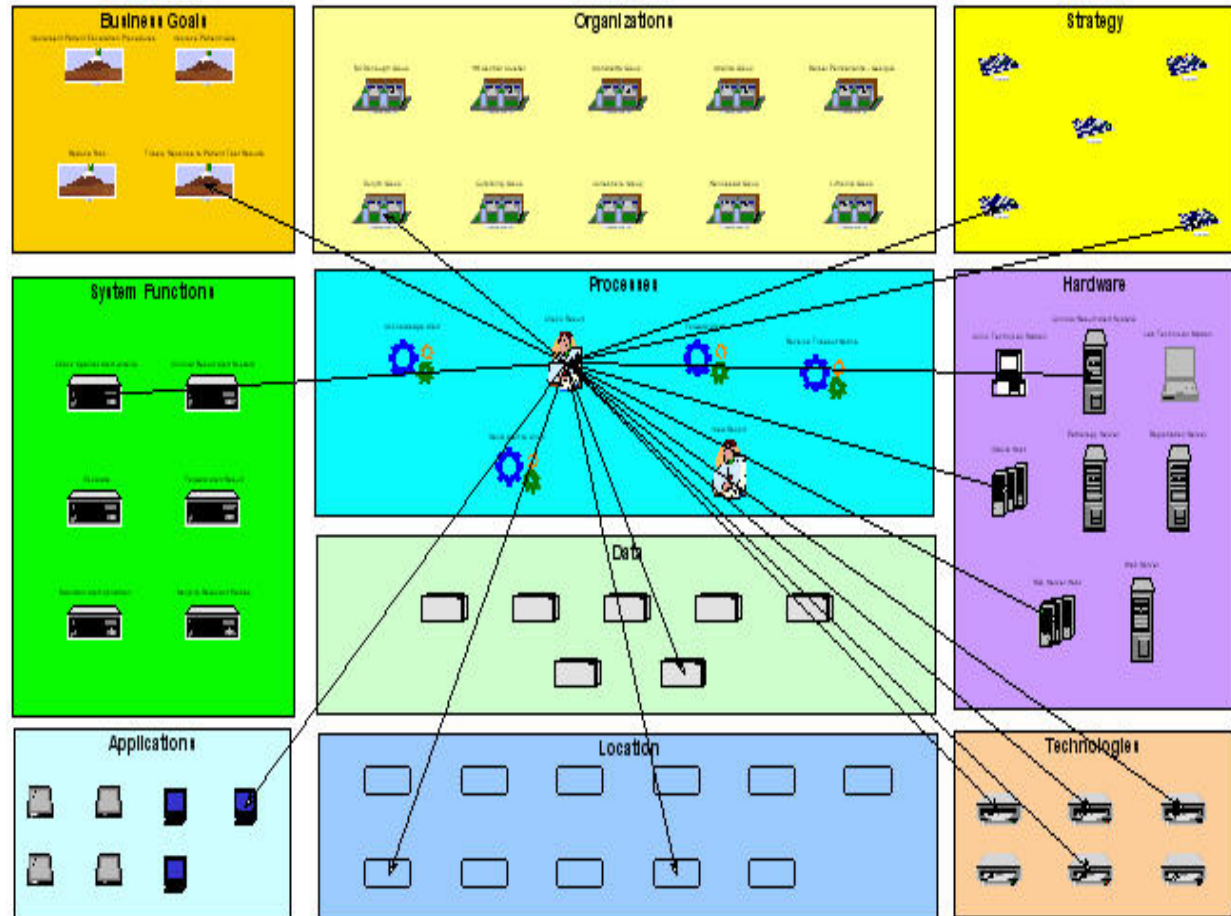
Why Enterprise Architecture? Communication, Enabling Change

- Knowing that your infrastructure supports your business
 - ▶ People
 - ▶ Process
 - ▶ Applications/Systems
 - ▶ Technology
- Knowing how your infrastructure supports your business
- Enabling business change
 - ▶ Putting your business on the web
 - ▶ Exposing your business processes
 - ▶ Mergers and acquisitions
 - ▶ Compliance
 - ▶ Portfolio management
- Facilitating effective communication between all stakeholders



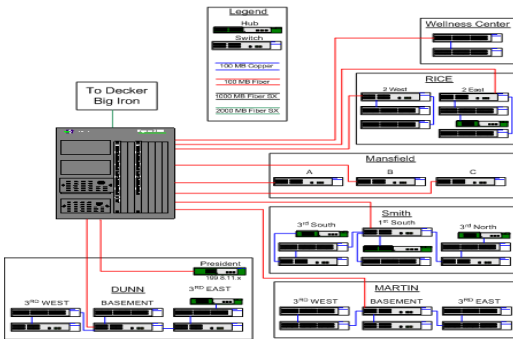
Analyse the Impact of Change

- **Who** is Impacted as a Result in a Change to a Process?
- **What** is the Impact of sun-setting an Application?
- **When** Do We Need to Have Systems Implemented in Order to achieve our Business Objectives?
- **Where** May problems Present Themselves When Rolling Out a New Technology or Process?
- **How** Does a Change in Technology Impact my Business Goals?

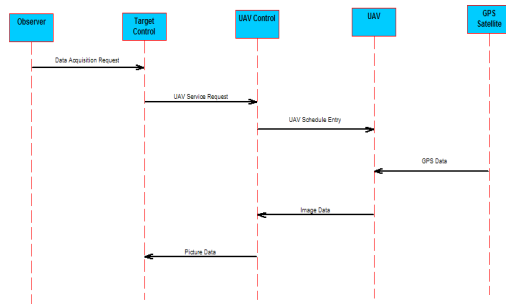




Visualise the Entire Enterprise



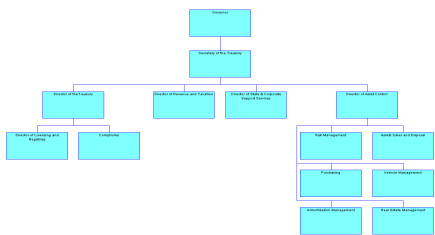
Network Topologies



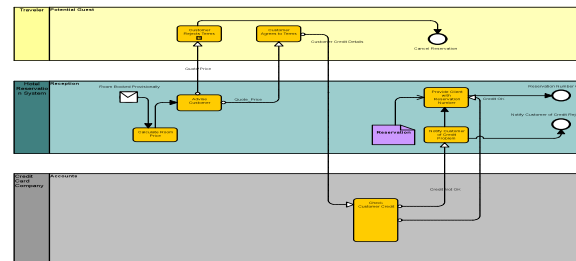
Behaviour Models

FROM SYSTEM	AFATDS	ASAS	ATACMS	CARS/DCGS	CDL	Camera Control System	Camera Management System	Camera Pod Positioning System	DCGS-A	Data Acquisition Client	GCS
TO SYSTEM											
AFATDS											
ASAS											
ATACMS											
CARS/DCGS											
CDL											
Camera Control System											
Camera Management System							X	X			
Camera Pod Positioning System							X	X			
DCGS-A											
Data Acquisition Client											
GCS											

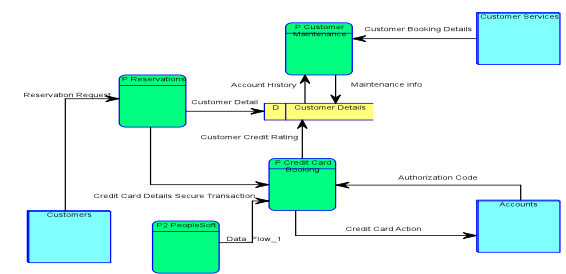
Matrix Views



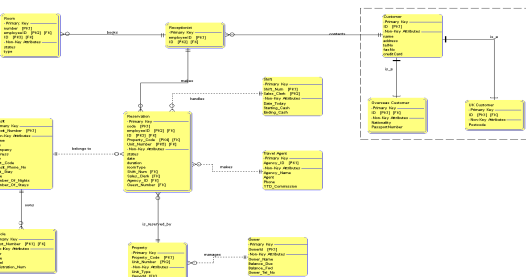
Organisational Charts



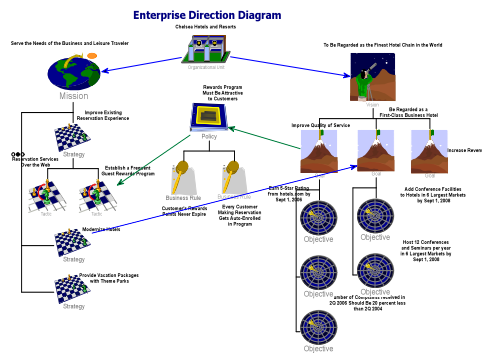
Process Models



Application Models

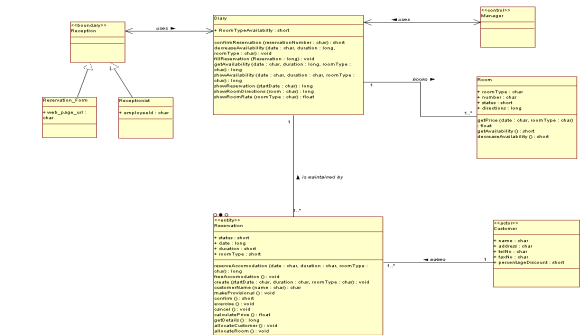


Data Models



Goals

Objectives

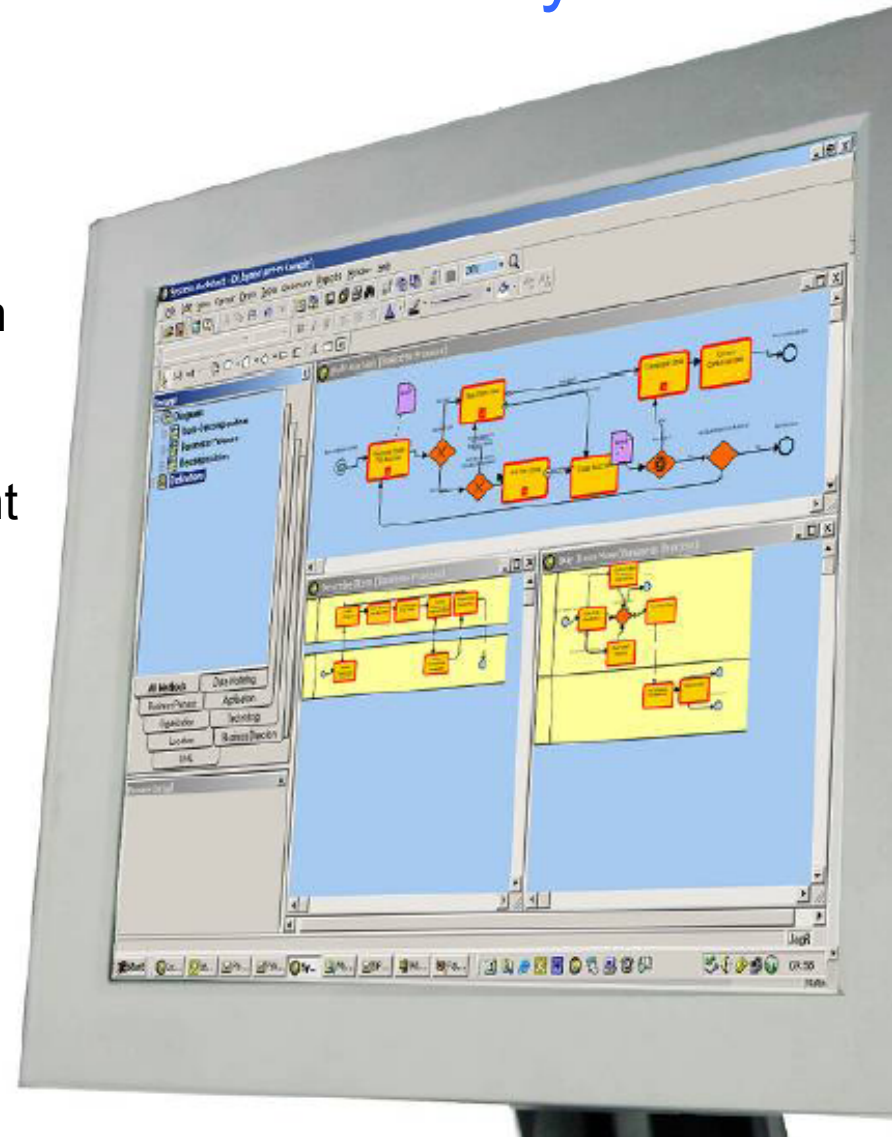


Class Diagrams



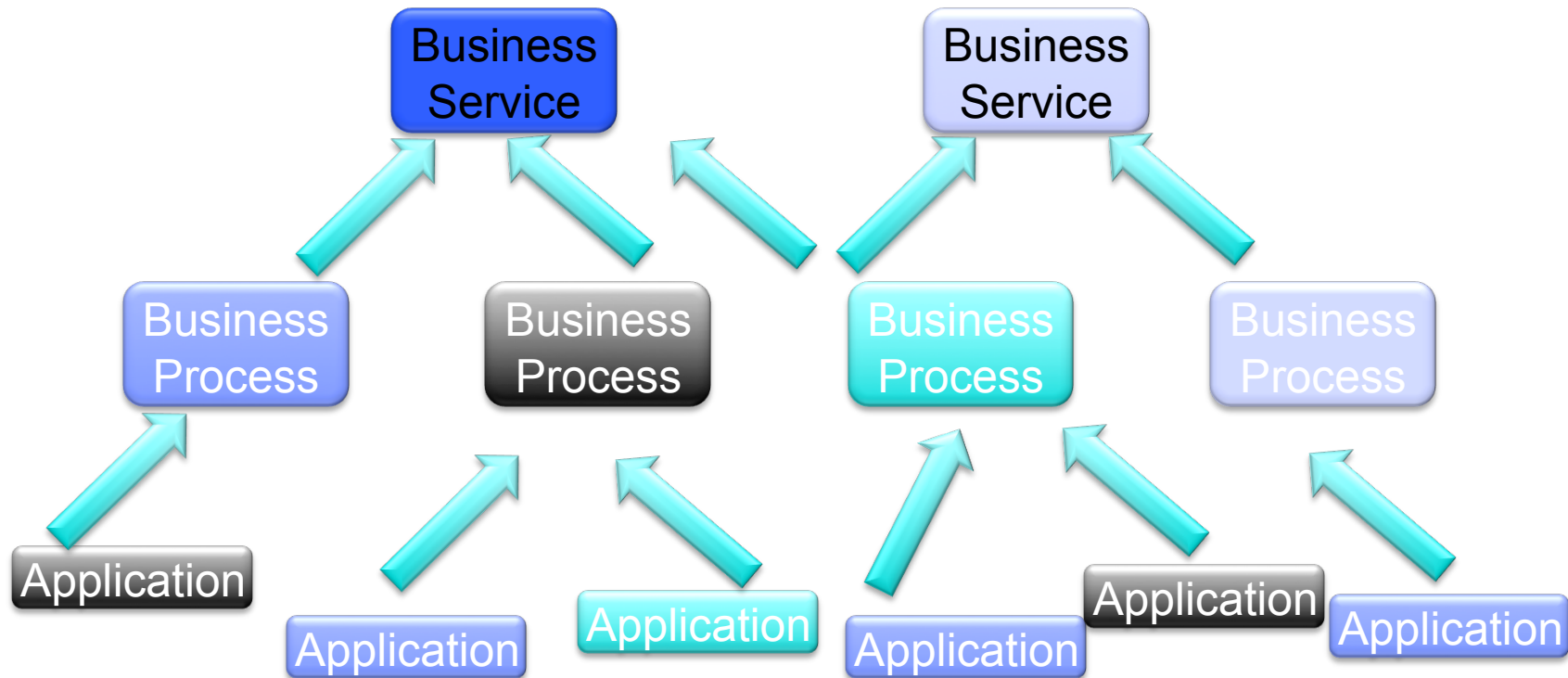
Initiative Driven: Implementation of a New System

- Implementation of new merchandising system ...
- What functionality in the proposed system overlaps with existing functionality?
- What is the impact of changing the current business processes?
- What systems will be affected by the changes?
- Who will need training?
- Which business area and geographical locations will be affected?

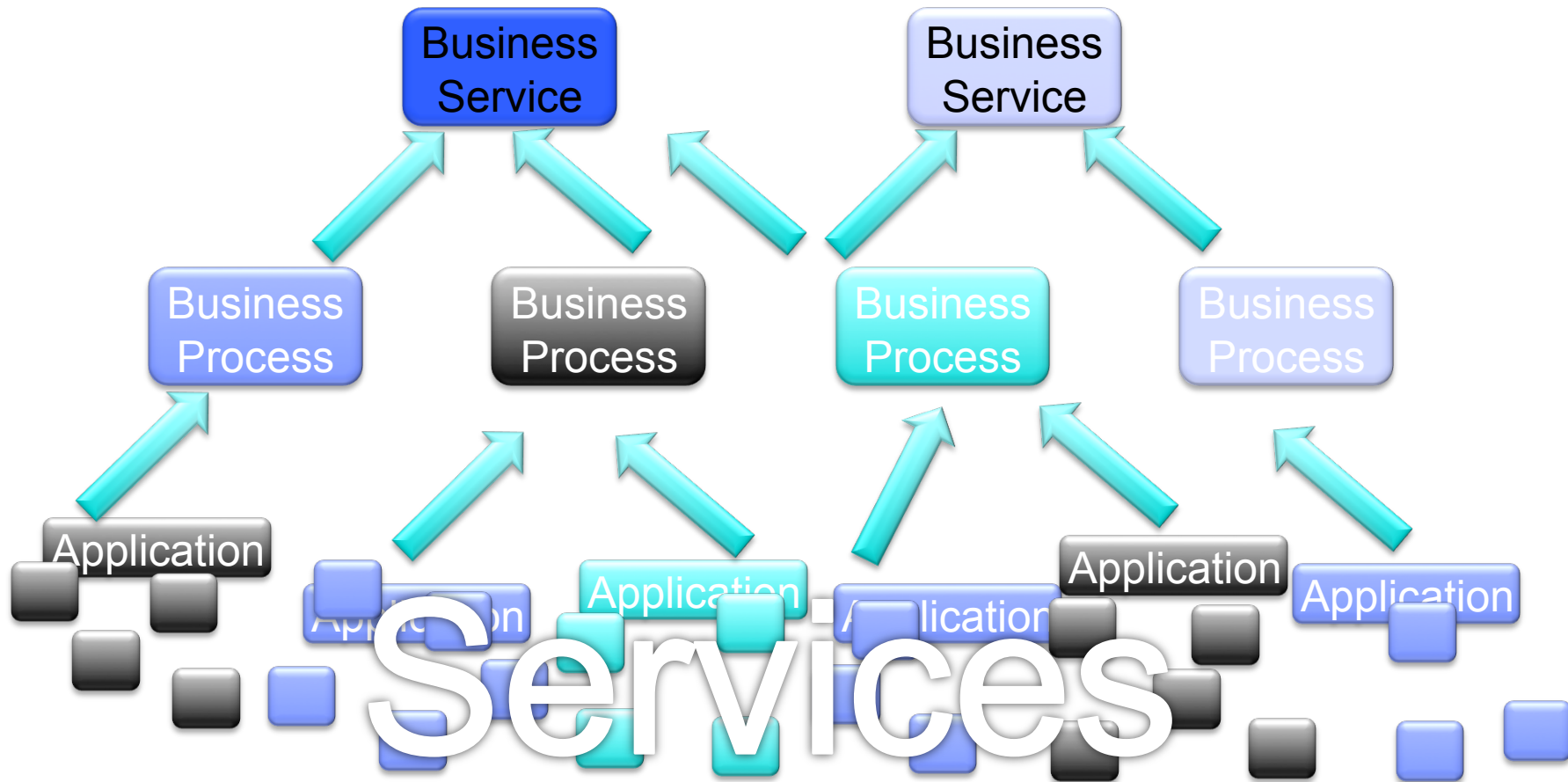




Today (without SOA)



Tomorrow (with SOA)

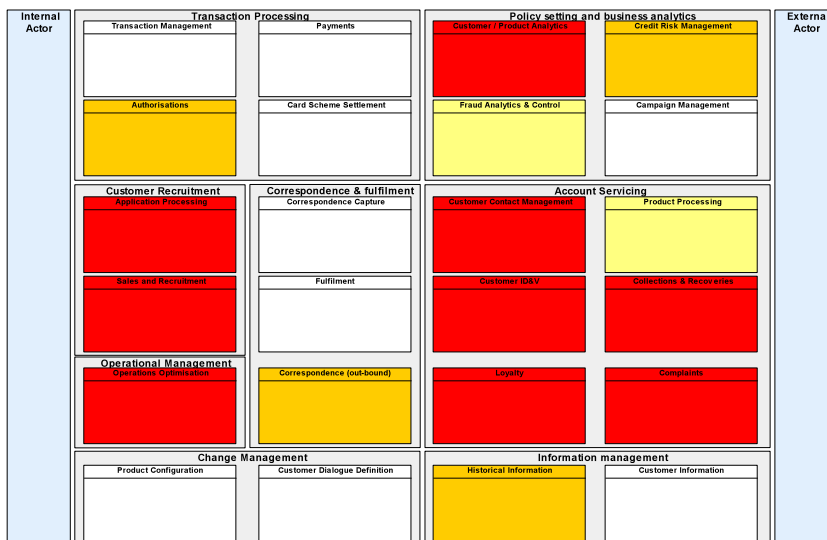




Is IT aligned to Business Strategy?



- Business Strategy heatmap
 - ▶ Use Application Landscape to show which components expect to be impacted by business strategy



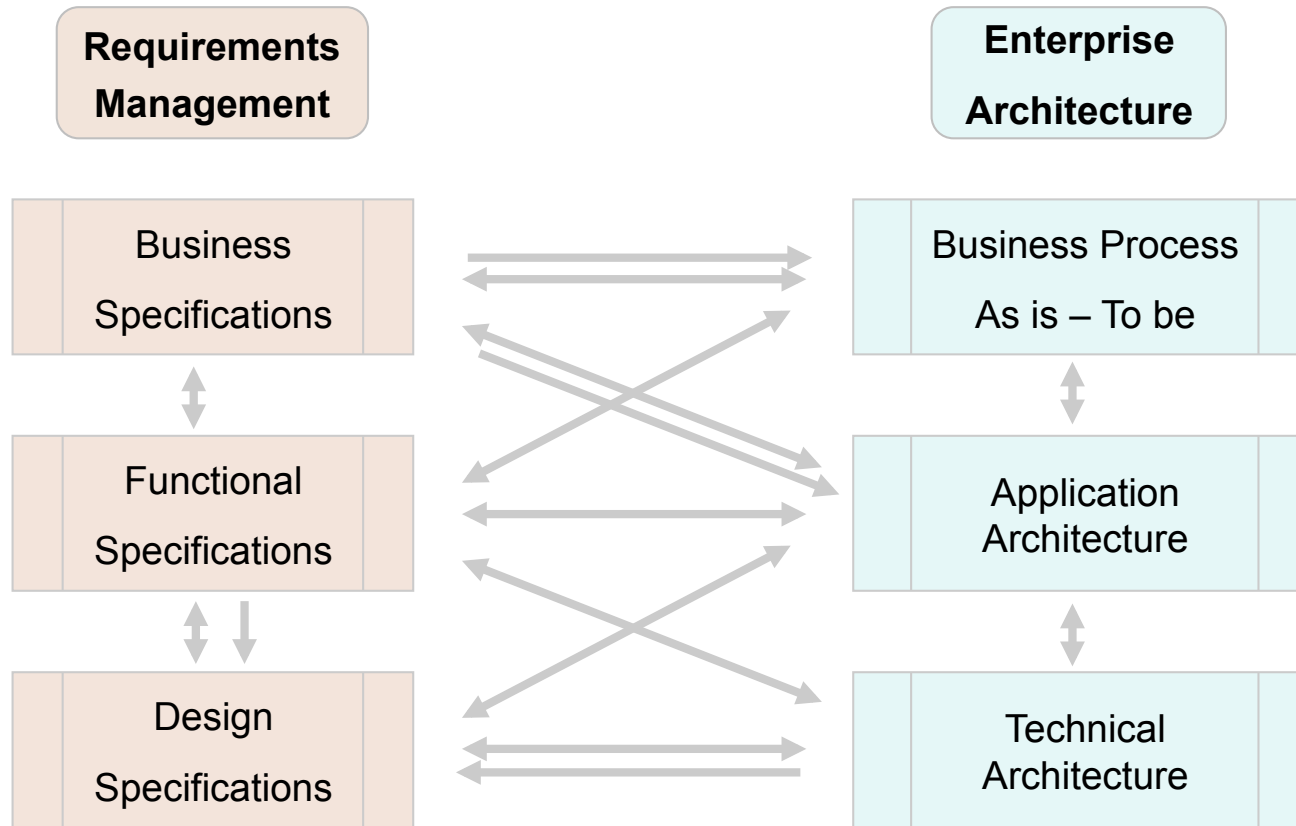
- Change plan heatmap
 - ▶ Now show which components are impacted by the current change portfolio

“Not an application name in sight”





Integrated Model



Improved Execution – less change Requests

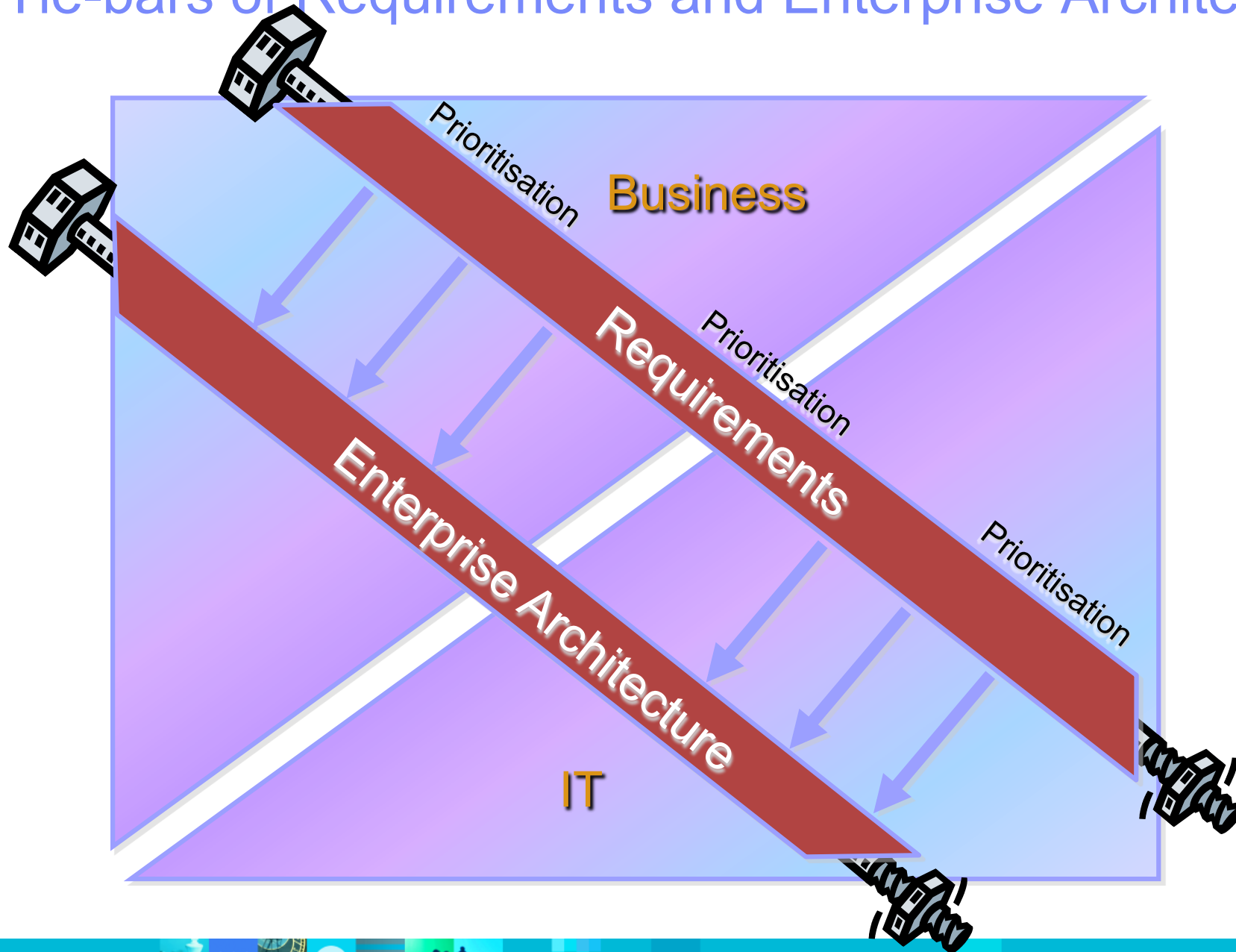
Improved knowledge retention

Improved visibility

Improved alignment



Tie-bars of Requirements and Enterprise Architecture





Are we getting them done well?

The Delivery Question

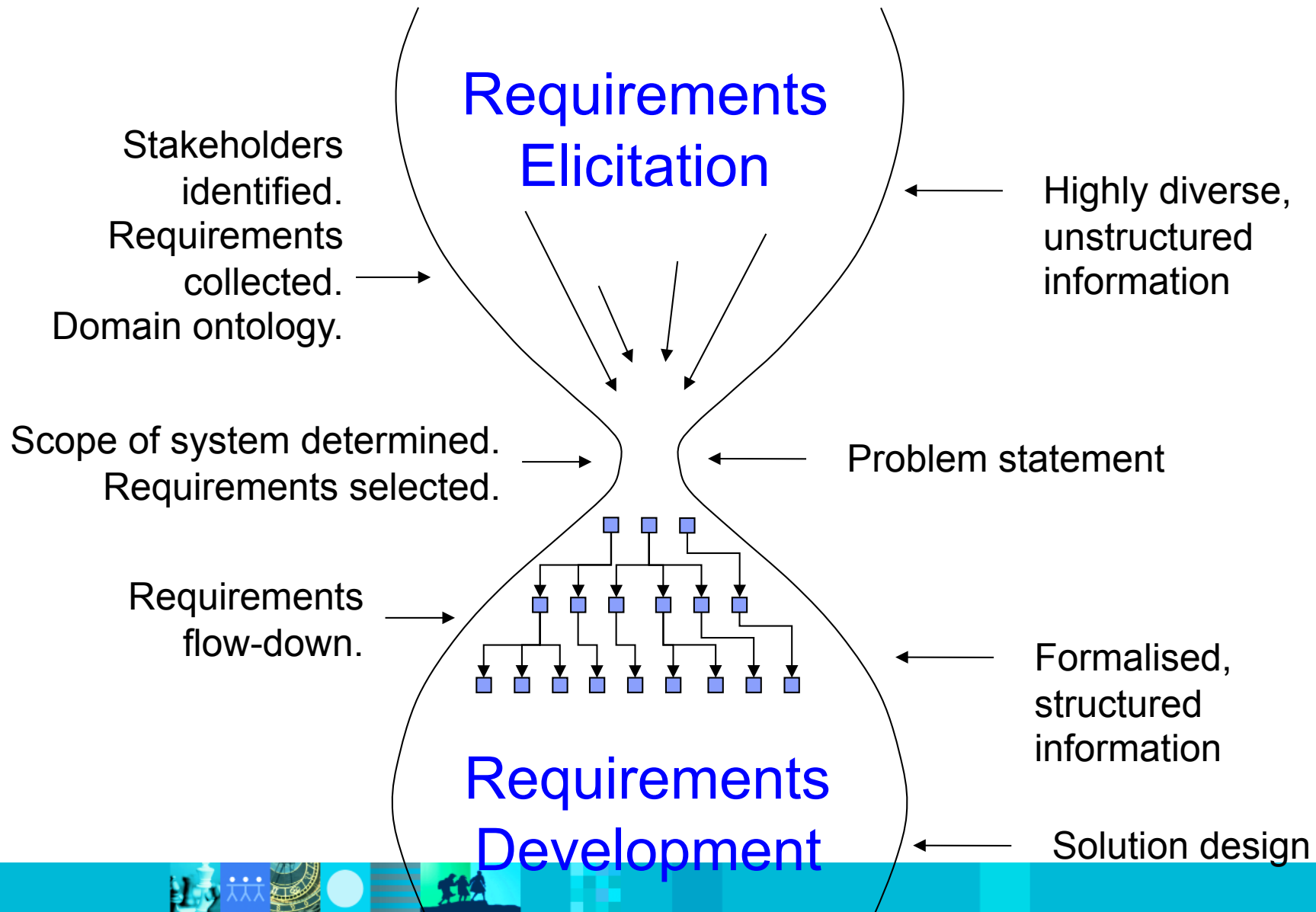


The Delivery Question – Capability and Efficiency



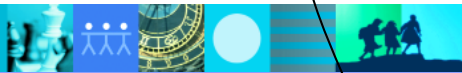
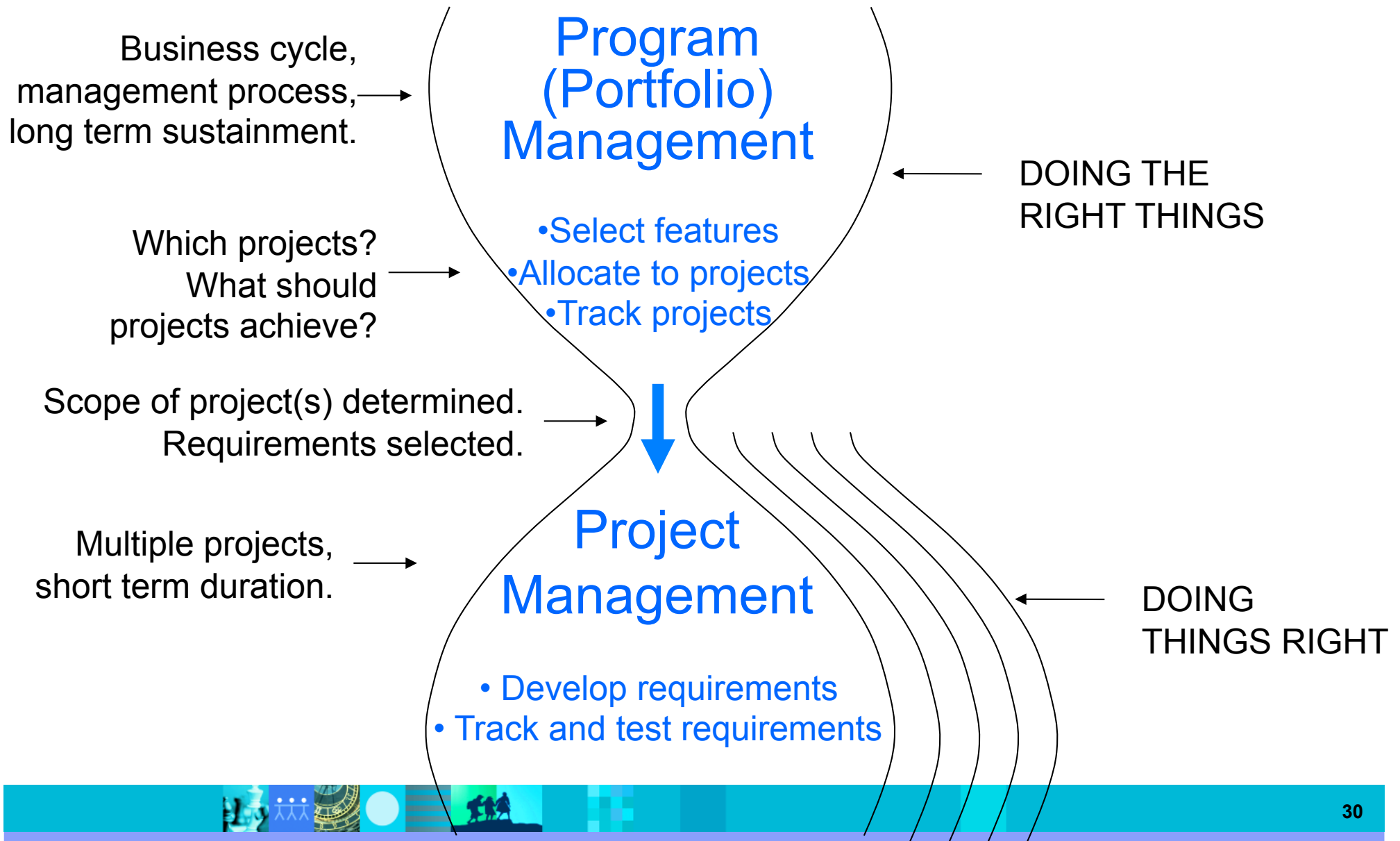


The Delivery “Hourglass”



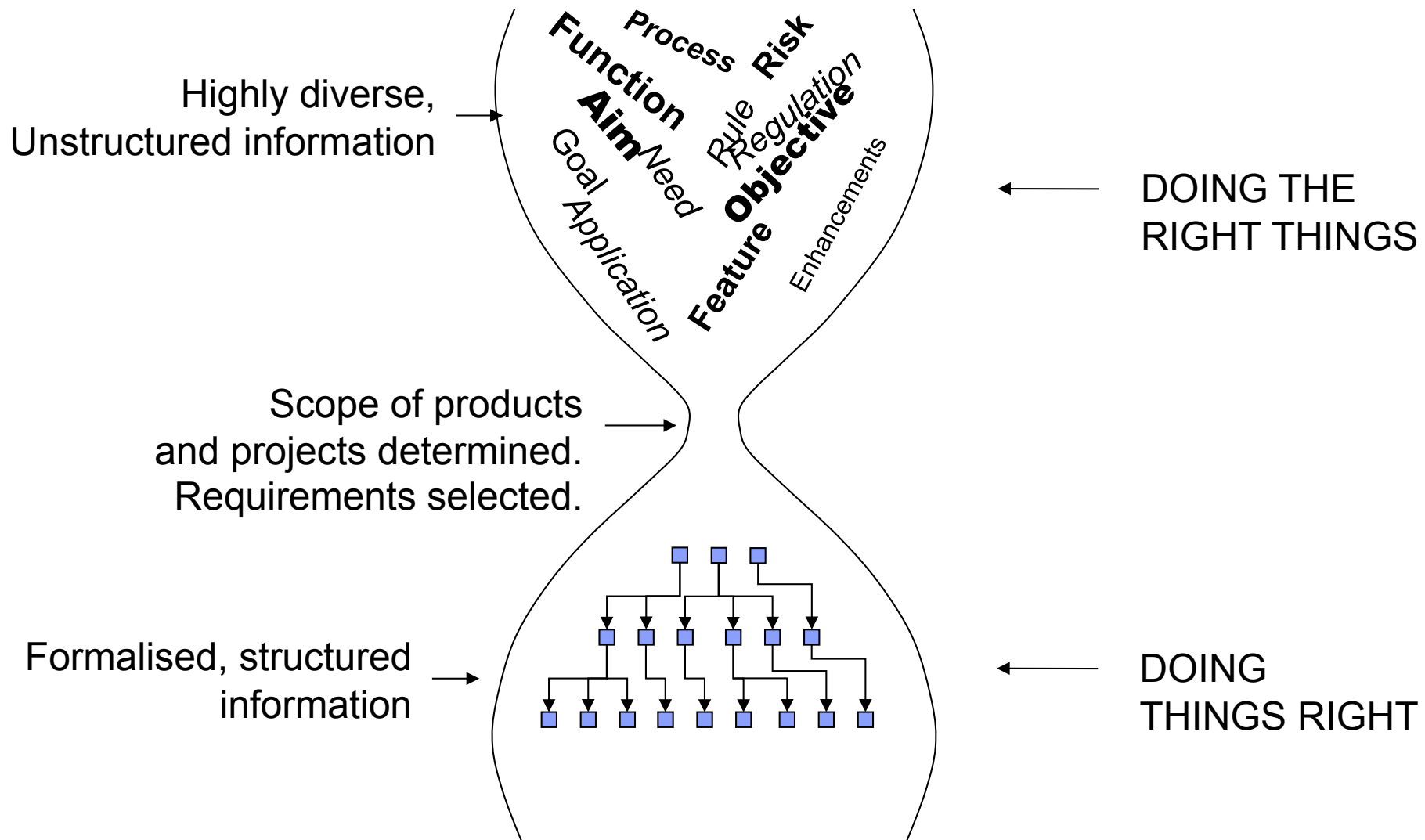


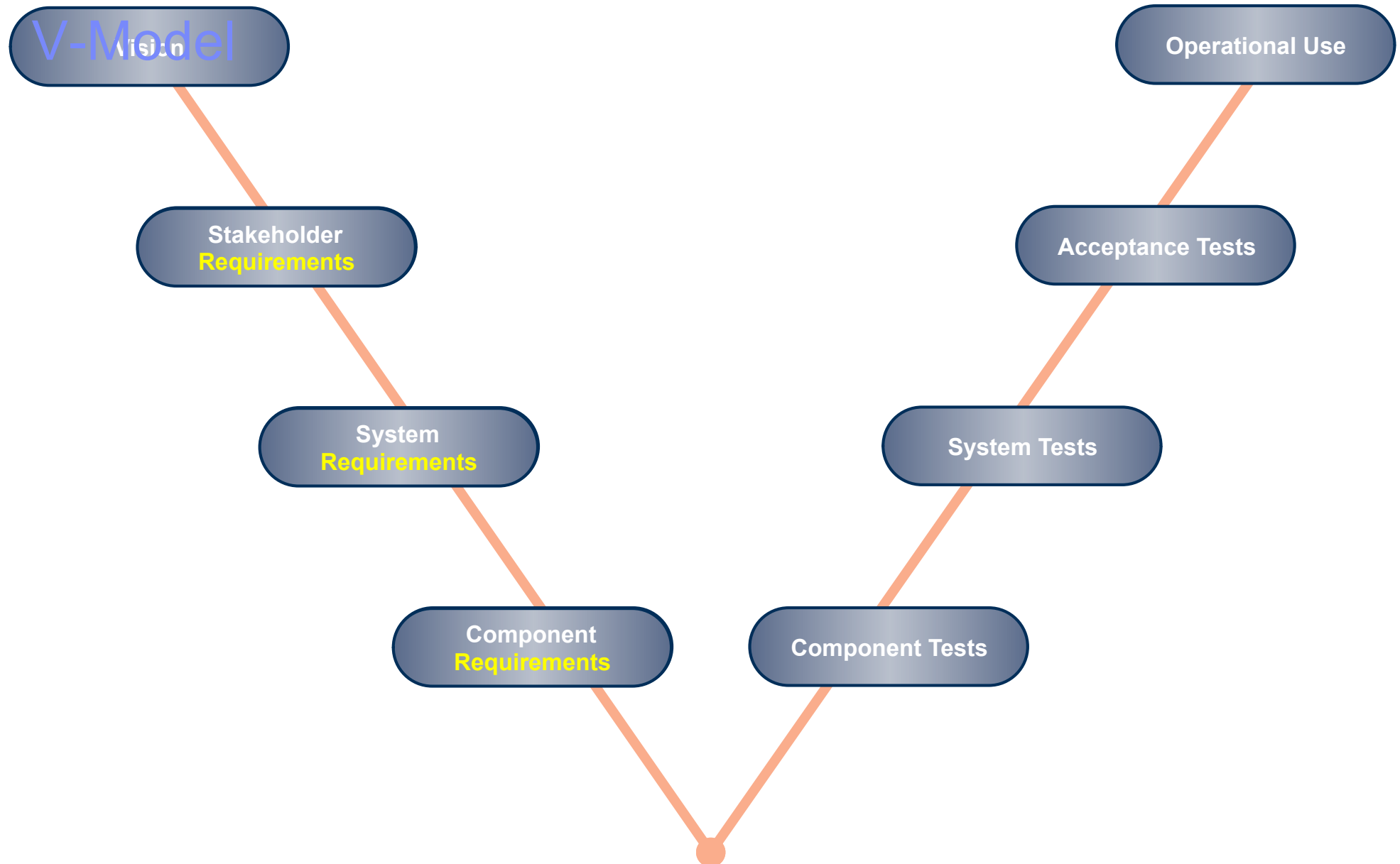
The Delivery “Hourglass”





...requirements are everywhere







Are we getting the benefits?

The Value Question





Where Does Value Come From?

- Value is not inherent in the technology itself
- Technology only provides a capability
- Value is realised when things are applied and managed in concert
 - ▶ Business Strategy
 - ▶ Business Processes
 - ▶ Organisational Structure
 - ▶ Technology
- So, the application is only part of the solution
 - ▶ Changes to many parts of the enterprise must be modelled, planned and documented





The New Order

Organisations must recognise that they are no longer making IT investments – they are investing in IT enabled change in the overall business system.

John Thorp – The Information Paradox





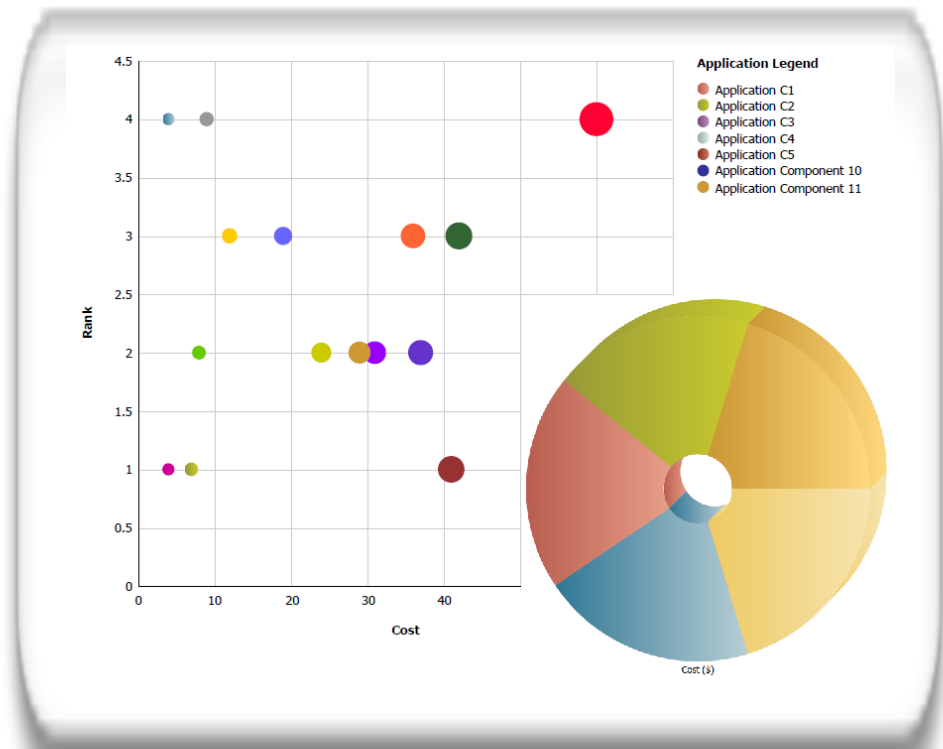
The Role of Enterprise Architecture





What you should know about your critical applications

- How do your key applications create business value?
- Do your applications support your operational processes?
- What applications are over-consuming scarce resources and investment capital?
- Where are you over-investing in outdated or aging applications that need to be modernized, replaced or retired?
- Are your overall applications costs increasing, decreasing or stabilizing?
- Which critical applications are currently at risk?



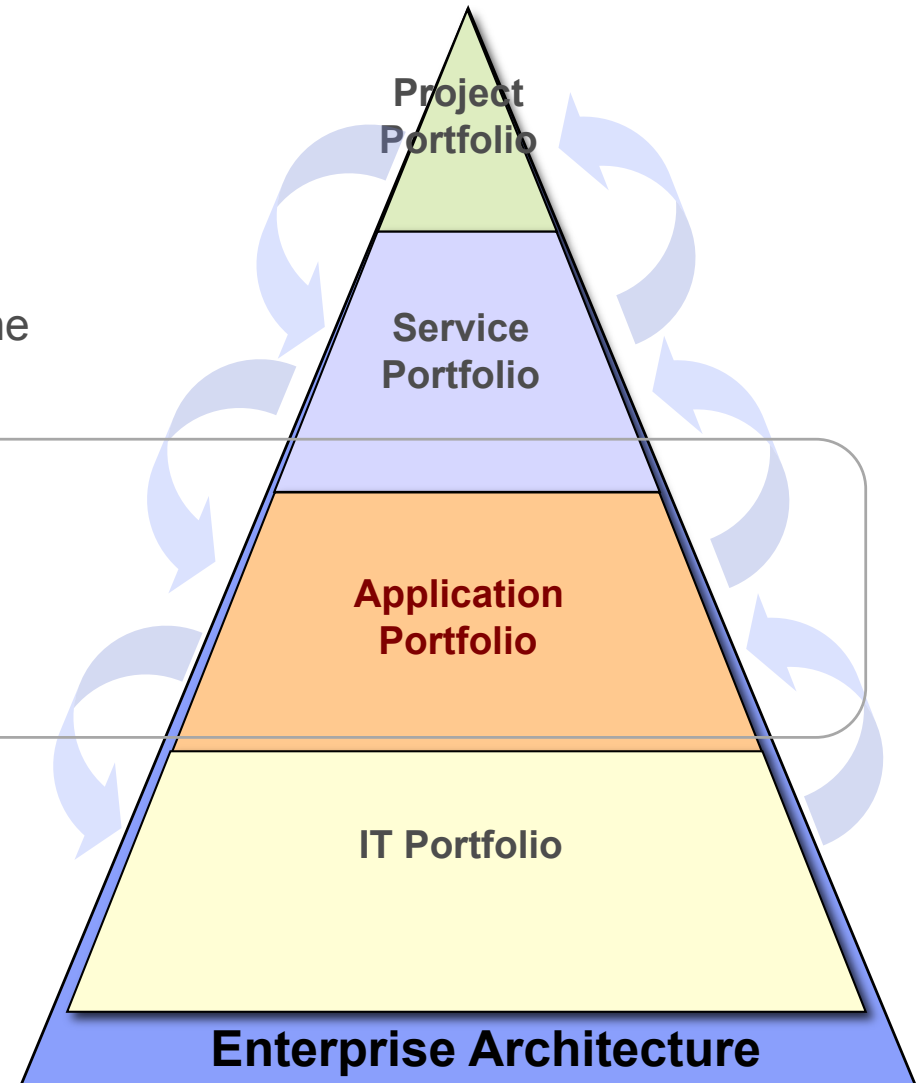
“for every \$1 of discretionary spending (i.e., new projects and major enhancements), up to \$5 is spent on support, maintenance and infrastructure during the life of an application”

Gartner Group



Where does Application Portfolio Management fit in?

- Project Portfolios are the proposed, and in-flight capabilities that will drive new business value
- Service portfolios are a consolidated view of the functional and shared business capabilities that the organization uses to operate
- **Application Portfolios** captures and organizes information about the application portfolio so that **business and IT** executives can make **prudent decisions around investing/replacing/retiring applications**
- IT Portfolio management encompasses applications, services & projects, and bring organizational, market & product decisions into focus for strategic alignment
- **Enterprise architecture** is a dynamic map of the organization – Connecting business and IT in one view



Traditional business and IT portfolio management - enhanced



Enterprise
Decision Support



Analysis and
Optimization



Increased
Visibility



Business and IT
Alignment

Goals of Managing the Business of IT

1. Understand what applications exist in the portfolio
2. Gain detailed understanding of applications, their composition.
3. Gain detailed cost structure information at the right level
4. Drive development and divestiture activities based on business goals
5. Track and trend key performance indicators for the application portfolio



IT Planning and
Transformation



Business Driven
Innovation



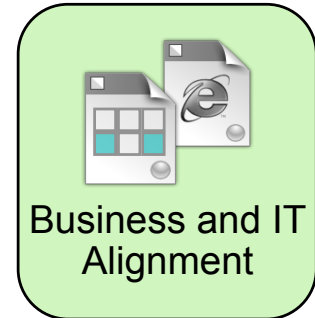
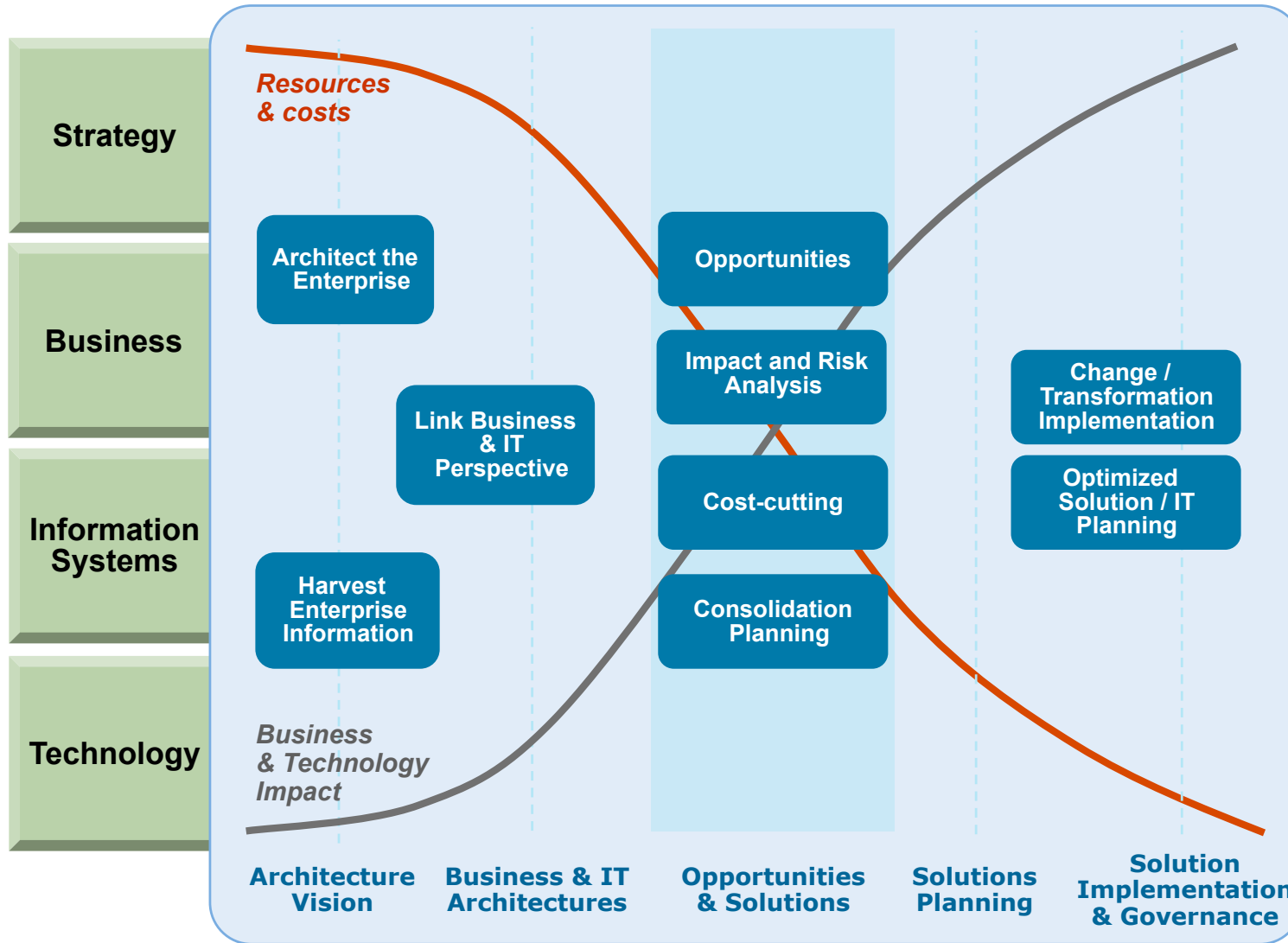


The Role of Enterprise Architecture

Managing the Business of IT Four Steps



Step 1. Build a holistic view



Step 2. Balance current needs and long-term demand

Sustained Business Value

Goals
Objectives
Needs



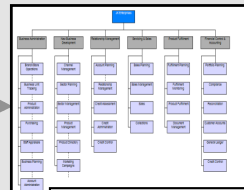
Enhanced APM

Portfolio Management:

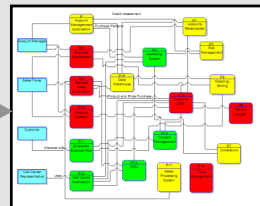
- Financial Analysis and Optimization

Enterprise Architecture:

- Holistic business-IT views
- Business and technology risk analysis



Services Portfolio



Application Portfolio

Application
and IT
Discovery



Execution
Roadmap

Enterprise Planning

Business Intelligence
Dashboard

Enterprise
Decision Support

Analysis and
Optimization





Step 3. Understand the business risk of change

Sustained Business Value

Targeted Strategy and Direction

Goals
Objectives
Needs



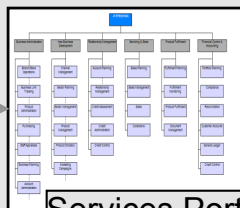
Enhanced APM

Portfolio Management:

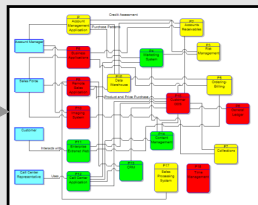
- Financial Analysis and Optimization

Enterprise Architecture:

- Holistic business-IT views
- Business and technology risk analysis

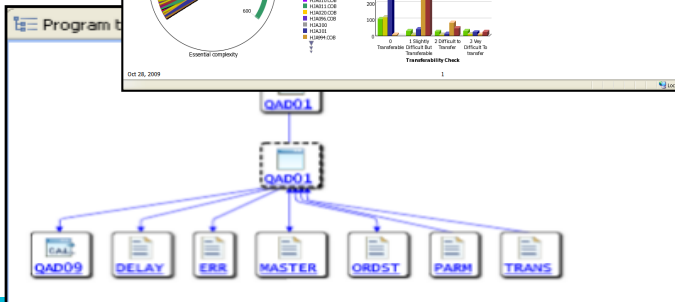
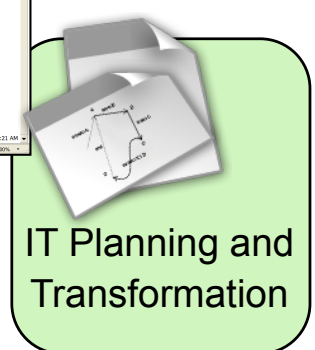
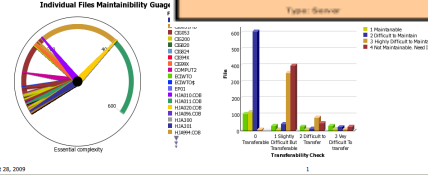
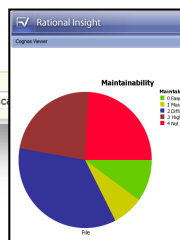
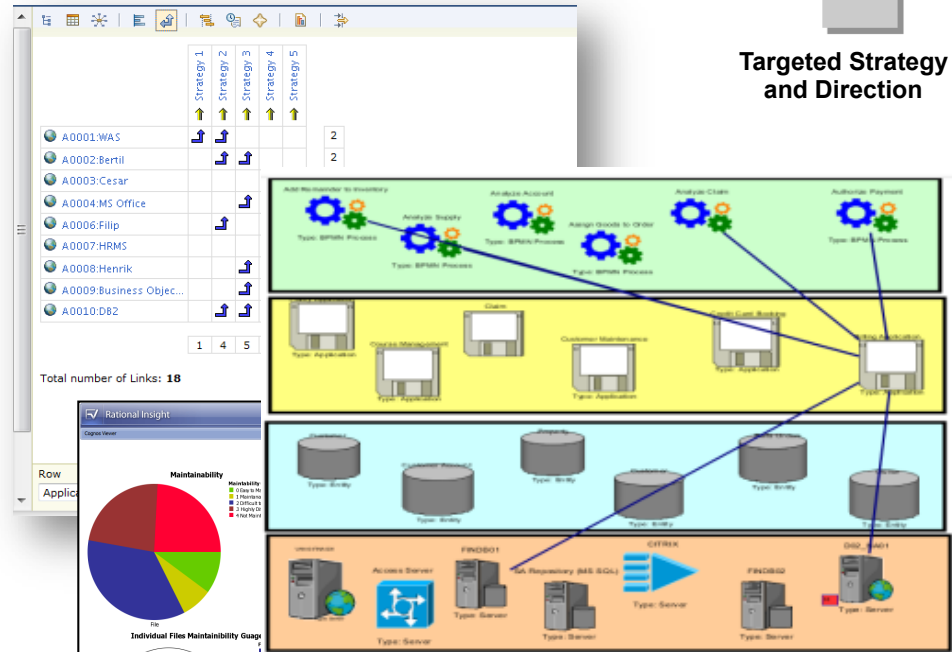


Services Portfolio



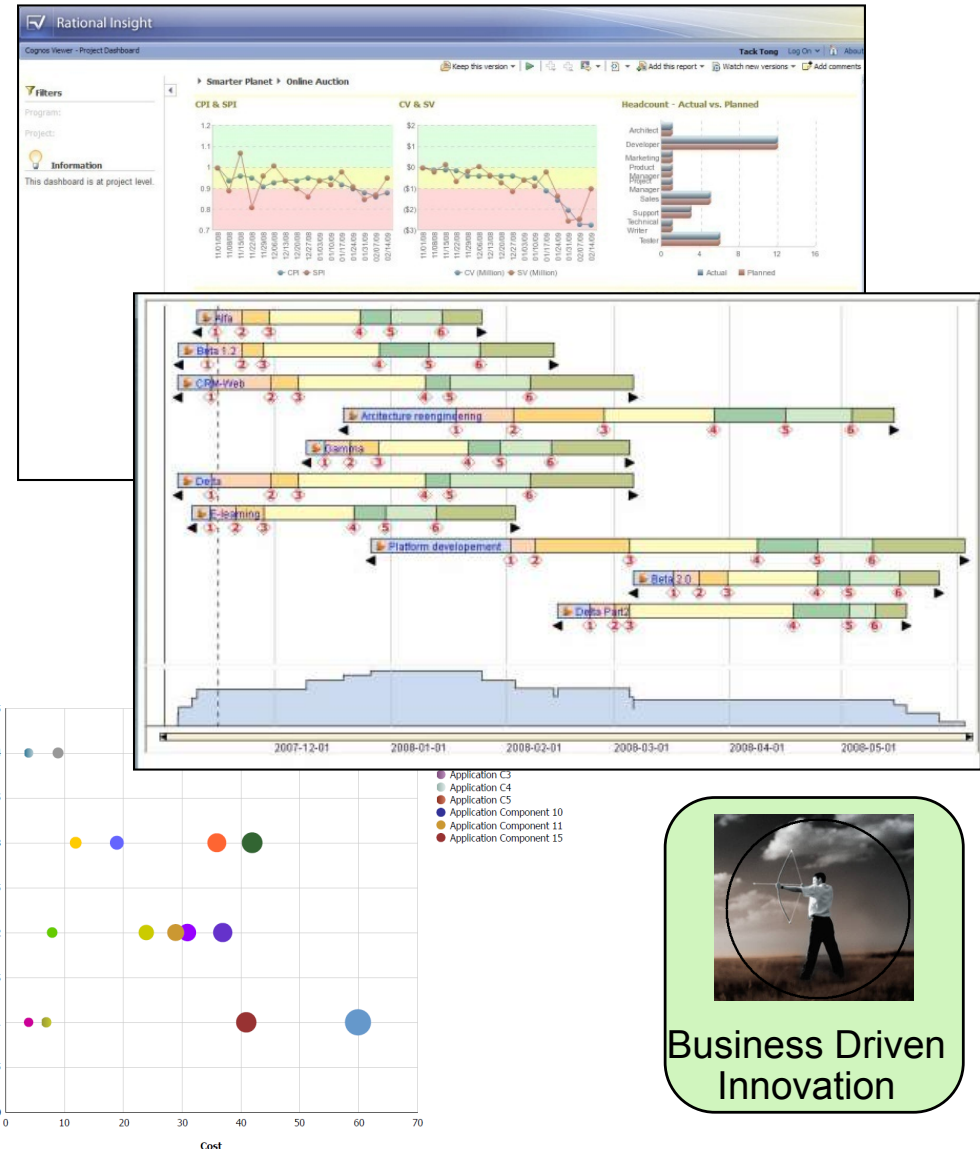
Application Portfolio

Application
and IT
Discovery



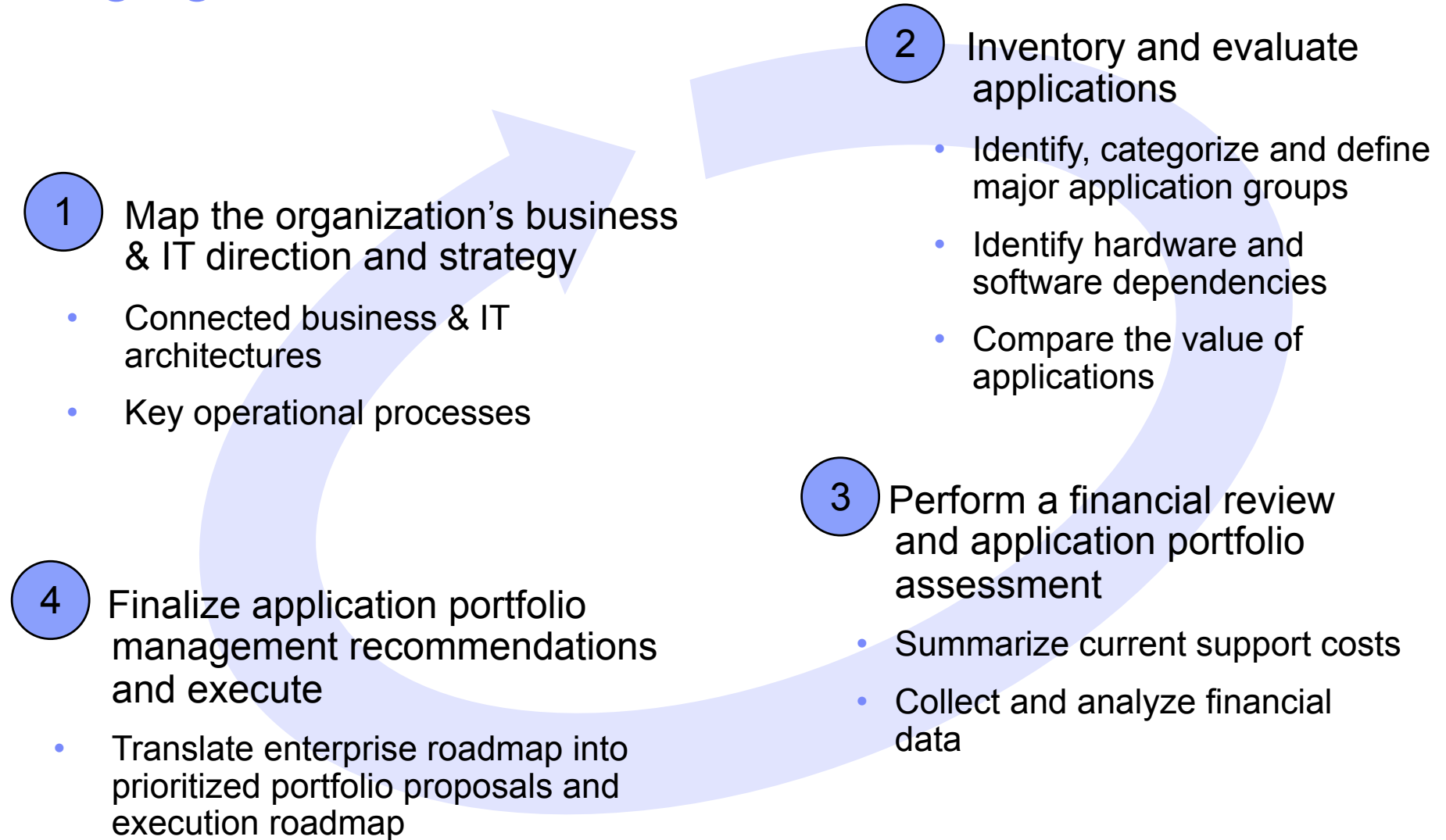
Step 4. Execute and govern your portfolio – new and existing

- Develop roadmap – one view of business and IT architectures, linked to business decisions and clearly articulated as scope
 - ▶ Reduce risk by quickly determining the full impact of proposed changes
 - ▶ Ensure application lifecycles do not erode APM optimization
- Measure, monitor, and control new proposals and transformational activities
 - ▶ Minimize impact on vision and value of ad-hoc or non-collaborative activities





Managing the Business of IT : Workflow



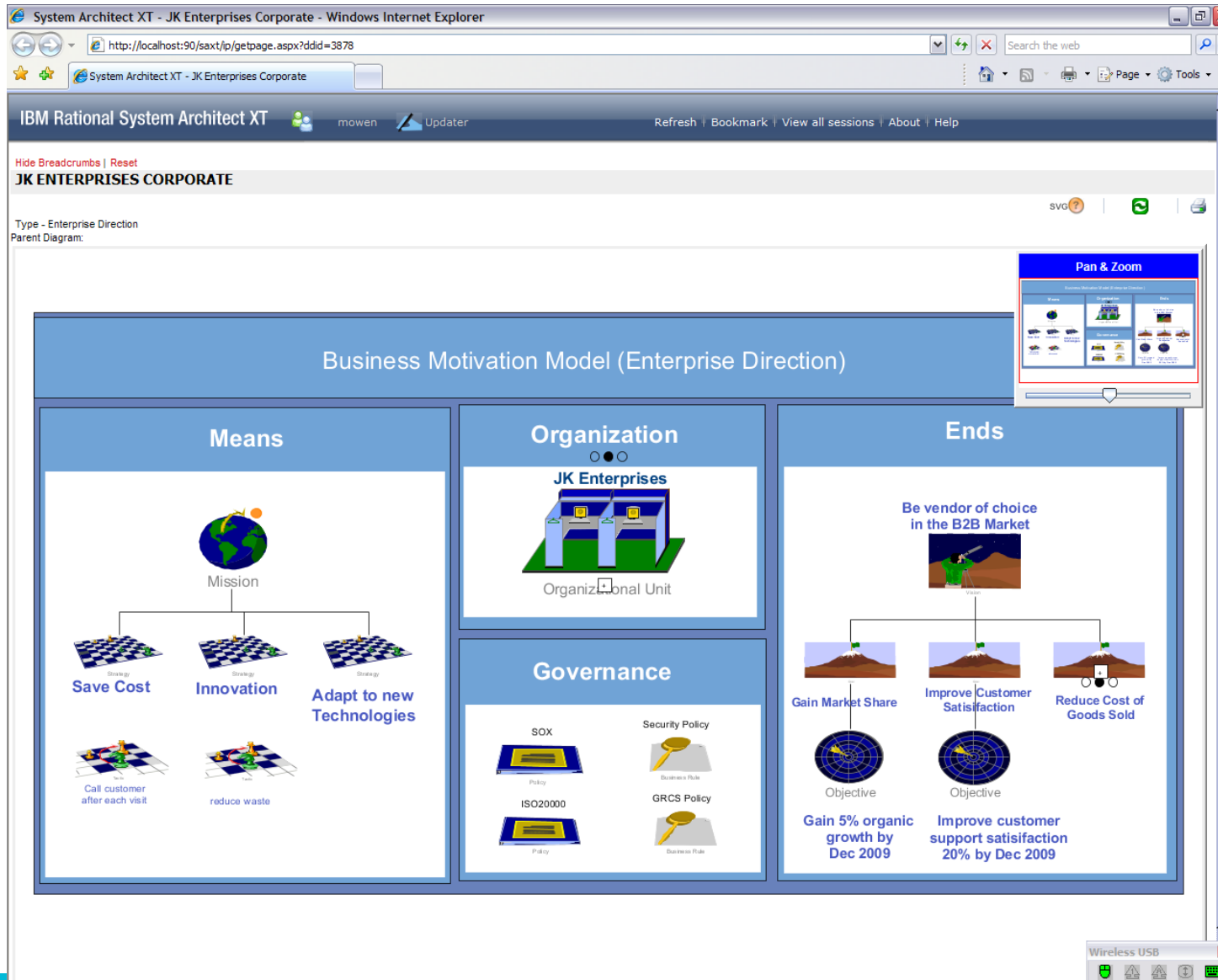


Defining the 'As is' and 'To be'





Define strategy & vision: business motivation model





Build Architecture and Business Architecture Current

The screenshot displays the IBM Rational System Architect XT interface. On the left, a business process diagram for 'SALES CREDIT' is shown, including steps like 'PD1 Regional Sales', 'PD1 Sales Manager', and 'Credit Management Service Manager'. On the right, a network architecture diagram titled 'SA FOOTPRINT' illustrates the following components and connections:

- Desktop Client**: Connected to the **SA Repository (MS SQL)** via 'data' and to the **License Server** via 'License Check'.
- SA Repository (MS SQL)**: Connected to the **System Architect Server** via 'data'.
- System Architect Server**: Connected to the **License Server** via 'License Check'.
- License Server**: Connected to the **SA XT** via 'License Check'.
- SA XT**: Connected to the **Internet** via 'internet/intranet'.
- Terminal Server/CITRIX**: An optional connection point for the Desktop Client.

Below the network diagram, a 'Program tree view' shows a hierarchical structure with nodes like QAD01, QAD09, DELAY, ERR, MASTER, ORDST, PARM, and TRANS.

At the bottom of the screenshot, a dashboard provides various metrics:

- Number of RFCs in new state**: A table with columns for Status, Last Reading, Actual, Target, and Variance.
- All active Changes (By PMCHGPROGRESS)**: A pie chart showing the distribution of change statuses.
- Number of active Changes**: A table with columns for Description, Due Date, Priority, and a list of change statuses (ACCEPTED, APPROVED, ASSESSED, IMPLEMENTED, WAITFORRELEASE, Undefined) with their respective counts and percentages.





Report on portfolio, project and process status

Rational Focal Point Workspaces | Home | Preferences | **Simon Vaughan** | Help | Log Out

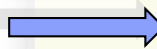
Demo - Application Portfolio Management

Welcome to the Focal Point Application Portfolio Assessment (APA) Demonstration

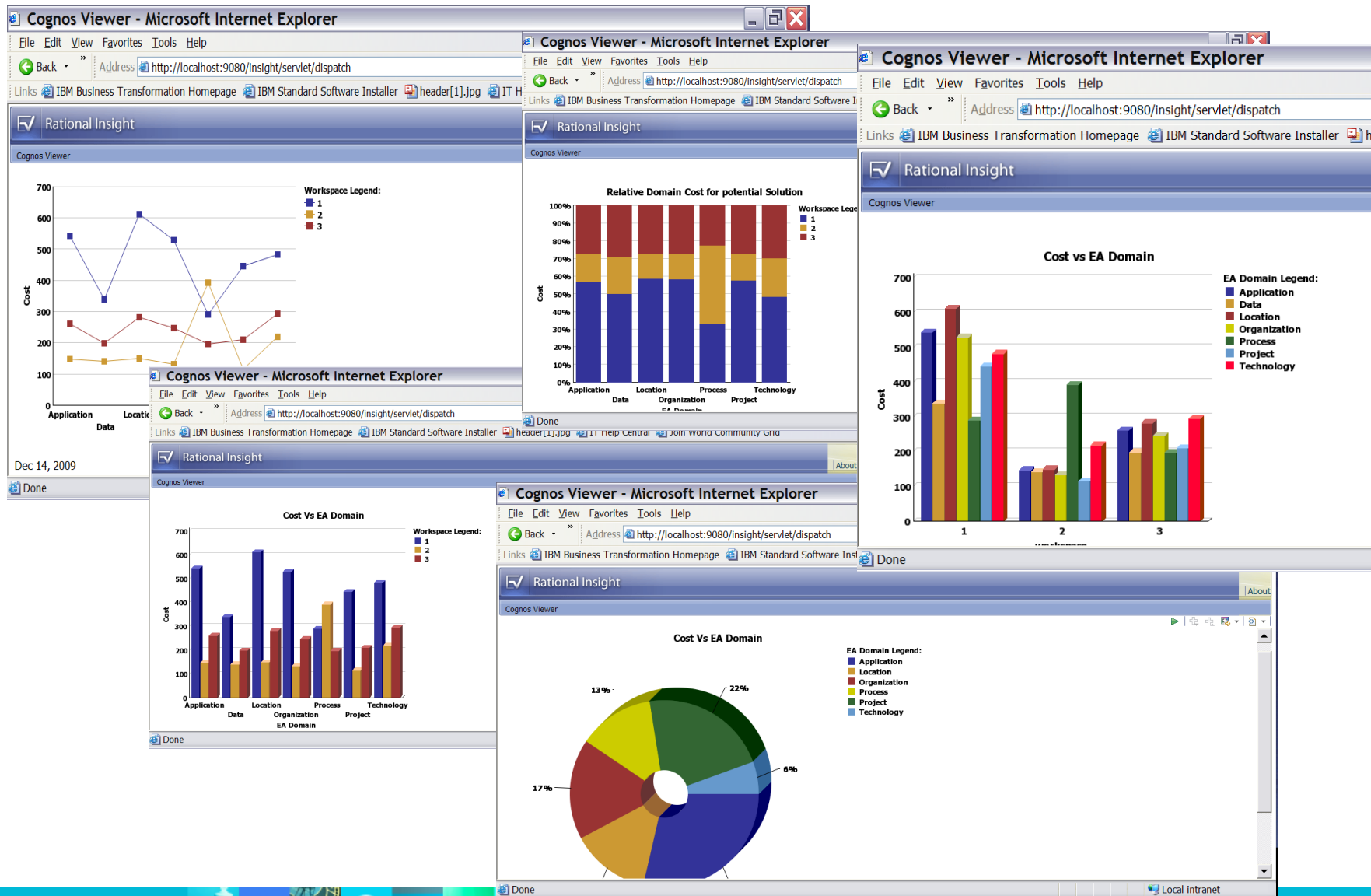
Application Name	Business Strategy Alignment	Criticality	Reliability	Availability	IT Strategy Alignment	Architectural Fit	Total Score	Recommended Classification
A0001:WAS	7 - High	10 - Very High	7 - High	4 - Medium	7 - High	10 - Compliant	45	Gold
A0002:OracleAS InterConnect	7 - High	7 - High	4 - Medium	4 - Medium	7 - High	10 - Compliant	39	Silver
A0003:Salesforce.com CRM	10 - Very High	10 - Very High	4 - Medium	7 - High	10 - Very High	10 - Compliant	51	Blue
A0004:MS Office 2007	7 - High	7 - High	7 - High	10 - Very High	7 - High	10 - Compliant	48	Blue
A0006:PnC 6000	10 - Very High	4 - Medium	4 - Medium	4 - Medium	1 - Low	10 - Compliant	33	Blue
A0007:IRIS Exchequer	7 - High	4 - Medium	4 - Medium	1 - Low	1 - Low	10 - Compliant	27	Blue
A0008:APBackup	4 - Medium	4 - Medium	7 - High	10 - Very High	4 - Medium	1 - Non Compliant	30	Blue
A0009:Microsoft Publisher 2010	10 - Very High	4 - Medium	4 - Medium	10 - Very High	4 - Medium	10 - Compliant	42	Blue
A0010:Oracle BI Publisher	7 - High	4 - Medium	7 - High	4 - Medium	7 - High	1 - Non Compliant	30	Blue
A0011:Tivoli Access Manager	7 - High	10 - Very High	7 - High	7 - High	10 - Very High	10 - Compliant	51	Gold
A0012:Lotus Notes 8.5	7 - High	10 - Very High	7 - High	10 - Very High	4 - Medium	10 - Compliant	48	Blue
A0013:CYMAIV Financial Management System	7 - High	4 - Medium	7 - High	7 - High	4 - Medium	1 - Non Compliant	30	Blue
A0014:Platform Contact Manager	7 - High	4 - Medium	4 - Medium	1 - Low	4 - Medium	10 - Compliant	30	Blue
A0015:Tivoli Identity Manager	7 - High	7 - High	7 - High	4 - Medium	7 - High	10 - Compliant	42	Silver
A0016:Sharepoint Server 2007	4 - Medium	4 - Medium	4 - Medium	4 - Medium	4 - Medium	10 - Compliant	30	Bronze
A0017:Field service management (FSM)	7 - High	7 - High	4 - Medium	1 - Low	7 - High	10 - Compliant	36	Bronze
A0018:Adobe Acrobat	7 - High	1 - Low	10 - Very High	7 - High	1 - Low	10 - Compliant	36	Blue
A0019:Amdocs Billing	7 - High	4 - Medium	7 - High	4 - Medium	1 - Low	1 - Non Compliant	24	Gold

IBM. Rational. software

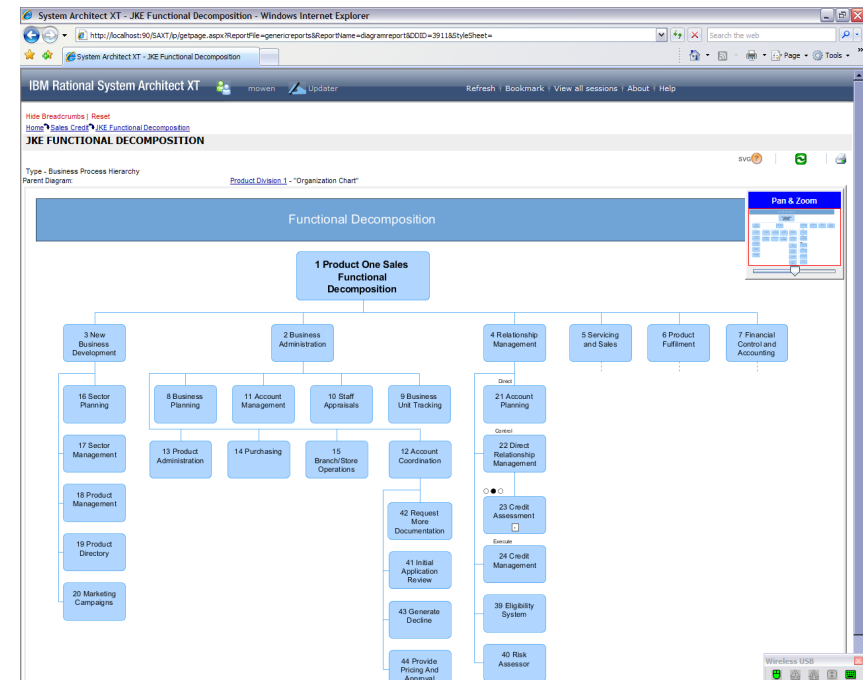
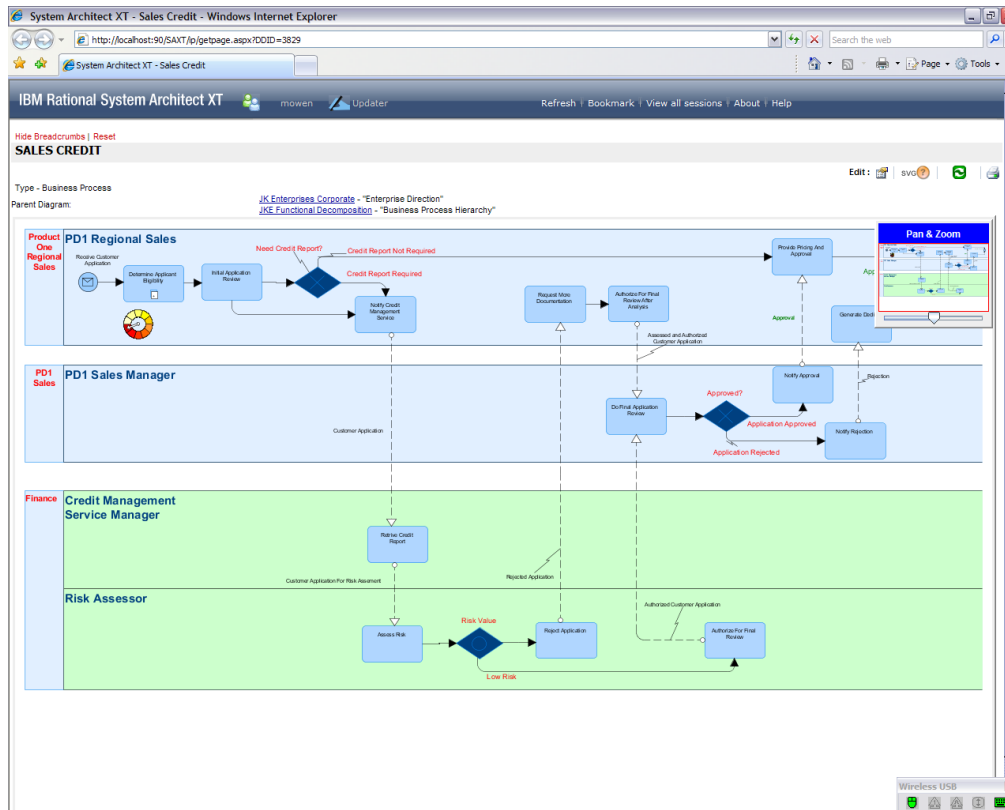
Done Internet | Protected Mode: On 100%



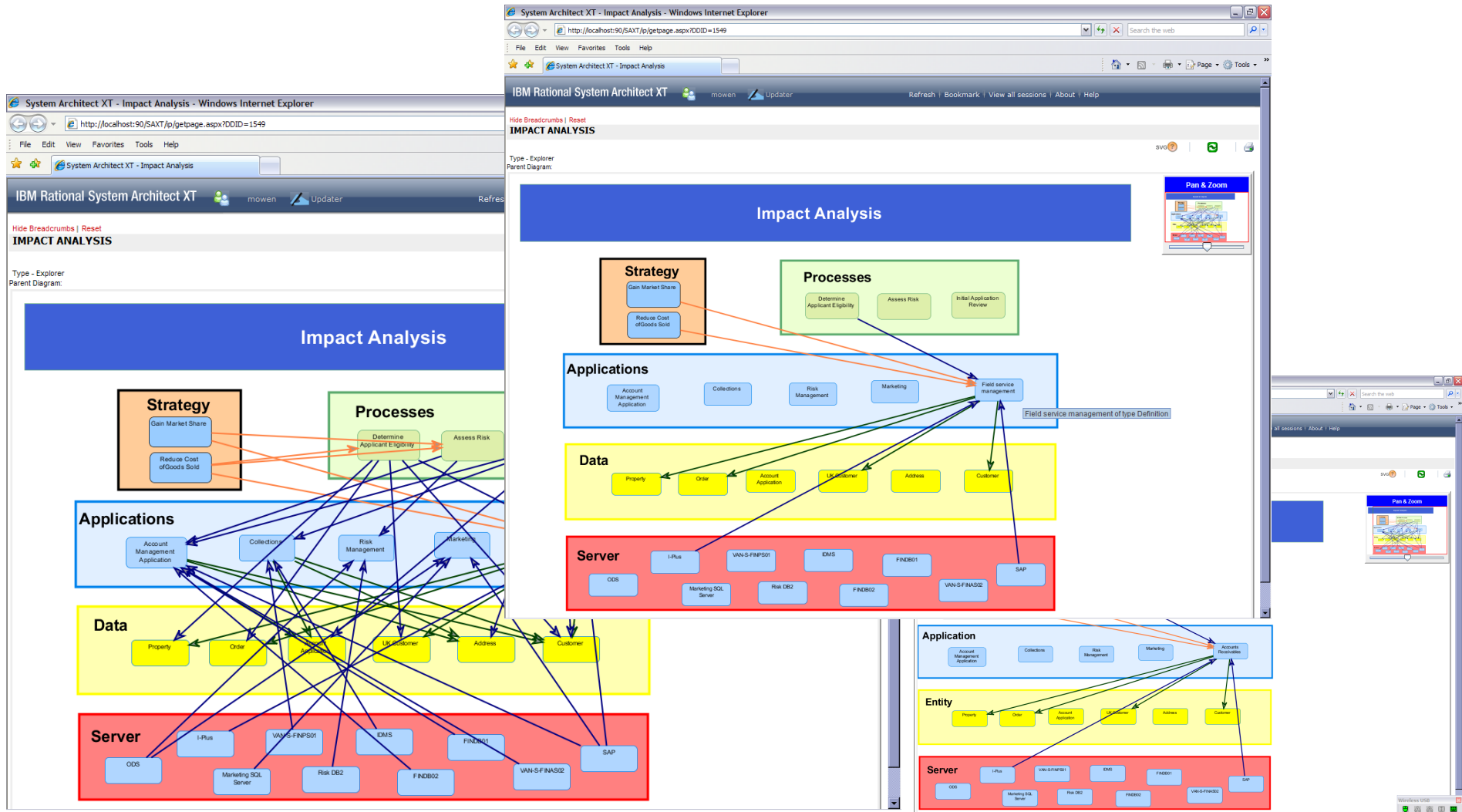
Utilize Executive Dashboards



Define Future state

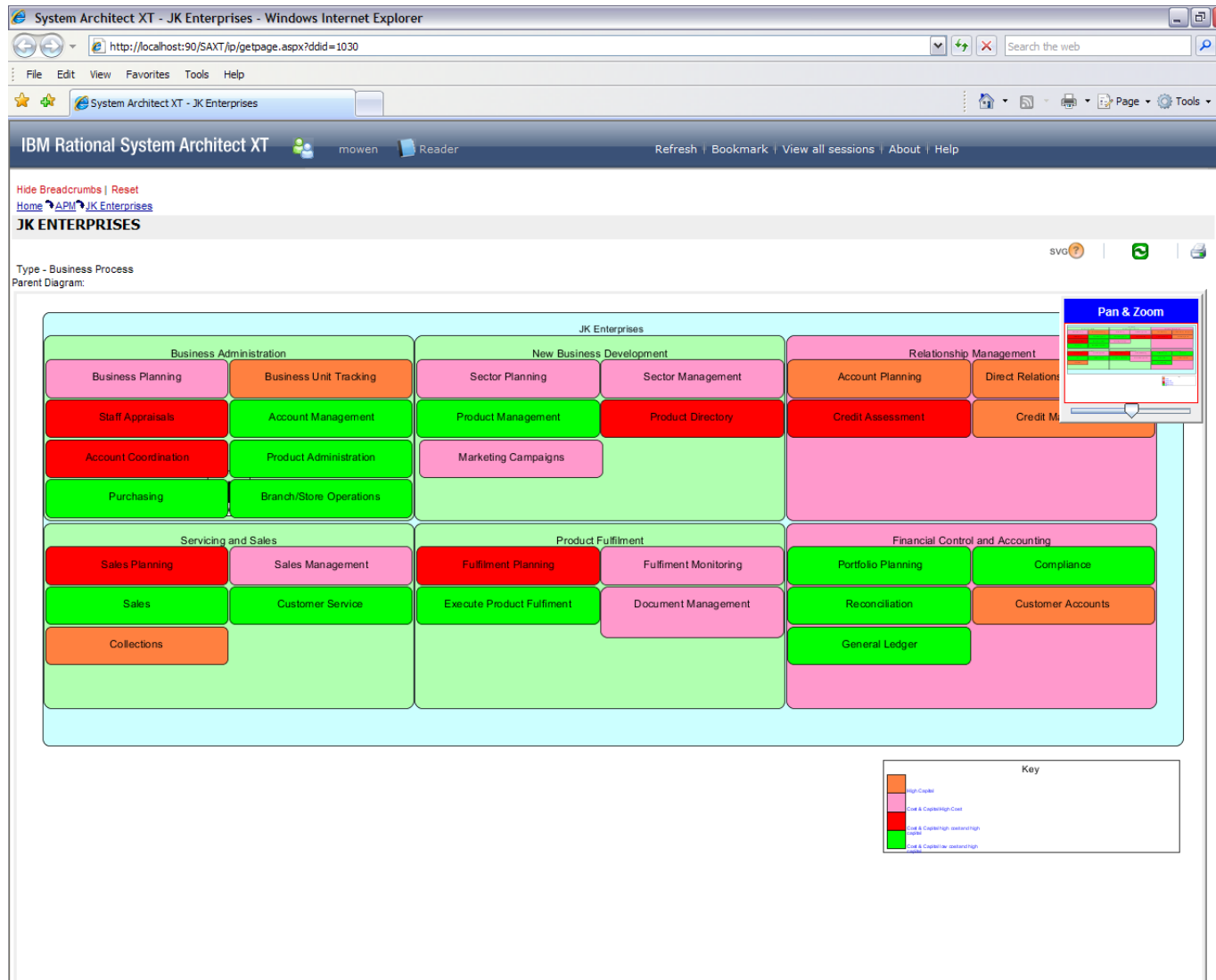


Compare to current state, perform gap analysis



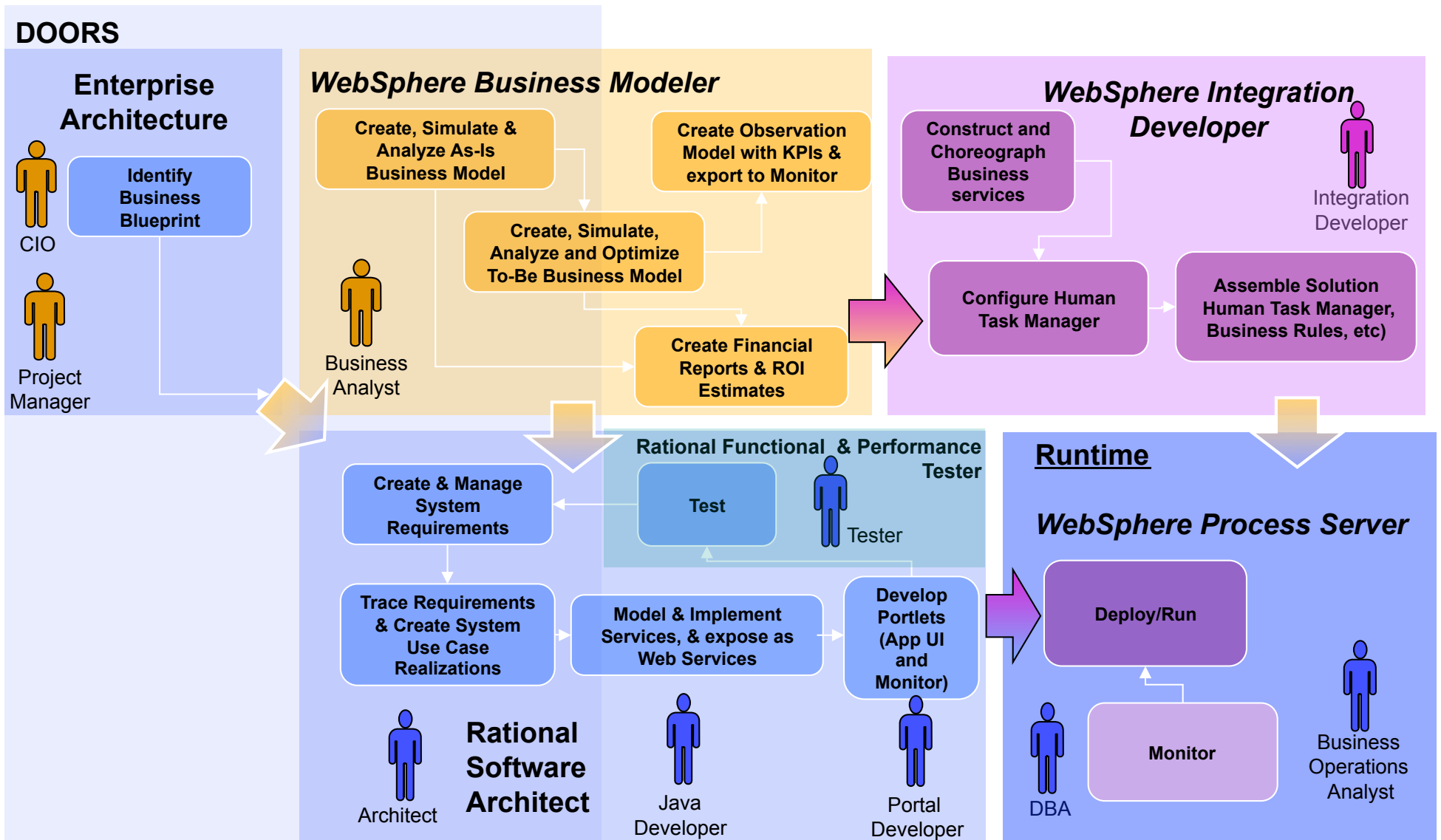


Define transition initiatives





Consider EA as an extension to BPM





System Architect Process Integrator

- Useful to deploy when:
 - ▶ Express challenges in interacting with, or communicating the value of enterprise architecture to large teams of Visio based modelers
 - ▶ Have difficulty promote modeling standards for Visio users
 - ▶ Want to enhance collaboration and analysis by centralizing disparate Visio models in a common repository
 - ▶ Want to Integrate Visio with enterprise-wide business analysis capabilities
- What is System Architect Process Integrator?
 - ▶ Allows Visio process modelers to work in their current environment and creates a live link to System Architect for model storage and access via the creation of standardized BPMN-based models.
 - ▶ Offers BPMN templates, modeling error checking, and central repository storage for model and artifact management and reuse (installs into Visio).
 - ▶ Visio process models can then be opened in the System Architect suite of products for detailed analysis, simulation and execution.
 - ▶ Process models can be exported from System Architect to Visio users for inspection and use as templates for process modeling projects.





Setting the Business Priorities





Collect and analyze stakeholder & financial priorities

Which application is more effective for processing applications?

Call Center Application

Application

ID: 008
 Title: Call Center Application
 State: Upgrade needed
 Type: Internal

Description

Application Description: System for call centers to manage customer in-bound and out-reach communications on the phone. Integrates with CALM, Customer On-Line Access, and Marketing and Promotions systems.

Comments: Admin 2010-02-17 16:37: Needs to be updated now to include more web and chat capabilities.

Attachments: Application Software.doc (29 KB)

Application Owner: Sofia

Business Units: Commerce

Department: Department 1

Sponsoring Organization: Marketing department

Business

Application Dates

Usage

Scorecard

Liability: 7 - High
 Reliability: 7 - High
 Availability: 7 - High
 Architectural Fit: 10 - Compliant

Loan Servicing

Application

ID: 010
 Title: Loan Servicing
 State: In production
 Type: Internal

Description

Application Description: Loan servicing application.

Comments: -

Attachments: Application Software.doc (29 KB)

Application Owner: Harald

Business Units: Operations, Commerce

Department: Department 2, Department 3

Sponsoring Organization: -

Business

Application Dates

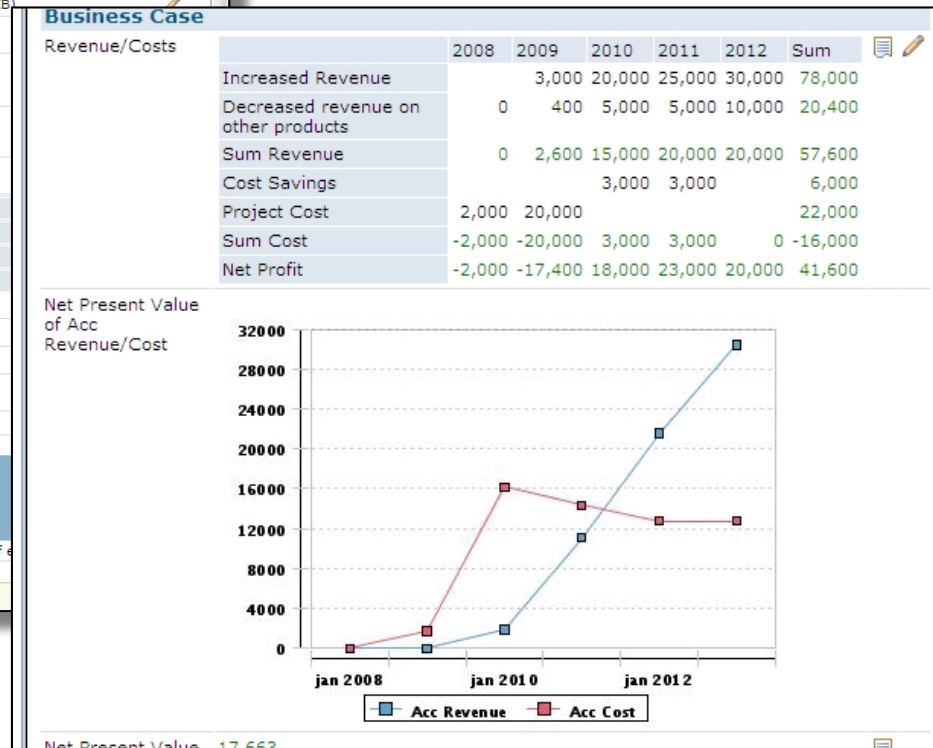
Usage

Scorecard

Liability: 10 - Very High
 Reliability: 7 - High
 Availability: 4 - Medium
 Architectural Fit: 10 - Compliant
 Total Score: 31

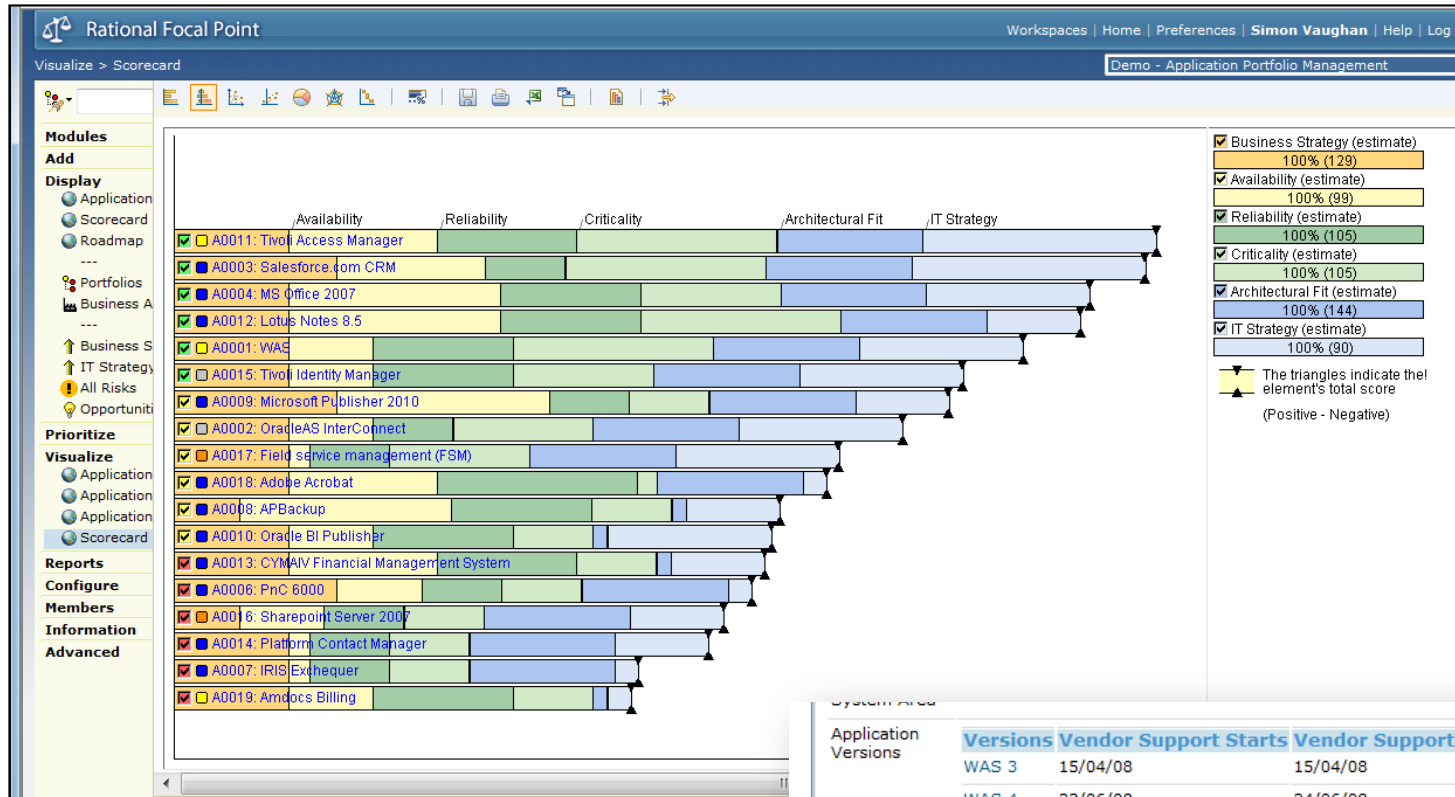
Completed: 38. Required: 16. Recommended: 35. Number of...

Criterion: Effectiveness (public) [Delete This Comparison] [Delete All Comparisons]





Analyze and prioritize initiatives



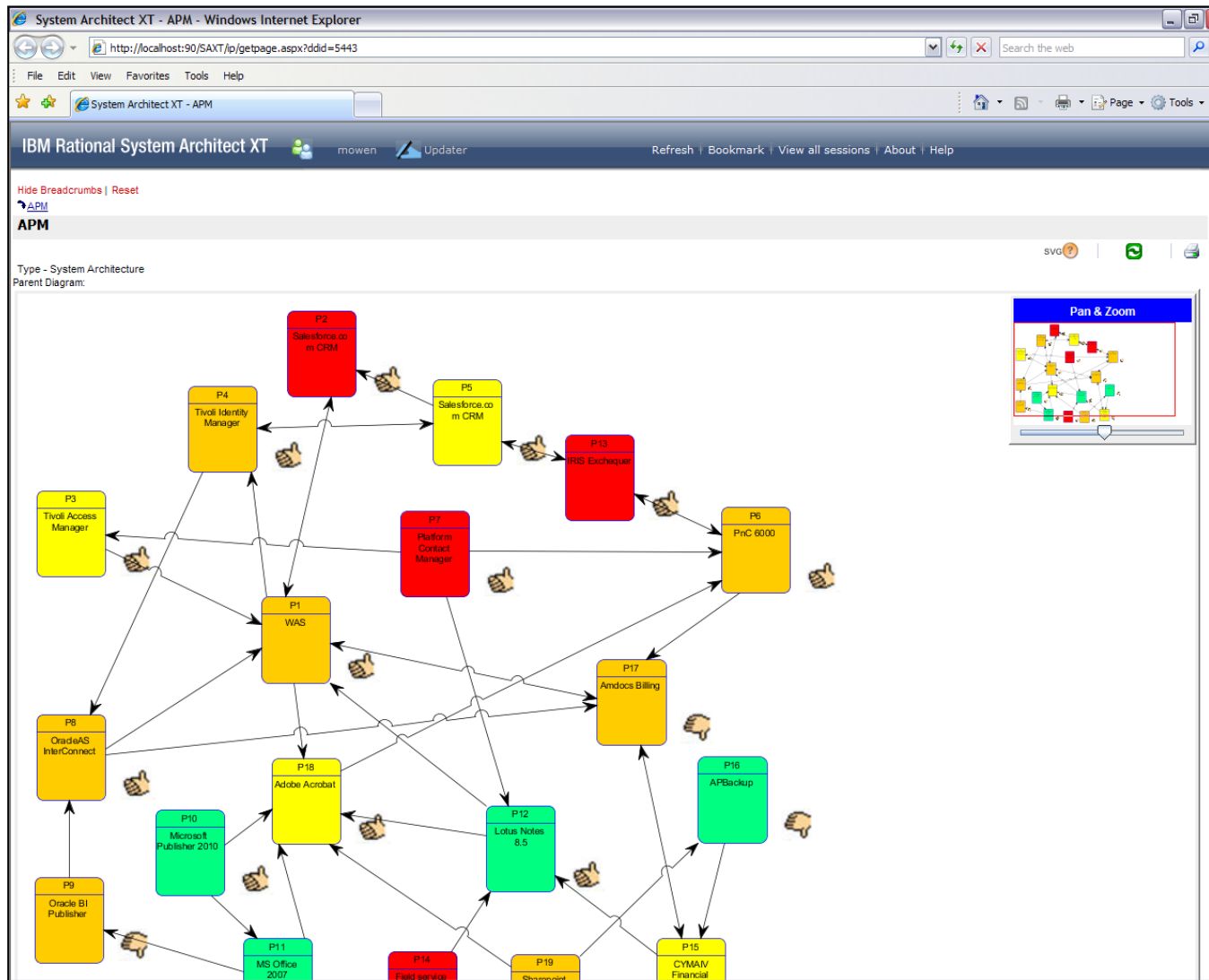
Application Versions	Versions	Vendor Support Starts	Vendor Support Ends	Strategy
	WAS 3	15/04/08	15/04/08	Upgrade
	WAS 4	23/06/08	24/06/08	Upgrade
	WAS 5.0	04/09/08	05/09/08	Upgrade
	WAS 5.1	28/11/08	30/11/08	Upgrade
	WAS 6.0	28/03/09	08/04/09	Upgrade
	WAS 6.1	11/05/09	13/06/09	Active
	WAS 7.0	17/10/09	22/11/09	Future

Business Criticality
Number of Application Users: 4,000
24/7 Support: Yes





Architect & design prioritized solutions within the EA



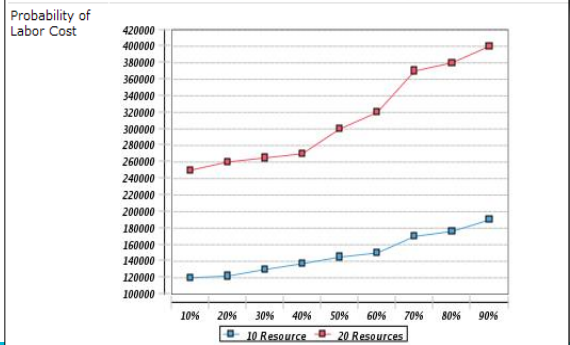
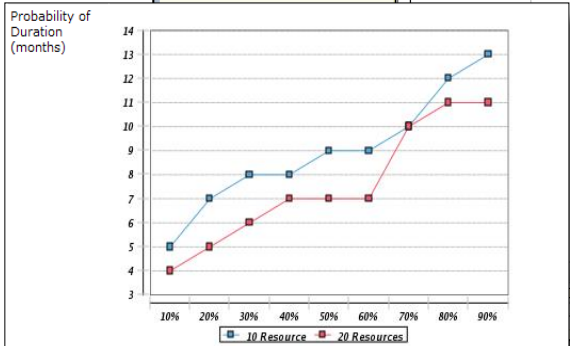
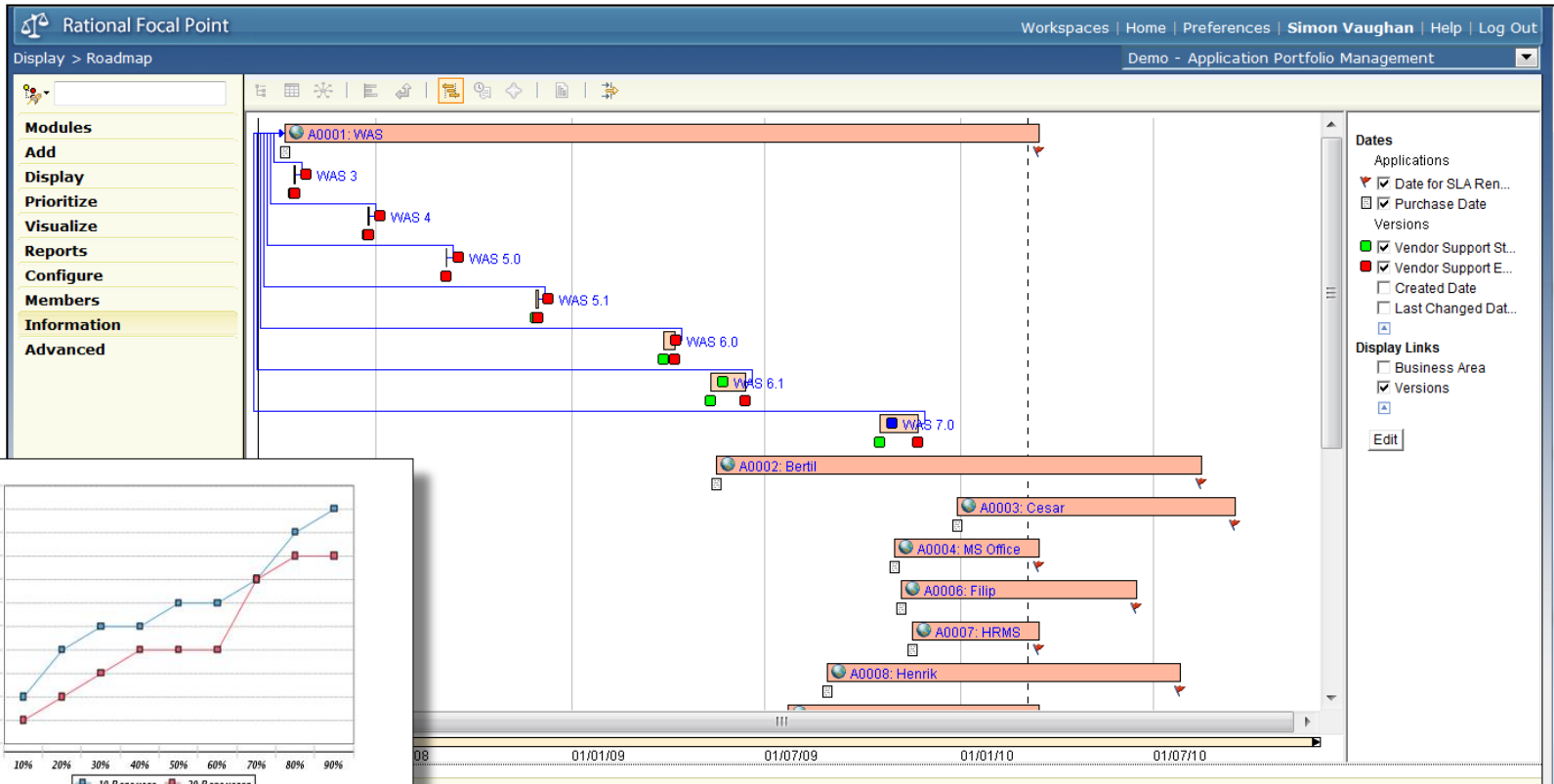
Consider EA to be a handoff to:

- BPM
- S/W Design
- Embedded Systems





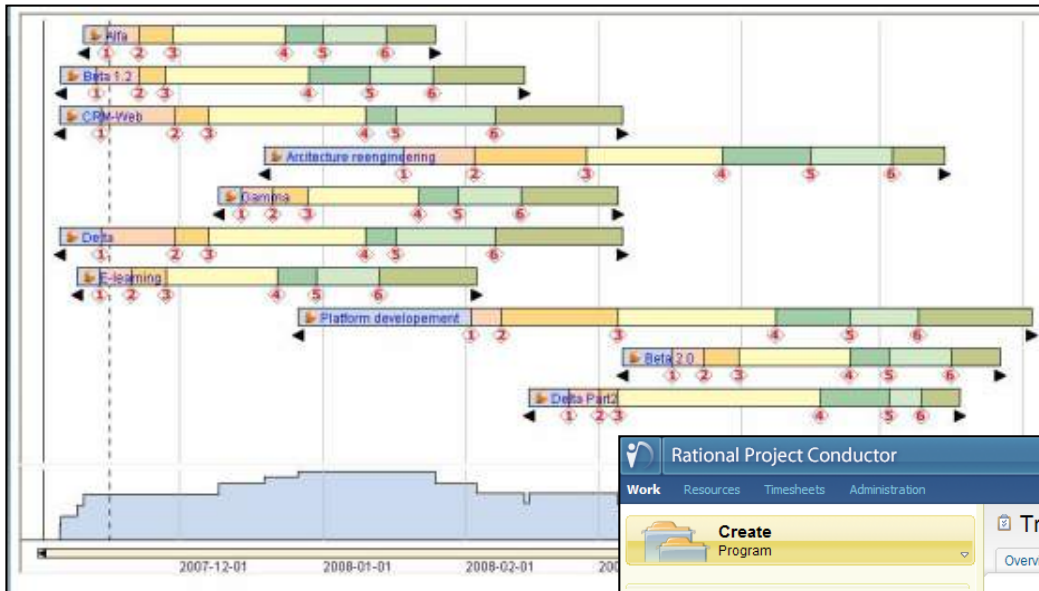
Define scope & roadmap initiatives



- Transition Initiatives
- Series of projects and milestones
- Dashboards for review
- Scope of project can be constantly assessed



Plan projects for Integrated Execution and Feedback



Scope now drives projects
 With integrated project management & App Dev Lifecycle increases the success rate and reduces risks

Rational Project Conductor

Work Resources Timesheets Administration

Create Program

Translation

Overview Schedule Details Risk Baselines Financials

Start (Actual)	Finish (Actual)	Effort (Actual)	%C	%EC	%DC	6, 2009							Nov 2, 2009						
						T	W	T	F	S	S	M	T	W	T	F			
Jul 30, 2007	Dec 19, 2008	509 d	5120 h		Jul 30, 2007														
Jul 30, 2007	Dec 19, 2008	365 d	5120 h		Jul 30, 2007														
Jul 30, 2007	Sep 14, 2007	35 d	280 h		Jul 30, 2007														
Jan 28, 2008	Dec 19, 2008	235 d	1344 h		Jan 28, 2008														
Feb 22, 2008	Sep 2, 2008	138 d	600 h		Feb 22, 2008														
Jan 14, 2008	Oct 22, 2008	203 d	2696 h		Jan 14, 2008														
Sep 14, 2007	Nov 7, 2008	301 d	200 h		Sep 14, 2007														
Jun 27, 2008	Jun 27, 2008	1 d	8 h		Jun 27, 2008														
Jul 24, 2008	Jul 24, 2008	1 d	8 h		Jul 24, 2008														
Aug 18, 2008	Aug 18, 2008	1 d	8 h		Aug 18, 2008														
Aug 15, 2008	Sep 9, 2008	18 d	72 h		Aug 15, 2008														
Sep 14, 2007	Sep 11, 2008	260 d	56 h		Sep 14, 2007														
Sep 22, 2008	Sep 22, 2008	1 d	8 h		Sep 22, 2008														
Oct 10, 2008	Nov 7, 2008	21 d	40 h		Oct 10, 2008														
Jan 1, 2009	May 11, 2010	495 d	1544 h		Jan 2, 2009														

Work Breakdown

- Programs and Projects
 - Financials
 - Payroll App
 - Project Name
 - Inception
 - Elaboration
 - Customer Interactions (Managed Beta)
 - Development
 - Translation
 - Drop 1 - all langs PII & Non PII
 - Drop 2 PII- all langs
 - Drop 2 nonPII - all langs
 - TVT
 - DVT
 - Drop 2a
 - Release
 - Sample Applications



Summary - Managing the business of IT...



Increased
Visibility

- **Four steps to success...**
 - ▶ Build a holistic view
 - ▶ Balance current needs and long-term demand
 - ▶ Understand the business risk of change
 - ▶ Execute and govern your portfolio



IT Planning and
Transformation



Analysis and
Optimization

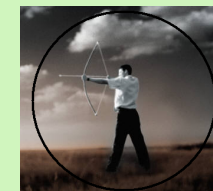
- Significant efficiency gains through visibility in decision making
- Savings in the investment budget through better management of transformational projects
- Improvement in the operations budget by better aligning applications with business demand



Enterprise
Decision Support



Business and IT
Alignment



Business Driven
Innovation





The Role of Requirements Management





Poor Requirements Management has a Significant Impact on your Business

Requirements Rework

- Errors, late detected in the Maintenance phase can cost up to **200 times** more than detected early in Requirement Analysis phase¹
- More than 40%** of development budget can be consumed by poor requirements²

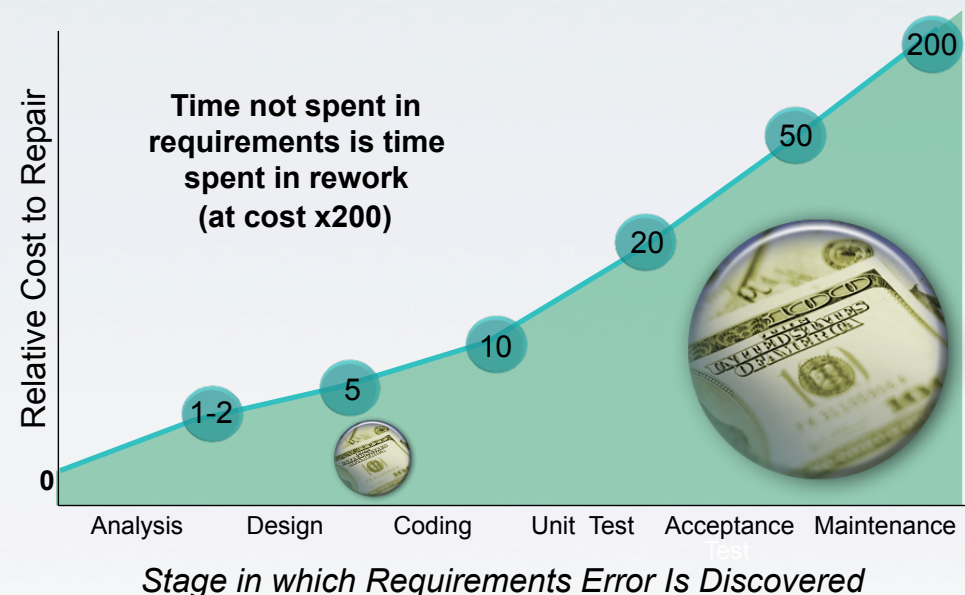
Project Impacts

- 41%** of projects fail to deliver the expected business value and ROI³
- 49%** of projects overrun original estimates³
- 28%** of projects on time and on budget⁴

Project Delays

- Being late to market by 6 months or more will cost organizations 33% of the 5-year ROI⁵

Requirements issues drive excessive rework, delays, poor quality, and project failures



“Our research indicates 80-plus percent of development failures result directly from poor requirements gathering, management, and analysis.”

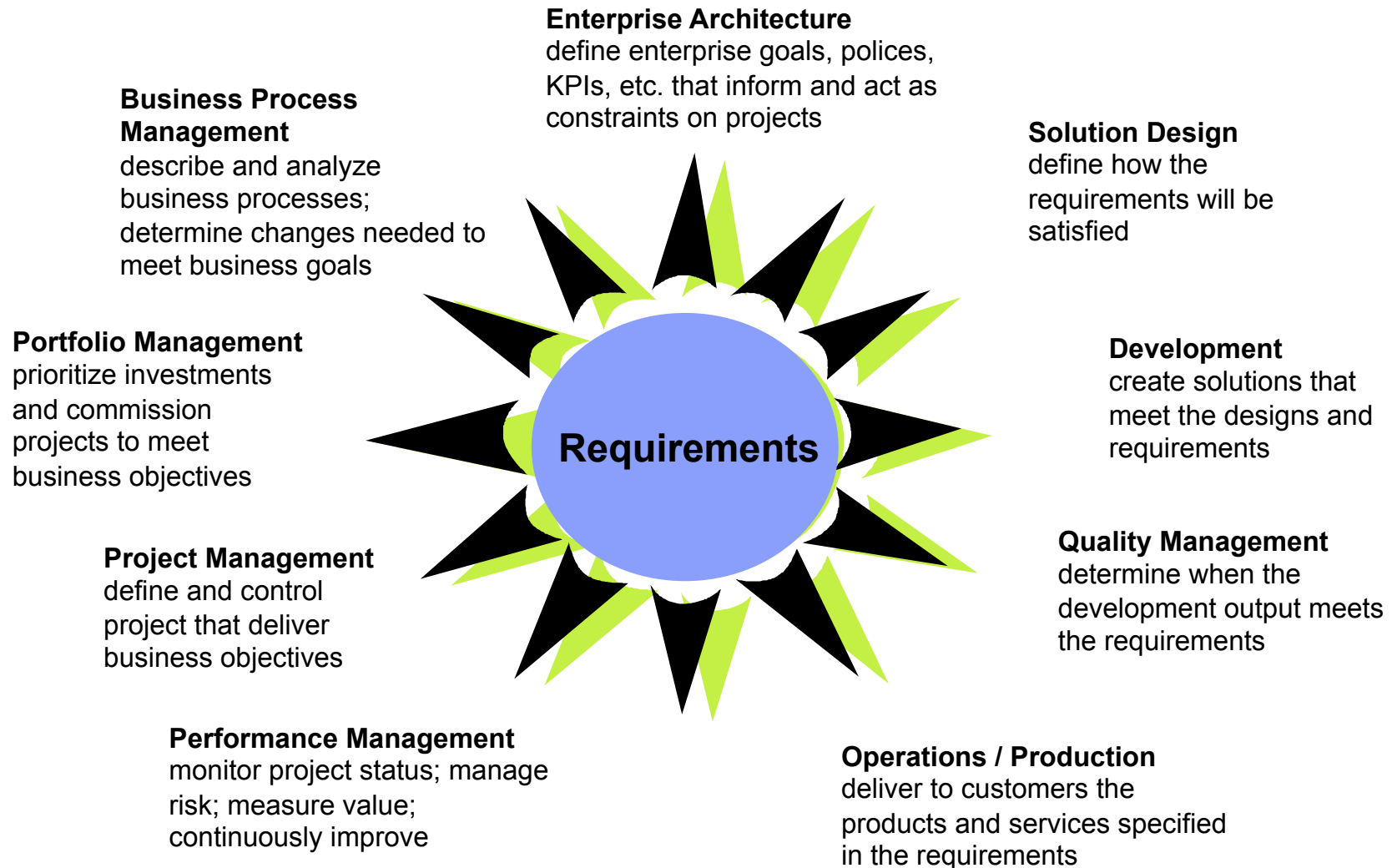
IDC, November 2007

Sources: 1) Leffingwell & Widrig, “Managing Software Requirements,” Addison Wesley, 1999 2) IAG Consulting, 2008 3) Dynamic Market Limited, 2007 4) Standish Group, 2001 5) Don Reinertsen, McKinsey, 1983





Requirements are everywhere and touch everything



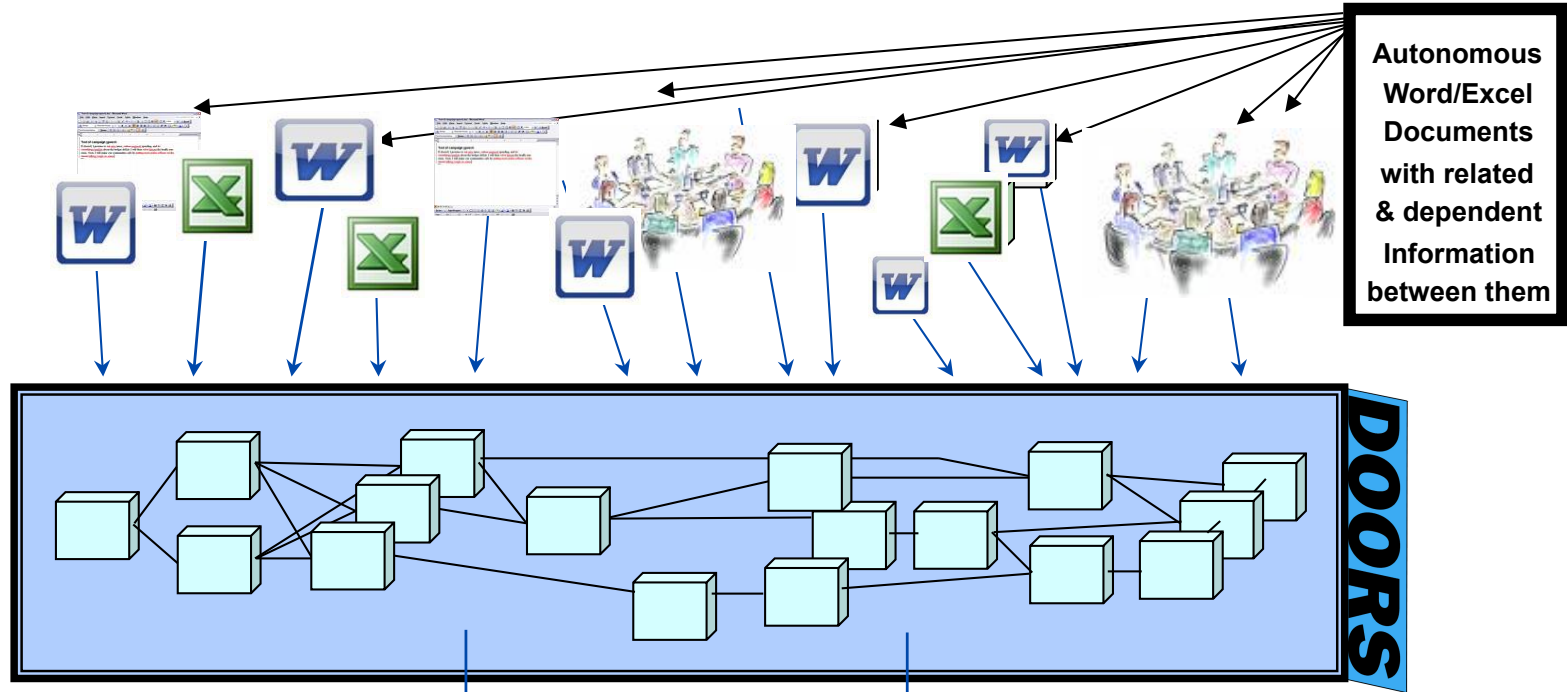


Information Traceability - "Chaos to Order"

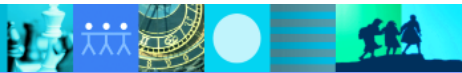
Non-integrated project data

are imported, structured, linked and traced at statement level,

to produce reports of managed information



User requirements for SUV 4x2	Links to Technical Requirements	Design	Links to Tests
<p>3 Requirements</p> <p>This section contains the user requirements.</p> <p>3.1 Capability Requirements</p> <p>3.1.1 Carrying Capacity</p> <p>3.1.1.1 Number of People</p> <p>Four average size adults shall be able to travel in comfort for a period of 3 hours. This level of comfort is defined as being equivalent to the standard of comfort provided by the top 40% of cars produced in 1999.</p> <p>The top level of cars are those in the price range \$20,000 to \$40,000 at 1999 prices.</p>	<p>SR-104 2.14.1.0-1 from /Sports utility vehicle 4x2/Requirements/Functional Requirements</p> <p>The car shall be able to carry 4 average size adults in average comfort for a period of 3 hours. Last modified 11 February 1997</p>	<p>D-542</p> <p>Full seats shall be created for two passengers in both front and back.</p> <p>D-544</p> <p>There shall be space for a fifth passenger in the back that will not meet the comfort requirement.</p>	<p>Test Number 18</p> <p>Market Research</p> <p>Test Result : Passed</p> <p>Test Number 12</p> <p>Verify Number of People</p> <p>Test Result : Untested</p>

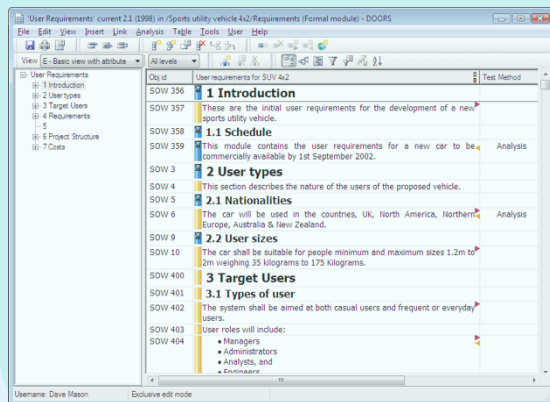




Rational DOORS product family

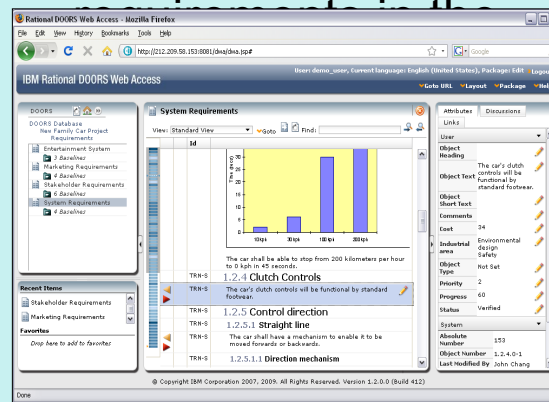
Rational DOORS

Requirements management and traceability platform for complex systems and software development



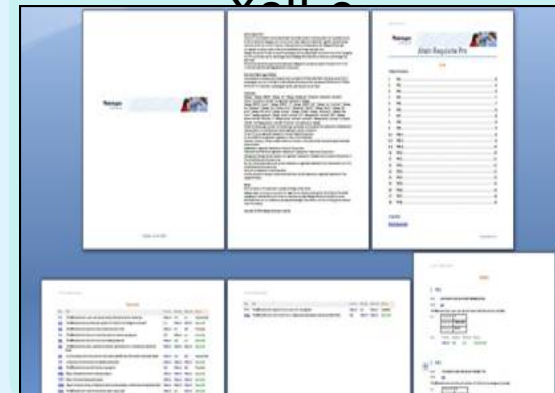
Rational DOORS Web Access

Rich Internet application providing globally distributed stakeholders access to review, edit, and discuss



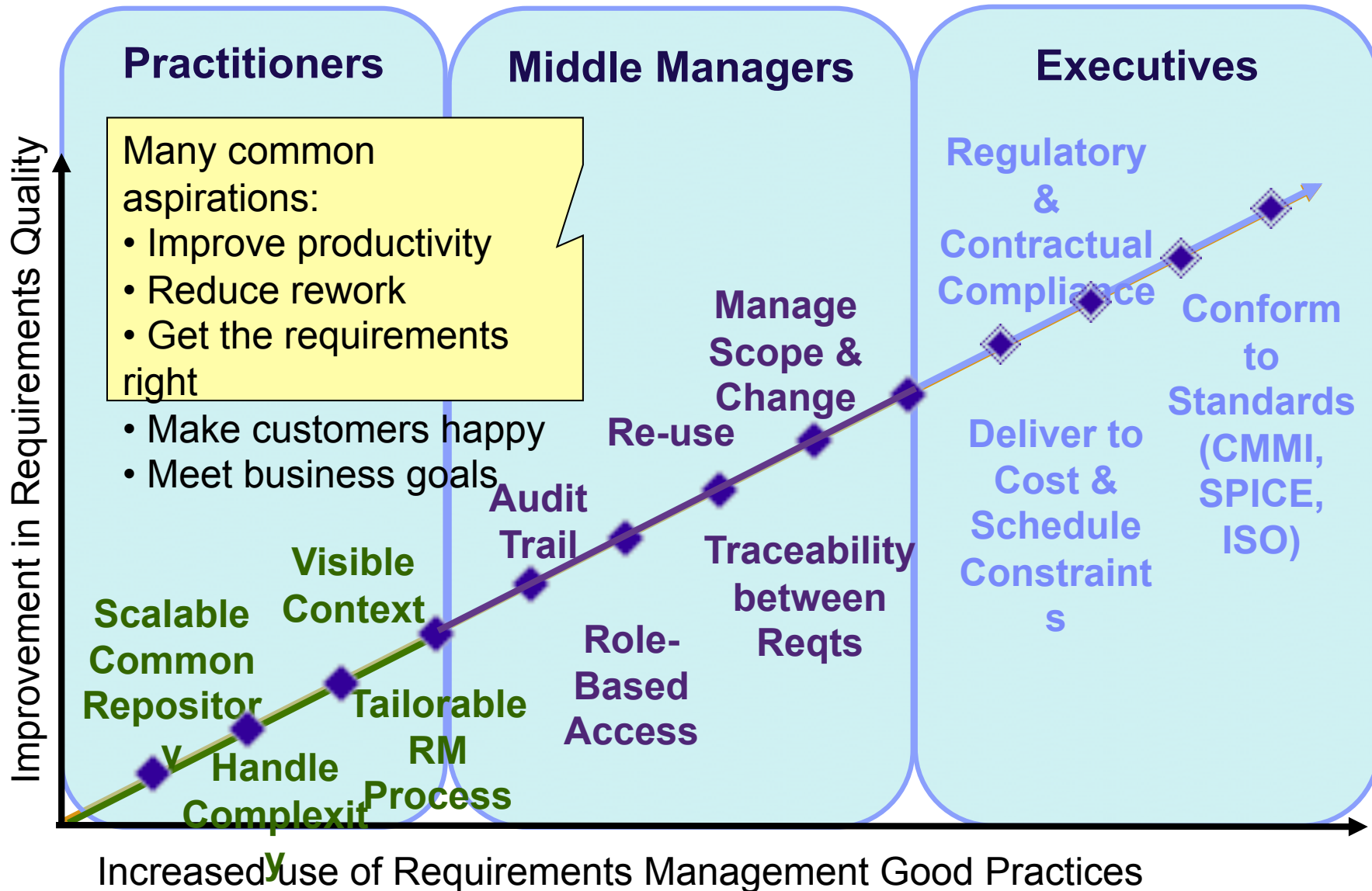
Rational Publishing Engine

The generic tool for publishing across the Rational tool suite, provides DOORS with an enhanced export to Word, Pdf, Html & Xsl-FO

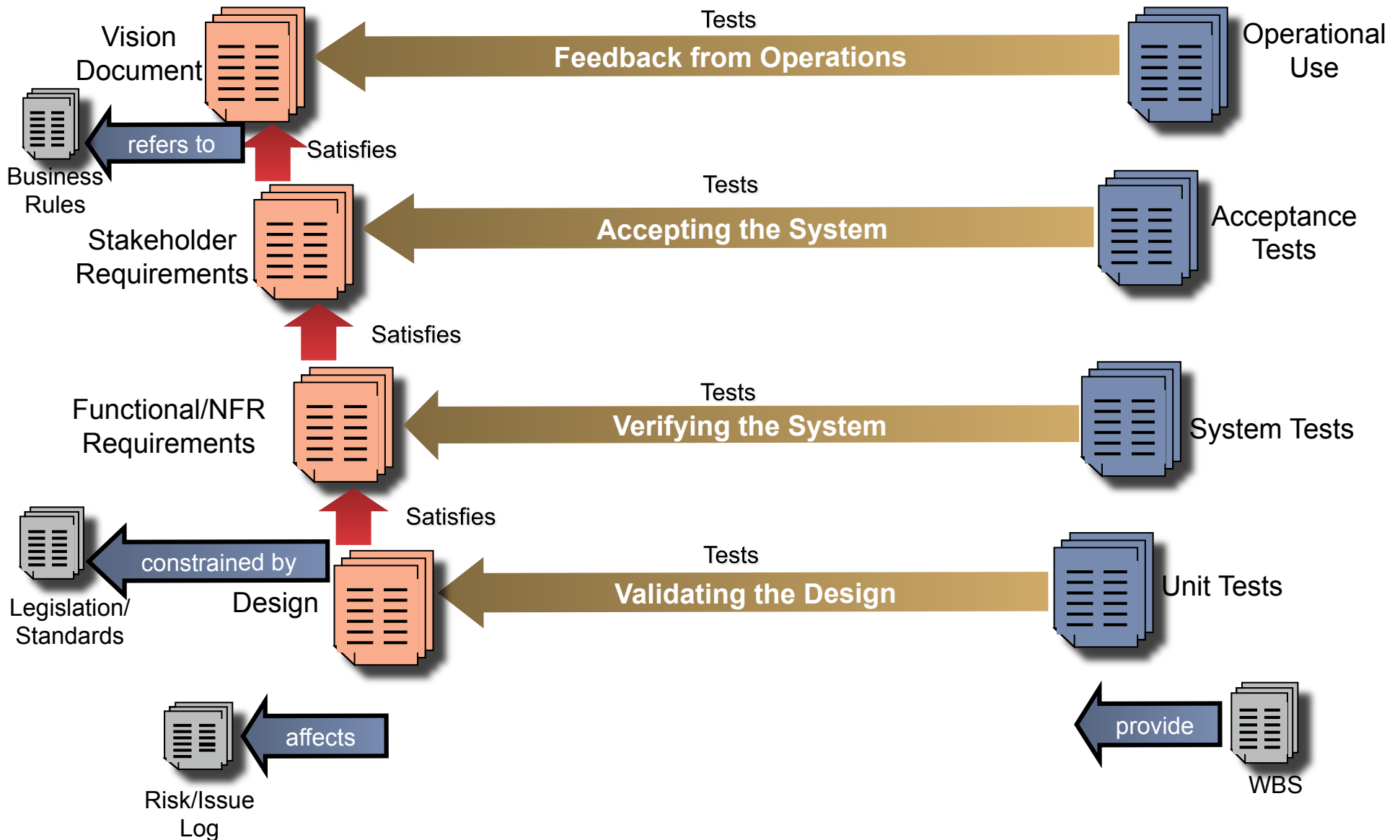




Value to stakeholders should determine RM priorities




Managing Impact of Requirements Change throughout Project





DOORS Database and Example Module Opened

The screenshot displays the DOORS software interface. On the left, a tree view shows the project structure under 'DOORS Database'. The main window shows the 'Stakeholder Requirements' module open, displaying a table of requirements with columns for Req, Discuss, Stakeholder Requirements, Business Prio, Scope, Rationale, Source, Queries, and Discussion.

Req	Discuss	Stakeholder Requirements	Business Prio	Scope	Rationale	Source	Queries	Discussion
TRN-CSR-1		1 Introduction	N/A					
TRN-CSR-139		This module contains the user requirements for a 'New Family Car' to be commercially available by 1 September 2012. 	Must Have	In	In time for the new UK registration launch.	Marketing		Incorrect Date (Open) 1) Mark Best on 5/24/2010 11:khdfkdjhkjf Version:./New Family Car Project DWSv2.5/Requirements/Stakeholder Requirements (while current) Data timestamp: 5/24/2010 13:00 Status: Open 2) Mark Best on 6/9/2010 13:00 ok noted Version:./New Family Car Project DWSv2.5/Requirements/Stakeholder Requirements (while current) Data timestamp: 6/1/2010 14:50 Status: Open
TRN-CSR-8		2 Requirements	N/A					
TRN-CSR-9		2.1 Capability Requirements	N/A					
TRN-CSR-10		2.1.1 Carrying Capacity	N/A					
TRN-CSR-11		2.1.1.1 Number of people	N/A					
TRN-CSR-136		Four average size adults shall be able to travel in comfort for a period of 4 hours. This level of comfort is defined as being equivalent to the standard of comfort provided by the top 30% of cars produced in 2006.	High	In				
TRN-CSR-14		Five average size adults shall be able to travel in comfort for a period of 4 hours.	Medium	In				
TRN-CSR-15		Two average size adults and 3 average size children shall be able to travel in comfort for a period of 2	Medium	In				




Audit Trail

'Stakeholder Requirements' current 3.0 in /New Family Car Project-DWSv2.5/Requirements (Formal module) - DOORS

File Edit View Insert Link Analysis Table Tools Discussions User PStoolbox Publish RMF Help

View 01 - Identify Requirements | All levels

Req	Discuss	Stakeholder Requirements	Business Priority	Scope	Rationale	Source	Queries	Discussion
TRN-CSR-1		1 Introduction	N/A					
TRN-CSR-139		This module contains the user requirements for a 'New Family Car' to be commercially available by 1 September 2012.	Must Have	In	In time for the new UK	Marketing		Incorrect Date (Open)
TRN-CSR-8		2 Requirements						
TRN-CSR-9		2.1 Capability Requirements						
TRN-CSR-10		2.1.1 Carrying Capacity						



Object 139 (Saved) - DOORS

General Access History Attributes Links Discussions

User	Session	Date	Modification
Mark Best	338	5/19/2010 5:28:05 ...	Modify Object Attribute: Object Text
Mark Best	338	5/19/2010 5:31:37 ...	Modify Object Attribute: Priority
Mark Best	339	5/24/2010 9:05:56 ...	Modify Object Attribute: Object Text
Mark Best	341	5/24/2010 12:09:48...	Modify Object Attribute: Object Text
Mark Best	346	5/24/2010 12:42:51...	Modify Object Attribute: Priority
Mark Best	348	6/1/2010 2:22:52 PM	Modify Object Attribute: Object Text
Mark Best	352	6/1/2010 2:53:08 PM	Modify Object Attribute: Priority
Mark Best	360	6/11/2010 11:30:13...	Modify Object Attribute: Object Text

Details of selected history record

From: be commercially available by 1 September ~~2011~~2012.

To: This module contains the user requirements for a 'New Family Car' to be commercially available by 1 September 2012.

Restore View change as redlining

Only show entries with

Dates: from: 6/11/2010 4:35:26 PM to: 6/11/2010 4:35:26 PM

User:

Details... Refresh Export...

Previous Next OK Cancel Apply Help

Username: Mark Best

Exclusive edit mode






Drag and Drop Linking

'Stakeholder Requirements' current 3.0 in /New Family Car Project-DWSv2.5/...

File Edit View Insert Link Analysis Table Tools Discussions User PStoolbox Publish RMF Help

View 03 - Link to All levels

ID	Stakeholder Requirements
TRN-CSR-1	1 Introduction
TRN-CSR-139	This module contains the user requirements for a 'New Family Car' to be commercially available by 1 September 2012.
	
TRN-CSR-8	2 Requirements
TRN-CSR-9	2.1 Capability Requirements
TRN-CSR-10	2.1.1 Carrying Capacity
TRN-CSR-11	2.1.1.1 Number of people
TRN-CSR-136	Four average size adults shall be able to travel in comfort for a period of 4 hours. This level of comfort is defined as being equivalent to the standard of comfort provided by the top 30% of cars produced in 2006.
TRN-CSR-14	Five average size adults shall be able to travel in comfort for a period of 4 hours.
TRN-CSR-15	Two average size adults and 3 average size children shall be able to travel in comfort for a period of 2 hours. This could be accomplished

Username: Mark Best Exclusive edit mode

'System Requirements' current 2.1 (Review Phase 2) in /New Family C...

File Edit View Insert Link Analysis Table Tools Discussions User PStoolbox Publish RMF Help


View 03 - Link from All levels

ID	System Requirements
TRN-SR-160	The delivery of the 'New Family Car' shall be delivered as per the requirements detailed in this System Requirements Specification by 1st September 2012.
TRN-SR-1	2 Functional Requirements
TRN-SR-2	2.1 Power car
TRN-SR-3	2.1.1 Move car
TRN-SR-4	2.1.1.1 Move forwards
TRN-SR-5	The car shall be able to move forwards at all speeds from 0 to 220 kilometers per hour on standard flat roads with winds of 0 kilometers per hour, with 280 BHP.
TRN-SR-6	2.1.1.2 Move backwards
TRN-SR-7	The car shall be able to move backwards to a maximum speed of 25 Kilometers per hour.
TRN-SR-8	2.1.2 Accelerate car
TRN-SR-9	The car shall be able to accelerate from 0 to 100 Kilometers per hour in 8 seconds on standard flat roads with winds of 0 kilometers per hour.
TRN-SR-10	The car shall be able to accelerate from 100 to 150 kilometers per hour at a rate of 5 kilometers per second on standard flat roads with winds of 0 kilometers per hour.
TRN-SR-11	The car shall be able to accelerate from 150 to 200 kilometers per hour at a rate of 3 kilometers per second on standard flat roads with winds of 0 kilometers per hour.
TRN-SR-12	2.2 Control car

Username: Mark Best Exclusive edit mode



Sufficiency of Requirements – GAP Analysis

Object Identifier	Stakeholder Requirements	System Requirements
TRN-CSR-83	Users shall be able to receive a warning when a service is due.	
TRN-CSR-85	The user shall be able to see at all times an indication of speed to within + or - 1%.	
TRN-CSR-86	The user shall be able to see at all times an indication of engine revolutions to within + or - 1%.	
TRN-CSR-92	The user shall be able to obtain direction to go information. 	
TRN-CSR-123	The user shall be able to ascertain when the next general maintenance procedure should be conducted.	
TRN-CSR-106	Loss of use of car due to equipment failure shall not exceed 1 day in every 2 years.	
TRN-CSR-112	A warning triangle shall be supplied with the vehicle	
TRN-CSR-113	A first aid kit shall be supplied with the vehicle	
TRN-CSR-120	The research and development for the full project shall not exceed £25 million at today's prices.	





Necessity of Requirements – Gold Plating

'System Requirements' current 2.1 (Review Phase 2) in /New Family Car Project-DWSv2.5/Requirements (Formal module) - DOORS

File Edit View Insert Link Analysis Table Tools Discussions User PStoolbox Publish RMF Help

View 05 - Gold Plating | All levels

Object Identifier	System Requirements	Stakeholder Requirements
TRN-SR-17	The speed control shall be infinitely variable from zero to maximum speed.	
TRN-SR-28	The direction control mechanism shall be hand operated and require no more than 2 inches of hand movement from the steering wheel for successful operation.	
TRN-SR-146	The direction control mechanism shall be mounted on the left hand side of the vehicle for USA, Northern Europe, Eastern Europe, Japanese and Russian variants.	
TRN-SR-147	The direction control mechanism shall be mounted on the right hand side for UK and Australian variants.	
TRN-SR-30	The car shall be controllable in any direction.	
TRN-SR-35	Headlights shall be fitted in accordance with statutory regulations abc dated 1 Jan 2004.	
TRN-SR-36	Headlight beam patterns shall be in accordance with statutory regulations abc dated 1 Jan 2004.	
TRN-SR-148	Replacing headlights shall be done by a technician.	
TRN-SR-41	Tail lights shall be fitted in accordance with statutory regulations abc dated 1 Jan 2004.	
TRN-SR-43	Reversing lights shall be fitted in accordance with statutory regulations abc dated 1 Jan 2004.	
TRN-SR-45	Fog lights shall switch on automatically in adverse weather conditions	
TRN-SR-51	All lights shall be able to be switched on without the need for the driver moving either of his hands more than 2.2 cms from the steering wheel.	
TRN-SR-53	All windows shall be able to be opened and closed by automatic means by the user.	
TRN-SR-55	A sun roof shall be able to be opened and closed by automatic means by the user.	
TRN-SR-59	The car shall be able to maintain stability of travel	

System Requirements

- 1 Delivery Requirements
- 2 Functional Requirements
 - 2.1 Power car
 - 2.2 Control car
 - 2.2.1 Switch on car
 - 2.2.2 Control speed
 - The car shall have a speed control
 - The speed control shall be infinitely variable from zero to maximum speed.
 - 2.2.3 Brake car
 - 2.2.4 Clutch Controls
 - 2.2.5 Control direction
 - 2.3 Illuminate car
 - 2.4 Control windows
 - 2.5 Control sun roof
 - 2.6 Maintain visibility
 - 2.7 Stabilize occupants
 - 2.8 Protect passengers
 - 2.9 Protect environmental
 - 2.10 Modularity
 - 2.11 Control entertainment
 - 2.12 Communicate
 - 2.13 Calculate
 - 2.14 Accommodate
- 3 System constraints

Username: Mark Best | Exclusive edit mode





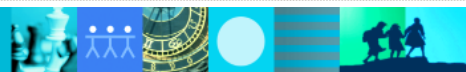
Coverage Analysis

'Stakeholder Requirements' current 3.0 in /New Family Car Project-DWSv2.5/Requirements (Formal module) - DOORS

File Edit View Insert Link Analysis Table Tools Discussions User PStoolbox Publish RMF Help

View 06 - End to End Trace All levels

ID	Stakeholder Requirements	System Requirements	Design	Test
TRN-CSR-44	2.1.6.1 Interior			
TRN-CSR-45	Users shall be able to hear only a very low level of noise inside the car.	TRN-SR-150 The car will be held to a 90 decibelle tolerance level for all noise production (both external and internal).		
TRN-CSR-46	2.1.6.2 Exterior			
TRN-CSR-47	Users shall be able to cause only a very low level of external noise with the car. [IIS-D-1601, PAGE 7]	TRN-SR-150 The car will be held to a 90 decibelle tolerance level for all noise production (both external and internal).		
TRN-CSR-48	2.1.7 Ease of Access			
TRN-CSR-49	2.1.7.1 Access to controls			
TRN-CSR-50	2.1.7.1.1 Braking Pedal			
TRN-CSR-51	Users shall be able to operate brakes in standard footwear.	TRN-SR-151 The break peddles shall be functional for standard footwear (considering size and foot depression rate).	TRN-AD-47 Braking system	TRN-ITST-107 Braking System Test - The braking system of the car is the most crucial part of the vehicle.
TRN-CSR-52	Users shall be able to operate brakes in 3 inch high heeled shoes without the need to remove the foot from the floor.	TRN-SR-151 The break peddles shall be functional for standard footwear (considering size and foot depression rate).	TRN-AD-47 Braking system	TRN-ITST-107 Braking System Test - The braking system of the car is the most crucial part of the vehicle.
TRN-CSR-53	2.1.7.1.2 Speed control			
TRN-CSR-54	Users shall be able to operate the speed control in standard footwear.	TRN-SR-16 The car shall have a foot mechanism to control the speed of the car.	TRN-AD-140 Accelerate Car	
TRN-CSR-55	2.1.7.1.3 Clutch			
TRN-	Users shall be able to operate the clutch, if fitted,	TRN-SR-153	TRN-AD-22	






DOORS Web Access

IBM Rational DOORS Web Access User: Mark Best, Current language: English (United States), Package: Edit [Logout](#)

[Goto URL](#) [Layout](#) [Package](#) [Help](#)

Stakeholder Requirements [Goto](#) [Find](#)

View: 01 - Identify Requir

Req	Discus	Stakeholder Requirements	Business Priority	Scope	Rationale	Source	Queries	Discussion
		1 Introduction	N/A					
TRN-CSR-1		This module contains the user requirements for a 'New Family Car' to be commercially available by 1 September 2012. 	Must Have	In	In time for			Incorrect Date (Open) 1) Mark Best on 5/24/2010 11:11:00 AM khdfikdjhkjkf Version:/New Family Car Project-DWSv2.5/Requirements/Stakeholder Requirements (while current) Data timestamp: 5/24/2010 13:00:00 Status: Open 2) Mark Best on 6/9/2010 13:00:00 ok noted Version:/New Family Car Project-DWSv2.5/Requirements/Stakeholder Requirements (while current) Data timestamp: 6/1/2010 14:15:00 Status: Open
TRN-CSR-139								
		2 Requirements	N/A					
TRN-CSR-8		2.1 Capability Requirements	N/A					
TRN-CSR-9		2.1.1 Carrying Capacity	N/A					
TRN-CSR-10		2.1.1.1 Number of people	N/A					
TRN-CSR-11								
TRN-CSR-136		Four average size adults shall be able to travel in comfort for a period of 4 hours. This level of comfort is defined as being equivalent to the standard of comfort provided by the top 30% of cars produced in 2006.	High	In				
		Five average size adults shall be able to travel in comfort for a period of 4 hours.	Medium	In				
TRN-CSR-14		Two average size adults and 3 average size children shall be able to travel in comfort for a period of 3	Medium	In				

Attributes Discussions

Links

Sort By New

Mark Best
09-Jun-2010 01:06:27 PM
[2] Incorrect Date

current





Rational Publishing Engine

IBM.	Commercial-in-Confidence	ID:	IBM-TEL-4315
		Issue:	2.5 Draft A
		Issue Date:	4 th June 2010

CONTENTS

1	Introduction	1
2	Requirements	1
2.1	Capability Requirements	1
2.1.1	Carrying Capacity	1
2.1.1.1	Number of people	1
2.1.1.2	Amount of luggage	1
2.1.2	Cost Points	2
2.1.3	Movement	2
2.1.3.1	Speed and Acceleration	2
2.1.3.1.1	Forwards	2
2.1.3.1.2	Backwards	2
2.1.3.2	Distance	2
2.1.3.3	Stopping	2
2.1.4	Fuel economy	3
2.1.5	Safety	3
2.1.6	Noise levels	3
2.1.6.1	Interior	3
2.1.6.2	Exterior	3
2.1.7	Ease of Access	3
2.1.7.1	Access to controls	3
2.1.7.1.1	Braking Pedal	3
2.1.7.1.2	Speed control	3
2.1.7.1.3	Clutch	3
2.1.7.1.4	Gears	4
2.1.8	Visibility	4
2.1.8.1	Daylight	4
2.1.8.2	Night time	4
2.1.8.3	Weather	4
2.1.9	Equipment malfunction	4
2.1.10	Entertainment	5
2.1.11	Maintenance	5
2.1.12	Servicing	5
2.1.13	Indication requirements	5
2.1.14	Terrain	6
2.1.15	Refueling	7
2.2	Constraint Requirements	7
2.2.1	Availability	7
2.2.2	Lifetime	7
2.2.3	Security	7
2.2.4	Accessories	7
2.2.5	Fuel input	7
2.2.6	Company constraints	8
3	User types	8
3.1	Nationalities	8
3.2	User sizes	8
	Appendix A - Traceability Matrix	9



1 Introduction

TRN-CSR-139 - This module contains the user requirements for a 'New Family Car' to be commercially available by 1 September 2011.



2 Requirements

2.1 Capability Requirements

2.1.1 Carrying Capacity

2.1.1.1 Number of people

ID	Requirement Text	Priority	Status
TRN-CSR-136	Four average size adults shall be able to travel in comfort for a period of 4 hours. This level of comfort is defined as being equivalent to the standard of comfort provided by the top 30% of cars produced in 2006.	High	Draft
TRN-CSR-14	Five average size adults shall be able to travel in comfort for a period of 4 hours.	Medium	Verified
TRN-CSR-15	Two average size adults and 3 average size children shall be able to travel in comfort for a period of 3 hours. This could be accomplished with a three seat arrangement.	Medium	Verified
TRN-CSR-16	Users shall have easy entry and exit.	Medium	Verified

2.1.1.2 Amount of luggage

ID	Requirement Text	Priority	Status
TRN-CSR-18	Users shall be able to carry 200 Kilograms of luggage. This may include the use of a roof rack, so special emphasis might be placed on the type of roof chosen. There could also be a convertible model which wouldn't have a roof rack. 150 Kg in trunk of car. 50 Kg on roof/roof rack.	Medium	Draft





To Conclude





Information Management software

Lotus software

Tivoli software

WebSphere software

Combined Portfolio in Action

Enterprise Architecture & Frameworks

System Architect/RAM

Product Portfolio Management

Focal Point/Project Conductor

Measurement and Reporting

Insight Publishing Engine

Requirements Definition and Management

DOORS/ReqPro Requirements Composer

Release Management

BuildForge Team Concert Software Analyzer

Analysis & Design

Rhapsody Software Architect

Configuration & Change Management

ClearCase/ClearQuest Synergy/Change Team Concert

Construction

Business Developer, Application Developer, Developer for z Rdi, HATS

Quality Management

Quality Manager, Functional Tester, Performance Tester, SOA Tester, Test Lab Manager, Test RealTime Logiscope, PurifyPlus AppScan, Policy Tester

System/Software Lifecycle Process Management

Method Composer, Harmony, RUP-SE



QUESTIONS





www.ibm.com/software/rational

© Copyright IBM Corporation 2010. All rights reserved. The information contained in these materials is provided for informational purposes only, and is provided AS IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, these materials. Nothing contained in these materials is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software. References in these materials to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in these materials may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. IBM, the IBM logo, Rational, the Rational logo, Telelogic, the Telelogic logo, and other IBM products and services are trademarks of the International Business Machines Corporation, in the United States, other countries or both. Other company, product, or service names may be trademarks or service marks of others.

