

# Application Portfolio Management

Qualiware user conference Copenhagen 2015

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# The typical issues for a Qualiware customer

- Identify
- Dependencies
- Lifecycle planning
- Evaluate – IT Perspective
- Evaluate applications – Business Perspective

**Identify**



# Challenges

- Definitions
  - Solution?
  - System?
  - Application?
  - Subsystem?
  - Module?
  - Component?
  - Software?
- Standard definitions tend to be too generic
- Focus on the "Identifying Characteristic"

# Example of definitions on application

“A deployed and operational IT system that supports business functions and services; for example, a payroll. Applications use data and are supported by multiple technology components but are distinct from the technology components that support the application.” (TOGAF)

An application is a program, or group of programs, that is designed for the end user.

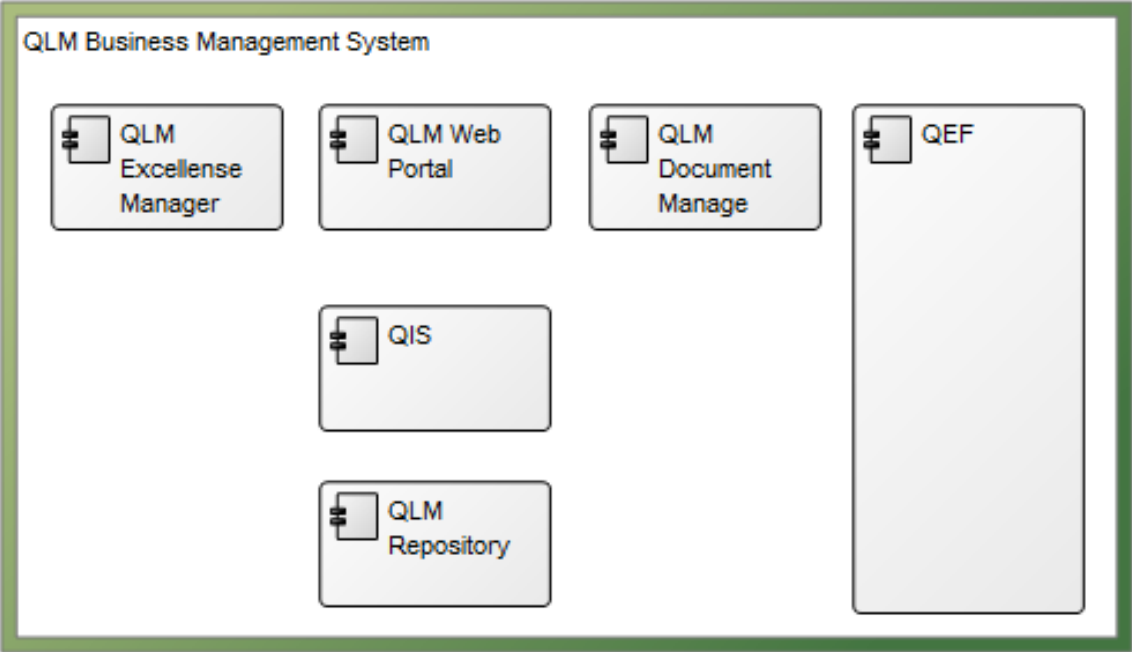
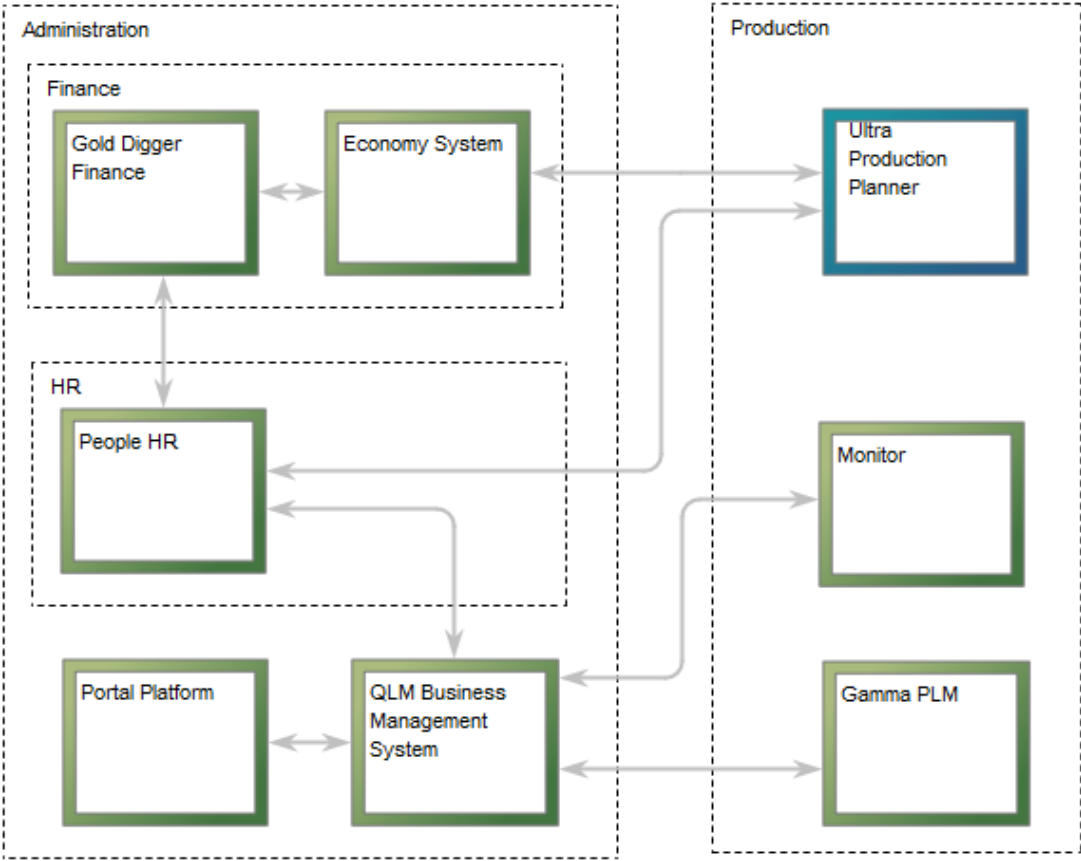
Application software can be divided into two general classes: systems software and *applications software*.

Applications software (also called *end-user programs*) include such things as database programs, word processors, Web browsers and spreadsheets. (WEBOPEDIA)

## Possible Identifying Characteristic

- In our organization "An Application has an owner" (vs. Software and components)
- In our organization "An application has a lifecycle" (vs. Software and components)
- In our organization "We don't differentiate between Application and component"

# Grouping & Decomposition



# Different levels of abstractions

- Conceptual
- Named
- Instance

The screenshot shows a software window titled "InformationSystem : QLM Business Management System : Rev. 0 : Default". It features a tabbed interface with various categories like "Audits", "Responsibility", "Capability", etc. A dropdown menu for "System Abstraction Level" is set to "Instance". Below this are two tables: "Refinements" (empty) and "System components" (listing various system components like QEF, QIS, QLM Document Manage, etc.).

Name	Rev.	Type	Modified
QEF	0	SystemComponent	2011 05 11 06.5
QIS	0	SystemComponent	2011 05 12 16.0
QLM Document Manage	0	SystemComponent	2011 05 11 07.0
QLM Excellence Manager	0	SystemComponent	2011 05 11 06.5
QLM Web Portal	0	SystemComponent	2011 05 11 06.5
QLM Repository	0	SystemComponent	2011 05 11 07.0



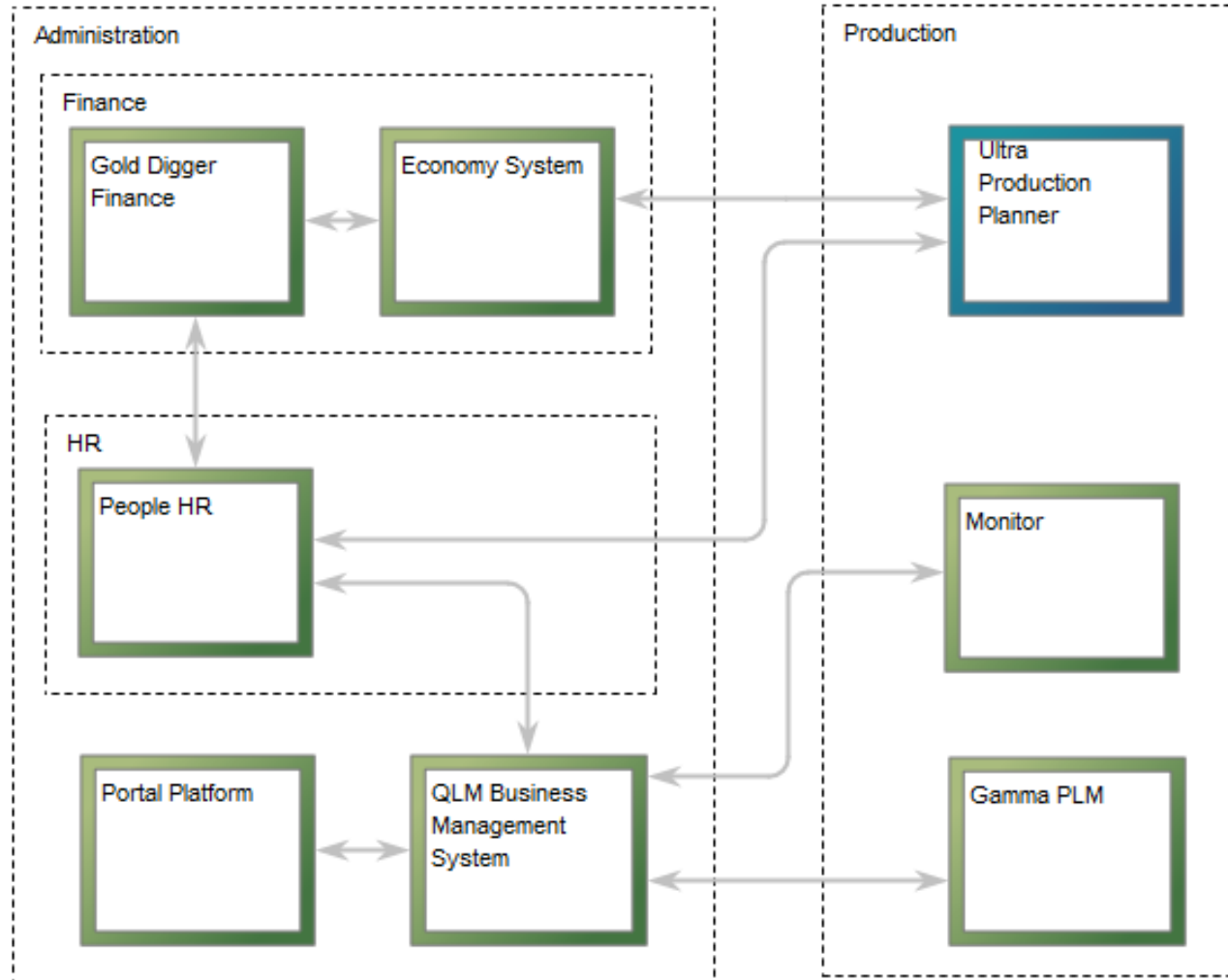


# System dependencies

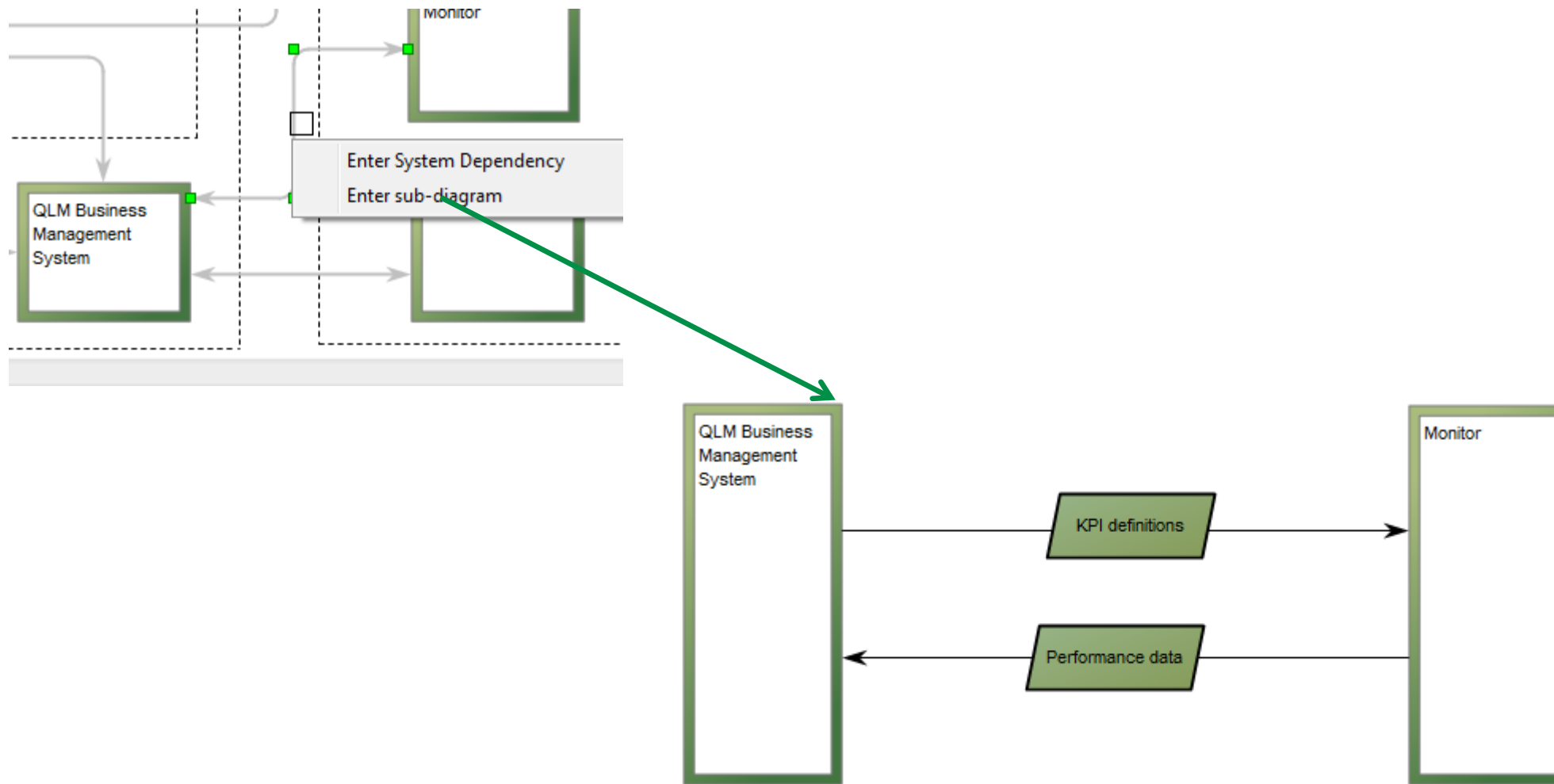


# System dependencies - Overview

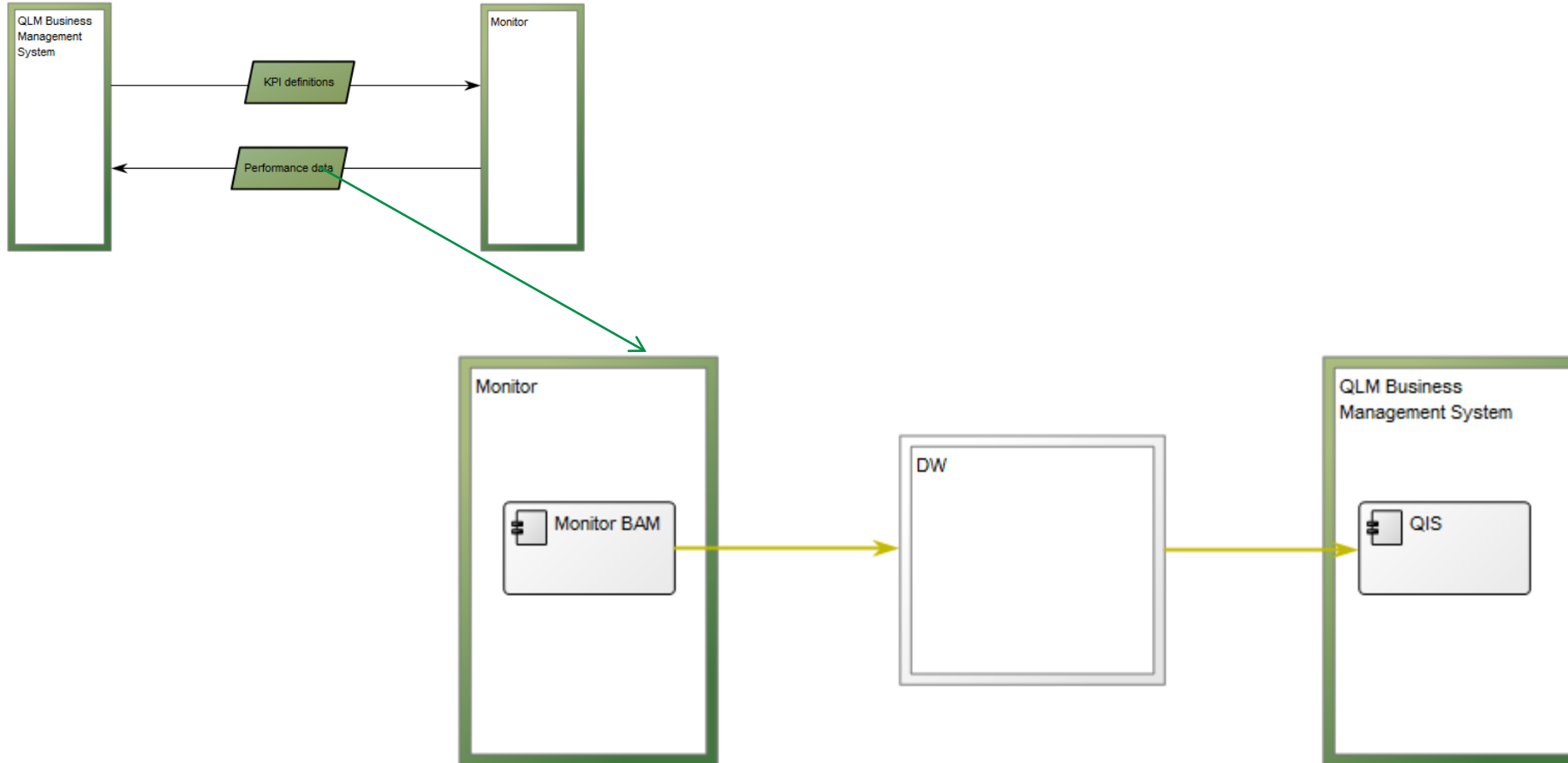
Overview – System dependencies



# System dependencies – Information flows



# System dependencies – Integration View



# Dependencies to Infrastructure

- Instances
  - Servers, databases, network connections that the application needs to operate
  - Source is often a CMDB
  - Impact analysis: "What happens if server XYZ is down"
- Types
  - What software and hardware components does the application runs on.
  - Lifecycle analysis

# Lifecycle Planning



# Lifecycle planning

- How to specify the lifecycle
  - Discrete values
  - Dates
  - Specific context

InformationSystem : QLM Business Management System : Rev. 0 : Default

RelationContext	Strategy	Target	Performance	Compliance	Documents	Other
InherentRisk	Revisions	Language	Circulation	Status	ProjectStatus	
InformationSystem	Audits	Responsibility	Capability	Information	Describe	Techniques
Components	Lifecycle	Usage Scope	Services	Provides	Evaluations	Infrastructure

Investigation Start: 2011 jan 01

Implementation Start: 2011 apr 30

Production Start: 2011 aug 01

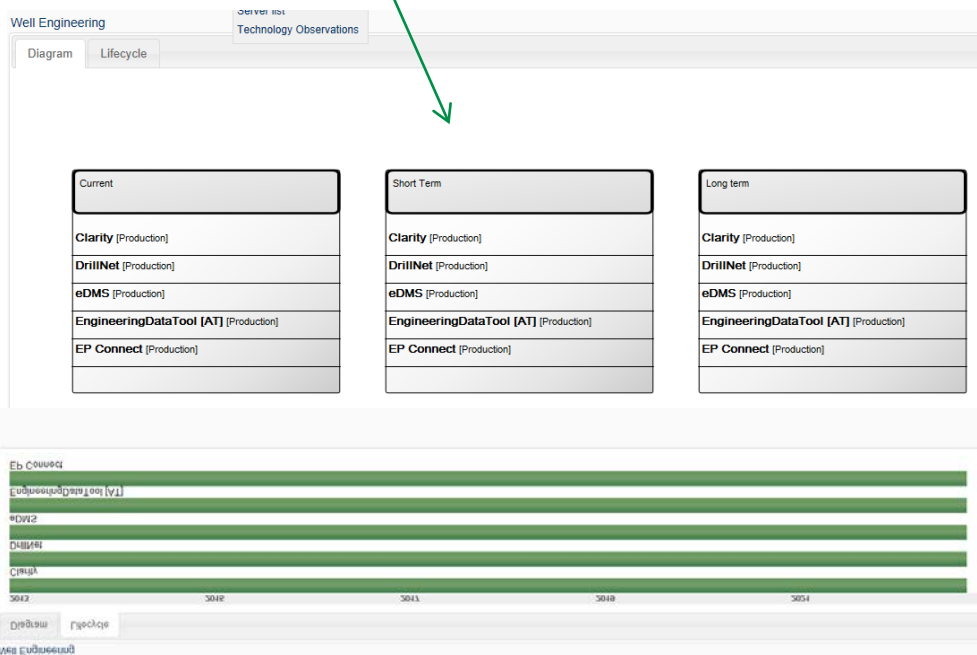
Frozen Start:

Out Start: End:

Lifecycle: Production

Waiver From: To: GrantedBy: Motivation:

OK Cancel Apply

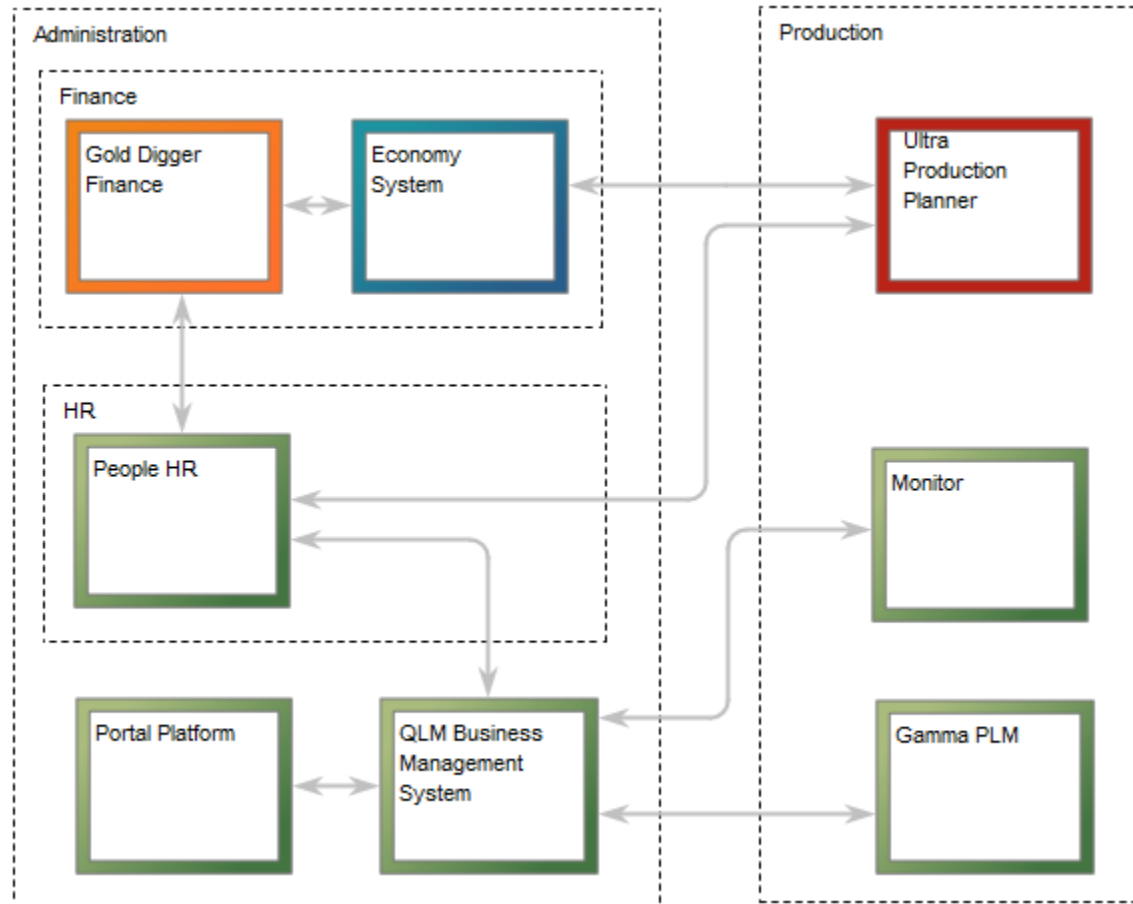


# Lifecycle planning – Visualize and compare

Visualize lifecycle in diagrams

Compare lifecycle

- Dependent applications
- Dependent infrastructure





# Evaluate – IT Perspective



# Evaluate applications – IT Perspective

- Quality criterias – differs between customer

InformationSystem : QLM Business Management System : Rev. 0 : Default

InformationSystem	Audits	Responsibility	Capability	Information	Describe	Techniques
RelationContext	Strategy	Target	Performance	Compliance	Documents	Other
InherentRisk	Revisions	Language	Circulation	Status	ProjectStatus	
Components	Lifecycle	Usage Scope	Services	Provides	Evaluations	Infrastructure

Provides:

Name	Perfor...	Status	Standard
Register Non-conformance	3. Good	Production	Yes
Register Change Request	4. Excelent	Production	Yes
Manage process description	4. Excelent	Production	Yes
Search process documentation	4. Excelent	Production	Yes
Search project documentation	3. Good	Investigation	No
Manage risks	3. Good	Implement...	Yes
Manage role descriptions	3. Good	Implement...	Yes

Performance: 4. Good   Usability: 4. Good   Security: 4. Good   Flexibility: 5. Excellent

Reliability: 4. Good   Technology: 4. Good   Fit for purpose: 5. Excellent   Cost: 3. Acceptable

Overall business score: 5. Excellent   Overall technical score: 4. Good

Functional point estimate:  +

Usability

Scalability

Fit for purpose

Security

Flexibility

Technology alignment

Complexity

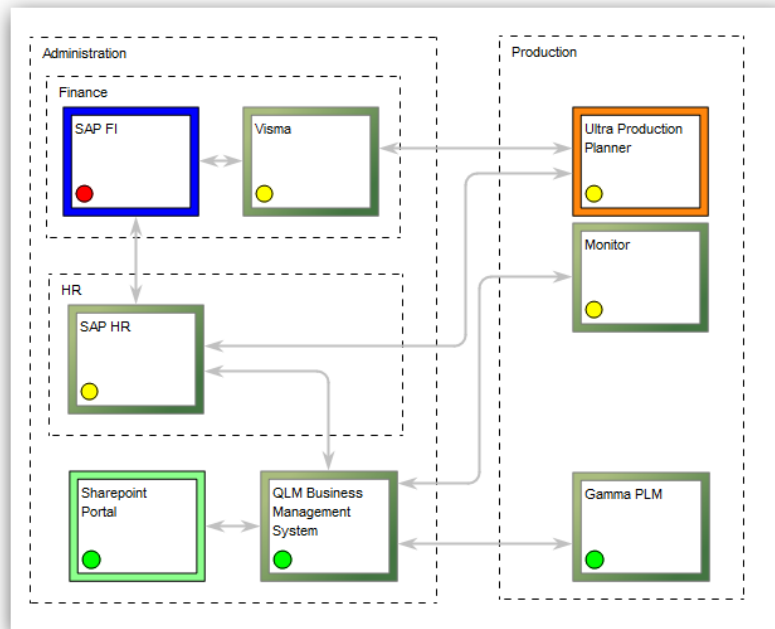
Maintainability

Cost

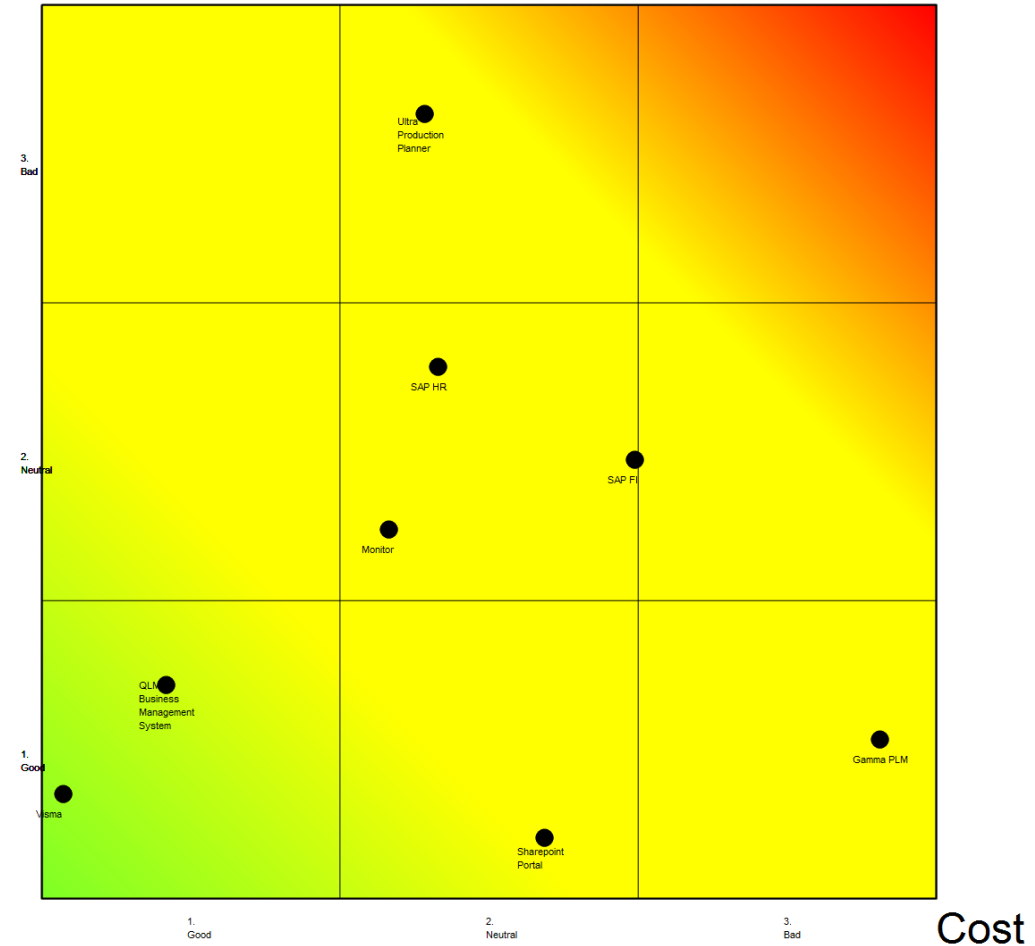
Performance

# Evaluate applications – IT Perspective

- Visualize and compare



Overall bussiness score



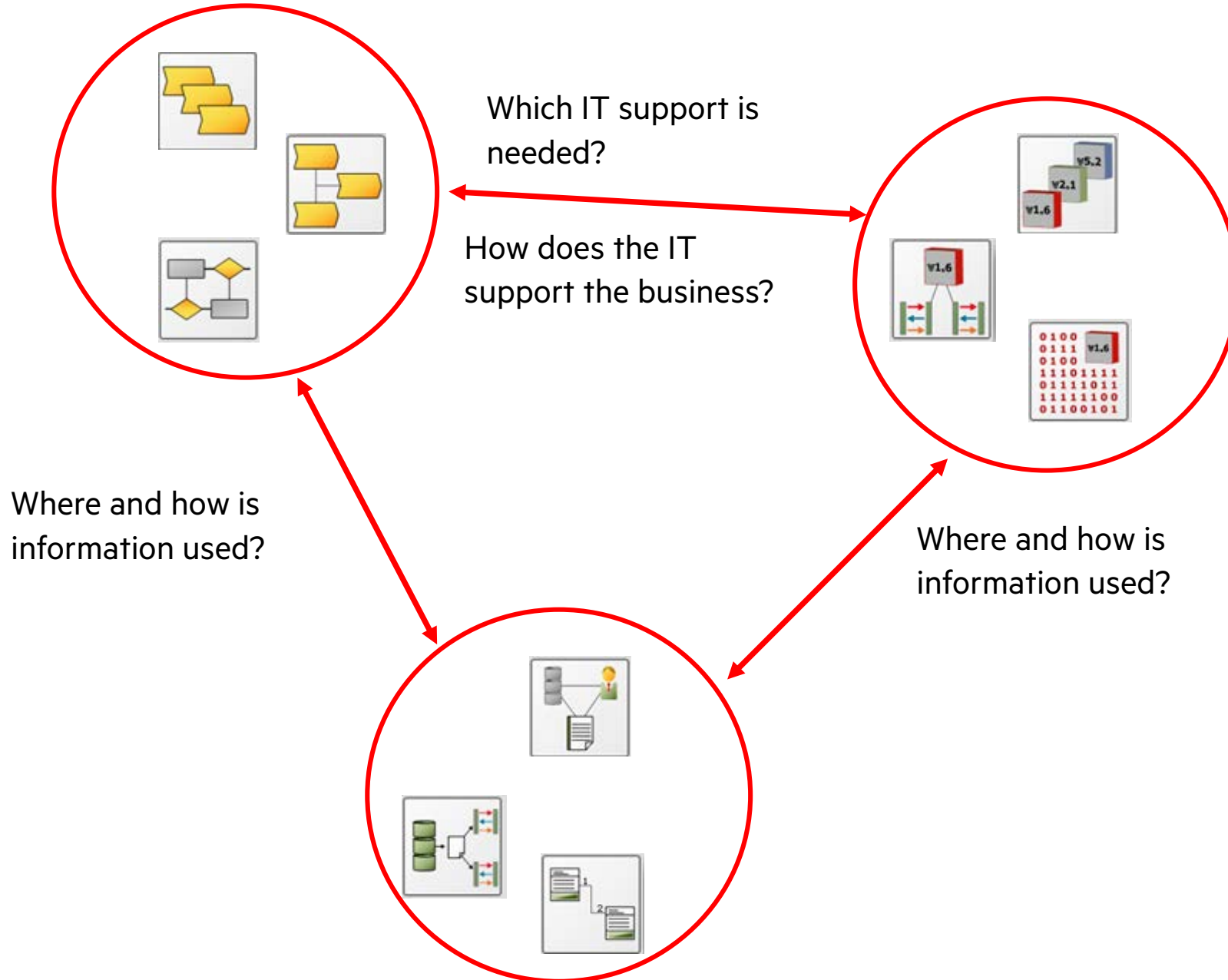
# Evaluate – Business Perspective

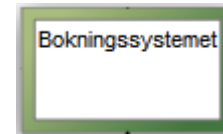
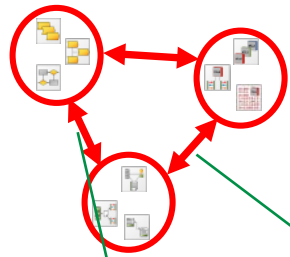


# Focus areas

	STRATEGY	PROCESS	APPLICATION	INFORMATION	ORGANIZATION	TECHNOLOGY
CONCEPTUAL	<p>Strategy</p>	<p>Business Process Model</p>	<p>Application Architecture</p>	<p>Semantic Model</p>	<p>Stakeholder Model</p>	<p>Strategic Technology Model</p>
LOGICAL	<p>Policies</p>	<p>Business Process Design</p>	<p>System Design</p>	<p>Logical Data Model</p>	<p>Organization Model</p>	<p>Business Technology</p>
OPERATIONAL	<p>Business Rules</p>	<p>Work Flow</p>	<p>Component Model</p>	<p>Physical Data Model</p>	<p>Human Resource Model</p>	<p>Physical Technology</p>







BusinessProcess : Uthyrning : Rev. 0 : Default

BusinessProcess Audits Start - End Input Output Relations  
Revisions Circulation Status Project Status  
IT Support Capability Information ABC Steps Describe Associate

Uses information:

Name	Type	Create	Read	Update	Delete
<input type="checkbox"/> Kontrakt	DataEntity	Create	Read	Update	
<input type="checkbox"/> Kund	DataEntity		Read	Update	
<input type="checkbox"/> Spärrlista	DataEntity		Read		
<input type="checkbox"/> Adress	DataEntity			Update	

Uses UserInterface:

Name	Rev.	Type	Modified	By
------	------	------	----------	----

OK Cancel Apply

InformationSystem : Bokningssystemet : Rev. 0 : Default

Associate Revisions Circulation Status Project Status Integration Provides  
InformationSystem Audits Responsibility Interfaces Information Describe Techniques

Uses information:

Name	Type	Create	Read	Update	Delete	So
<input type="checkbox"/> Bil	DataEntity		Read			
<input type="checkbox"/> Bokning	DataEntity	Create				

Uses UserInterface:

Name	Rev.	Type	Modified	By
------	------	------	----------	----

OK Cancel Apply

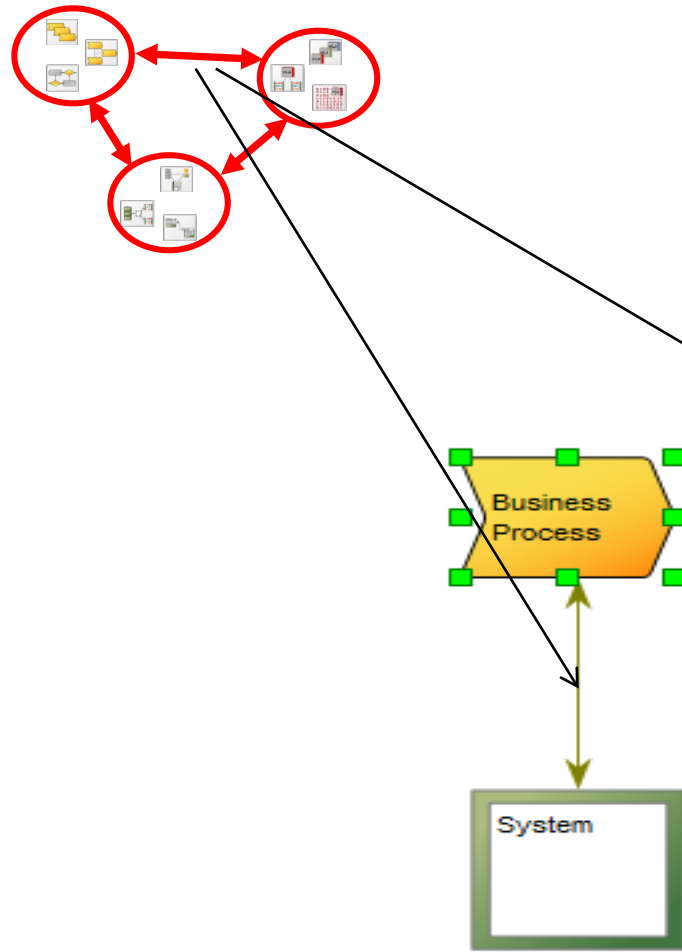


# The CRUD Matrix

BusinessProcess CRUD	Adress	Bokning	Faktura	Kontrakt	Kund	Order	Produkt	Projekt	Spärrlista	Create	Read	Update	Delete
<a href="#">Affärsutveckling</a>										0	0	0	0
<a href="#">Anskaffning</a>										0	0	0	0
<a href="#">Bokning av bil</a>		Create		Create	Read	Update				2	1	1	0
<a href="#">Ekonomi</a>			Create							1	0	0	0
<a href="#">Kundservice</a>	Create									1	0	0	0
<a href="#">Marknadsföring</a>	Delete									0	0	0	1
<a href="#">Personal</a>										0	0	0	0
<a href="#">Service</a>			Update							0	0	1	0
<a href="#">Uthyrning</a>	Update			Create Read Update	Read Update				Read	1	3	3	0
<a href="#">Utlämning av bil</a>										0	0	0	0
<a href="#">Återlämning av bil</a>		Create Update								1	0	1	0
Create	1	2	1	2	0	0	0	0	0	6			
Read	0	0	0	1	2	0	0	0	1		4		
Update	1	1	1	1	1	1	0	0	0			6	
Delete	1	0	0	0	0	0	0	0	0				1







BusinessProcess : Business Process : Rev. 0 : Default

BusinessProcess	Audits	Start - End	Input Output	Relations	Capability	Information
Status	Project Status	Uses	Stakeholders	Controls	Transactionrequests	Influences
IT Support	ABC	Steps	Describe	Associate	Revisions	InherentRisk
						Circulation

IT Support:

Name	R..	Type	Modified	By
System	0	InformationSys...	2010 09 19 10.47:25	pa

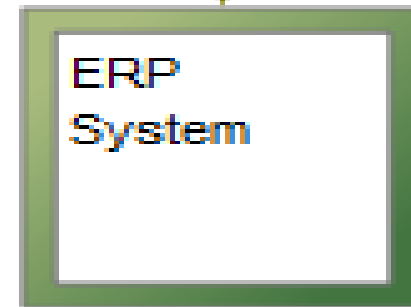
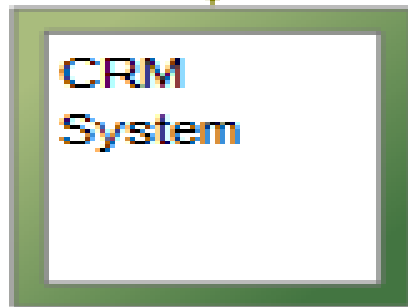
Uses UserInterface:

Name	R..	Type	Modified	By
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OK Cancel Apply



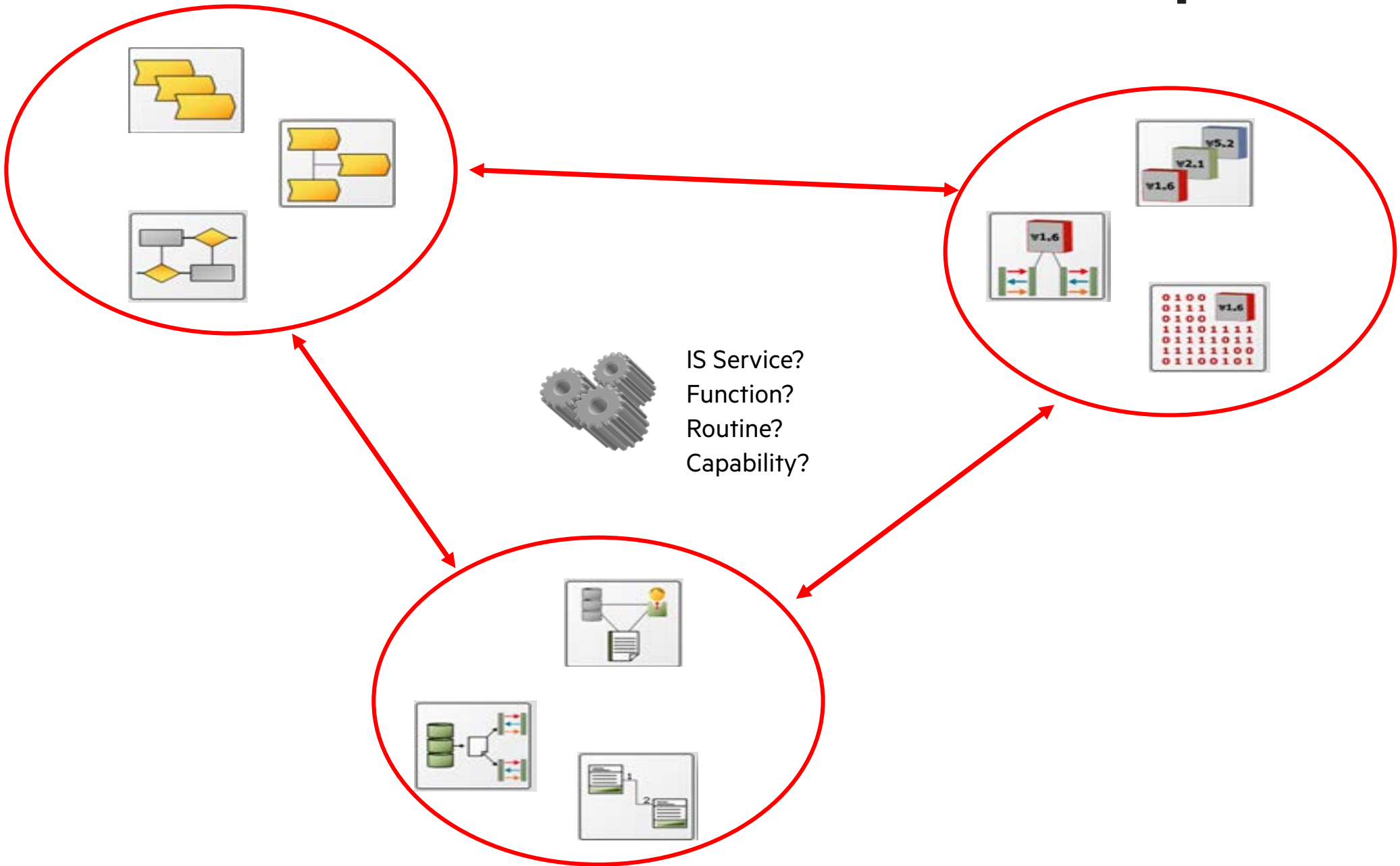
# Granularity

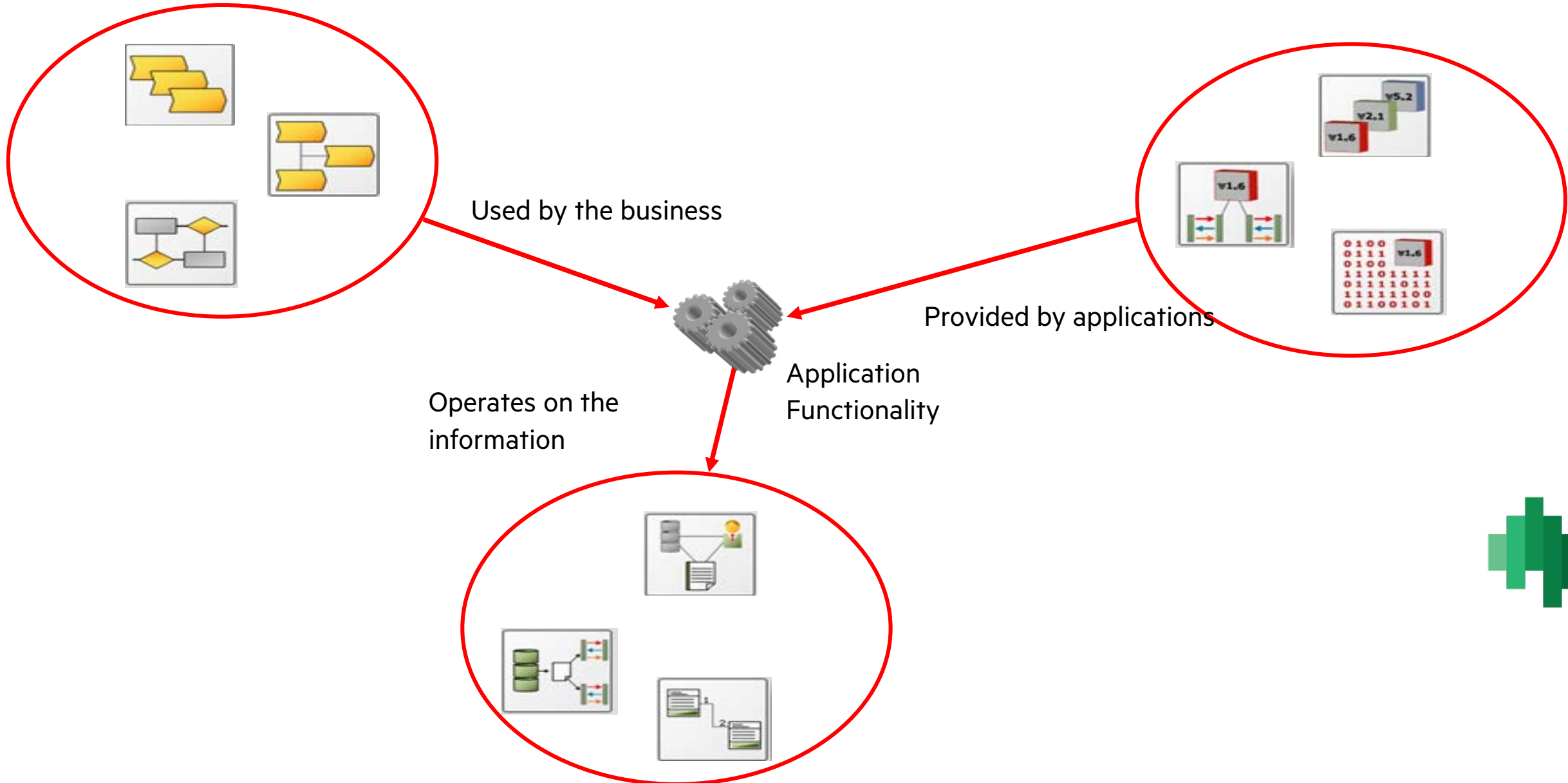


# Problems

- Difficult to do any non-trivial analysis since the mapping doesn't say how the application is used or how well it performs.
- Risk for pre-mature decisions since the business doesn't express the needs but pinpoint a solution.
- Difficult to compare applications

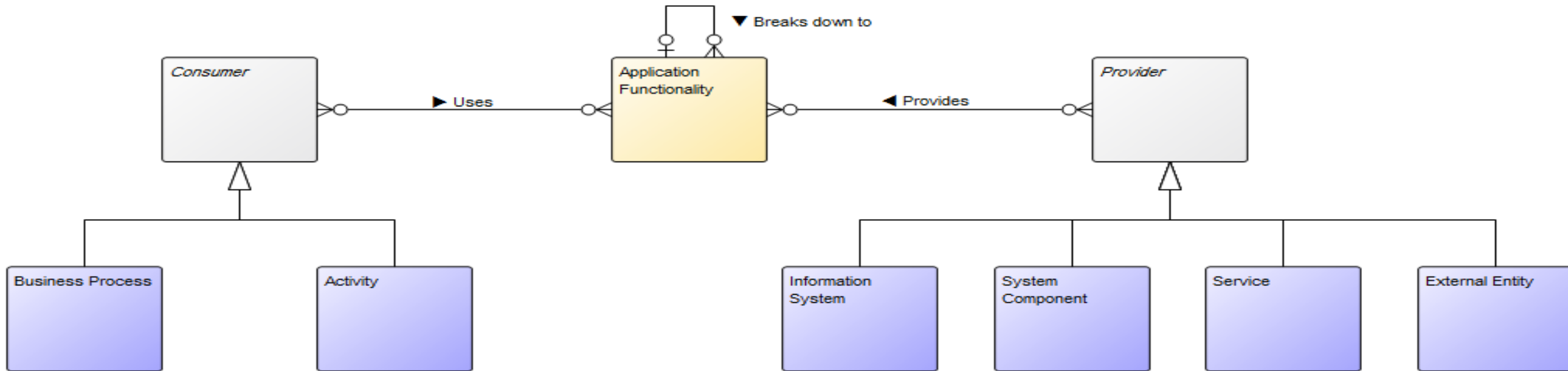
# Introducing "Something"





# Application Functionality characteristics

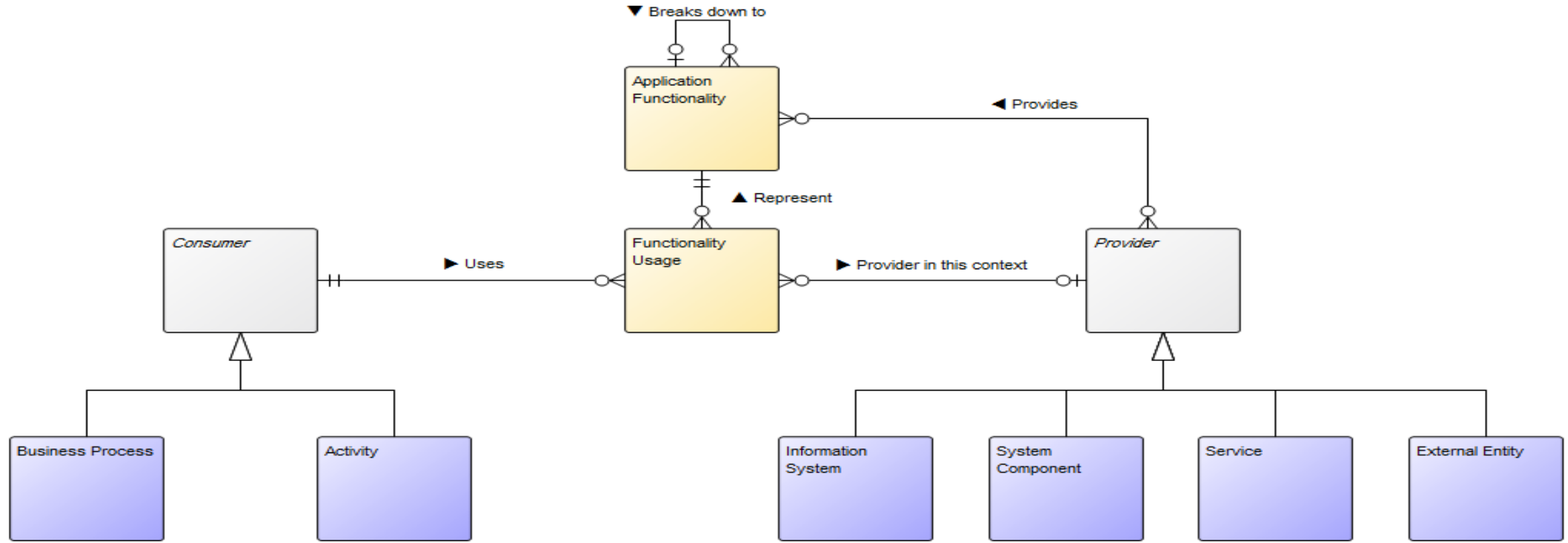
- Business Functionality – Use business terminology
  - *Register Customer Information (good)*
  - *Reserve Data Record (bad)*
- *Implementation independent*
  - Several systems could provide the same functionality
  - Business could reuse the same functionality in multiple contexts (e.g. different processes)
- Possible to use on different level of details
  - The process **Handle procurement** uses functionality *Manage supplier* provided by the **ERP** system
  - The activity **Contact supplier** uses functionality *Search supplier contact information* provided by **Supplier register**



How to deduct which system supports which process?

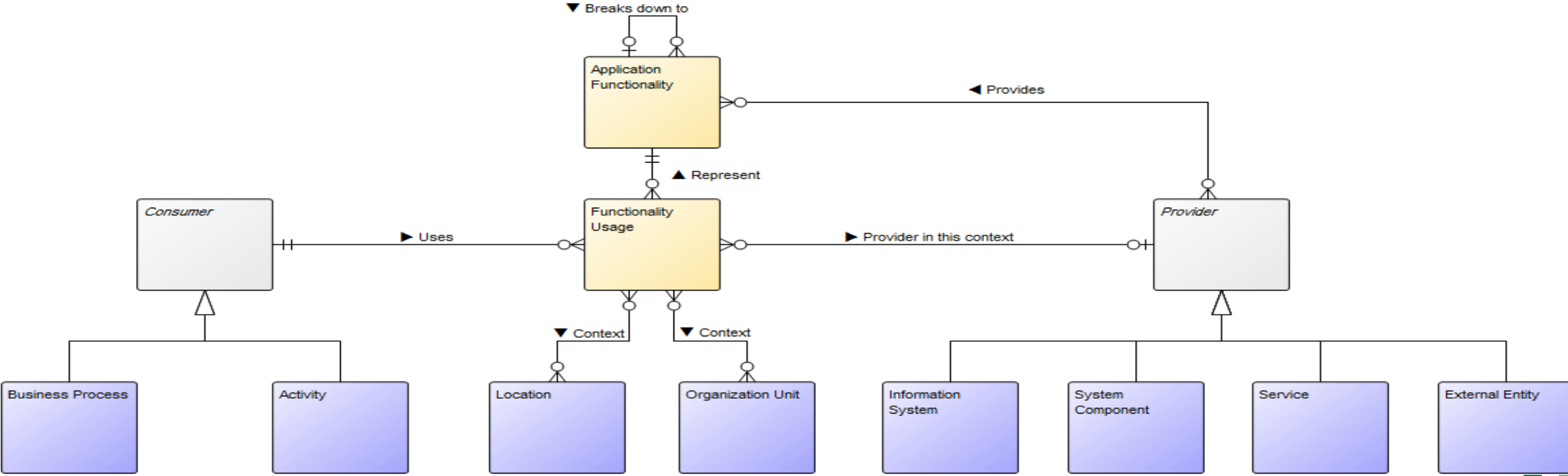


# Introducing Functionality Usage

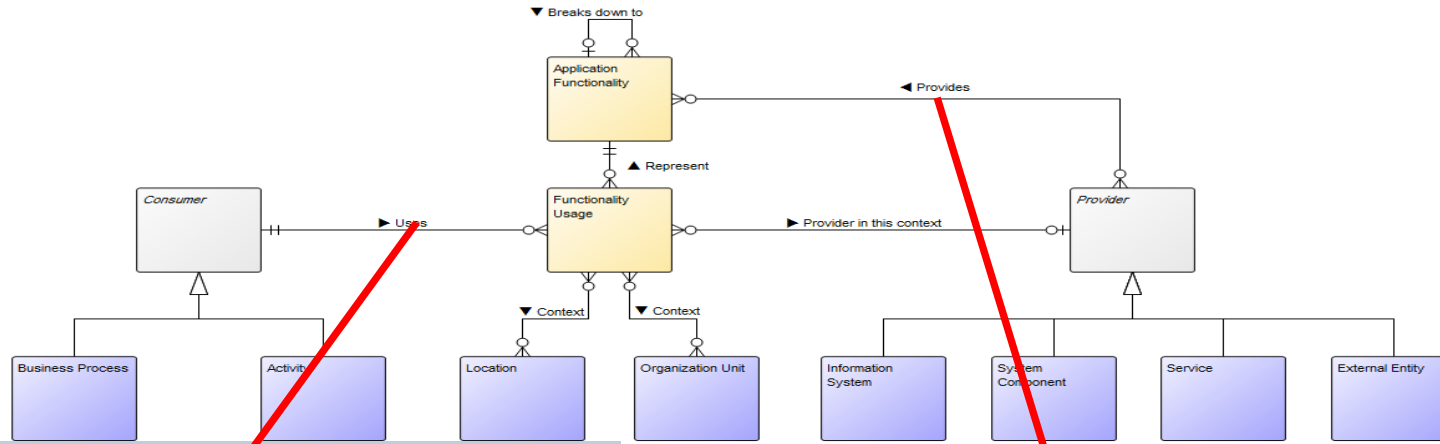




# Extra dimensions



# Implementation



BusinessProcess : Develop and govern business : Rev. 0 : Default

BusinessProcess	Audits	Consulted	Start - End	Input Output	Guide Enabler
Decomposition	Capability	Information	IT Support	ABC	Describe
Stakeholders	Controls	Transaction requests	Influences	Revisions	Language
Circulation	Status	Project Status	Audits	Circulation	Status
Strategy	Target	Performance	Compliance	Documents	Other
InherentRisk	Uses				

Uses:

Name	Provider	Perform...	Criticality
Register Change Request	Portal Platform	4. Good	4. Top Qu...
Manage documents	Portal Platform	3. Acceptable	5. Differen...
Search product	Ultra Production Pla...	4. Good	1. Not imp...
Assign project resources	People HR	4. Good	3. Equality
Financial reporting	Gold Digger Finance	4. Good	5. Differen...
Search process documentation	QLM Business Mana...	1. Unaccep...	4. Top Qu...
Manage risks	Gold Digger Finance	5. Excellent	5. Differen...
Manage role descriptions	QLM Business Mana...	5. Excellent	3. Equality

InformationSystem : QLM Business Management System : Rev. 0 : Default

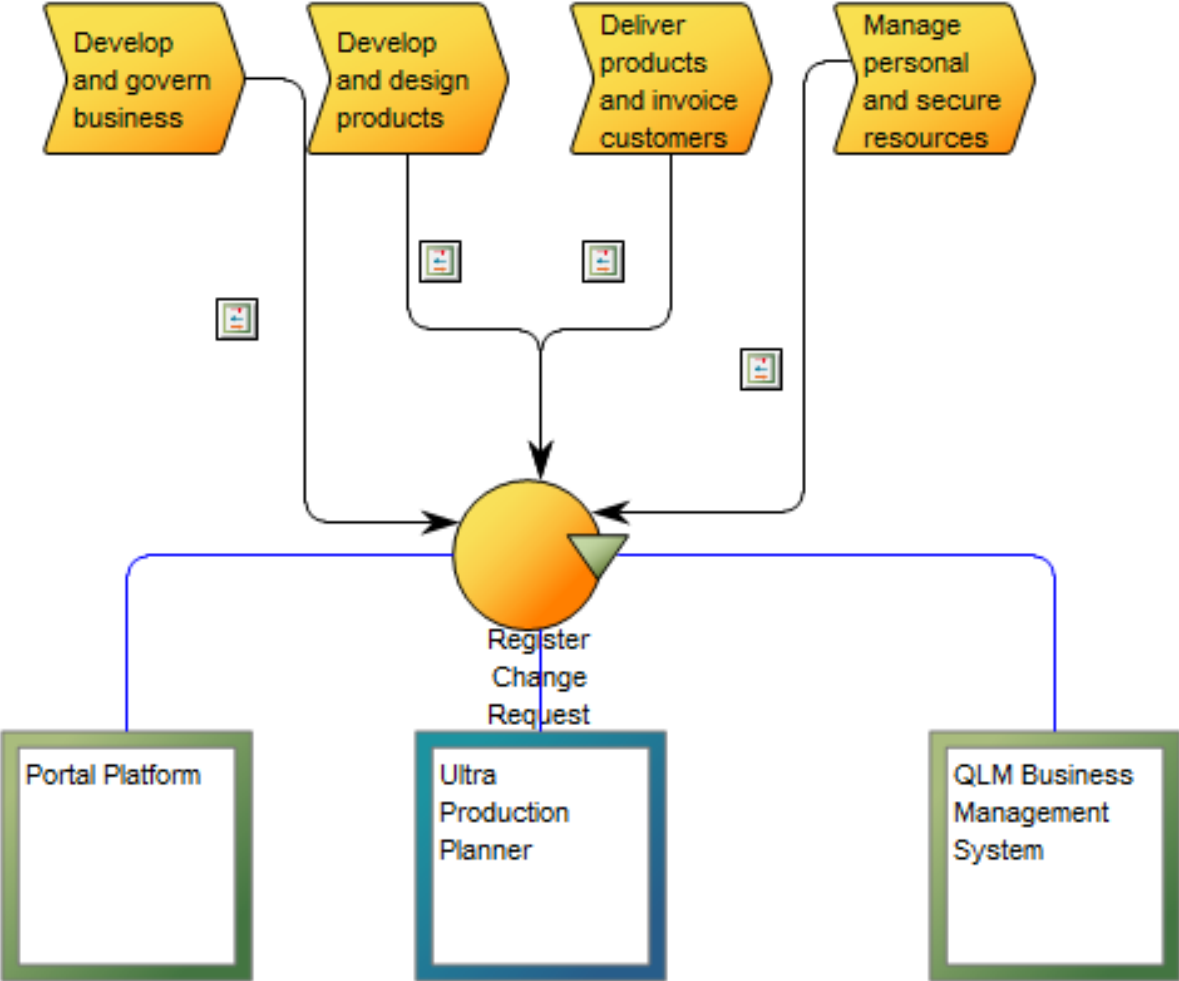
InformationSystem	Audits	Responsibility	Capability	Information	Describe	Techniques
RelationContext	Strategy	Target	Performance	Compliance	Documents	Other
InherentRisk	Revisions	Language	Circulation	Status	Project Status	
Components	Lifecycle	Usage Scope	Services	Provides	Evaluations	Infrastructure

Provides:

Name	Perfor...	Status	Standard
Register Non-conformance	3. Good	Production	Yes
Register Change Request	4. Excellent	Production	Yes
Manage process description	4. Excellent	Production	Yes
Search process documentation	4. Excellent	Production	Yes
Search project documentation	3. Good	Investigation	No
Manage risks	3. Good	Implement...	Yes
Manage role descriptions	3. Good	Implement...	Yes



# ApplicationFunctionalityContext

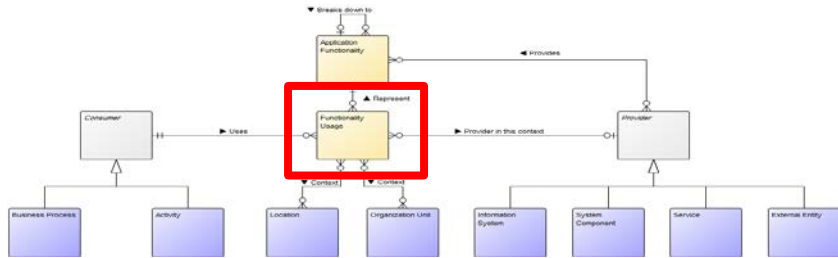


# Matrix

Process - Functionality - Provider	<a href="#">DW</a>	<a href="#">Easy Project</a>	<a href="#">Economy System</a>	<a href="#">Gamma PLM</a>	<a href="#">Gold Digger Finance</a>	<a href="#">Monitor</a>	<a href="#">People HR</a>	<a href="#">Portal Platform</a>	<a href="#">QLM Business Management System</a>
<a href="#">Deliver products and invoice customers</a>	<a href="#">Report sales</a>	<a href="#">BAM</a>	<a href="#">Search account</a> <a href="#">Register account</a>		<a href="#">Search customer</a>	<a href="#">Monitor production</a>			<a href="#">Register Change Request</a>
<a href="#">Develop and design products</a>				<a href="#">Analyze product structure</a>			<a href="#">Assign project resources</a>		<a href="#">Register Change Request</a>
<a href="#">Develop and govern business</a>					<a href="#">Financial reporting</a>		<a href="#">Assign project resources</a>	<a href="#">Register Change Request</a> <a href="#">Manage documents</a>	<a href="#">Search process documentation</a>
<a href="#">Manage Infrastructure</a>					<a href="#">Manage risks</a>				<a href="#">Register Non-conformance</a>
<a href="#">Manage personal and secure resources</a>							<a href="#">Register employee</a> <a href="#">Search employee</a>	<a href="#">Search project documentation</a>	<a href="#">Search process documentation</a>
<a href="#">Market and sale products</a>			<a href="#">Financial reporting</a> <a href="#">Report sales</a>		<a href="#">Search customer</a>				
<a href="#">Procure goods and services</a>								<a href="#">Search process documentation</a>	
<a href="#">Produce products</a>				<a href="#">Analyze product structure</a>		<a href="#">Monitor production</a>			<a href="#">Register Non-conformance</a> <a href="#">Manage risks</a>
<a href="#">Project planning</a>		<a href="#">Project management</a>							
<a href="#">Support customers</a>					<a href="#">Search customer</a>		<a href="#">Manage documents</a>		



# Grading in two dimensions



FunctionalityUsage : Register Non-conformance : Rev. 0 : Default

Performance | Compliance | Documents | Other | InherentRisk | Lifecycle | Usage Scope

FunctionalityUsage | Audits | Describe | RelationContext | Strategy | Target

Short Description:

Functionality: Register Non-conformance [Applicat] +

Provider: QLM Business Management System | +

Business Impact: 4. Top Quartile

Quality of execution: 5. Excellent

OK Cancel Apply



# Consolidate Application Portfolio

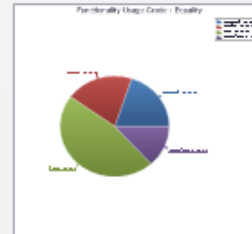
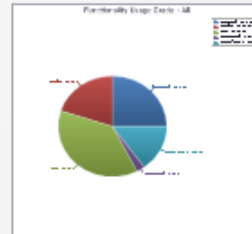
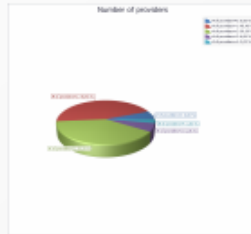
Process - Functionality - Provider	Cancelera bokning	Kontrollera kreditvärdighet	Kontrollera personuppgifter	Registrera bokning	Skicka bokningsbekräftelse	Spara kund	Söka bokning	Ta fram årsbokslut
Bedöm leverantör Bekräfta inköpsorder Besluta om medlemskap Kontrollera faktura							Provider: <a href="#">Bokningssystemet</a> Criticality:2, Nice to have Performance:3, Good	
Kontrollera fakturabelopp Kontrollera förfallodatum Kontrollera kreditvärdighet		Provider: <a href="#">Kundsystemet</a> Criticality:4, Critical Performance:2, Average	Provider: <a href="#">Kundsystemet</a> Criticality: Performance:		Provider: <a href="#">Bokningssystemet</a> Criticality:2, Nice to have Performance:4, Excellent		Provider: <a href="#">Ekonomisystemet</a> Criticality:3, Important Performance:1, Poor	
Kontrollera kunduppgifter								
Kontrollera medlemsansökan Registrera bokning			Provider: <a href="#">Bokningssystemet</a> Criticality:3, Important Performance:2, Average	Provider: <a href="#">Bokningssystemet</a> Criticality:3, Important Performance:2, Average				Provider: <a href="#">Ekonomisystemet</a> Criticality:4, Critical Performance:3, Good
Bevärdera bil Skicka faktura Skicka fakturainvettning Skicka besked om medlemskap Skicka bokningsbekräftelse					Provider: <a href="#">Kundsystemet</a> Criticality:3, Important Performance:2, Average			
Skicka faktura Stoppa bokning	Provider: <a href="#">Bokningssystemet</a> Criticality:3, Important Performance:2, Average					Provider: <a href="#">Kundsystemet</a> Criticality:2, Nice to have Performance:2, Average		
Ta emot ansökan om medlemskap Ta emot bekräftelse på inköpsorder Ta emot beställningsunderlag Ta fram kundkontrakt Uppräta inköpsorder								

Company processes		Develop and govern business		QLM Business Management System		Application Portfolio Management		Process/Activity - Functionality...	
Process - Functionality - Provider	Analyze product structure	Assign project resources	Define Product Structure	Financial reporting	Manage documents	Manage risks	Manage r		
Deliver products and invoice customers									
Develop and design products	Provider: <a href="#">Gamma PLM</a> Criticality:5, Differentiator Performance:2,	Provider: <a href="#">People HR</a> Criticality:3, Equality Performance:4, Good	Provider: <a href="#">Gamma PLM</a> Criticality:5, Differentiator						
Develop and govern business		Provider: <a href="#">People HR</a> Criticality:3, Equality Performance:4, Good		Provider: <a href="#">Gold Digger Finance</a> Criticality:5, Differentiator	Provider: <a href="#">Portal Platform</a> Criticality:5, Differentiator Performance:3, Acceptable	Provider: <a href="#">Gold Digger Finance</a> Criticality:5, Differentiator Performance:5, Excellent	Provider: <a href="#">QLM Business System</a> Criticality:3, Equality		
Manage infrastructure		Provider: <a href="#">Ultra Production Planner</a> Criticality:4, Top Quartile				Provider: <a href="#">Gold Digger Finance</a> Criticality:3, Equality Performance:2, Unsatisfactory			
Manage personal and secure resources									
Market and sale products				Provider: <a href="#">Economy System</a> Criticality:3, Equality Performance:3, Acceptable					
Procure goods and services									
Produce products	Provider: <a href="#">Gamma PLM</a> Criticality:4, Top Quartile Performance:4, Good						Provider: <a href="#">QLM Business Management System</a> Criticality:4, Top Quartile		
Project planning									
Support customers		Provider: <a href="#">Ultra Production Planner</a> Criticality:4, Top Quartile				Provider: <a href="#">People HR</a> Criticality:4, Top Quartile Performance:2,			

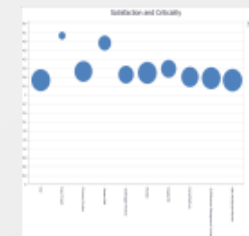
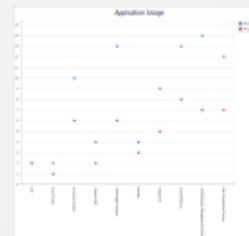
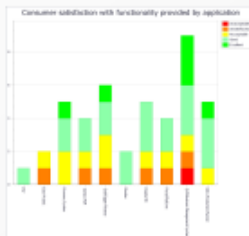


# Analytics & Application Portfolio Management

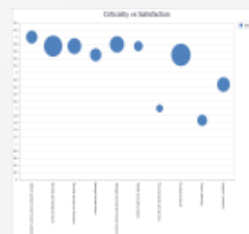
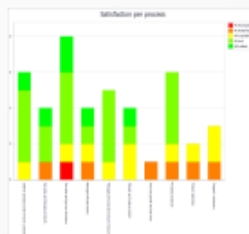
## Functionality Centric



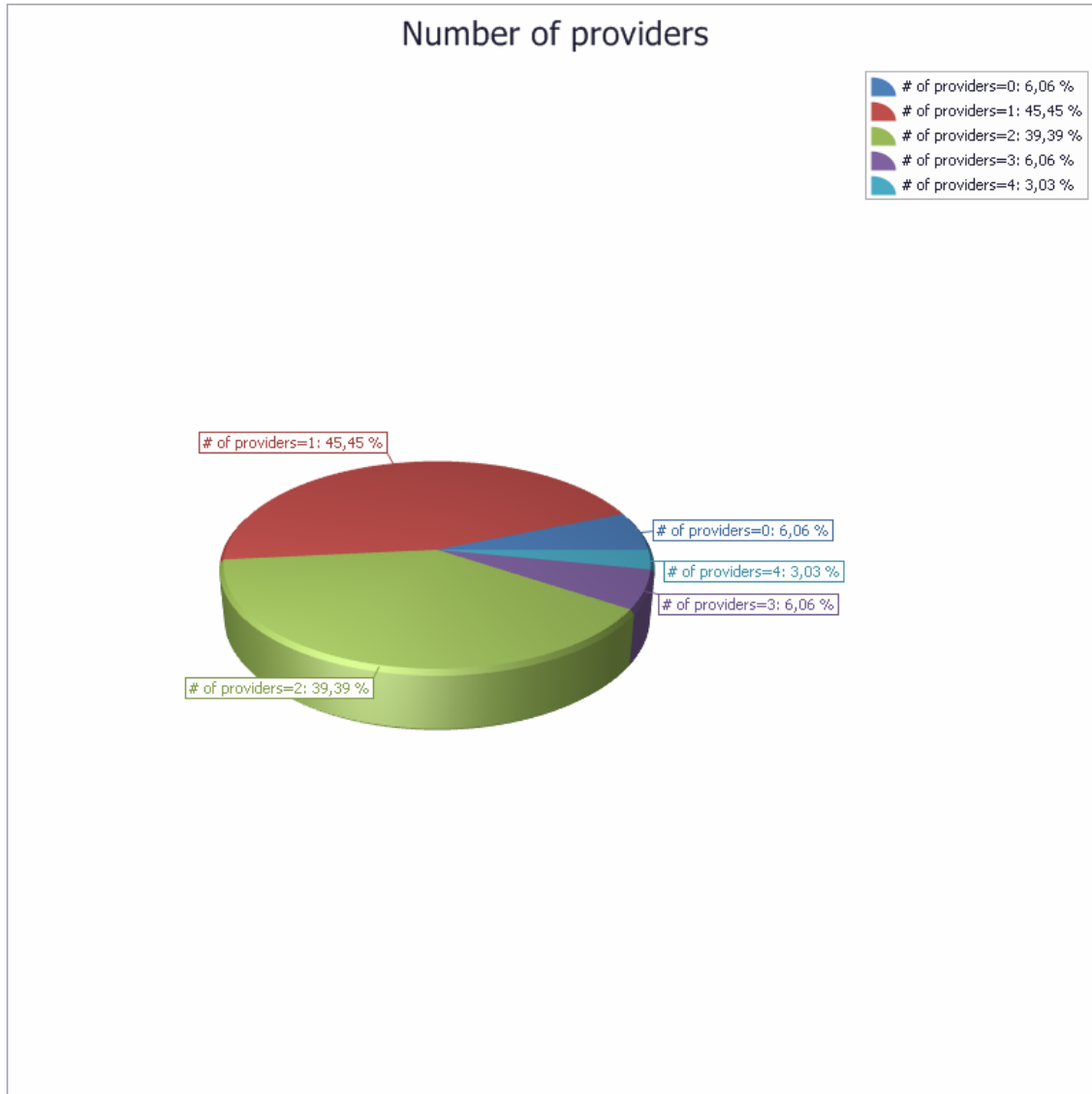
## Application Centric



## Process Centric



# Analyse Providers



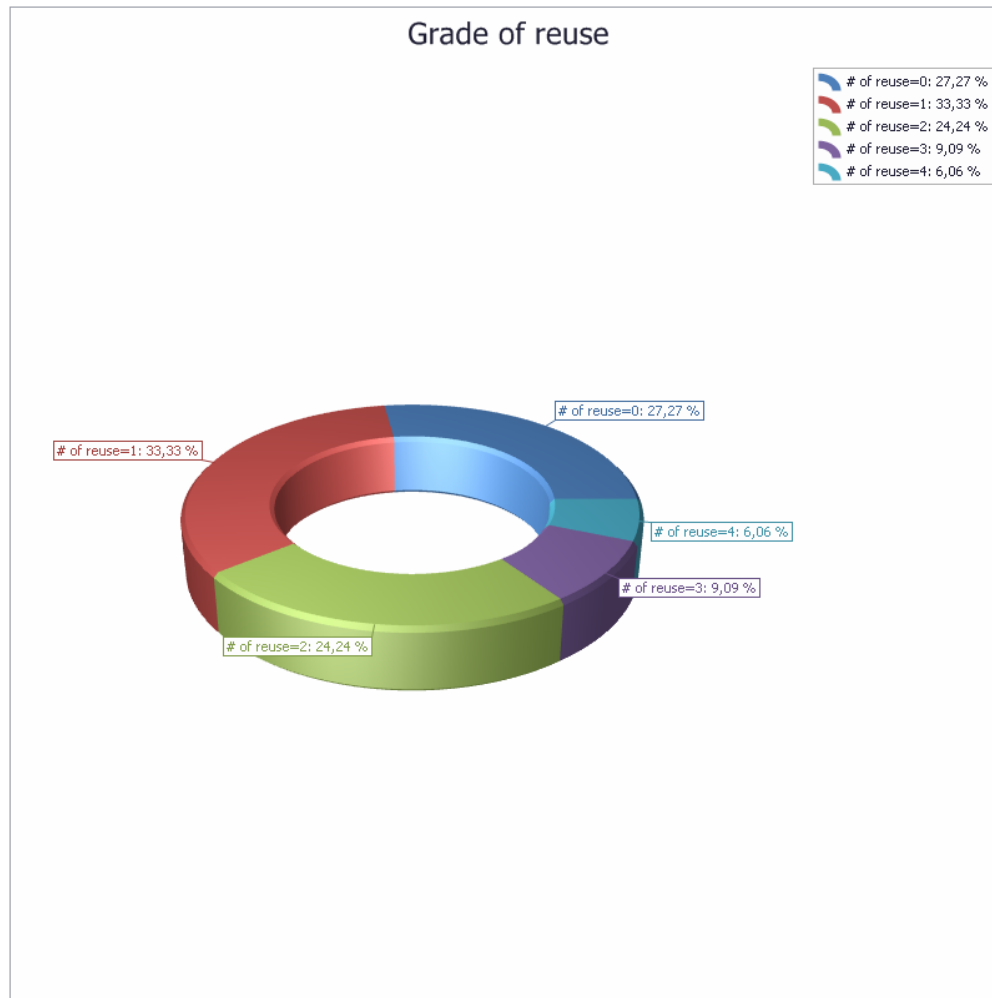
- "Level of Redundency"

- "New needs"





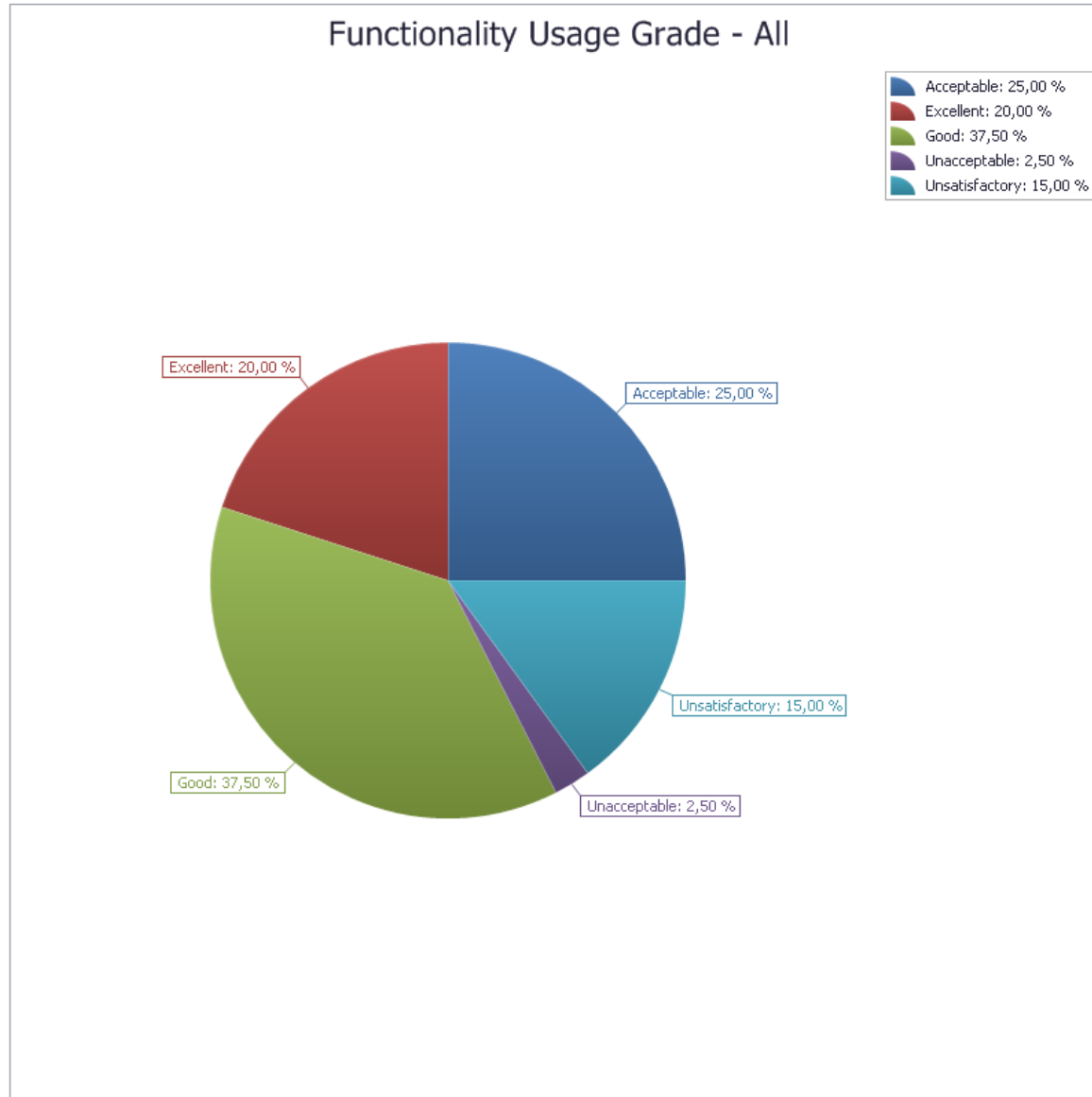
# Analyse



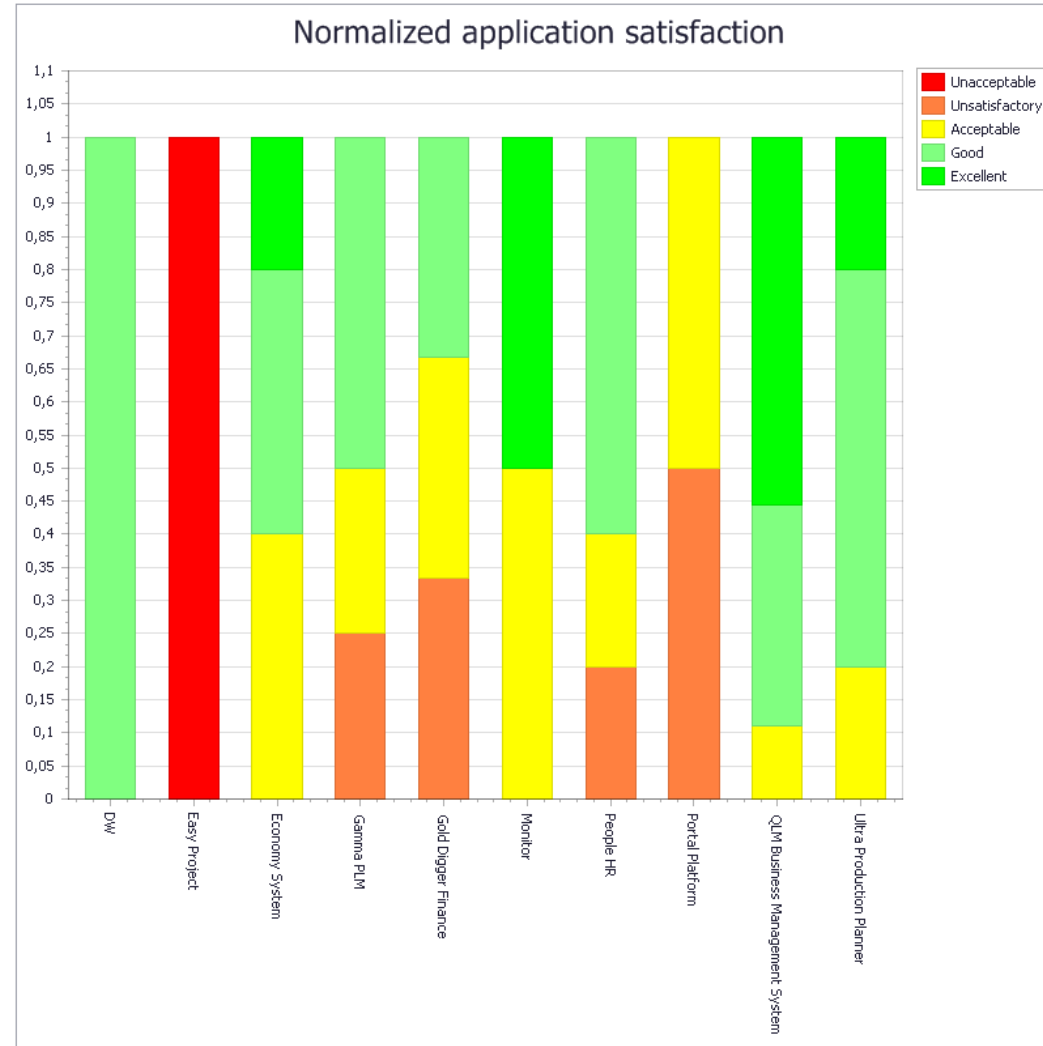
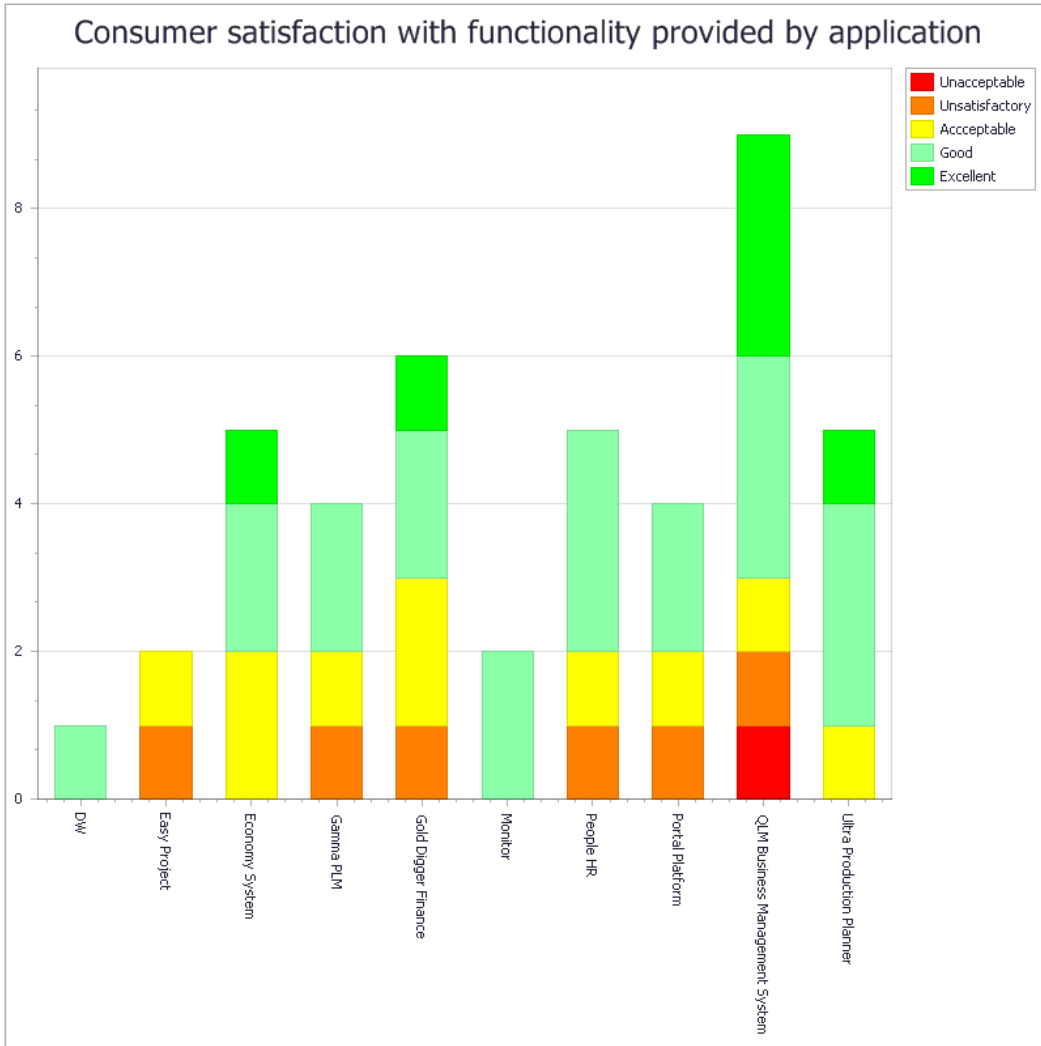
”Grade of reuse”



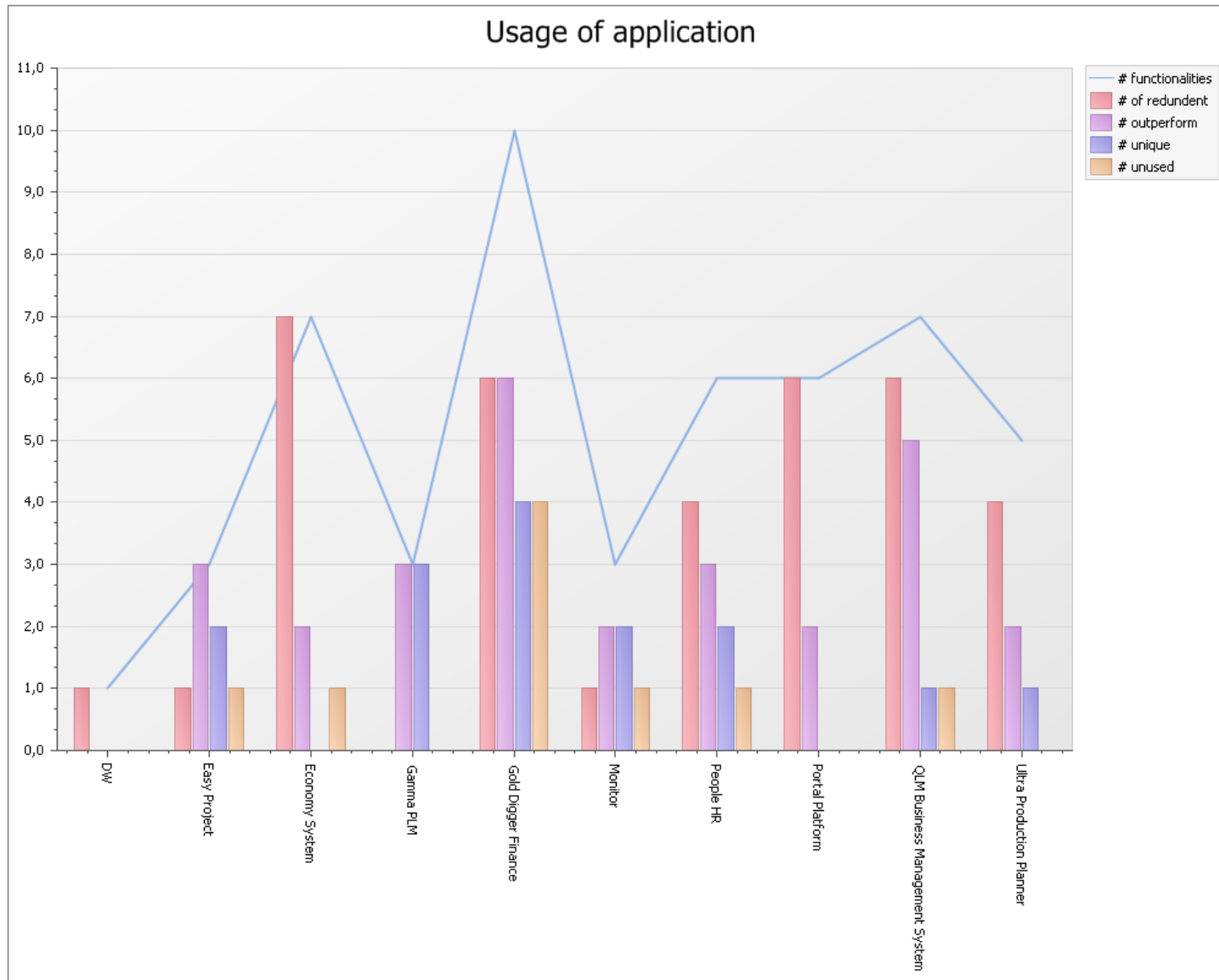
# Satisfaction



# Satisfaction per Application



# Usage of application



How "big" is the application?

Level of redundancy?

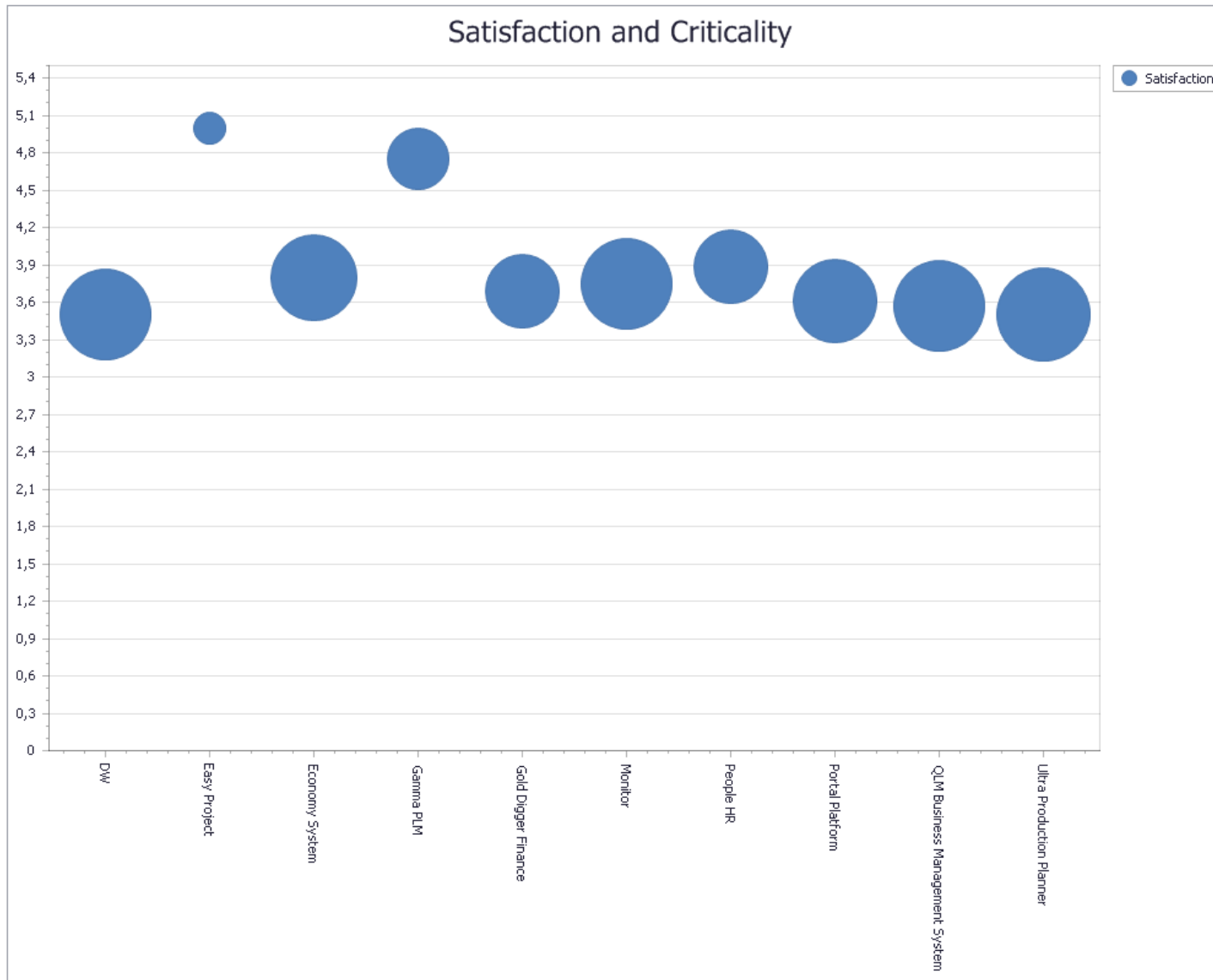
Level of uniqueness?

Level of outperforming ?

How much of the application is unused?



# Satisfaction vs Criticality per application

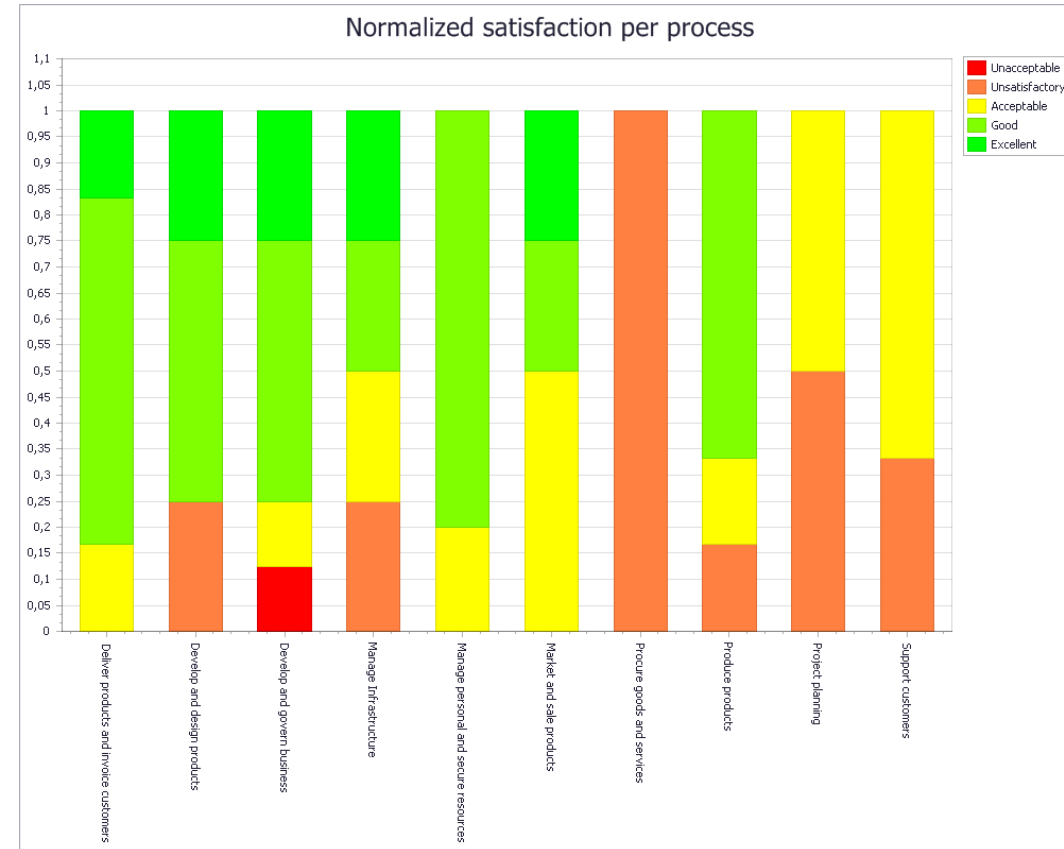
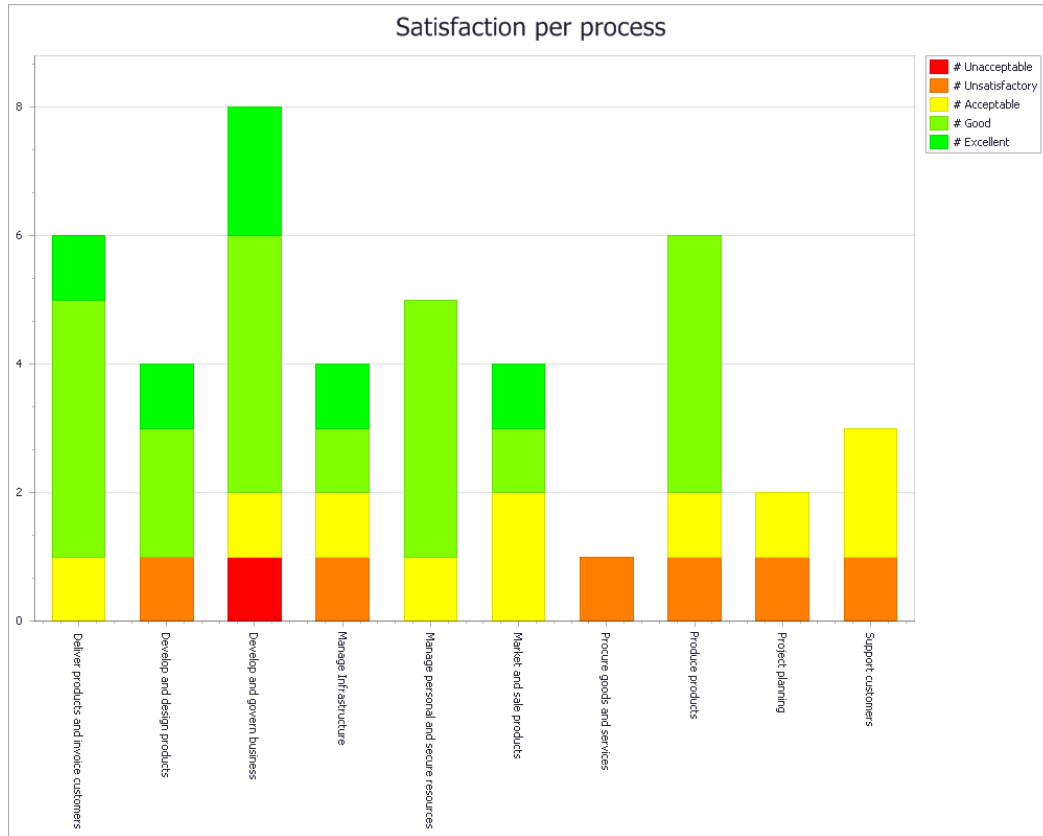


Whats need to be improved?

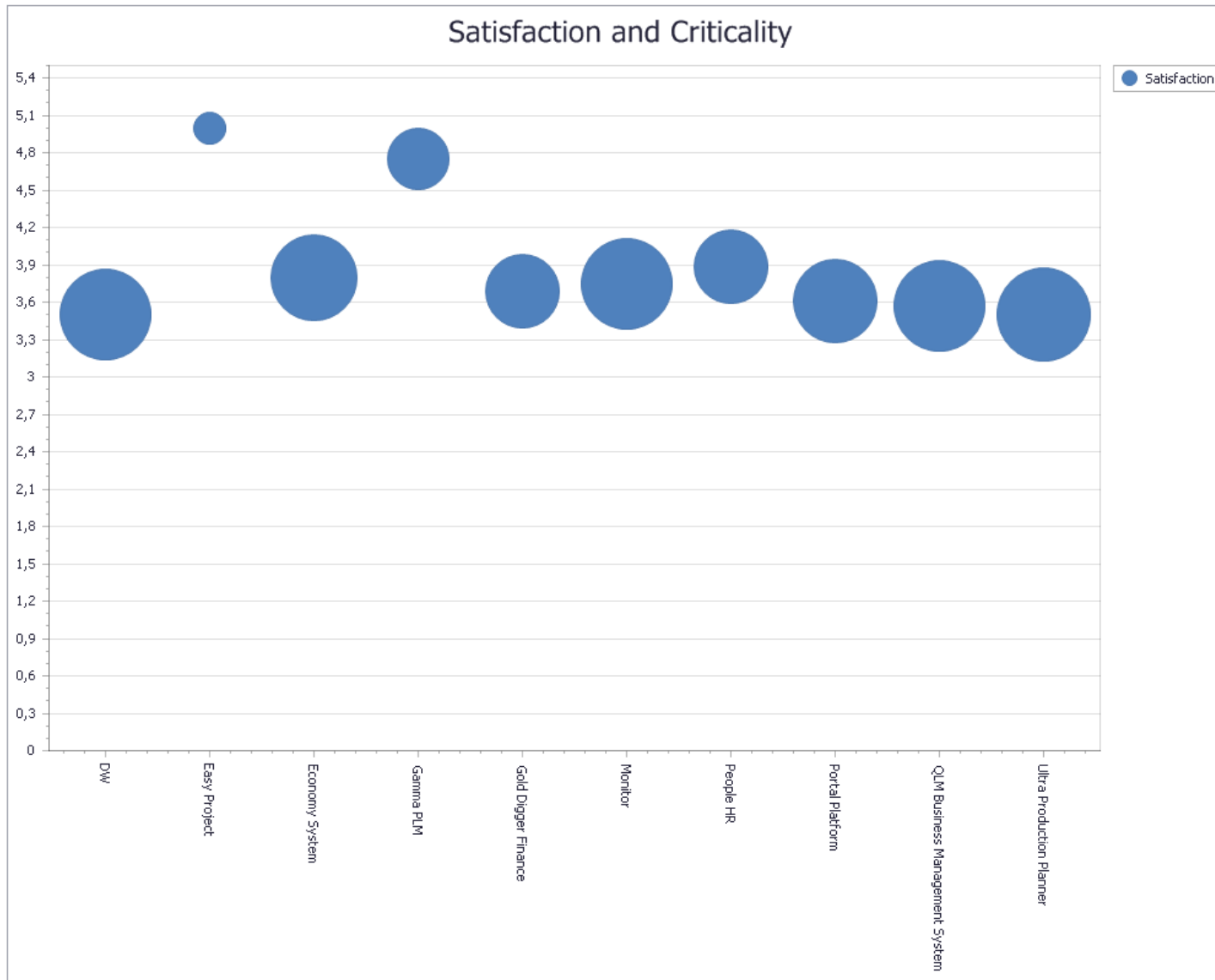


# Satisfaction per process

Whats need to be improved?



# Satisfaction vs Criticality per process



Whats need to be improved?

