IBM Software Group

Aligning IT Investments with Business Priorities

Do the Right Things Right

Mark Best – Client Technical Consultant

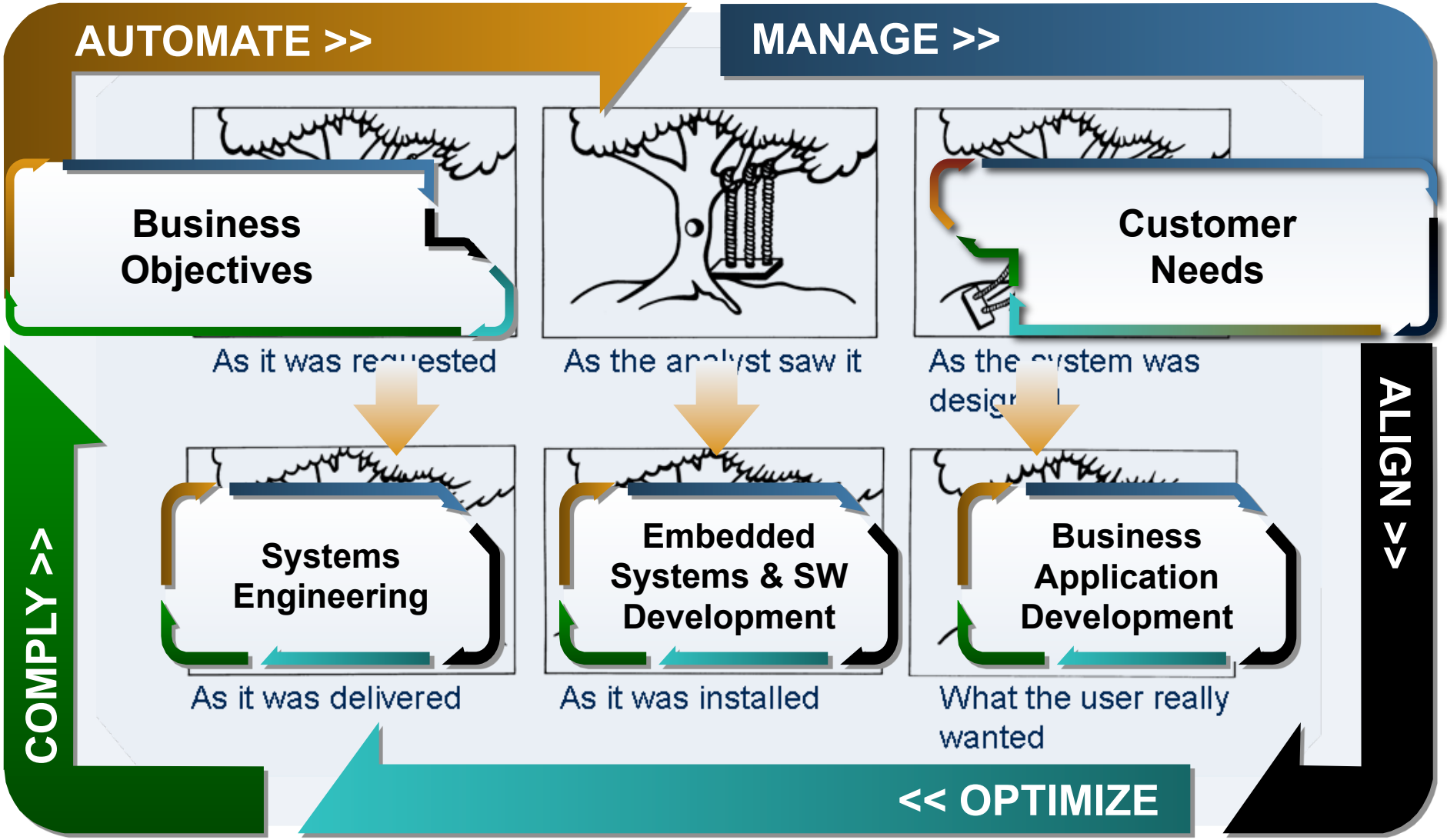
Rational. software

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

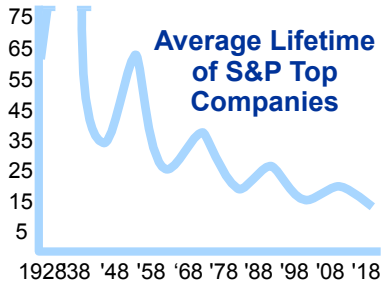
It's Critical the IT and the Business understand each other



…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

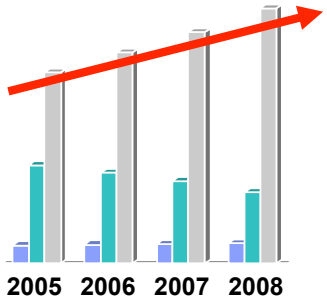
What the business wants to do!

Lower Cost & Risk

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

What the business must do!

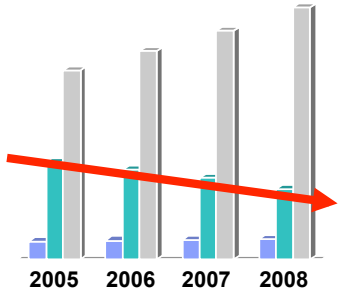
Rising Cost of Operations



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

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

IT Infrastructure

Business Infrastructure

Organizations face challenges optimizing their application portfolio

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

Redundant applications amassed through mergers, acquisitions and organic growth

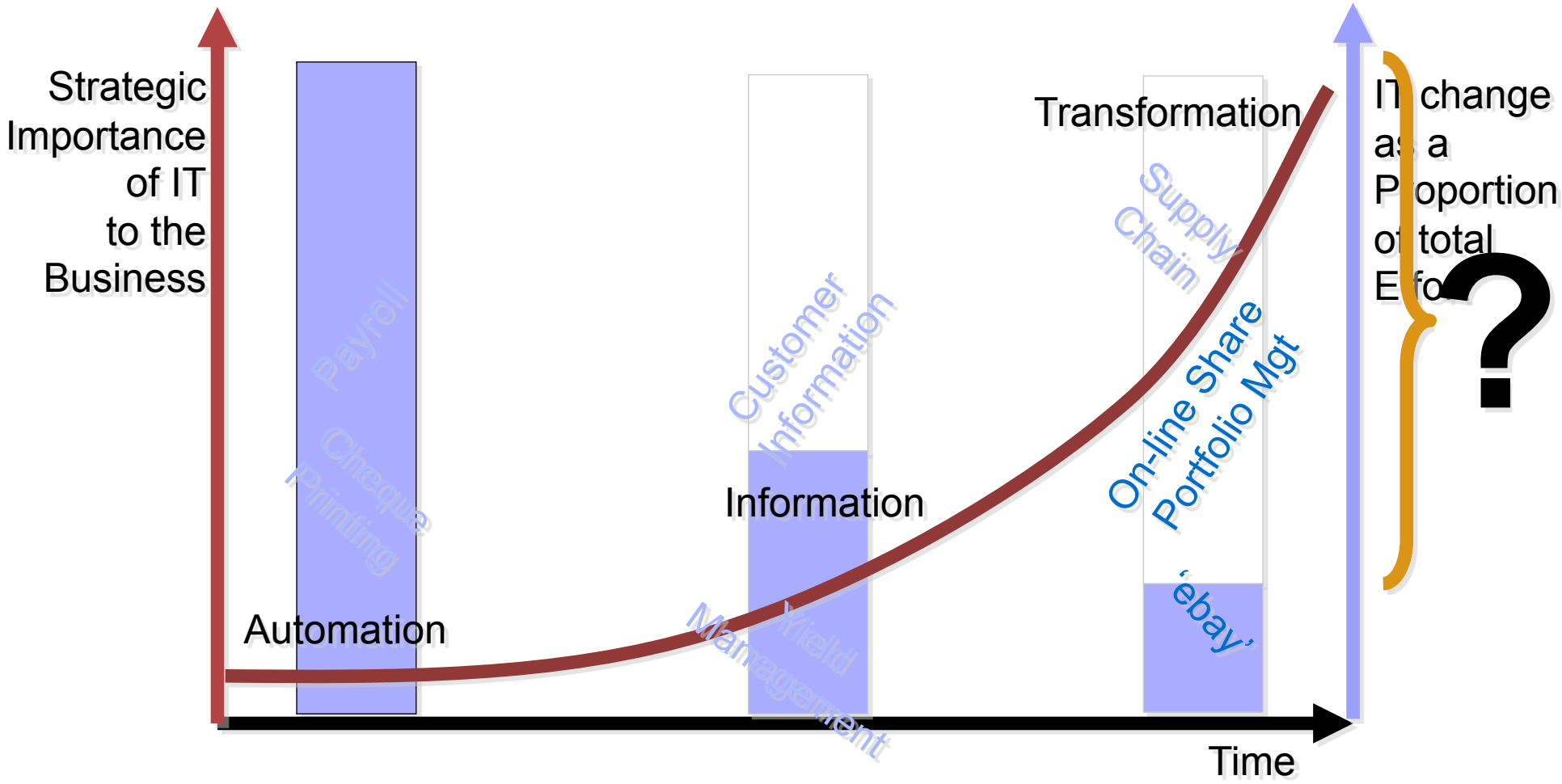
Lack of visibility into the inventory of applications, metrics and KPIs

Legacy applications that no longer meet the business needs; have high maintenance costs

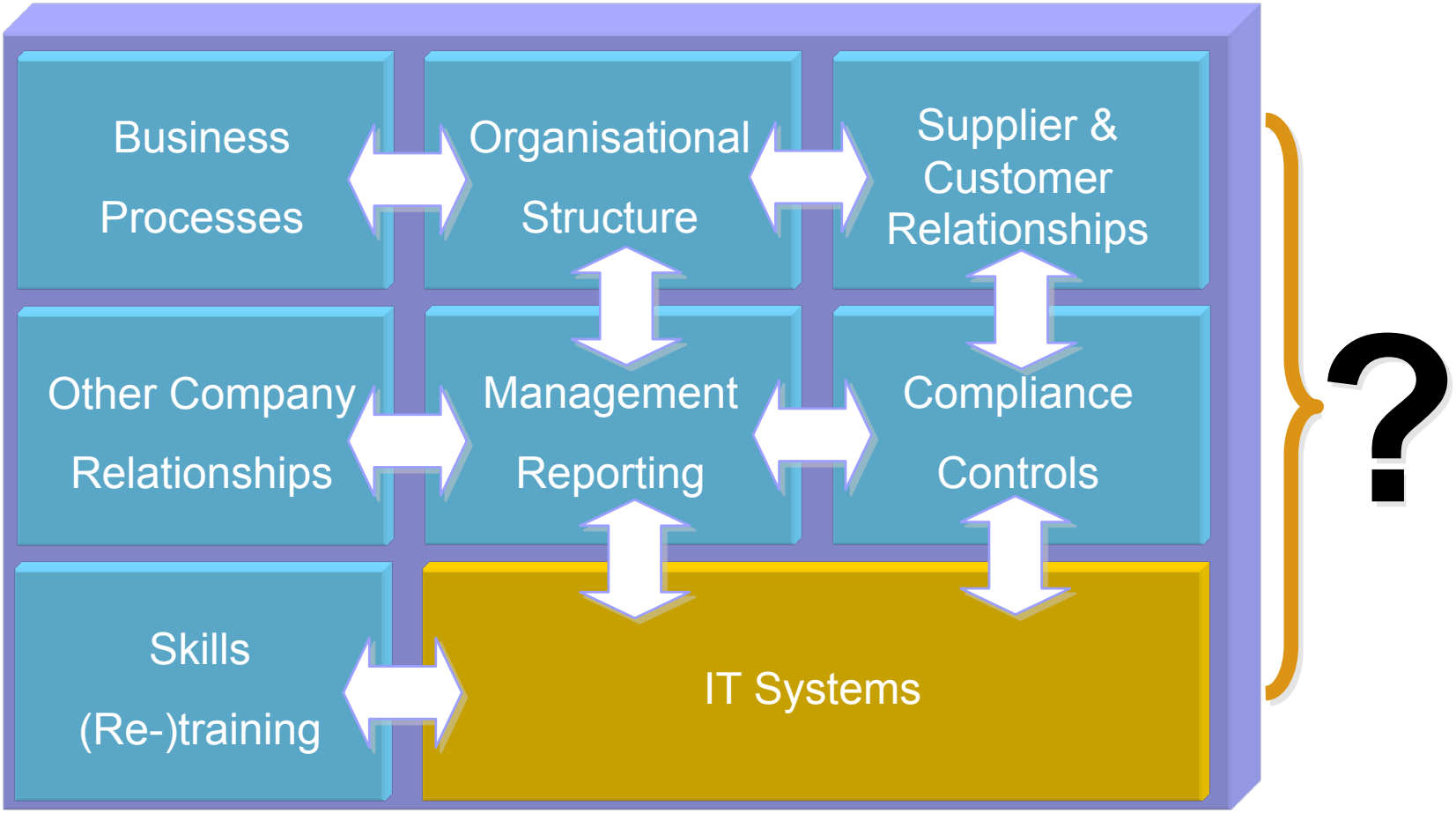
Keeping current with new releases of packaged applications; risk losing of support and costly license compliance

Lack of visibility into IT owned assets

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

Source – The Information Paradox, John Thorp

These apply at many levels

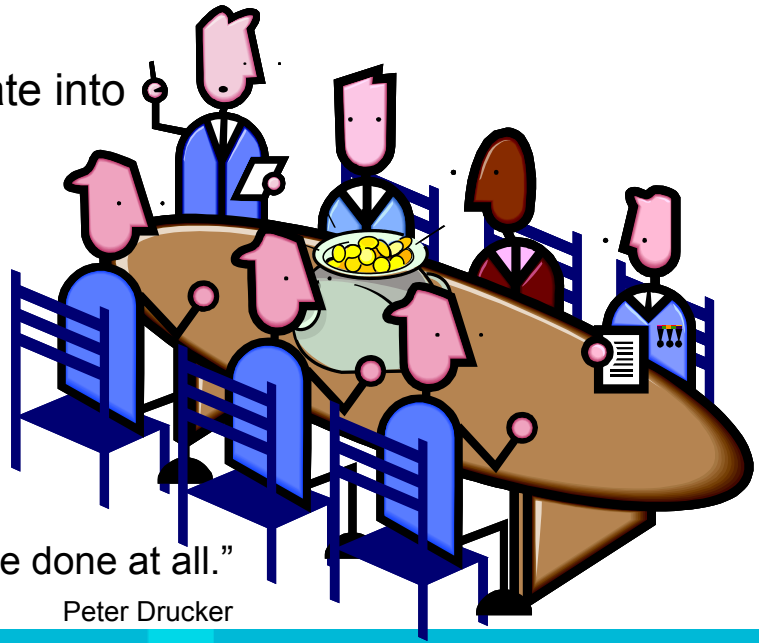
- Program
- Project
- Activity
- Task

Are we doing the right things?

The Strategic Question

Are we doing the right things?

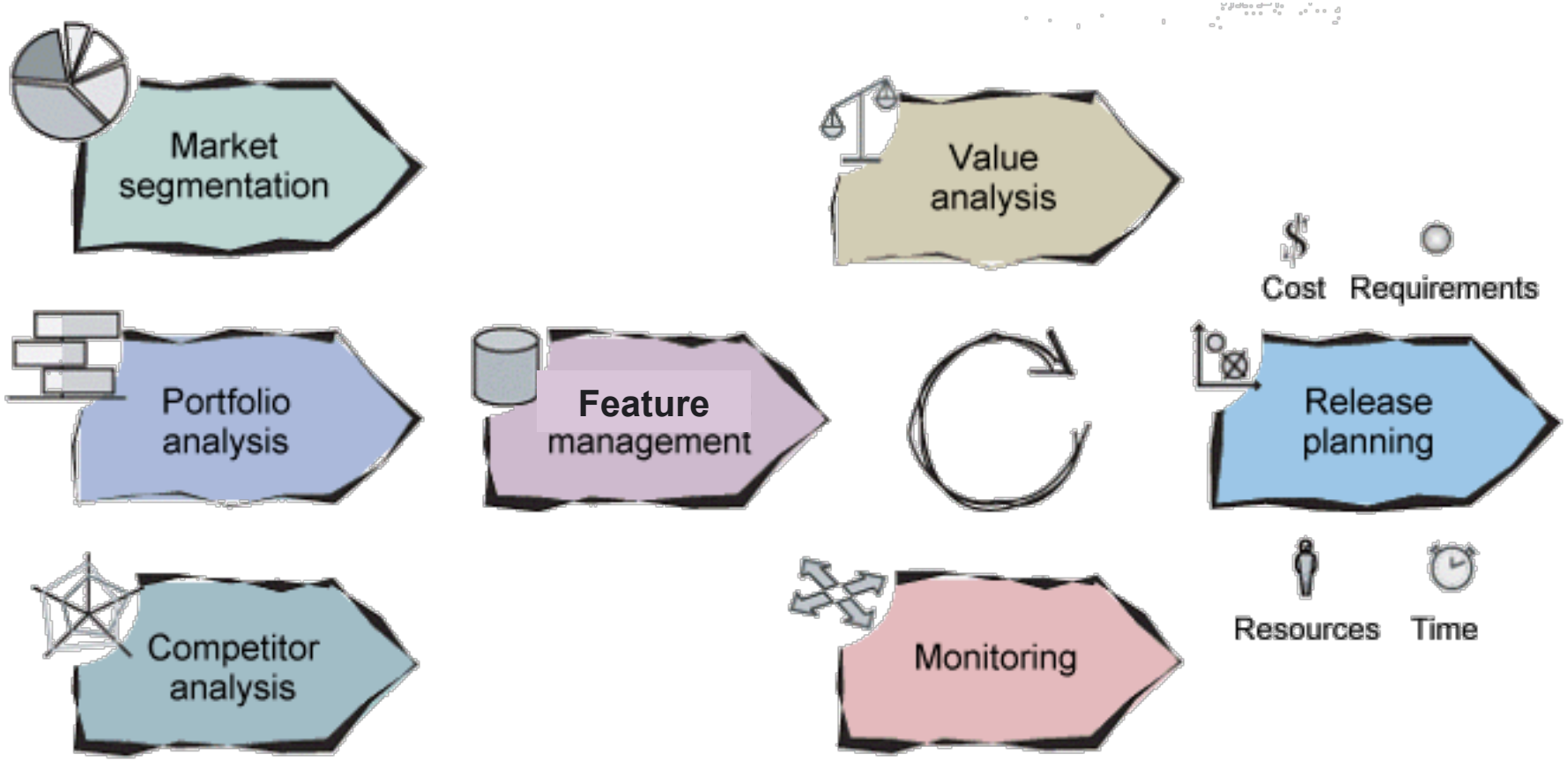
- **As a business?**
  - What are the opportunities at present?
  - Do they align with our organisational directions?
  - Do we have the skills to take advantage of them?
- **As an IT organisation?**
  - Is everything we are doing continually aligned to the imperatives of the rest of the business?
  - 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?



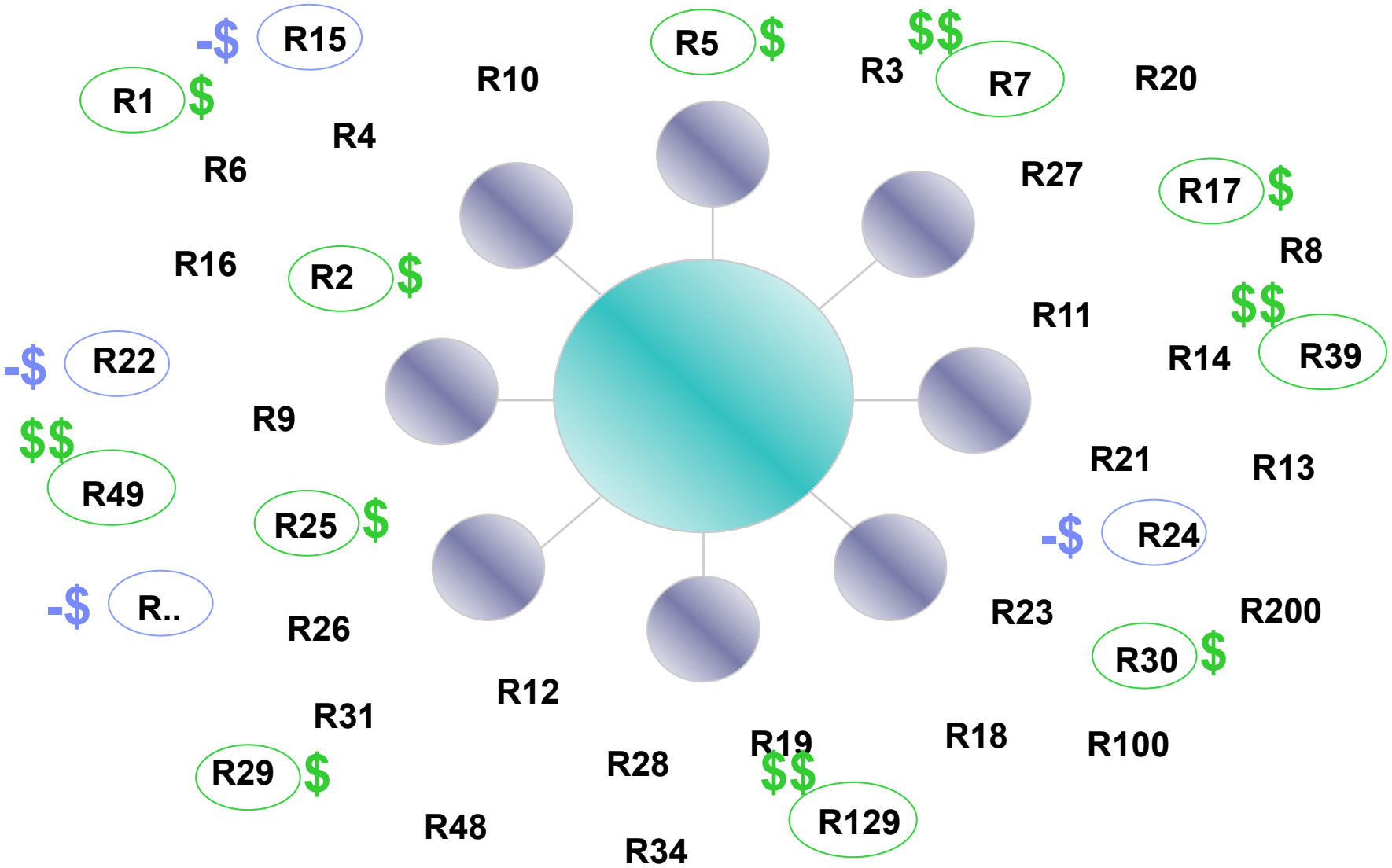
"There is nothing so useless as doing efficiently that which should not be done at all."

Peter Drucker

Decisions Through the Lifecycle



Value-Based Selection



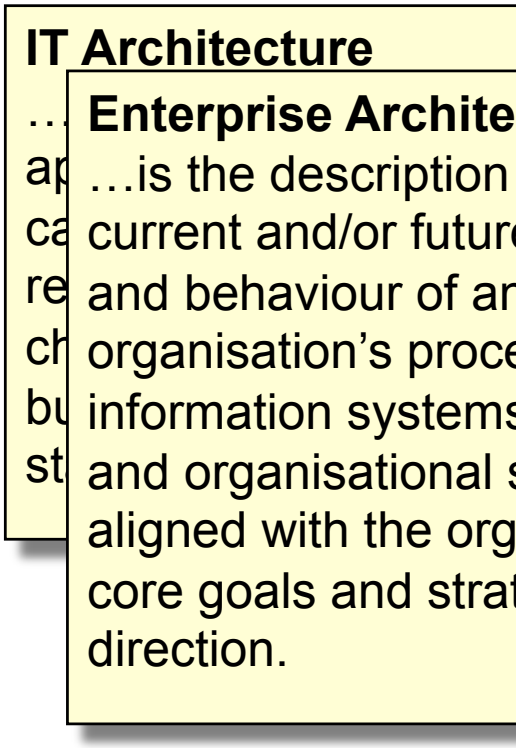
"Management is doing things right, leadership is doing the right things" Peter Drucker

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?



Change and Conversation

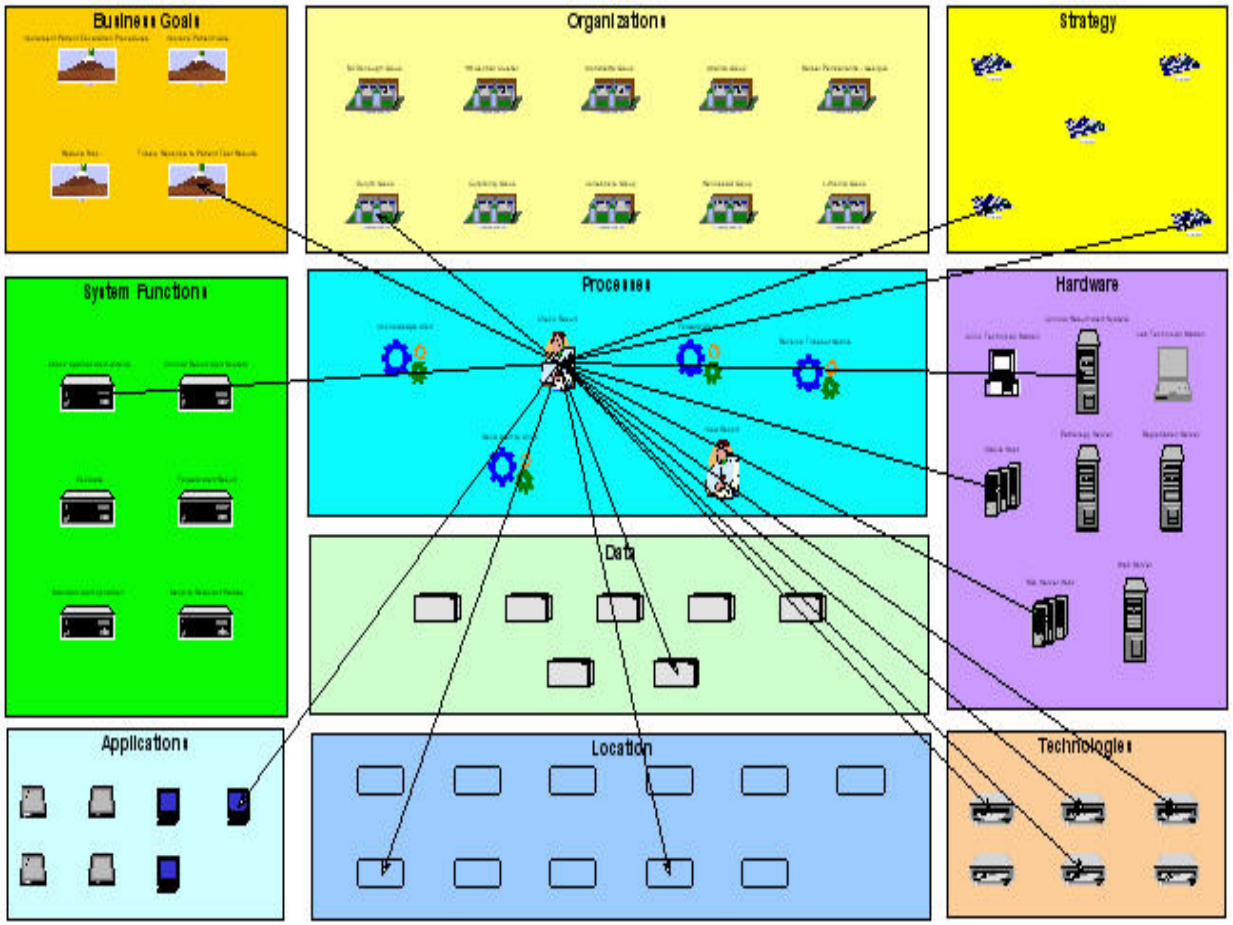
- Change cannot be effected without effective conversations
- These are complex conversations and require Tools and Technology support
- Too much knowledge is ‘walking out of the door’
- Knowledge needs to be captured and treated as business assets

Why Enterprise Architecture? Communication, Enabling Change

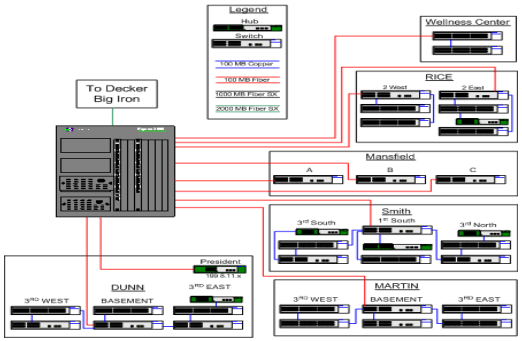
- Knowing that your infrastructure supports your business
  - People
  - Process
  - Applications/Systems
  - Technology
- Knowing how your infrastructure supports your business
- Enabling business change
  - Putting your business on the web
  - Exposing your business processes
  - Mergers and acquisitions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

Analyse the Impact of Change

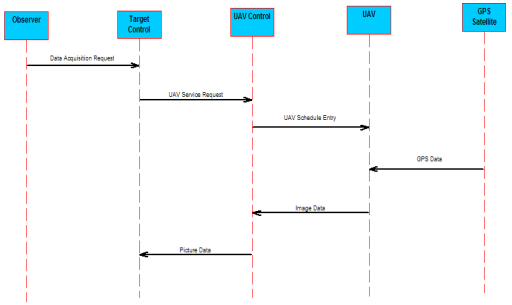
- **Who** is Impacted as a Result in a Change to a Process?
- **What** is the Impact of sun-setting an Application?
- **When** Do We Need to Have Systems Implemented in Order to achieve our Business Objectives?
- **Where** May problems Present Themselves When Rolling Out a New Technology or Process?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



Visualise the Entire Enterprise



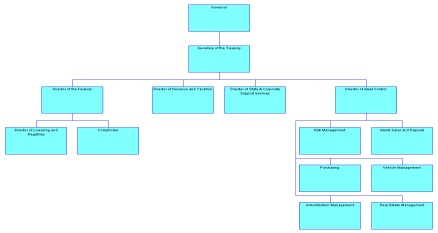
Network Topologies



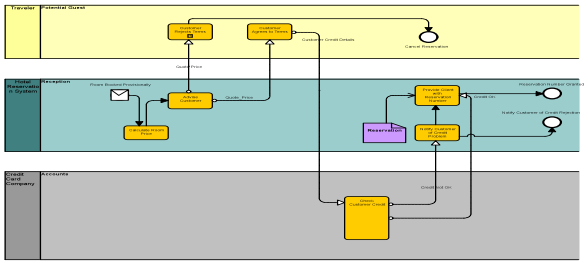
Behaviour Models

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

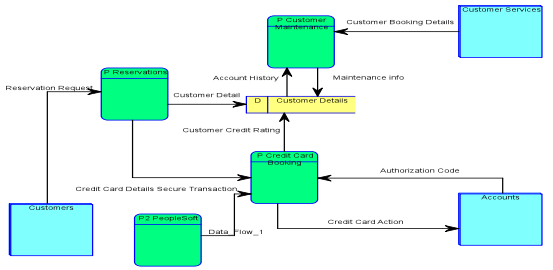
Matrix Views



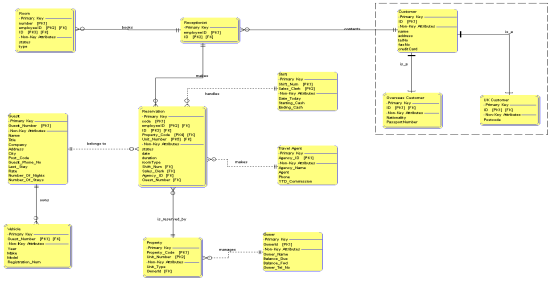
Organisational Charts



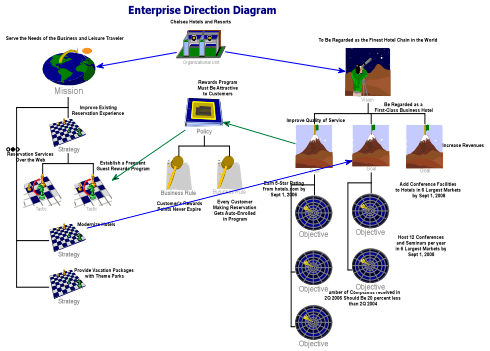
Process Models



Application Models

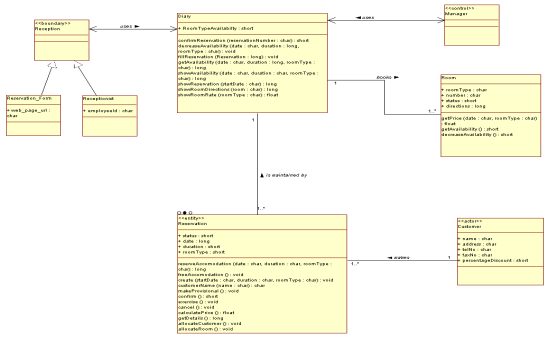


Data Models



Goals

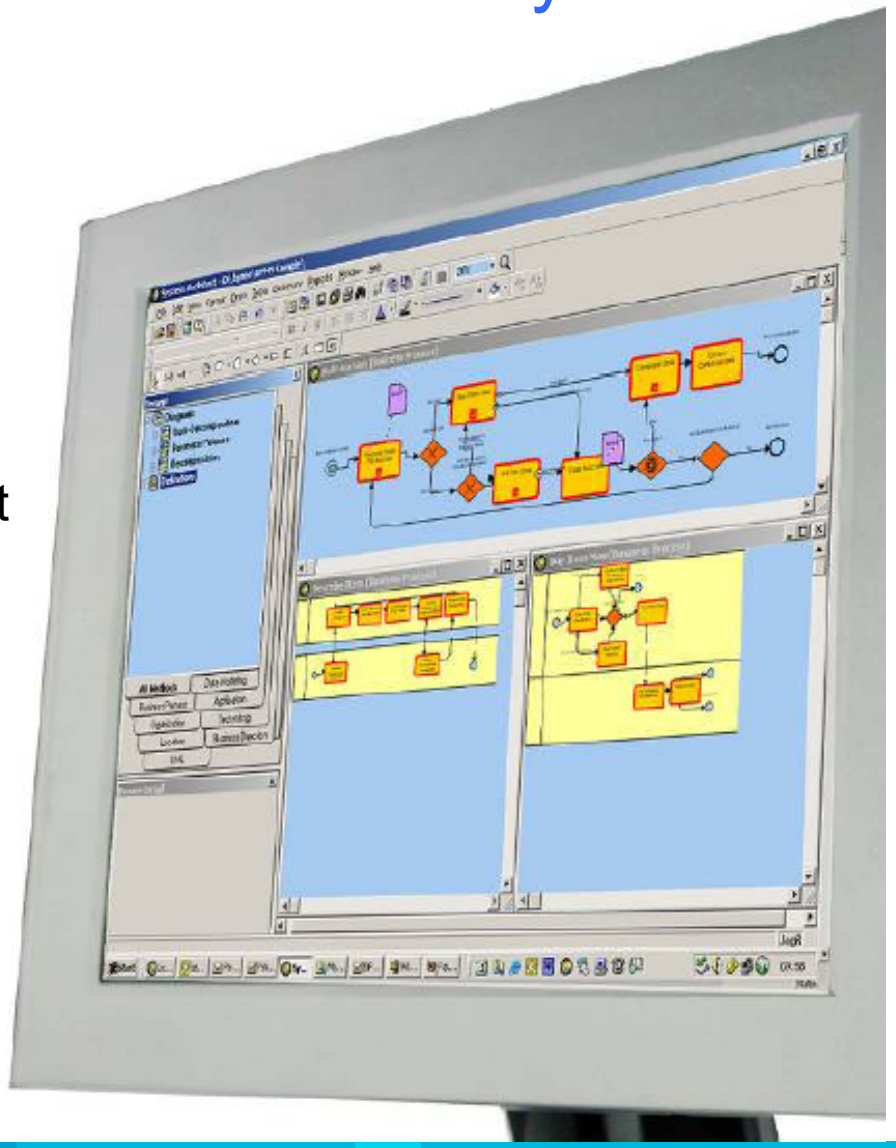
Objectives



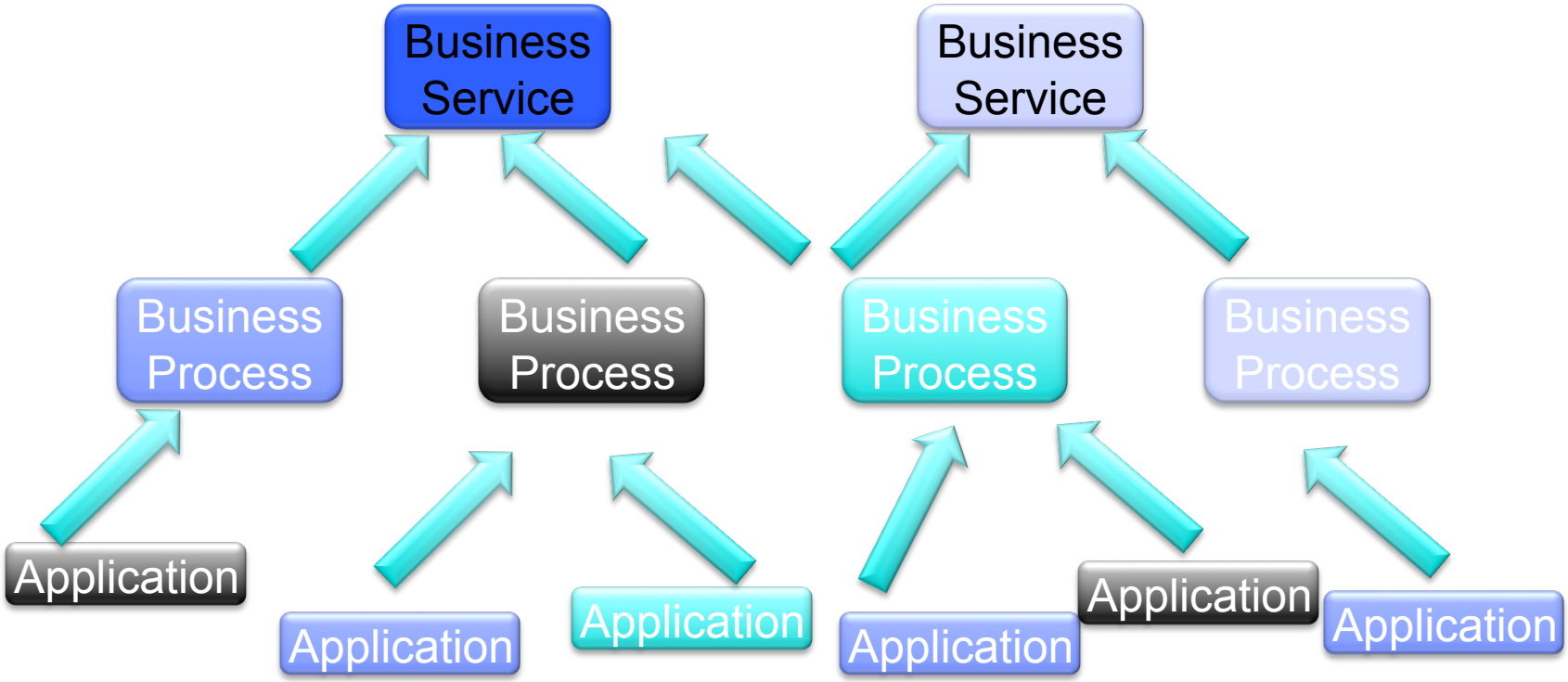
Class Diagrams

Initiative Driven: Implementation of a New System

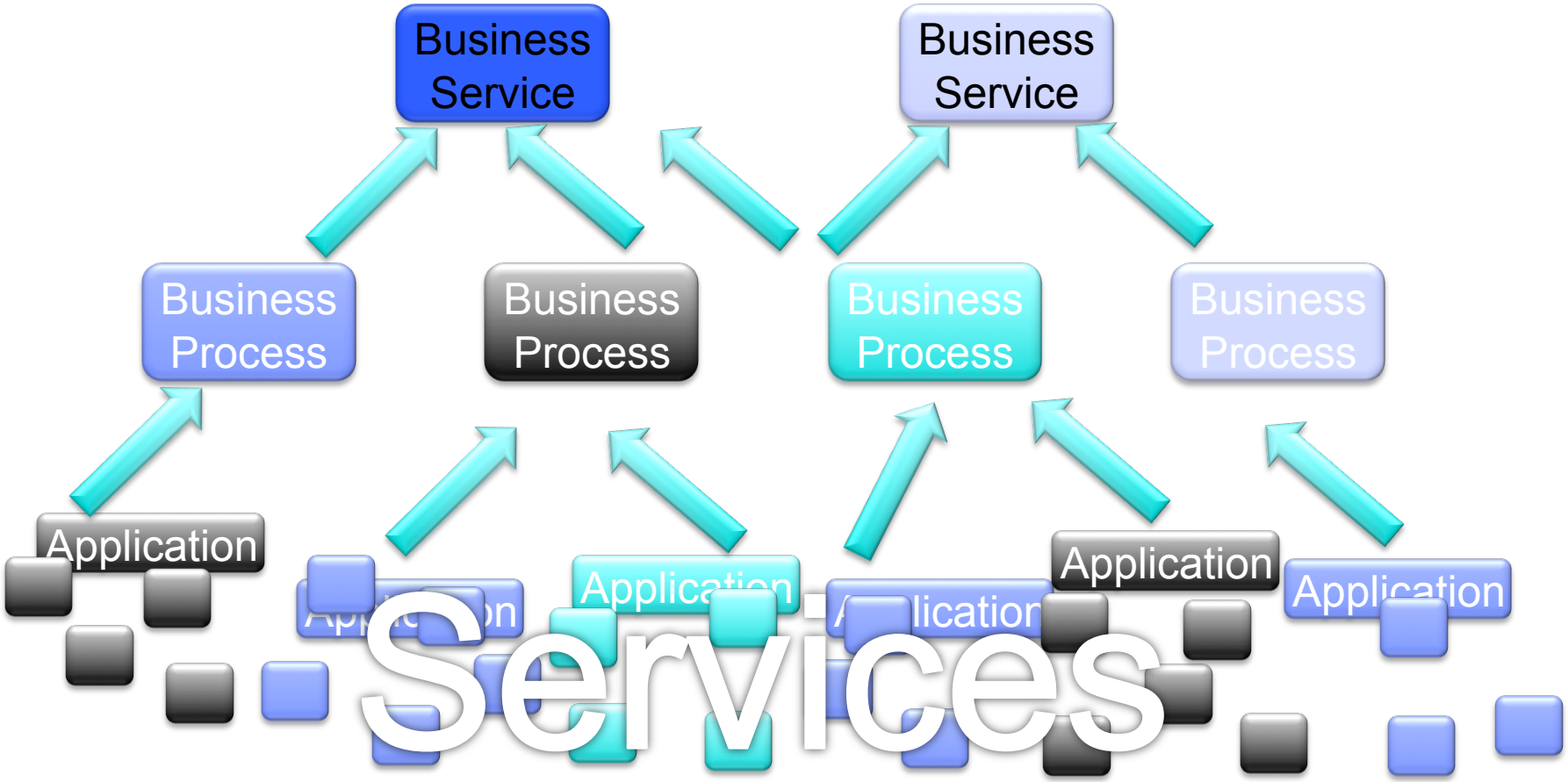
- Implementation of new merchandising system …
- What functionality in the proposed system overlaps with existing functionality?
- What is the impact of changing the current business processes?
- What systems will be affected by the changes?
- Who will need training?
- Which business area and geographical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



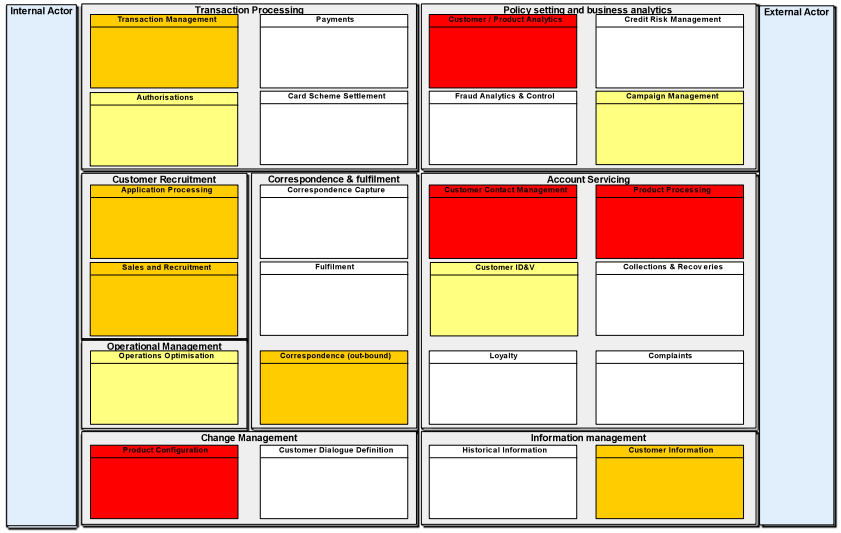
Today (without SOA)

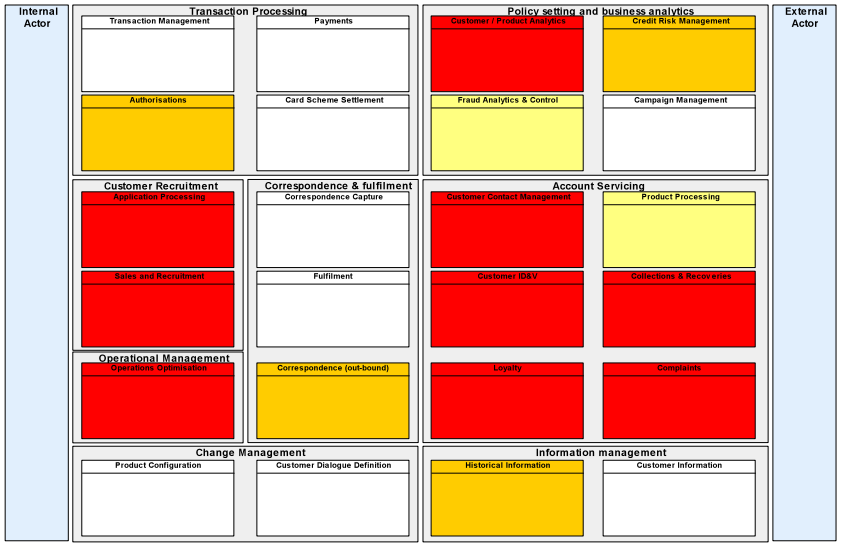


Tomorrow (with SOA)



Is IT aligned to Business Strategy?

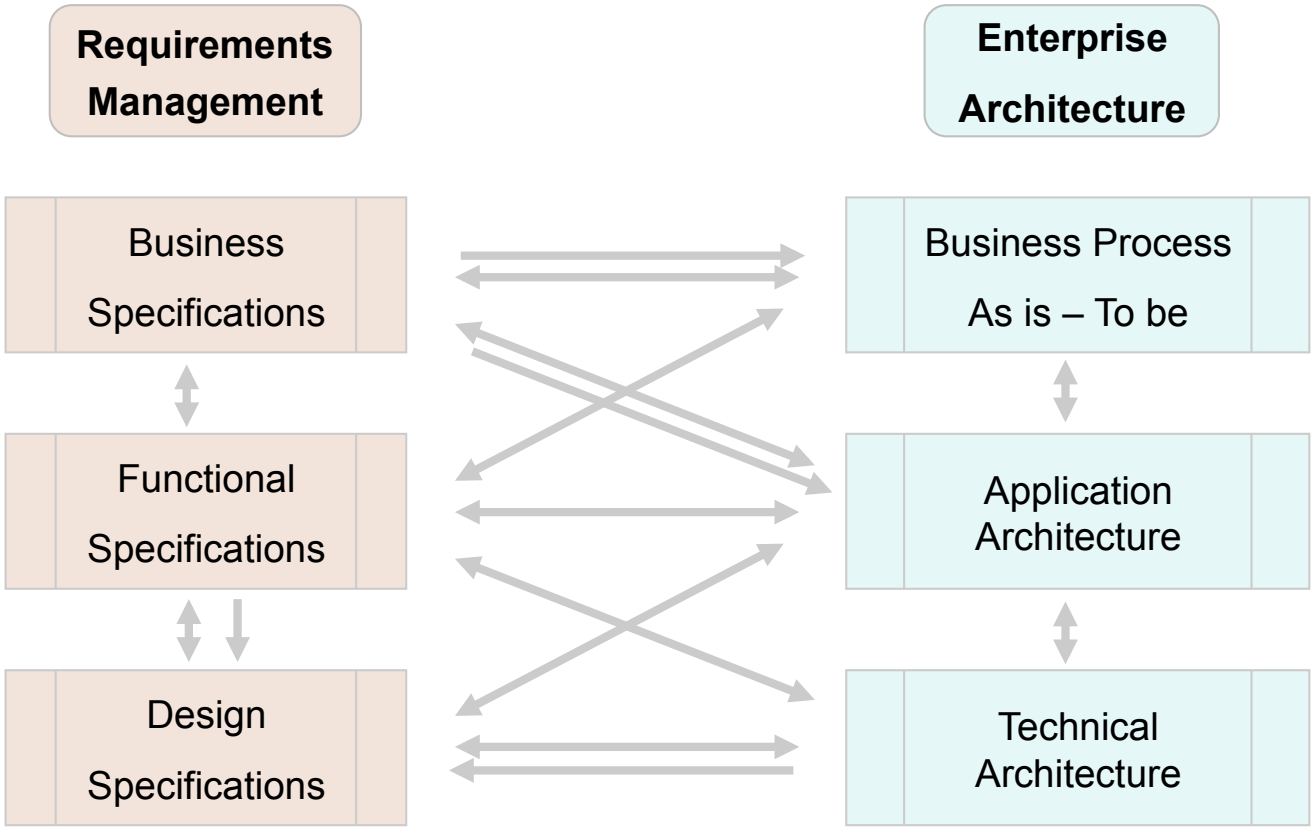




- Business Strategy heatmap
  - Use Application Landscape to show which components expect to be impacted by business strategy
- Change plan heatmap
  - Now show which components are impacted by the current change portfolio

"Not an application name in sight"

Integrated Model



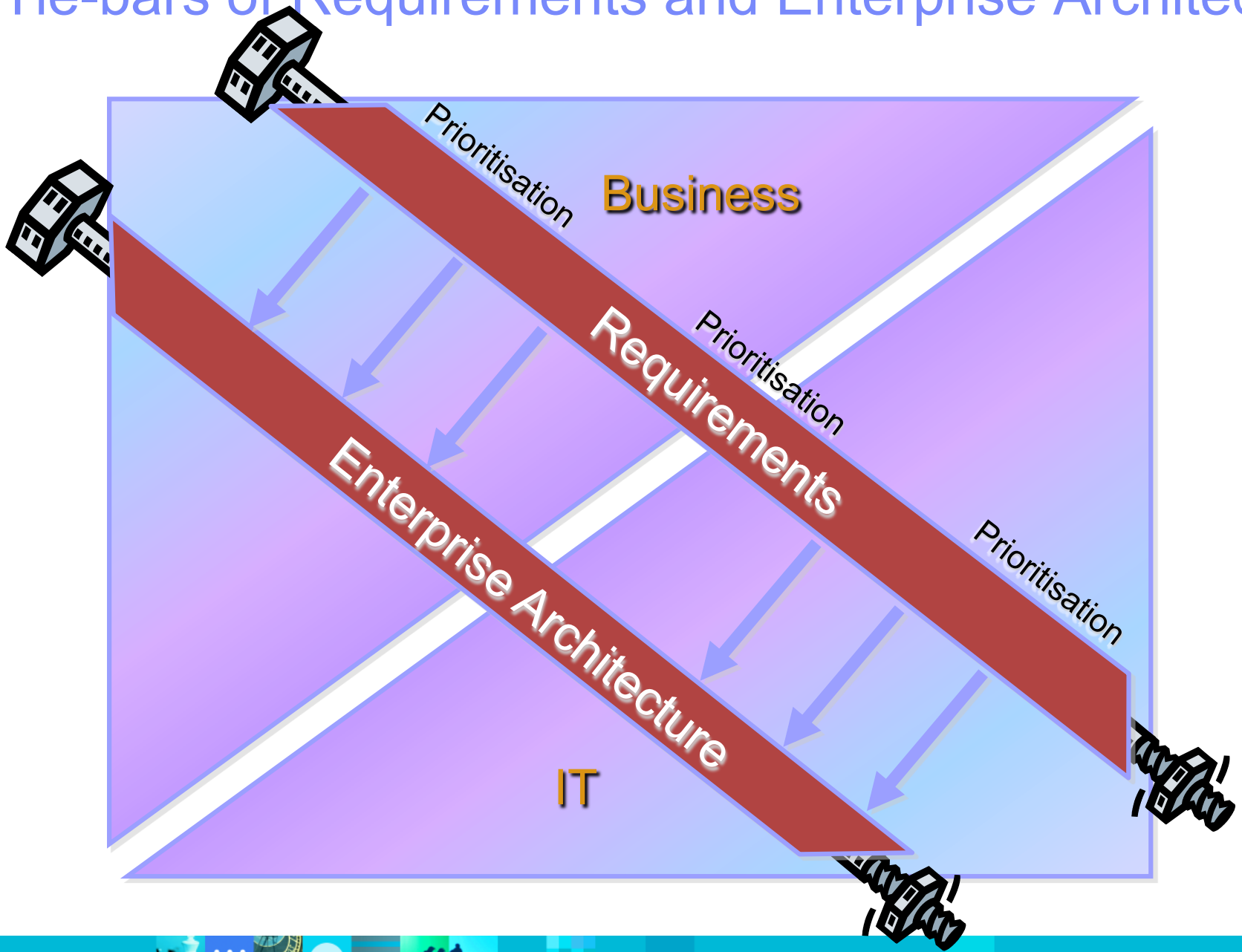
Improved Execution – less change Requests

Improved knowledge retention

Improved visibility

Improved alignment

Tie-bars of Requirements and Enterprise Architecture

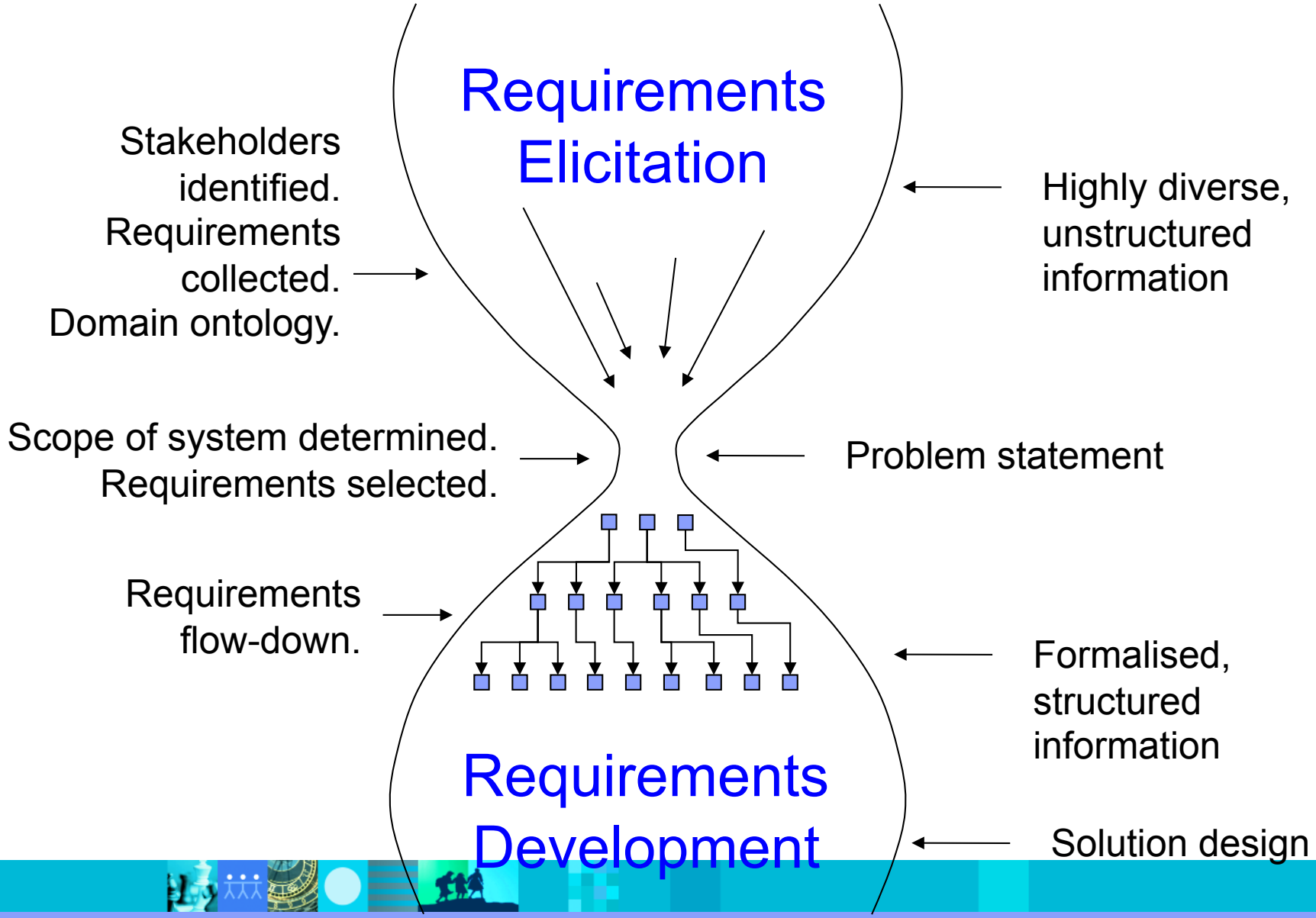


Are we getting them done well?

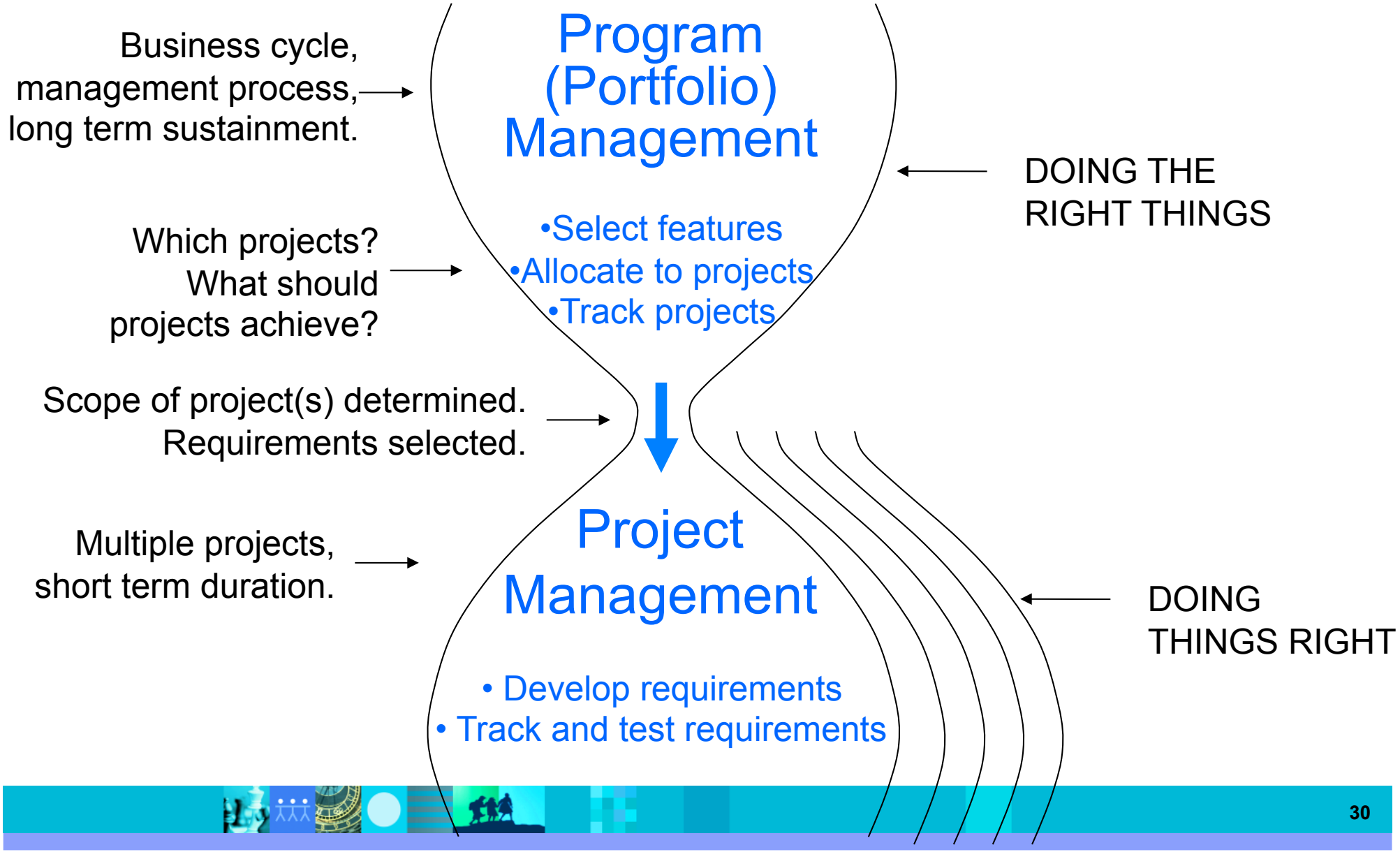
The Delivery Question

The Delivery Question – Capability and Efficiency

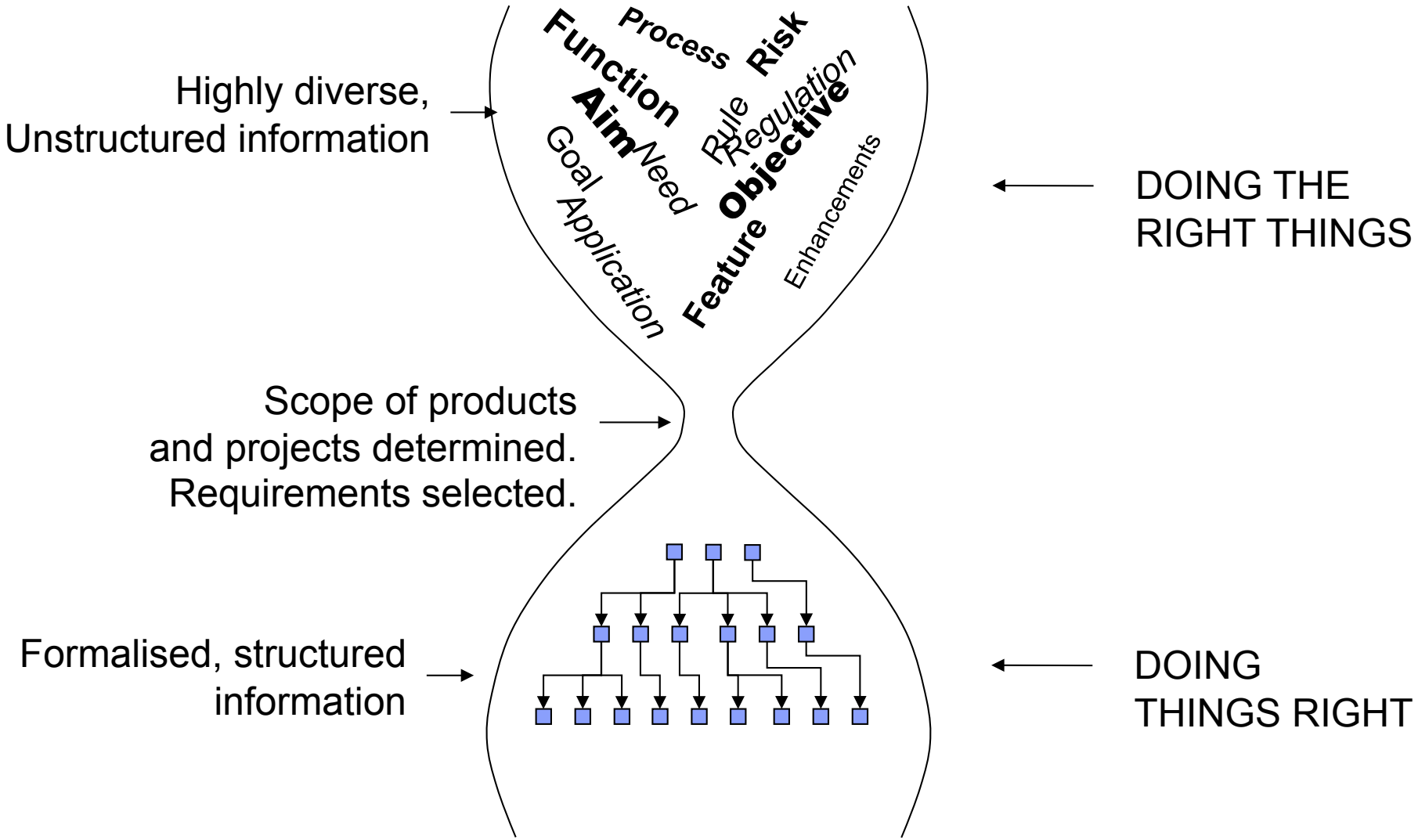
The Delivery "Hourglass"



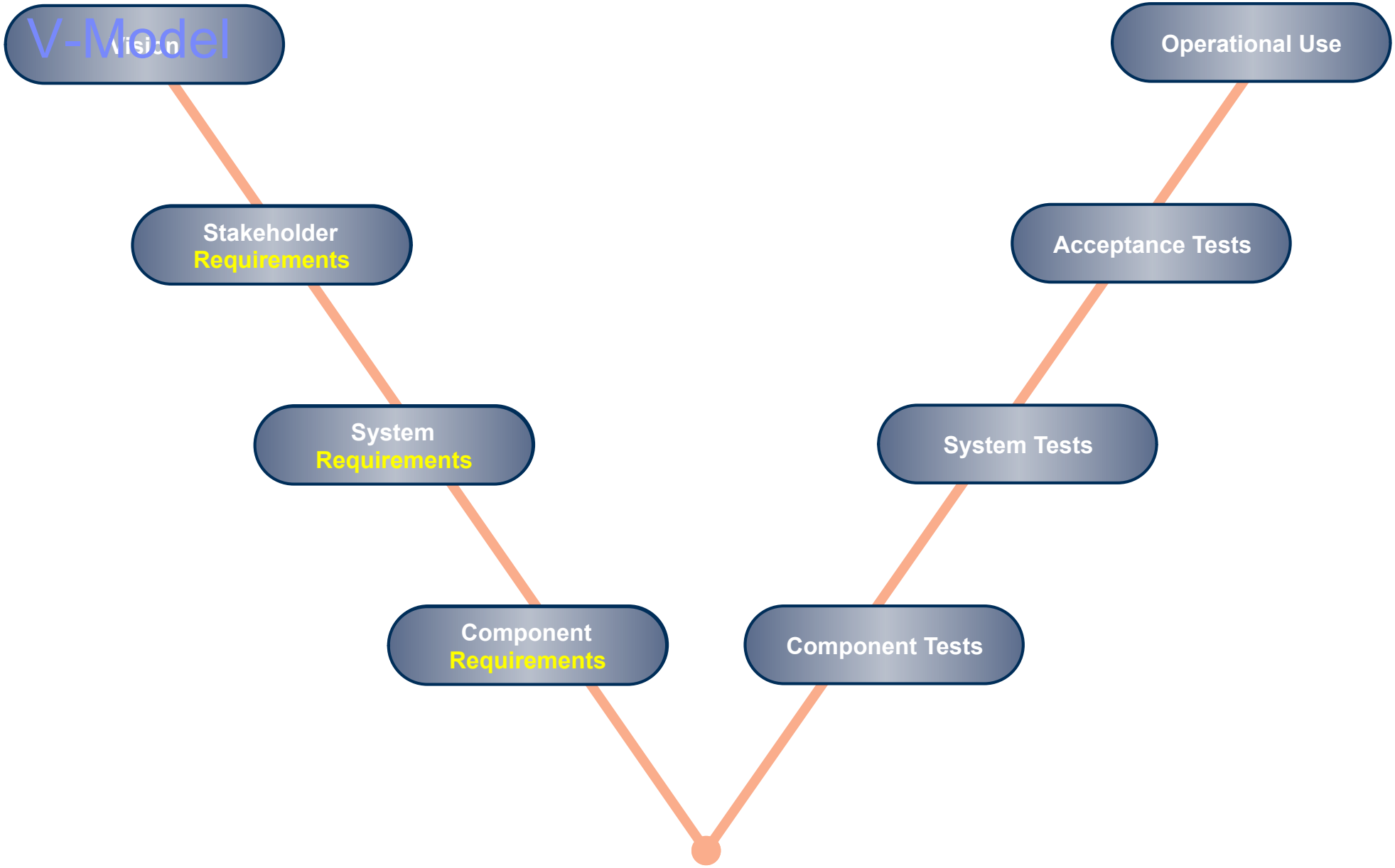
The Delivery "Hourglass"



…requirements are everywhere



V-Model


Vision
Stakeholder Requirements
System Requirements
Component Requirements
Component Tests
System Tests
Acceptance Tests
Operational Use

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

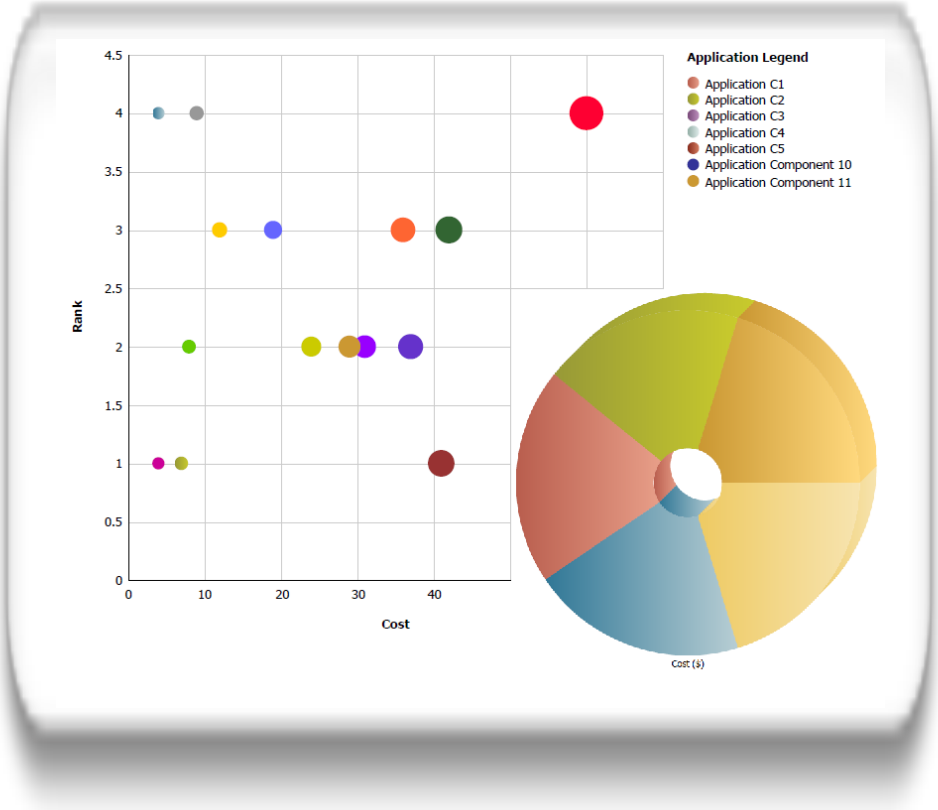
Organisations must recognise that they are no longer making IT investments – they are investing in IT enabled change in the overall business system.

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 out-dated 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?

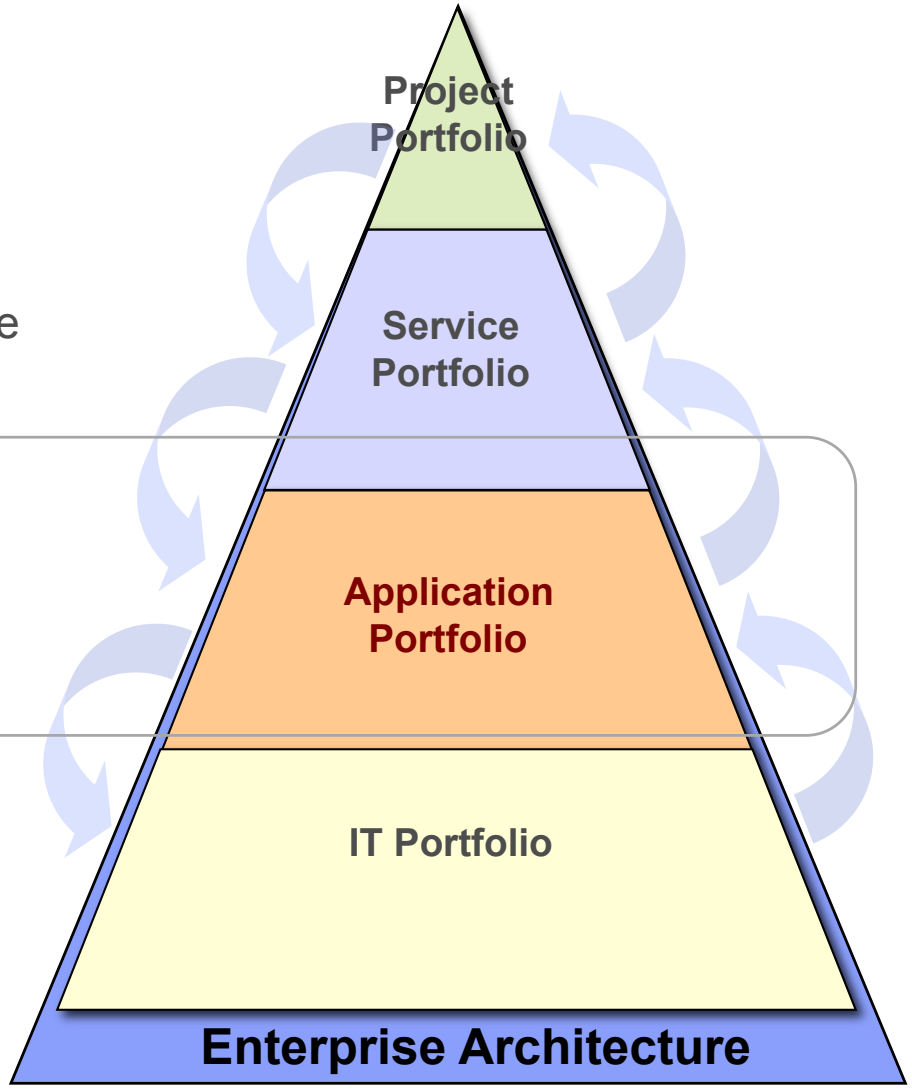


"for every $1 of discretionary spending (i.e., new projects and major enhancements), up to $5 is spent on support, maintenance and infrastructure during the life of an application"

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

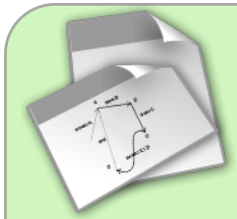
Enterprise Decision Support

Analysis and Optimization

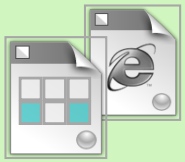
Increased Visibility

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



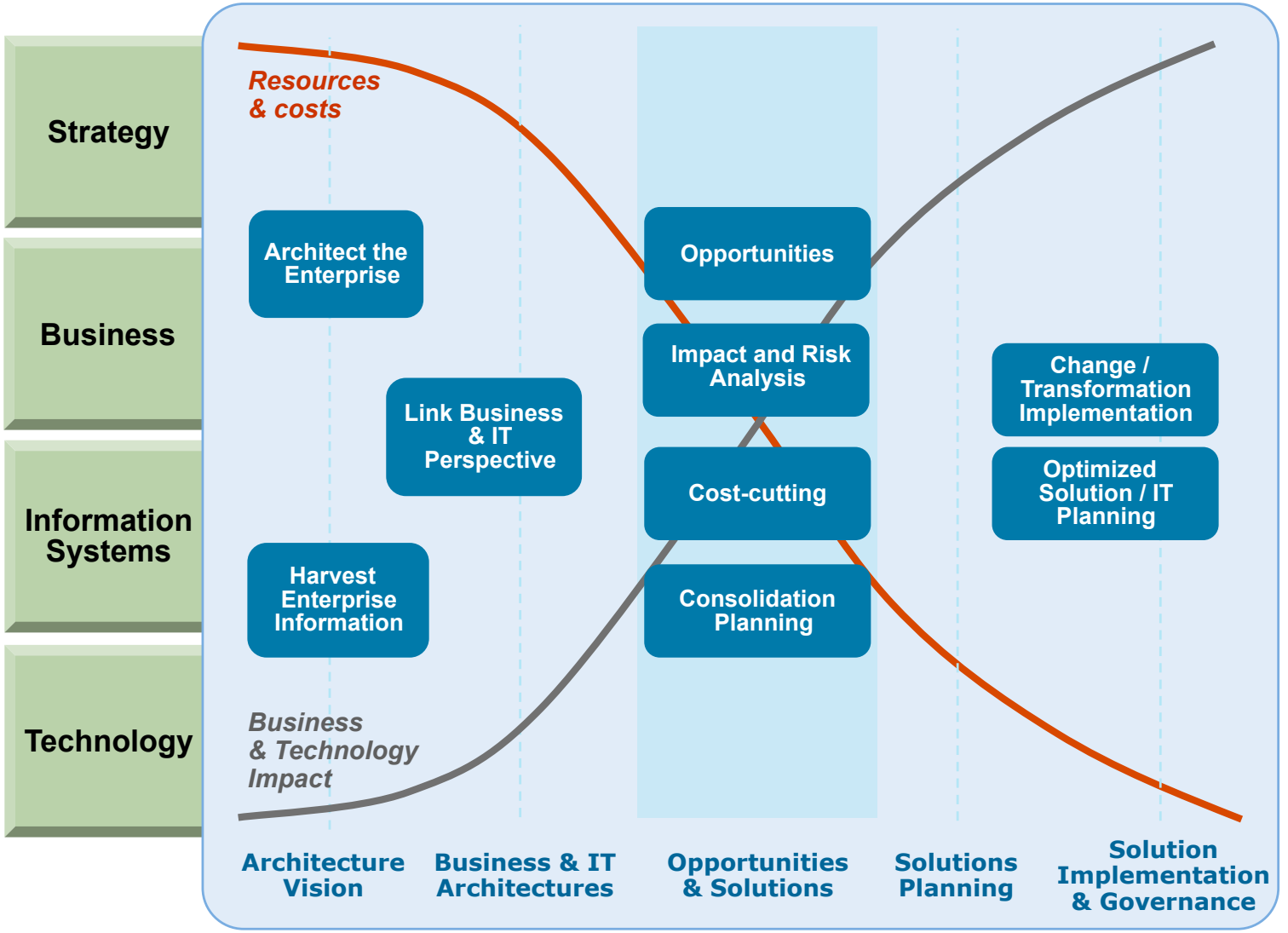
Business and IT Alignment

Business Driven Innovation

The Role of Enterprise Architecture

Managing the Business of IT
Four Steps

Step 1. Build a holistic view



Business and IT Alignment

Increased Visibility

Step 2. Balance current needs and long-term demand

Sustained Business Value

Goals
Objectives
Needs

demand

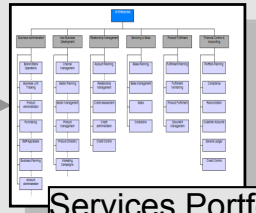
Enhanced APM

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

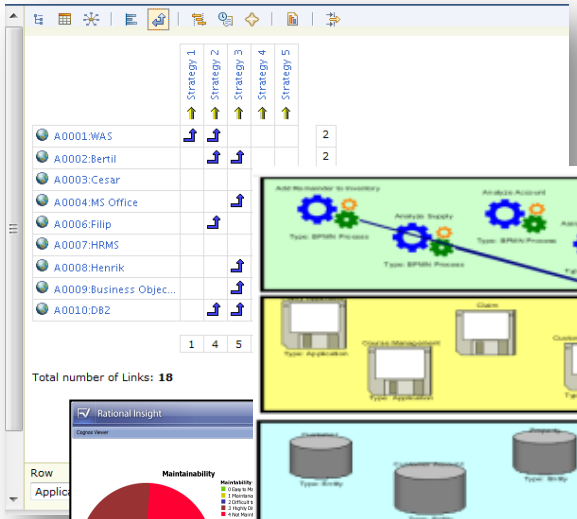
Analysis and Optimization

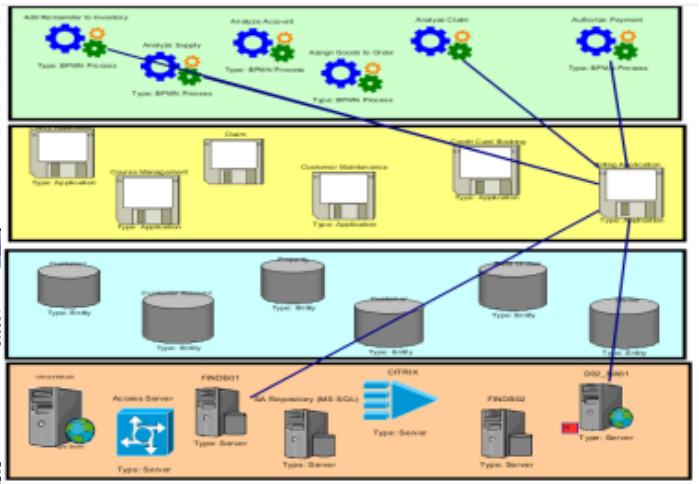
Step 3. Understand the business risk of change

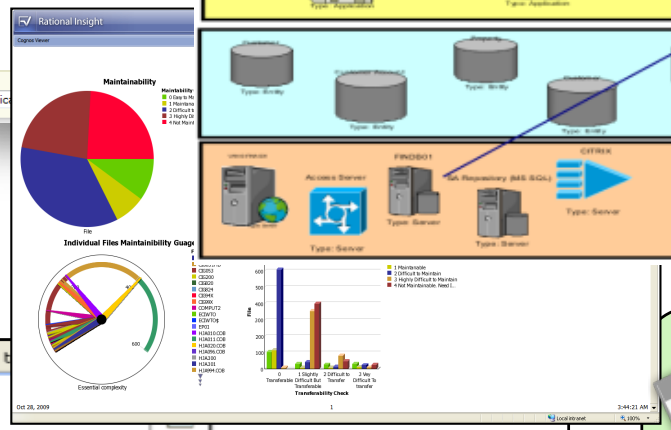
Sustained Business Value

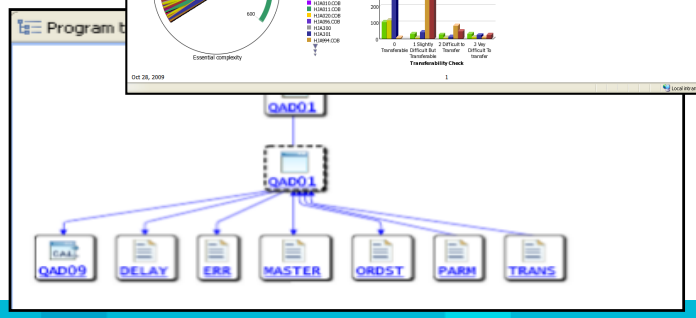
Goals
Objectives
Needs

Targeted Strategy and Direction









Enhanced APM

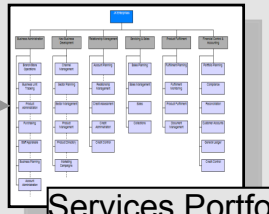
Portfolio Management:

- Financial Analysis and Optimization

Enterprise Architecture:

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

demand



Services Portfolio

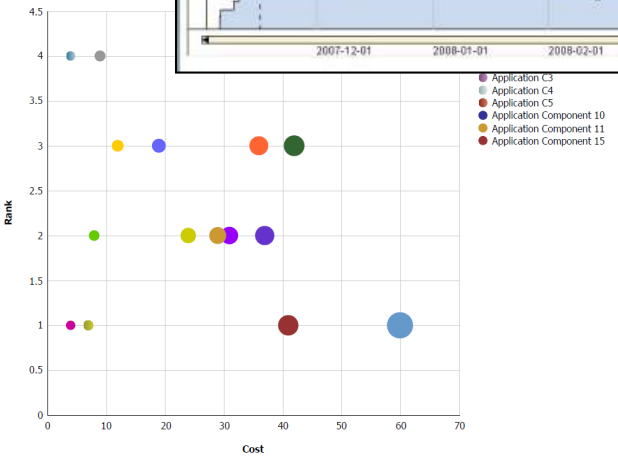
Application Portfolio

Application and IT Discovery

IT Planning and Transformation

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
- Align execution activities to the application strategy (future state)
  - 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 o ad-hoc or non-collaborative activities



Managing the Business of IT : Workflow

1 Map the organization's business & IT direction and strategy

- Connected business & IT architectures
- Key operational processes

2 Inventory and evaluate applications

- Identify, categorize and define major application groups
- Identify hardware and software dependencies
- Compare the value of applications

3 Perform a financial review and application portfolio assessment

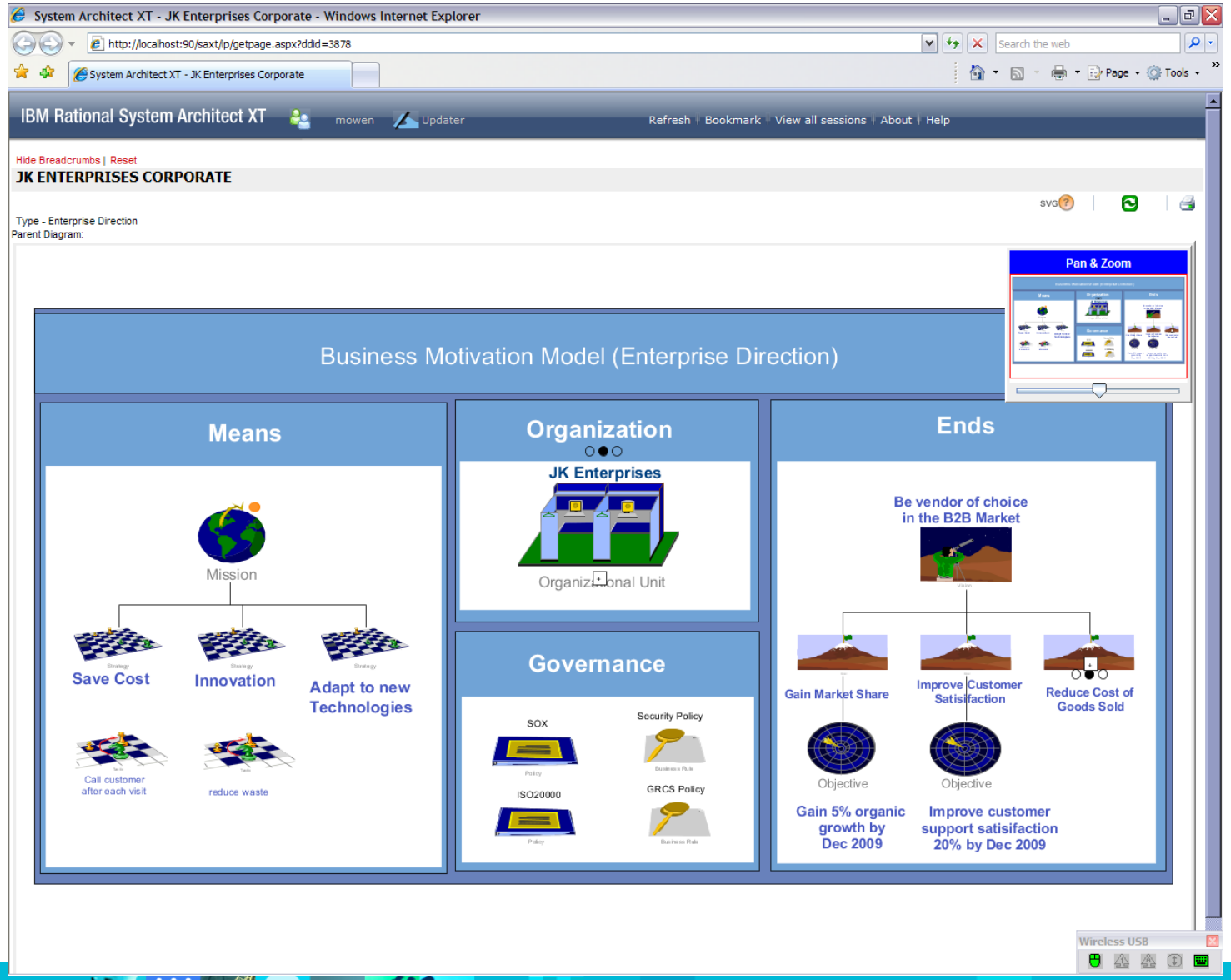
- Summarize current support costs
- Collect and analyze financial data

4 Finalize application portfolio management recommendations and execute

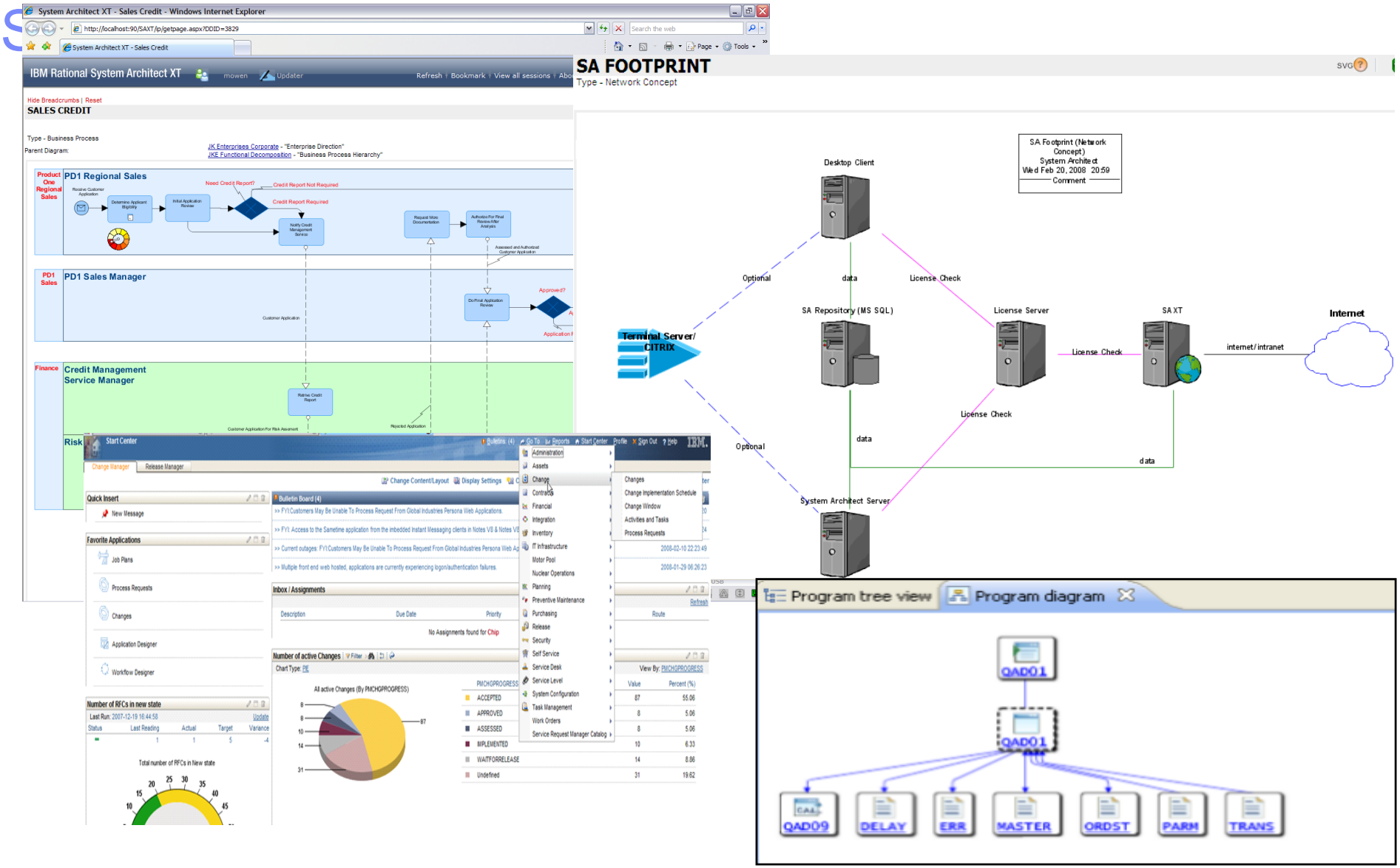
- Translate enterprise roadmap into prioritized portfolio proposals and execution roadmap

Defining the ‘As is’ and ‘To be’

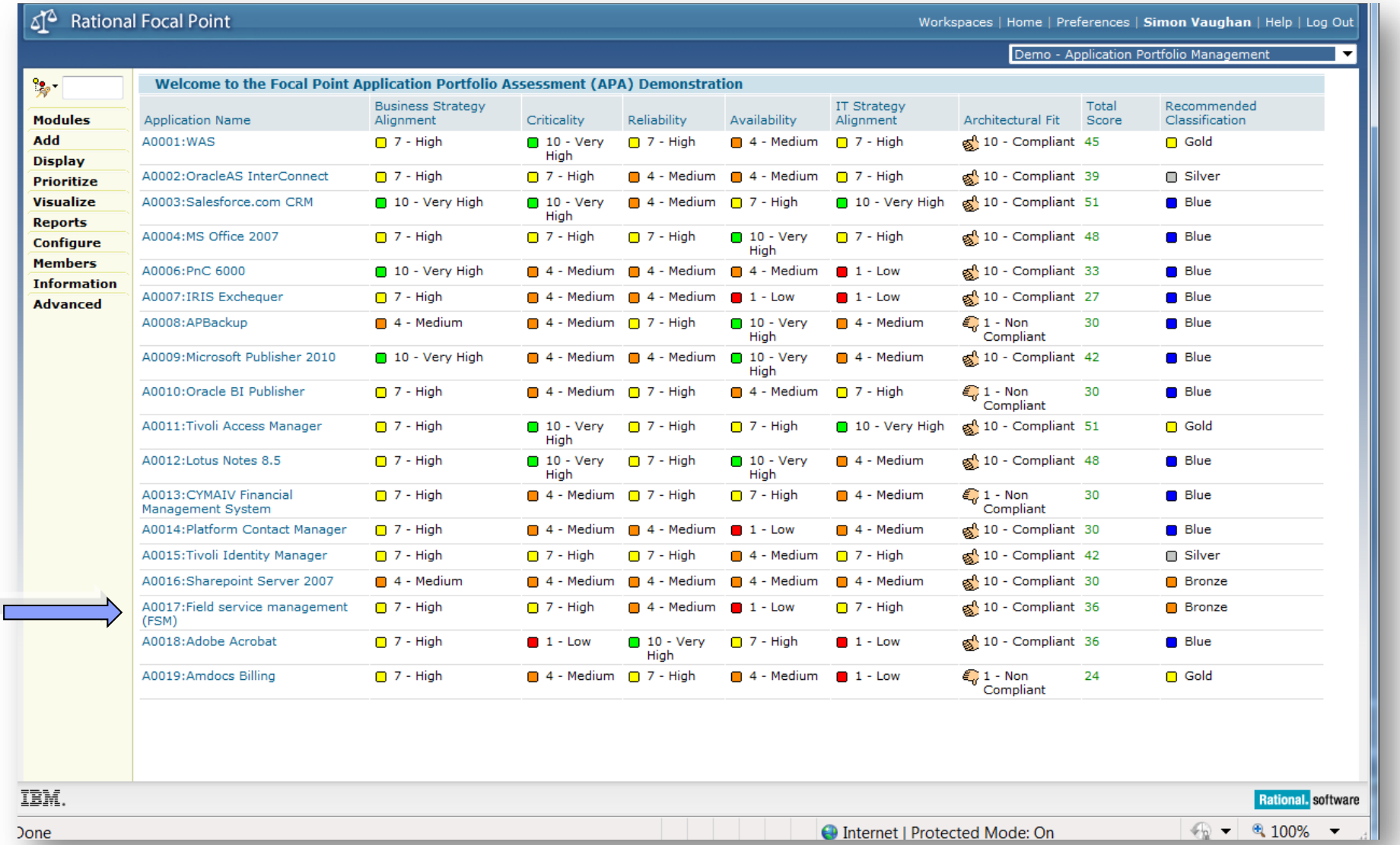
Define strategy & vision: business motivation model



Build Architecture and Business Architecture Current S

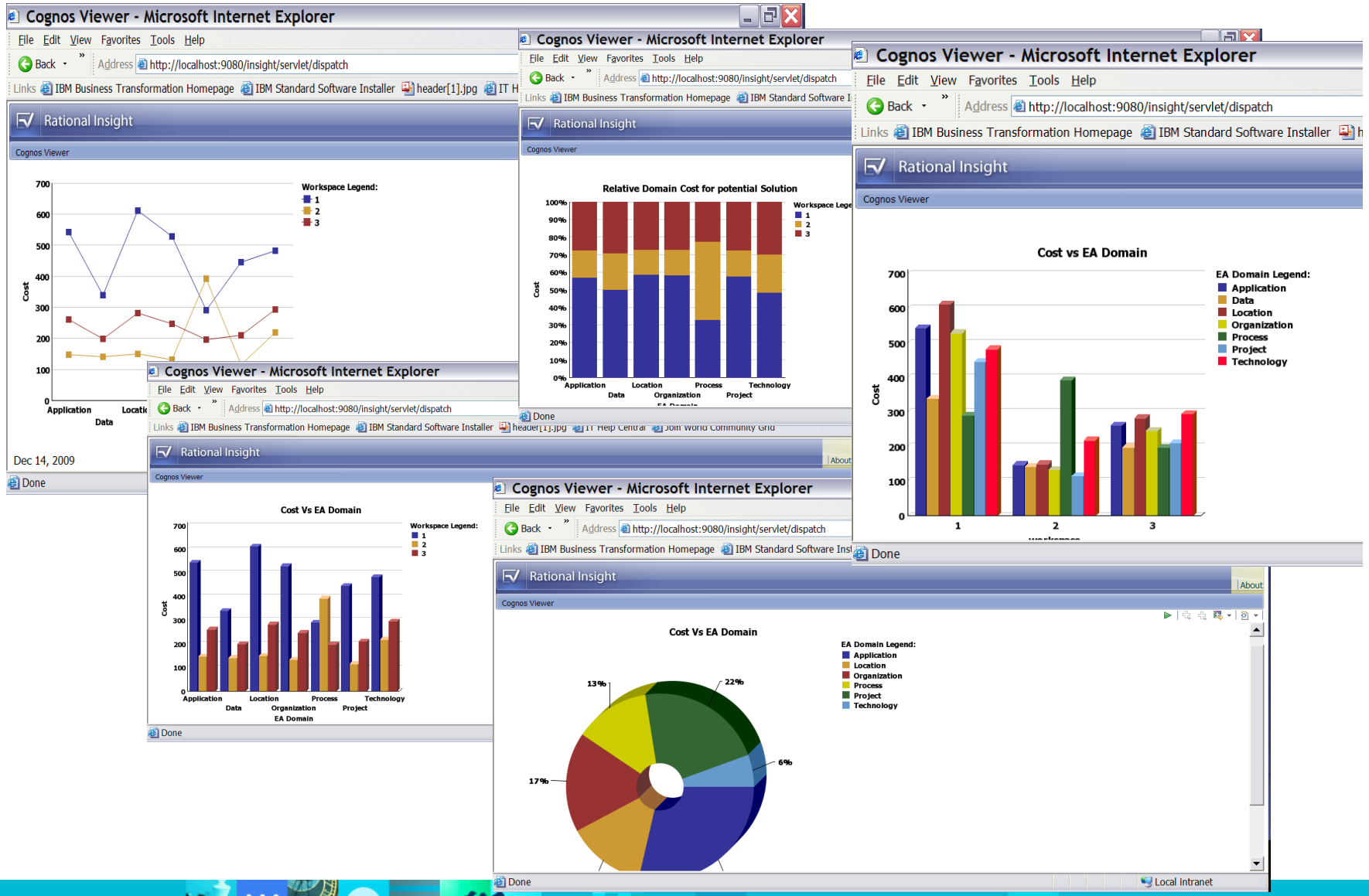


Report on portfolio, project and process status

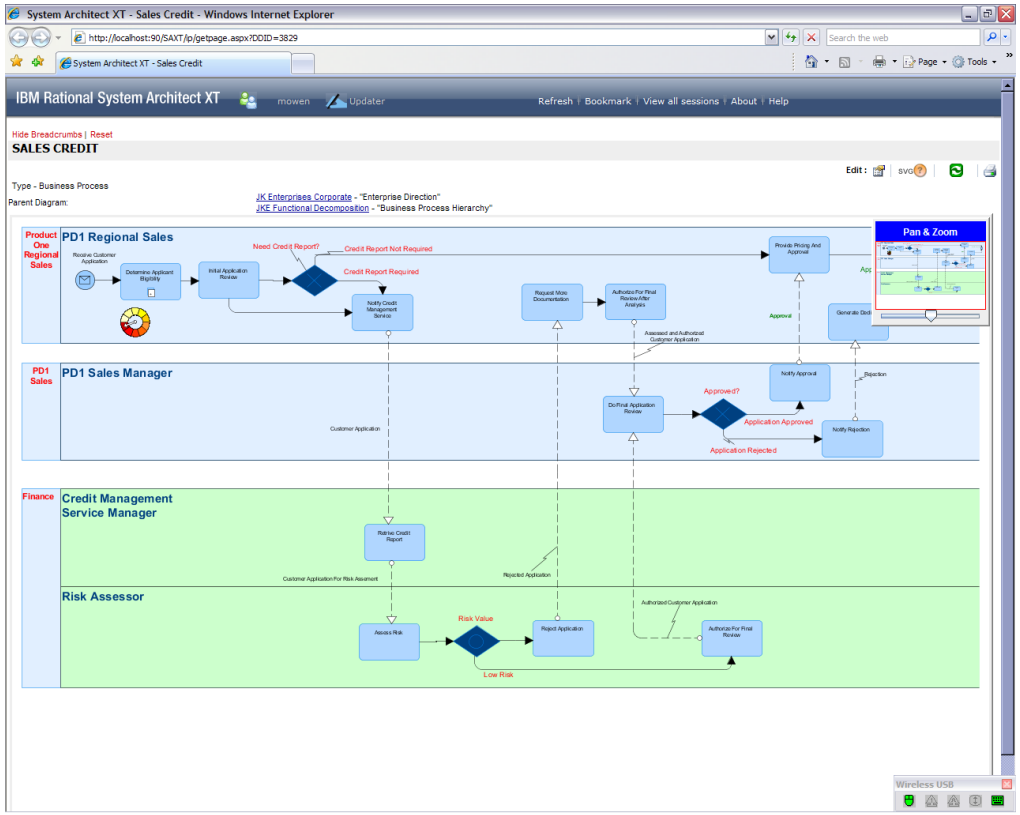


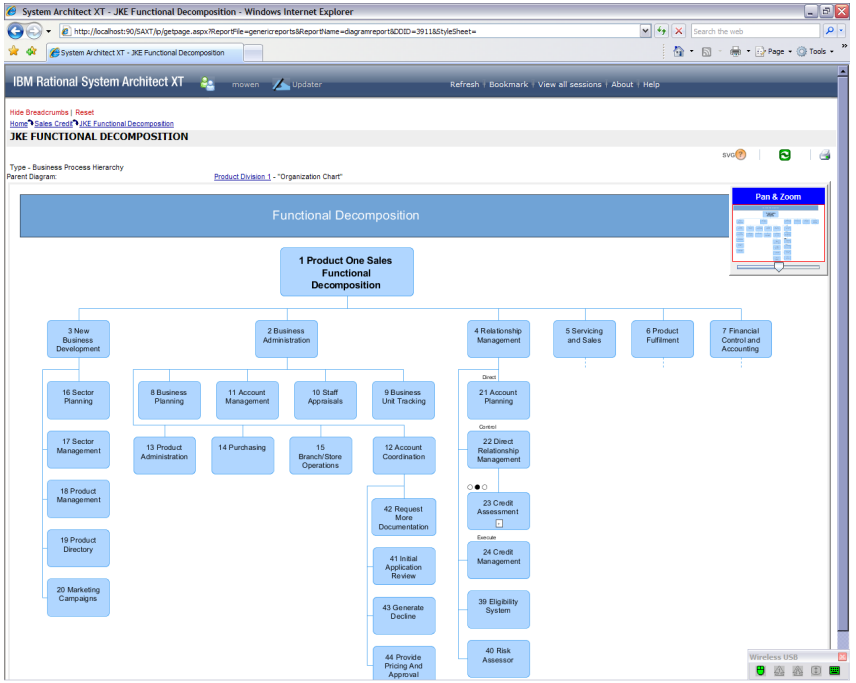
Application Name	Business Strategy Alignment	Criticality	Reliability	Availability	IT Strategy Alignment	Architectural Fit	Total Score	Recommended Classification
A0001:WAS	7 - High	10 - Very High	7 - High	4 - Medium	7 - High	10 - Compliant	45	Gold
A0002:OracleAS InterConnect	7 - High	7 - High	4 - Medium	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

Utilize Executive Dashboards

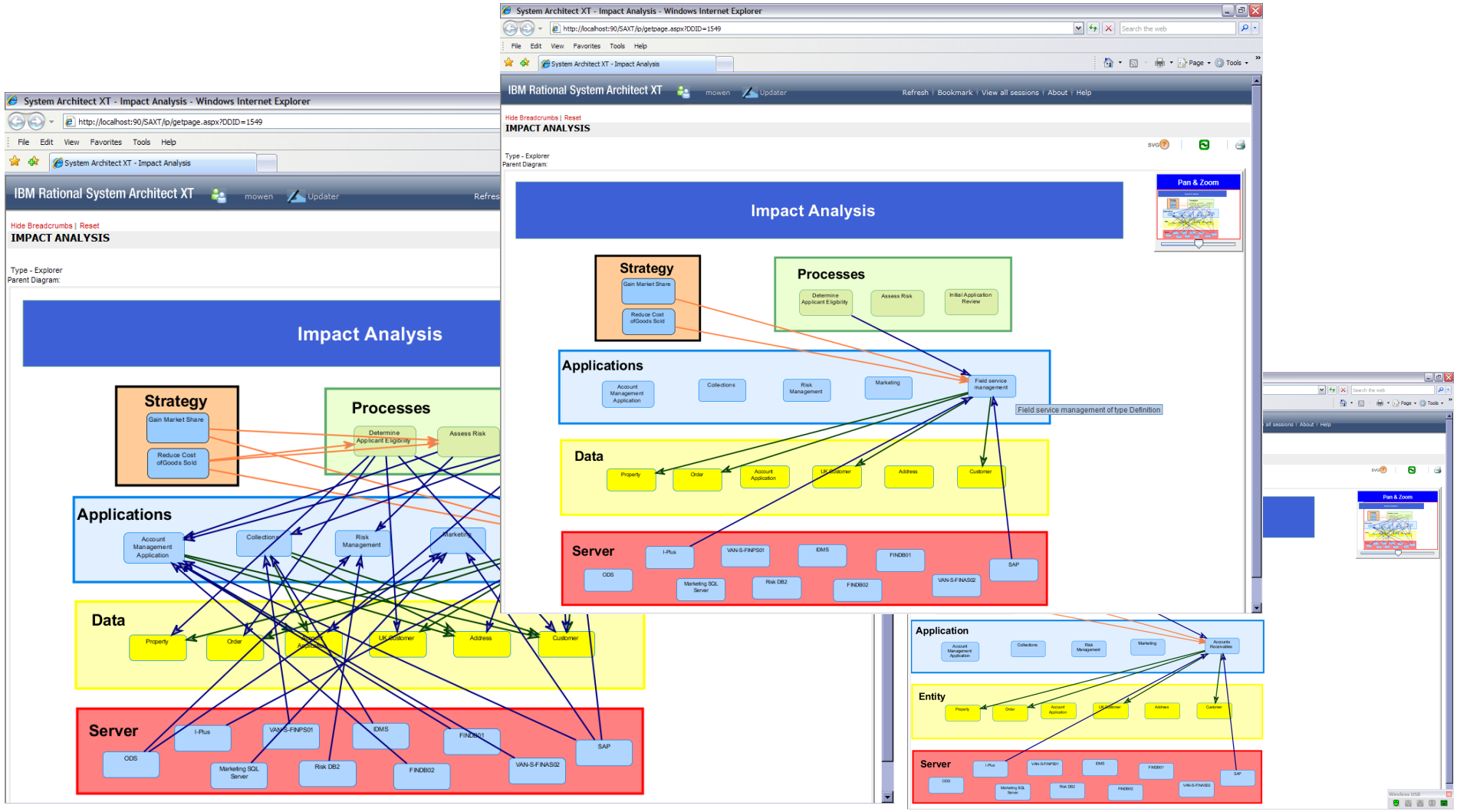


Define Future state



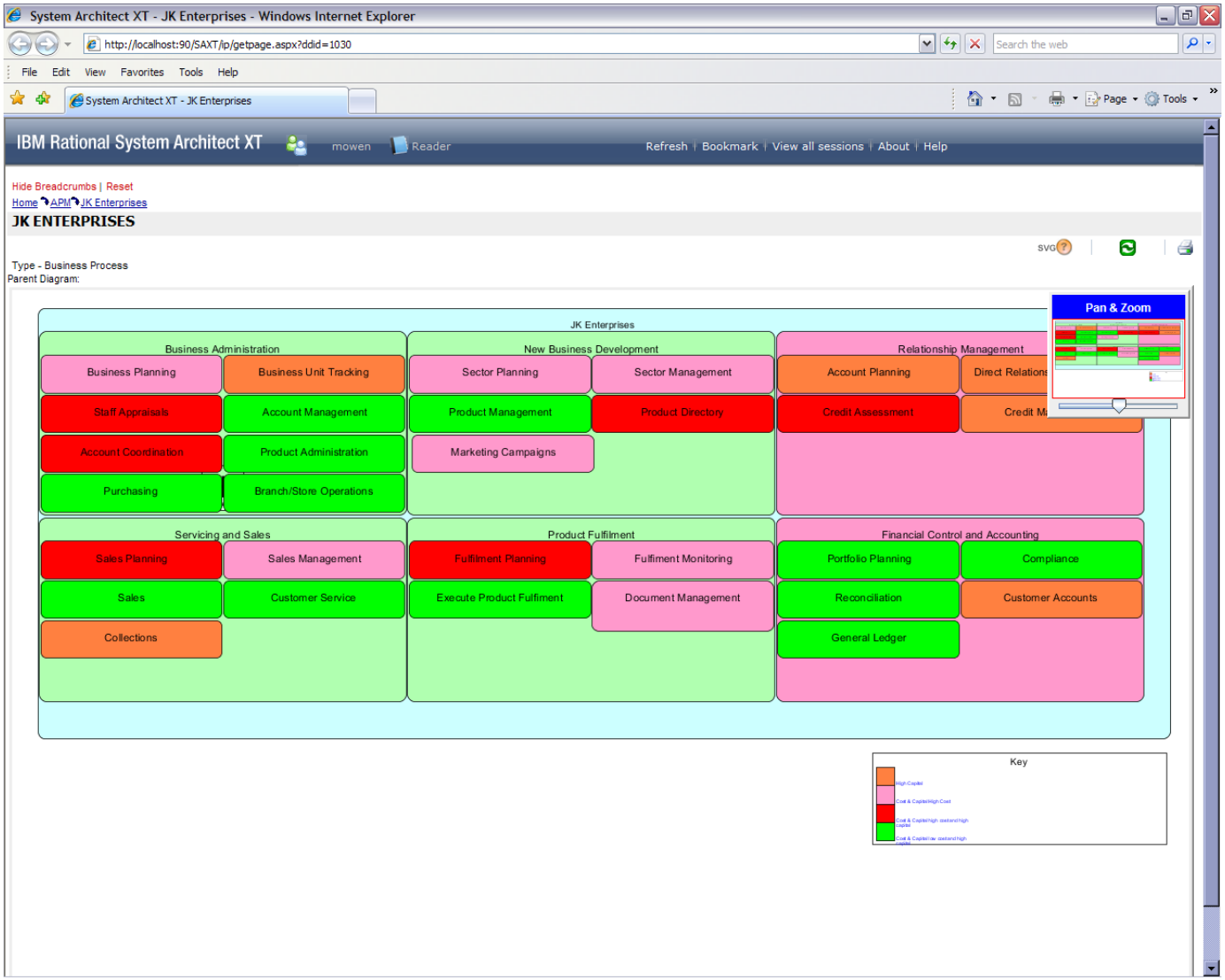


Compare to current state, perform gap analysis

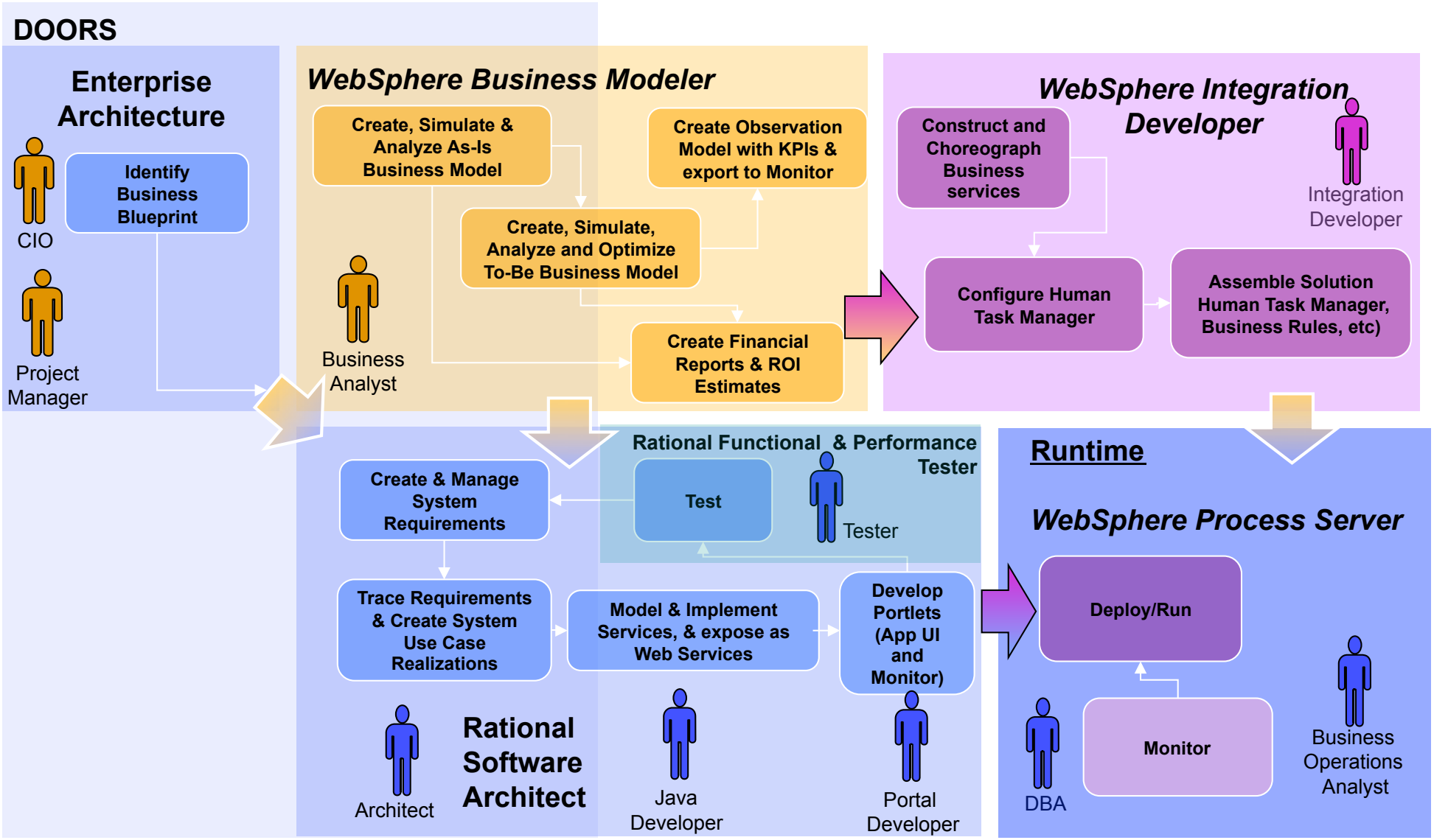


A0017:Field service management (FSM) | 7 - High | 7 - High | 4 - Medium | 1 - Low | 7 - High | 10 - Compliant | 36

Define transition initiatives



Consider EA as an extension to BPM

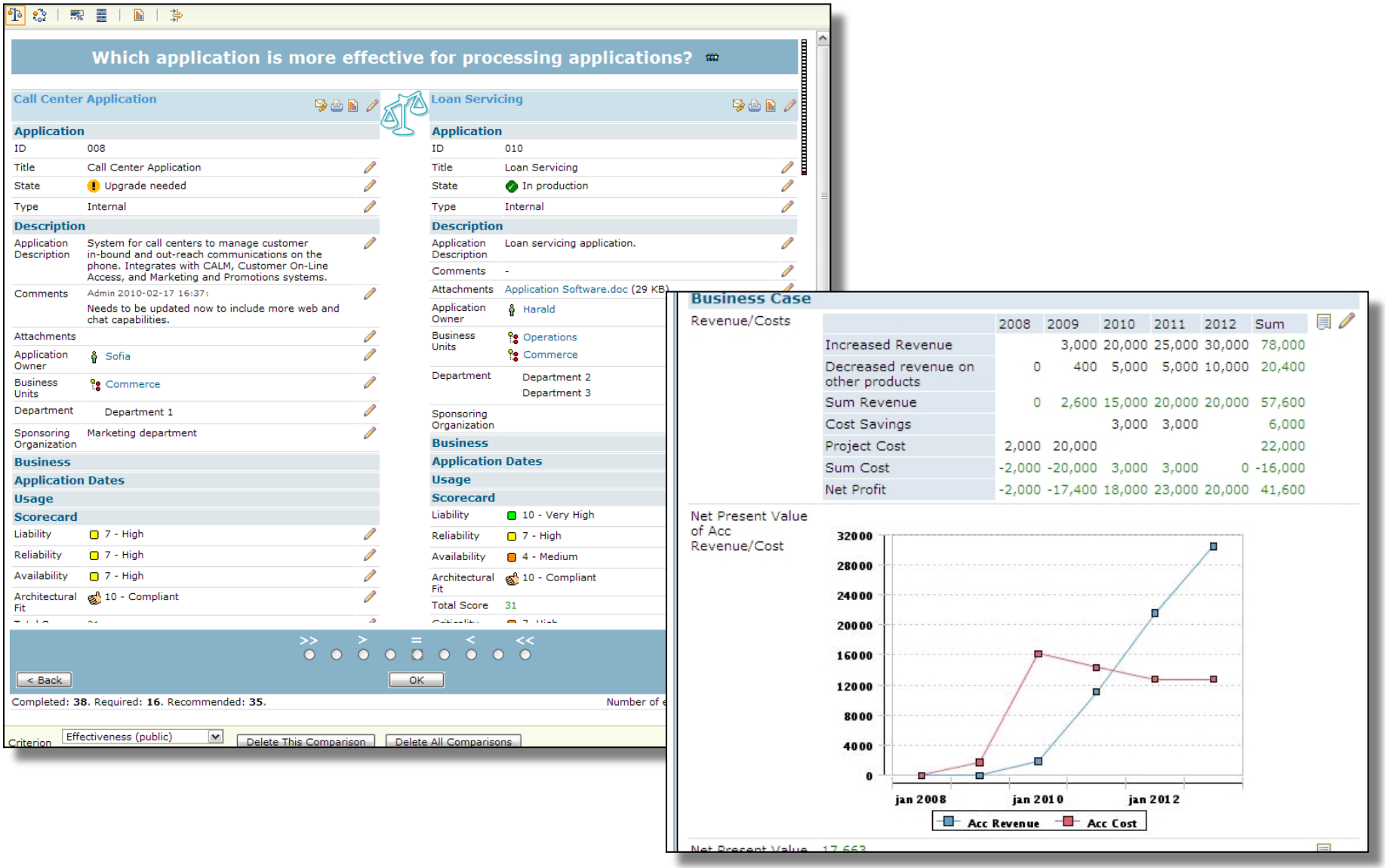


System Architect Process Integrator

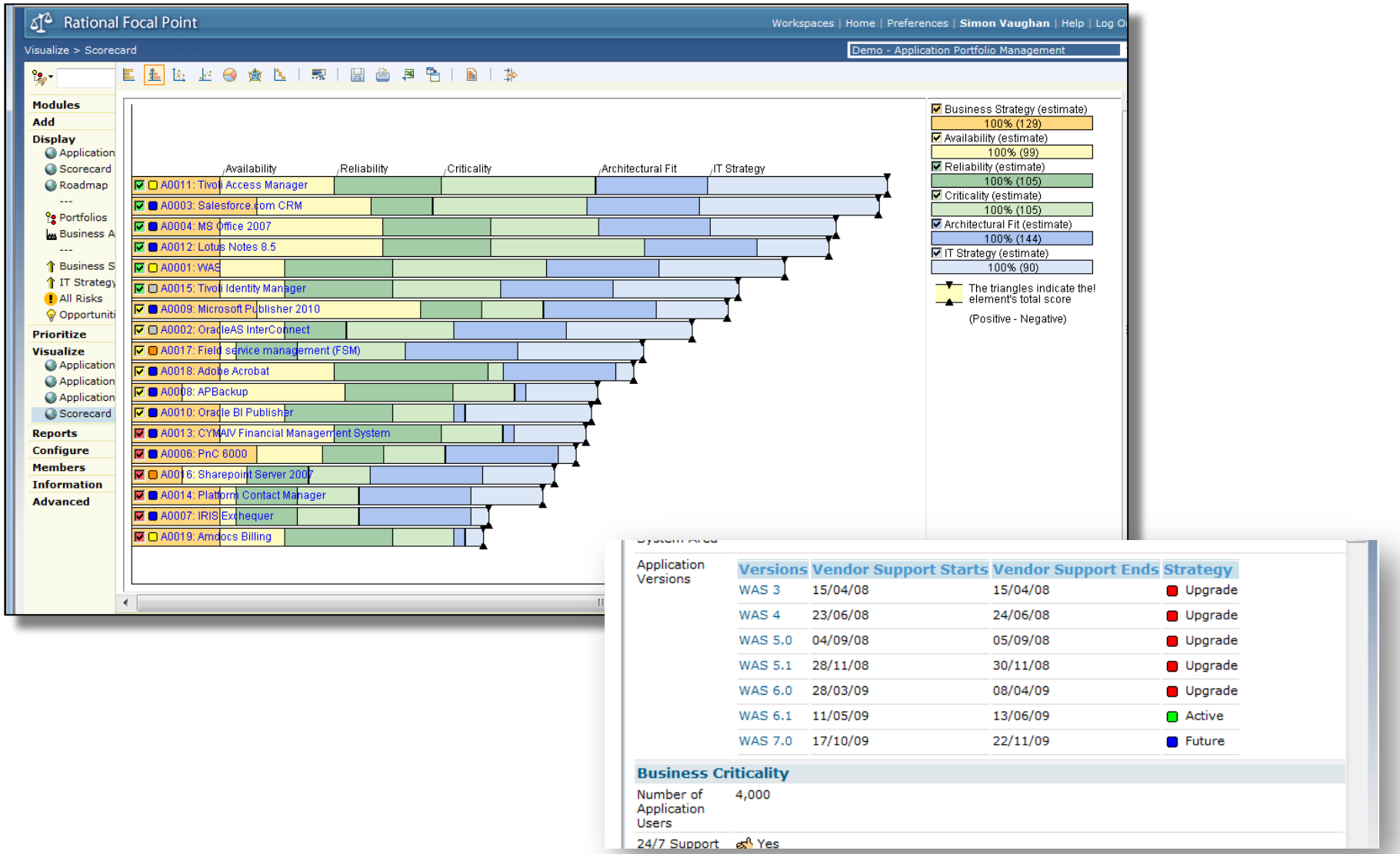
- Useful to deploy when:
  - Express challenges in interacting with, or communicating the value of enterprise architecture to large teams of Visio based modelers
  - Have difficulty promote modeling standards for Visio users
  - Want to enhance collaboration and analysis by centralizing disparate Visio 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

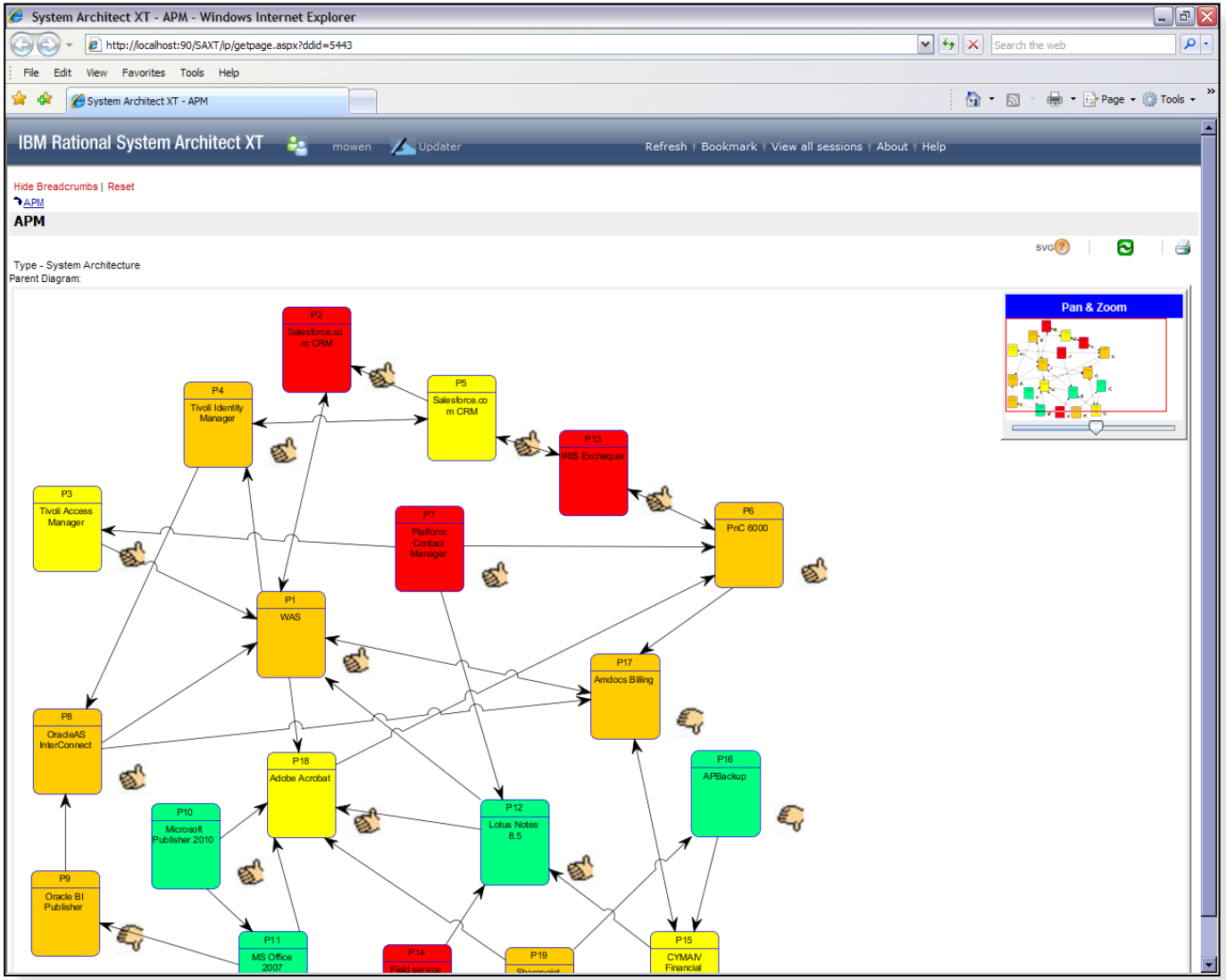
Collect and analyze stakeholder & financial priorities



Analyze and prioritize initiatives



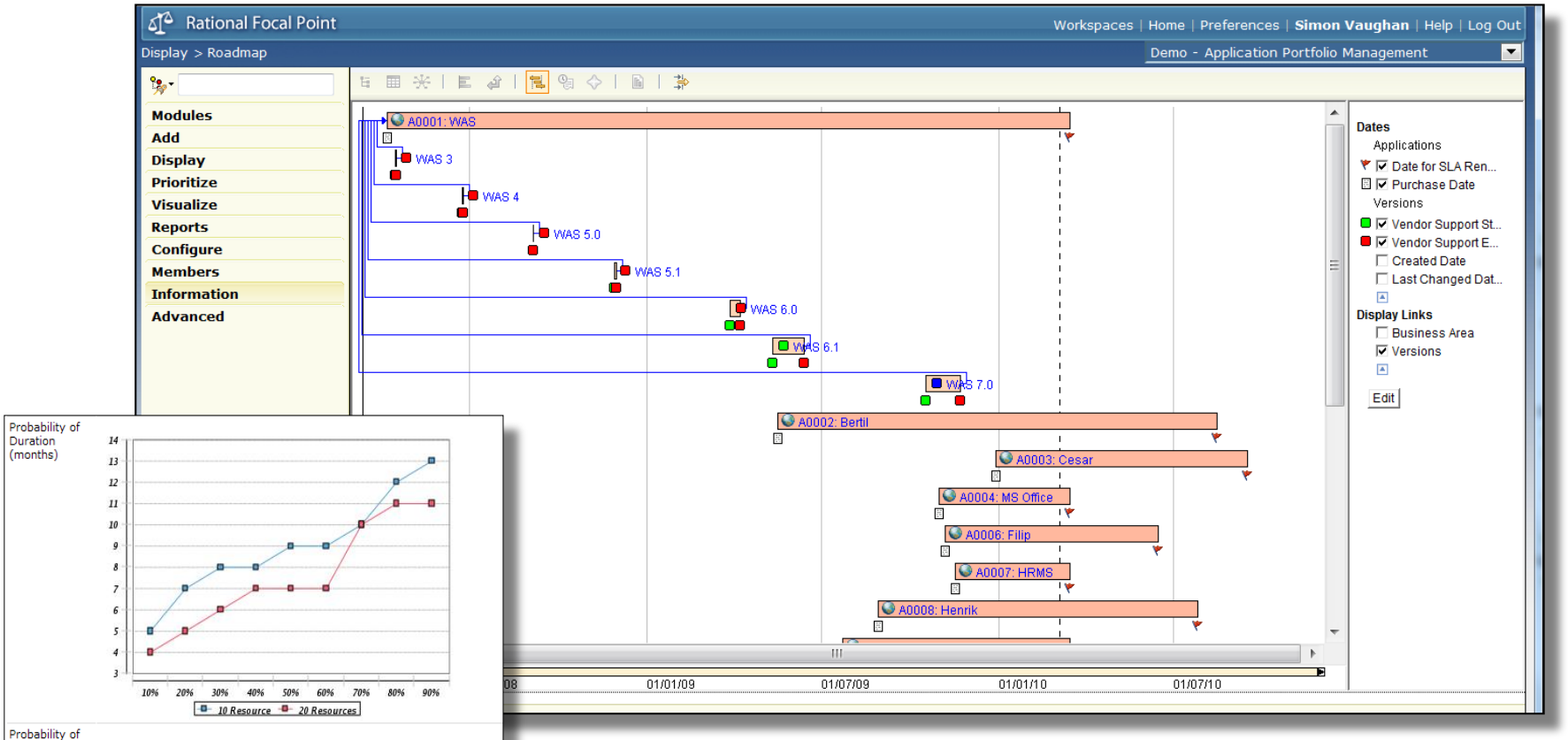
Architect & design prioritized solutions within the EA



Consider EA to be a handoff to:

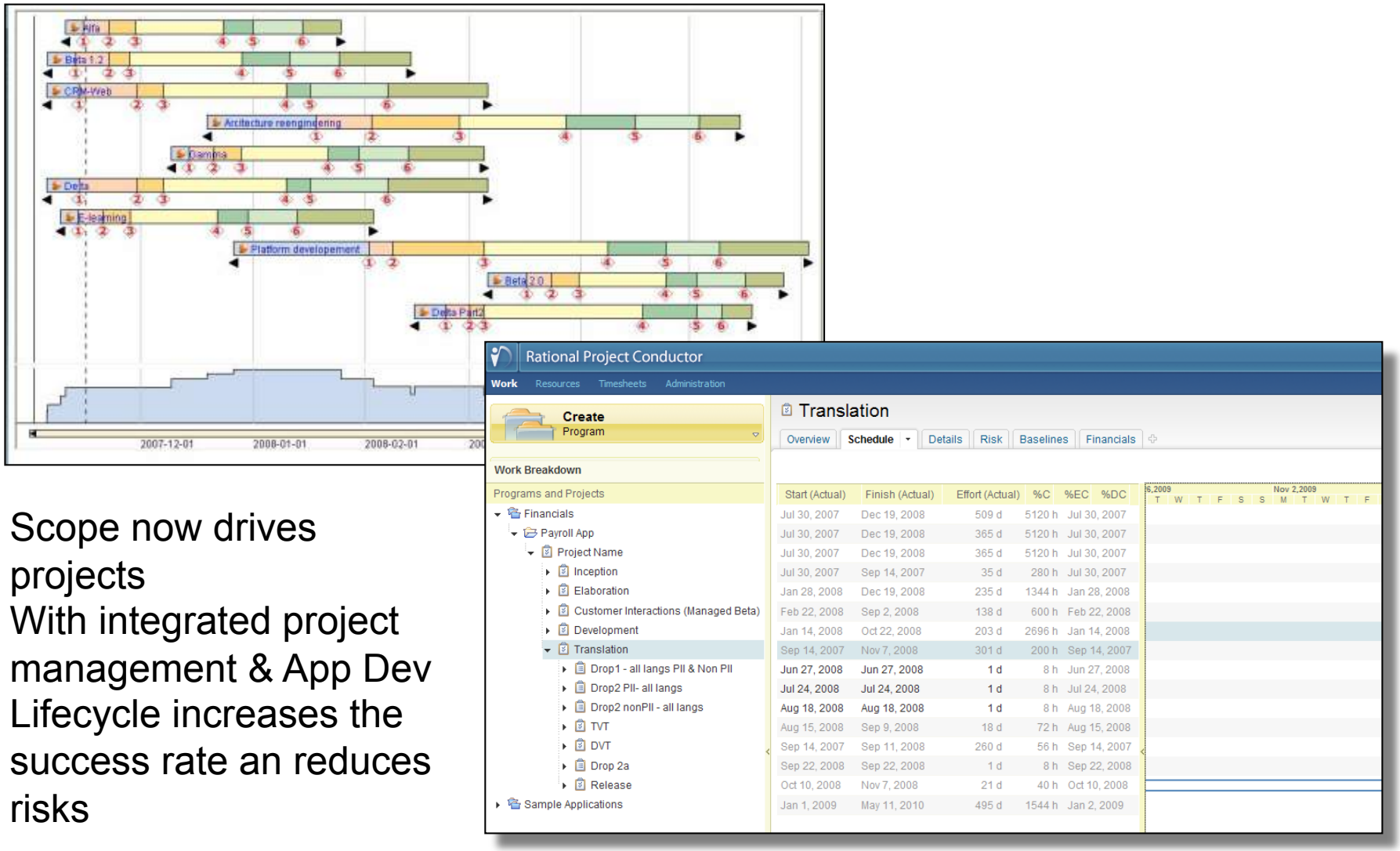
- BPM
- S/W Design
- Embedded Systems

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

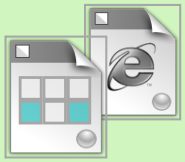


Scope now drives projects
With integrated project management & App Dev Lifecycle increases the success rate an reduces risks

Summary - Managing the business of IT…

Increased Visibility

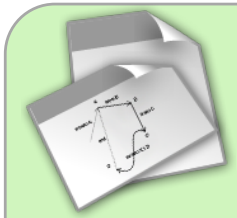
Analysis and Optimization



Business and IT Alignment

- **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

- 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



IT Planning and Transformation

Enterprise Decision Support

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 phase[1]
- **More than 40%** of development budget can be consumed by poor requirements[2]

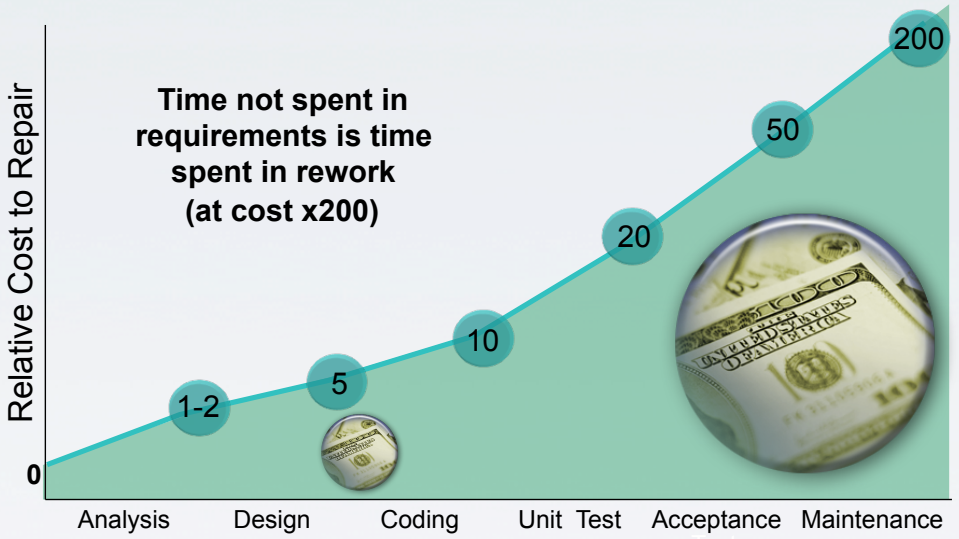
Project Impacts

- **41%** of projects fail to deliver the expected business value and ROI[3]
- **49%** of projects overrun original estimates[3]
- **28%** of projects on time and on budget[4]

Project Delays

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

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



Stage in which Requirements Error Is Discovered

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

IDC, November 2007

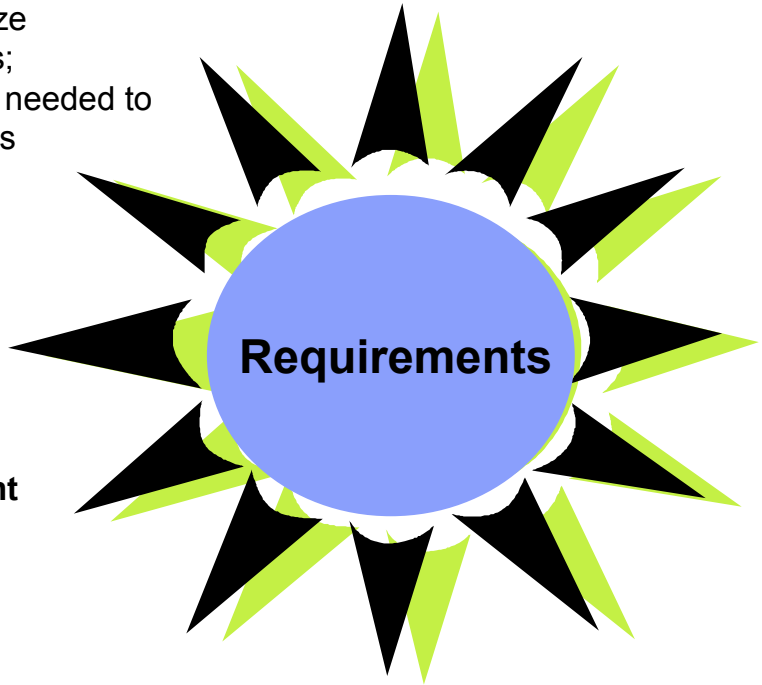
Sources: 1) Leffingwell & Widrig, "Managing Software Requirements," Addison Wesley, 1999 2) IAG Consulting, 2008 3) Dynamic Market Limited, 2007 4) Standish Group, 2001 5) Don Reinertsen, McKinsey, 1983

Requirements are everywhere and touch everything

Enterprise Architecture
define enterprise goals, polices, KPIs, etc. that inform and act as constraints on projects

Business Process Management
describe and analyze business processes; determine changes needed to meet business goals

Solution Design
define how the requirements will be satisfied



Portfolio Management
prioritize investments and commission projects to meet business objectives

Development
create solutions that meet the designs and requirements

Project Management
define and control project that deliver business objectives

Quality Management
determine when the development output meets the requirements

Performance Management
monitor project status; manage risk; measure value; continuously improve

Operations / Production
deliver to customers the products and services specified in the requirements

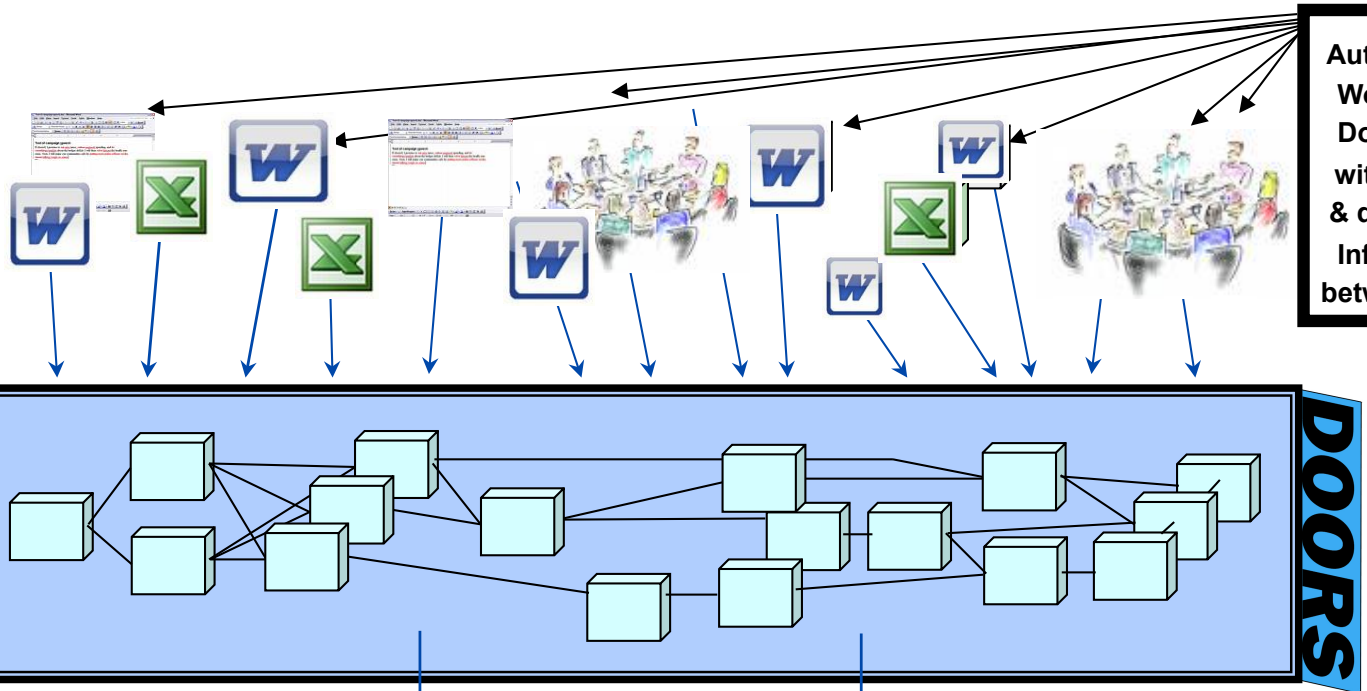
Information Traceability - “Chaos to Order”

Non-integrated project data

are imported,

structured, linked and traced at statement level,

to produce reports of managed information

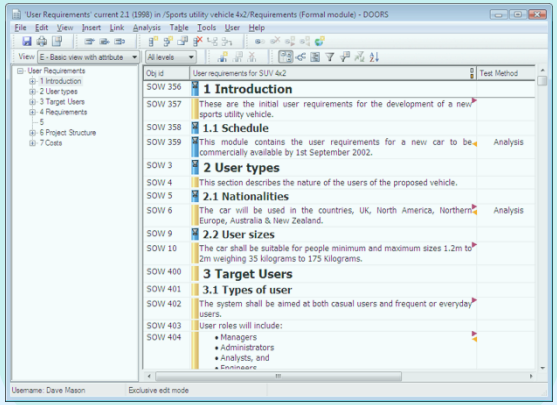


User requirements for SUV 4x2	Links to Technical Requirements	Design	Links to Tests
3 Requirements			
This section contains the user requirements.			
3.1 Capability Requirements			
3.1.1 Carrying Capacity			
3.1.1.1 Number of People			
Four average size adults shall be able to travel in comfort for a 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.	SR-104 2.14.1.0-1 from /Sports utility vehicle 4x2/Requirements/Functional Requirements 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	D-342 Full seats shall be created for two passengers in both front and back. D-344 There shall be space for a fifth passenger in the back that will not meet the comfort requirement.	Test Number 18 Market Research Test Result : Passed Test Number 12 Verify Number of People Test Result : Untested
The top level of cars are th[illegible] the price range $20,000 to $40,000 at 1999 prices.			

Rational DOORS product family

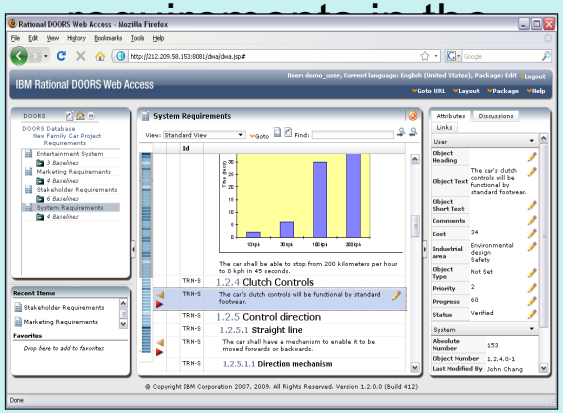
Rational. DOORS

Requirements management and traceability platform for complex systems and software development



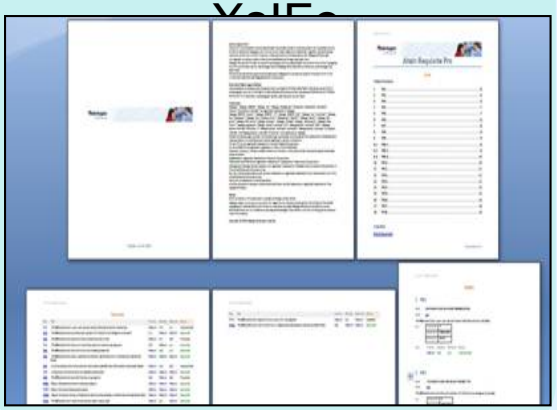
Rational. DOORS Web Access

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

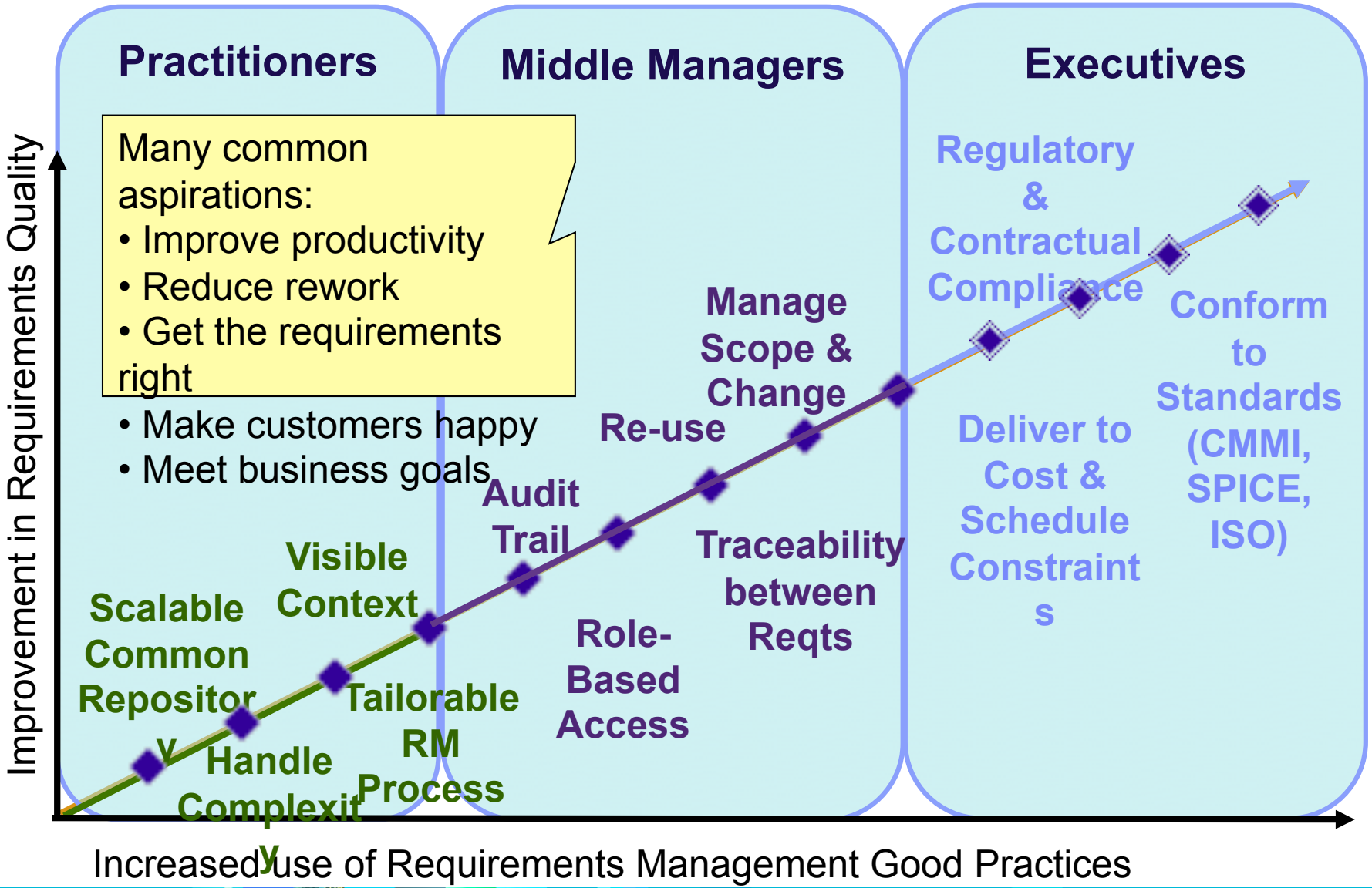


Rational. Publishing Engine

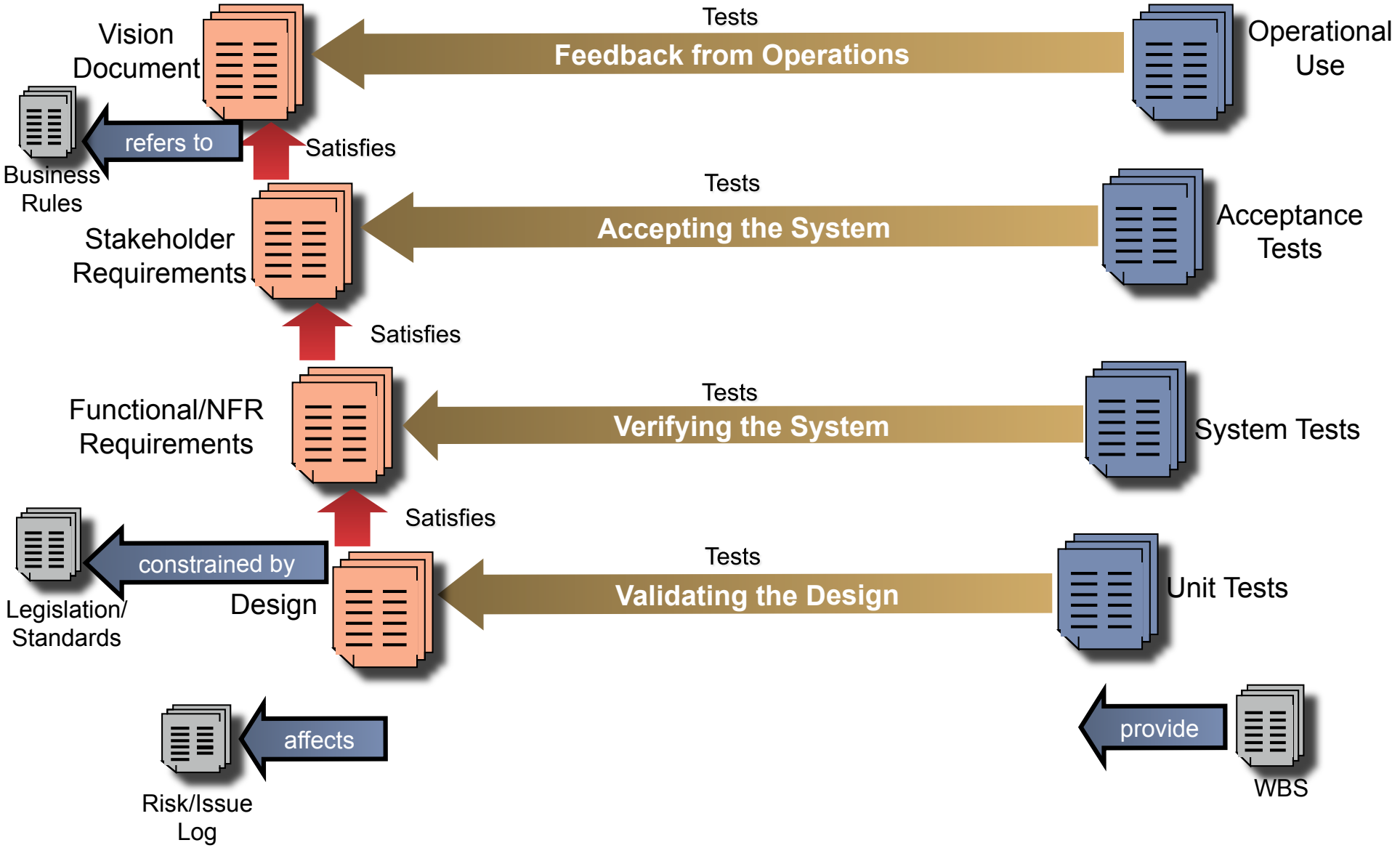
The generic tool for publishing across the Rational tool suite, provides DOORS with an enhanced export to Word, Pdf, Html &



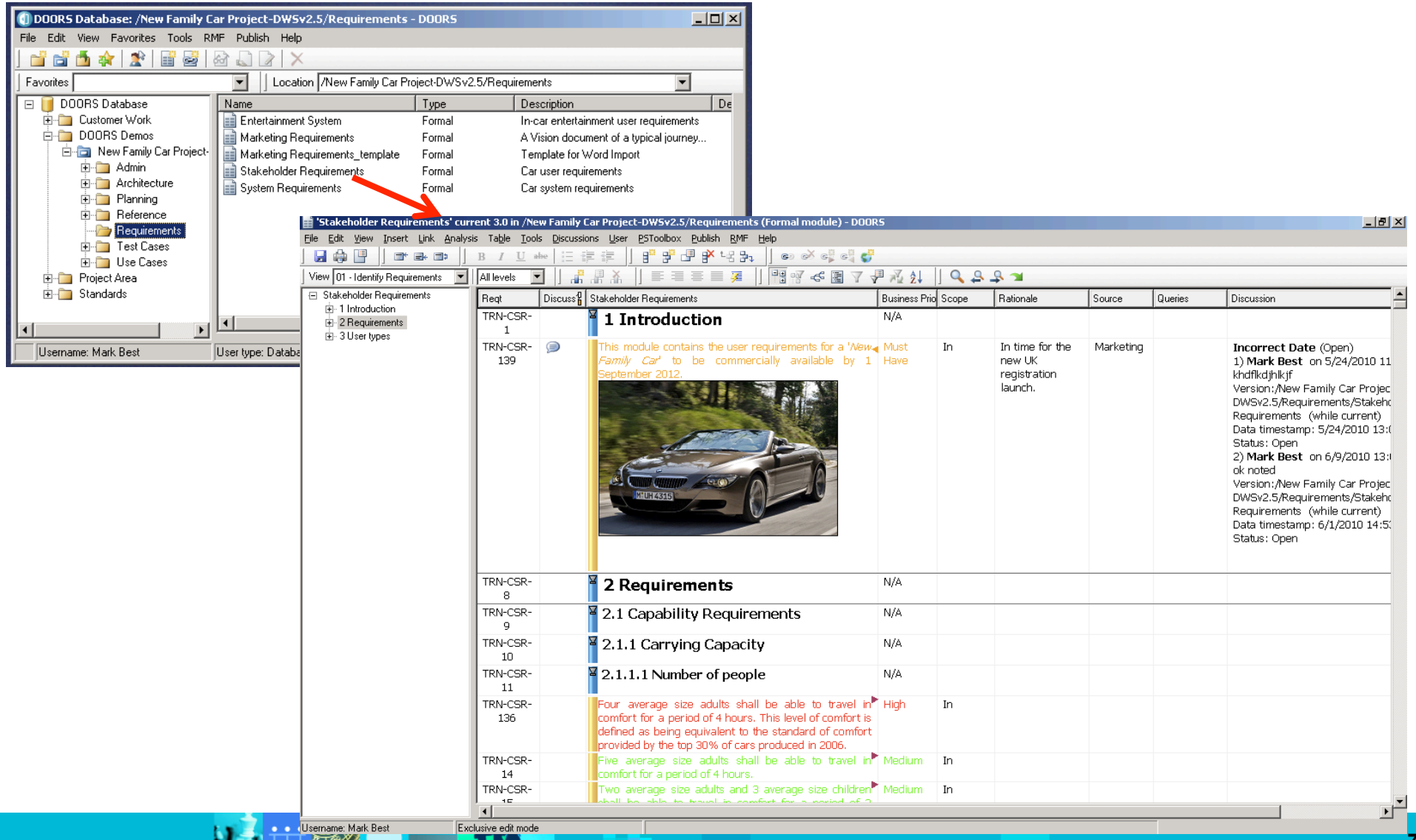
Value to stakeholders should determine RM priorities



Managing Impact of Requirements Change throughout Project



DOORS Database and Example Module Opened



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

Reqt	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

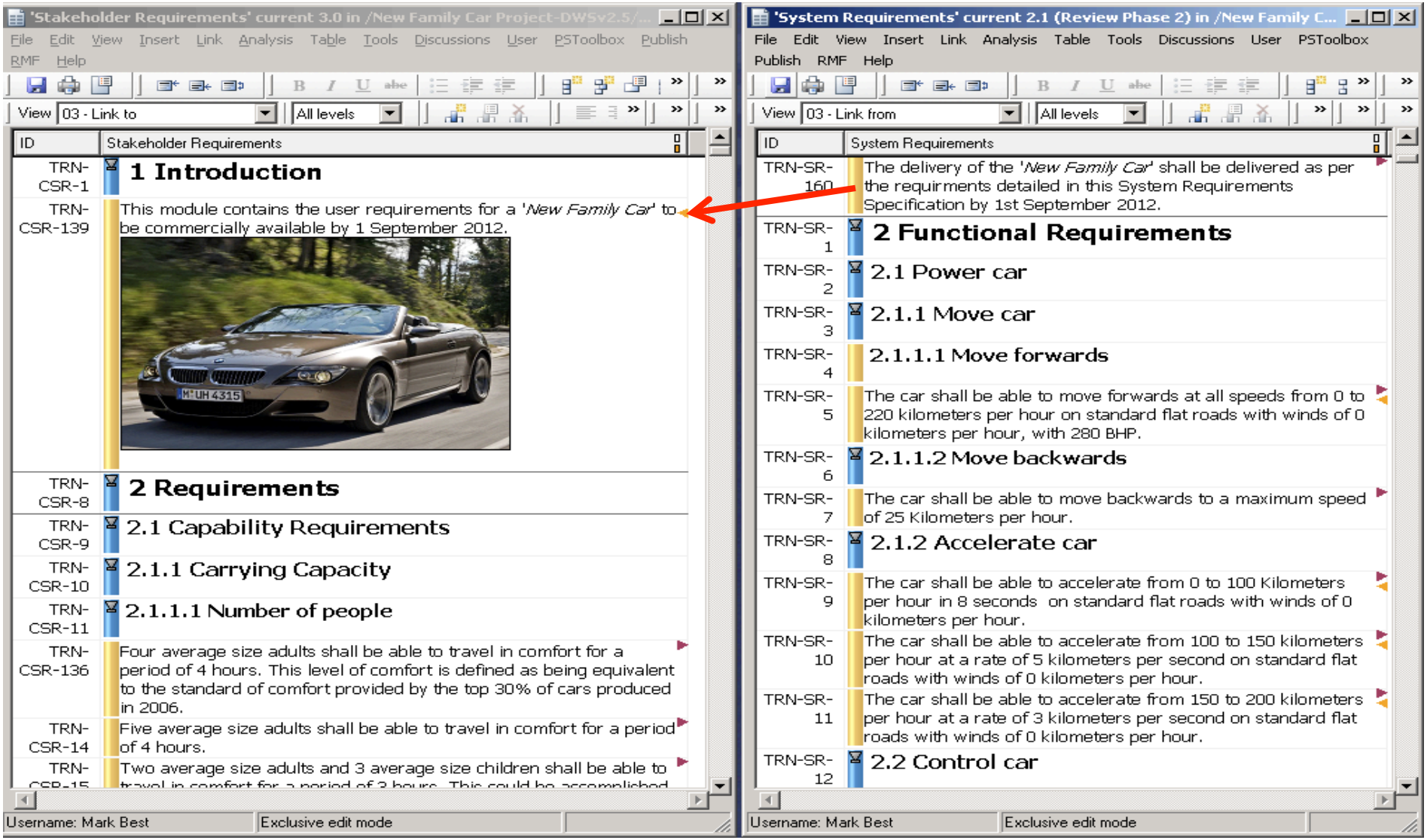
User:

Details... | Refresh | Export...

Previous | Next | OK | Cancel | Apply | Help

Username: Mark Best | Exclusive edit mode

Drag and Drop Linking



Sufficiency of Requirements – GAP Analysis

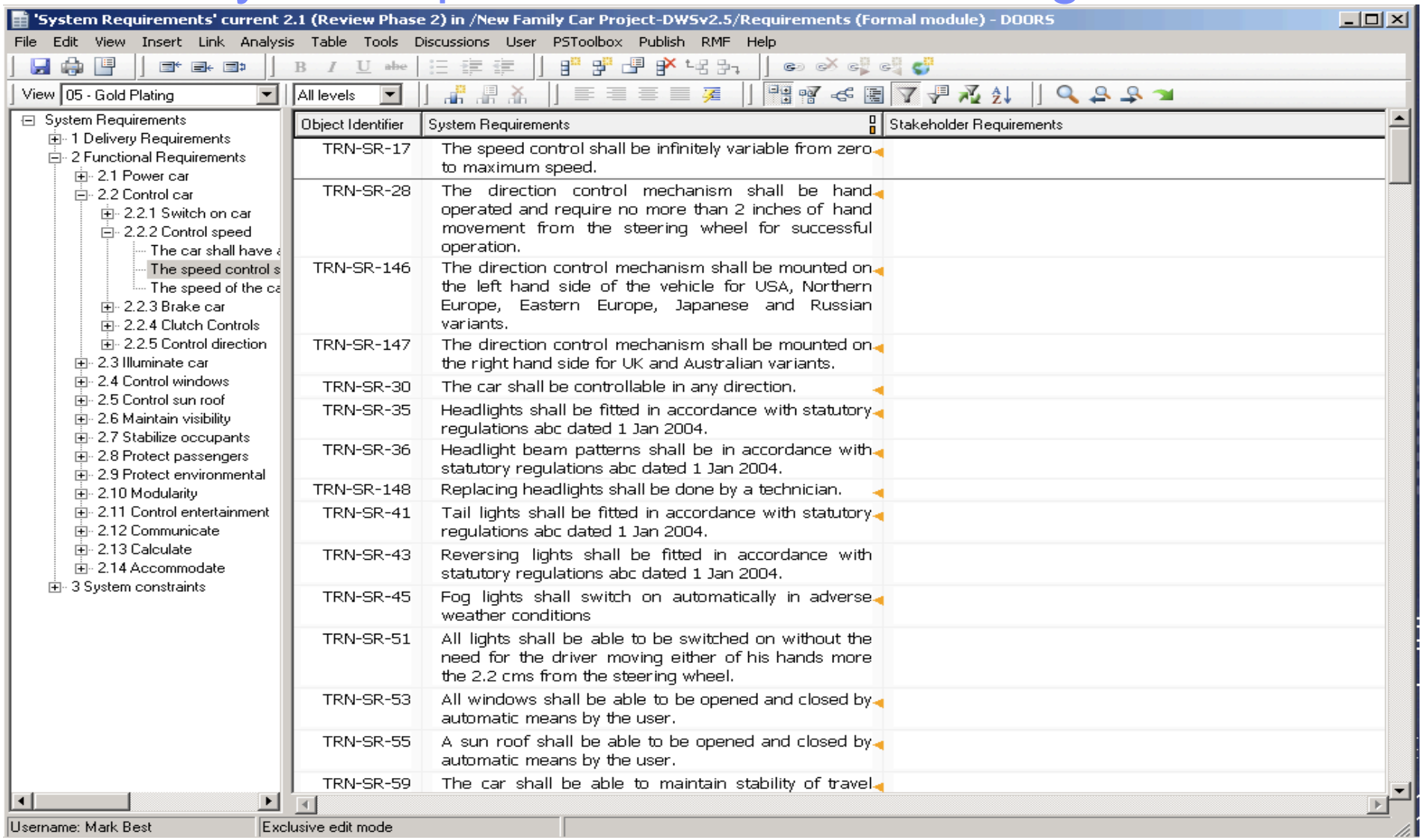
'Stakeholder Requirements' current 3.0 in /New Family Car Project-DWSv2.5/Requirements (Formal module) - DOORS

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

View: 05 - Gap Analysis | All levels

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



Coverage Analysis

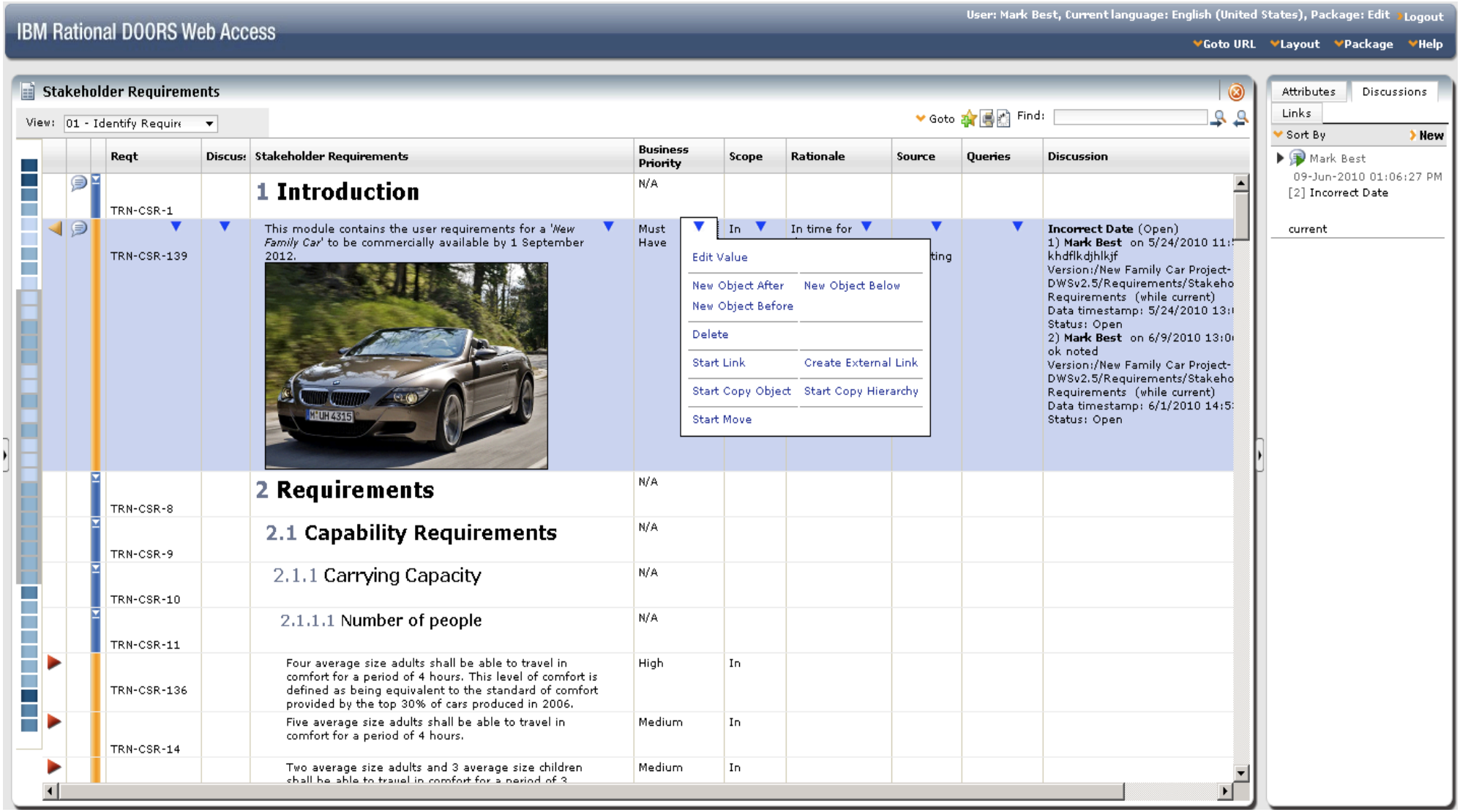
'Stakeholder Requirements' current 3.0 in /New Family Car Project-DWSv2.5/Requirements (Formal module) - DOORS

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

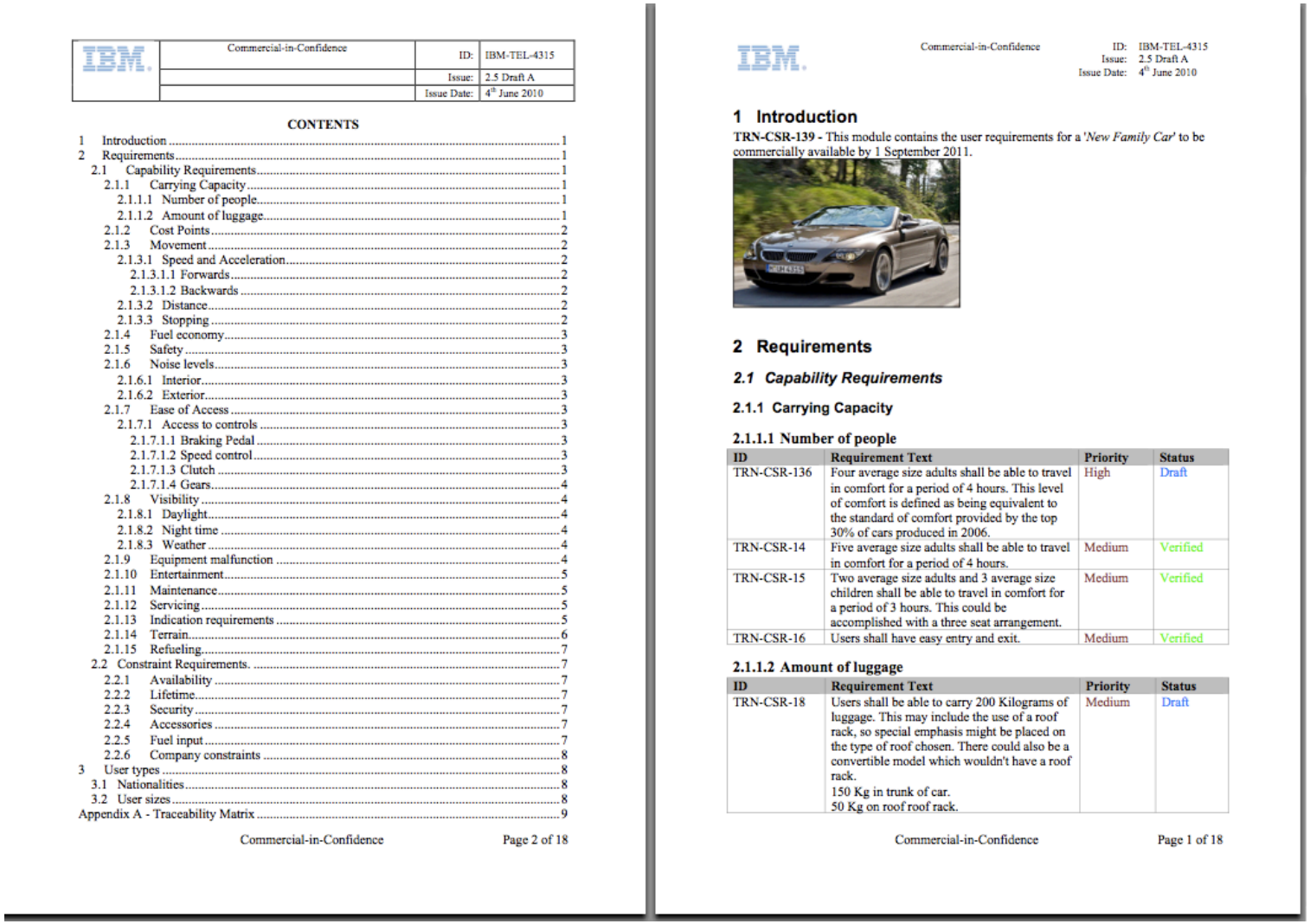
View: 06 - End to End Trace | All levels

ID	Stakeholder Requirements	System Requirements	Design	Test
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 decebile 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. [JIS-D-1601, PAGE 7]	TRN-SR-150 The car will be held to a 90 decebile 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 vechicle.**
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 vechicle.**
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



Rational Publishing Engine



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

CONTENTS

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

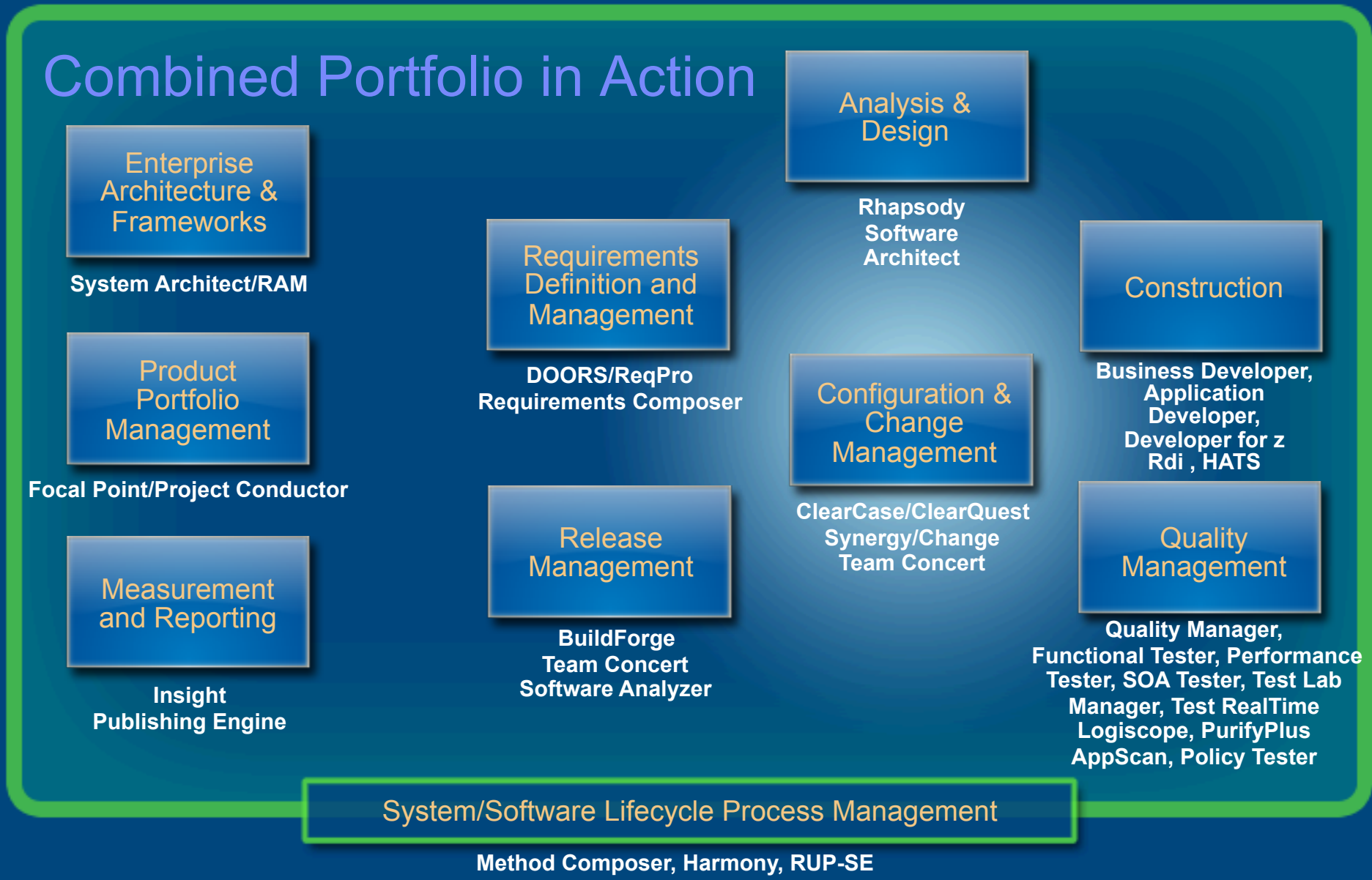
2.1.1.2 Amount of luggage

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




Questions

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