



A rule-based approach to prioritization of IT work requests maximizing net benefit to the business

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Outline

- Context: Business-driven IT management
- Problem: Prioritization of work requests
- Approach: Rule-based bundling of work requests
- Conclusions

Business-driven IT management (BDIM)



- IT service delivery and support face complex decisions due to:
 - More stringent SLAs (time, availability, penalties, etc.)
 - More complex IT services to deliver
 - Larger pools of systems involved in service delivery
 - Larger customer base consuming IT services

How to align the decisions made by IT with business objectives?

BDIM – A definition

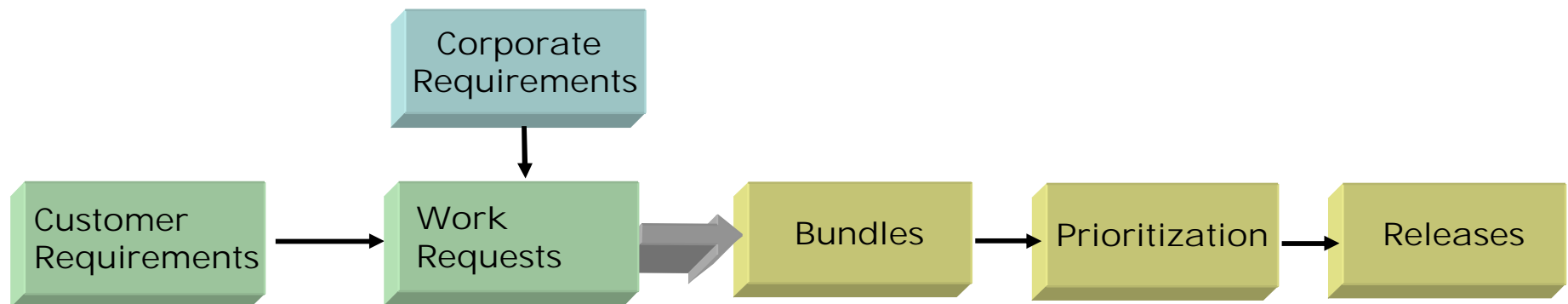
- Business-driven IT management is the application of a set of models, practices, techniques and tools to:
 - evaluate the performance of IT service delivery and support from the point of view of the business that IT supports
 - increase the effectiveness of IT service delivery and support by driving critical decisions from business objectives

BDIM Approach

- Bring business objectives at the core of the IT management decision making process
- Model and reason over the objectives, the decision criteria and the dependencies that link IT management and IT operations
- Integrate where possible with existing tools and technologies for IT services delivery and support
- Build upon IT service management best practices (ITIL, ITSM, COBIT)

IT work requests lifecycle

- The work requests management system (WRMS) manages the lifecycle of work requests including the capture, validation, prioritization reporting and communication on Work Requests





Our project's value proposition

- Offer

- Enhanced executive decision support for best allocation of scarce resources
- Reduced cost of toolset development and shorter time to value
- Reduced turn around time of delivery to trade customers

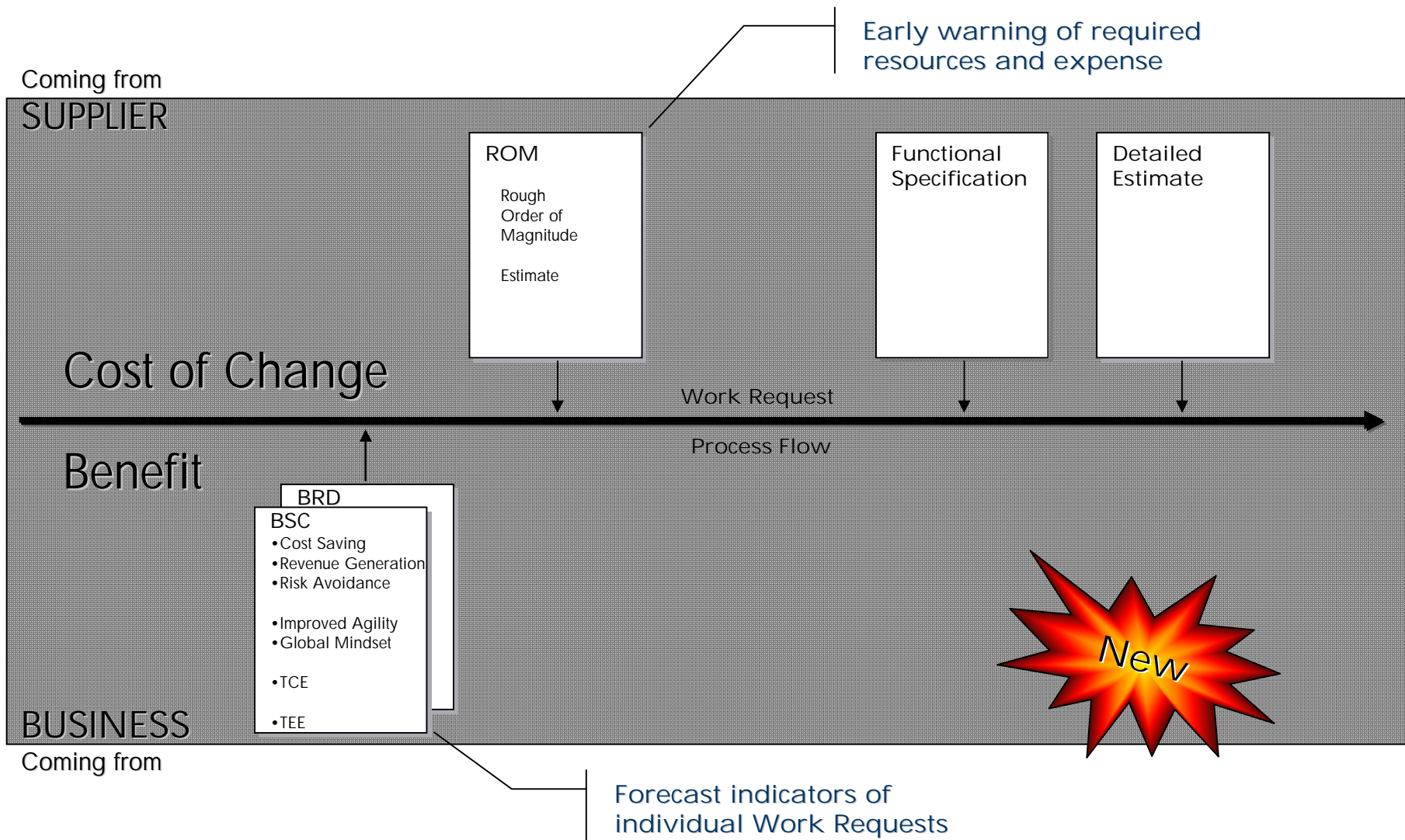
- Delivered By

- More timely and accurate delivery of Balanced Scorecard forecast indicators
eg Total forecast revenue, Total forecast cost reduction
- Identification of synergies, duplication and commonality in requested toolset modifications then bundling dependent WRs
- Enhanced prioritization, optimized release trains

Main challenges and our approach

- Scarce resources: Not all work requests can be serviced on time so need to **prioritize**
 - => Prioritization should be based on **maximizing the overall net benefit**
- However, work requests are **dependent** and prioritizing individual WRs could lead to inefficiencies
 - => Need to **bundle** together interdependent WRs and prioritize bundles instead of single WRs


Single work request value chain



Prioritization

- What represents the highest overall business return?
- What represents the best regional return?
- What are the medium and long term implications of delaying a request?
- How can we achieve the lowest cost (highest efficiency) in our development teams?
- How can we achieve the highest levels of responsiveness to our trade customers?
- How can we achieve the greatest leverage off standardization of service and architectures ?

Balanced scorecard

	A	B	C	D	E	F
1						
2	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <i>This is the only column that should be modified.</i> </div>					
3	ITEM	SCORE (Calculated)	RATING	UNITS (Standard)	Total Allocation	Notes
4	Revenue Generation					
5	Additional Revenue earned	9	>\$1,000k Bronze <10 <input type="text"/>	US\$pa	20	1
6						
7						
8	Cost Reduction					
9	Cost Saving	20	> \$5,000k <input type="text"/>	US\$pa	20	2
10						
11	Risk Avoidance					
12	Financial Penalties Avoided	7	\$100k - \$1,000k <input type="text"/>	US\$pa	10	3
13						
14					50	
15	Notes					
16	1. This can only be for Revenue not previously claimed in another WR. Pro Rata allocations may be made across multiple WR's.					

Scoring work requests

Microsoft Excel - WR Balanced Scorecard V1.3a.xls

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	A	B	C
	ITEM	SCORE	Max Score
3			
4	Financial		
5	Revenue Generation	9	20
6	Cost Reduction	20	20
7	Risk Avoidance	7	10
8			
9	Operational		
10	Improved Agility	10	12
11	Global Mindset	12	12
12			
13	Total Customer Experience		
14	Created Customer Value	5	10
15	Anticipates Customer Needs	5	6
16			
17			
18	Total Employee Experience		
19	Champions change	10	10
20			
21	TOTAL PRIORITY SCORE	78	100

Ready

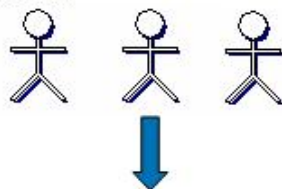
BSC Summary | Financial | Operational | TCE | TEE | Def

Prioritization challenges

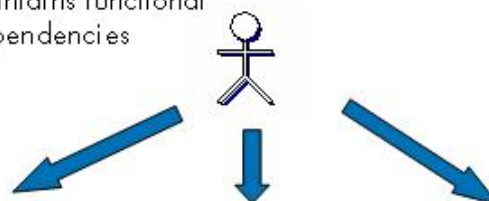
- The score assigned to the value ranges of the metrics measured in the scorecard do not express an explicit business justification
 - The stakeholders within the executives in MS are not presented with convincing evidence that the prioritization of work requests is made so as to maximizing the net benefit to the business
 - The submitters can argue that the score given to their estimate is arbitrary and subjective
- There is no measure of a confidence value to be associated to the estimates made by the submitters
- There is no measure of a trust value to be assigned by the work request manager to the estimates

Making Business Justification Explicit

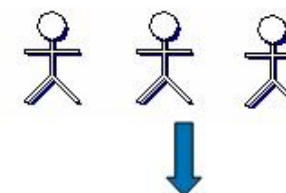
Executive stakeholders:
Provide validation of business objectives



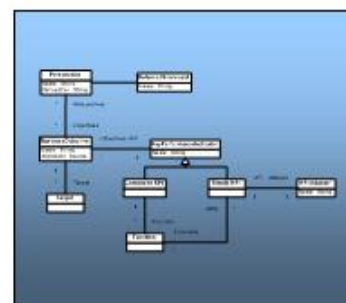
DIME front office:
Selects business objectives,
creates questionnaire and
maintains functional
dependencies



Business users:
Fill in questionnaire



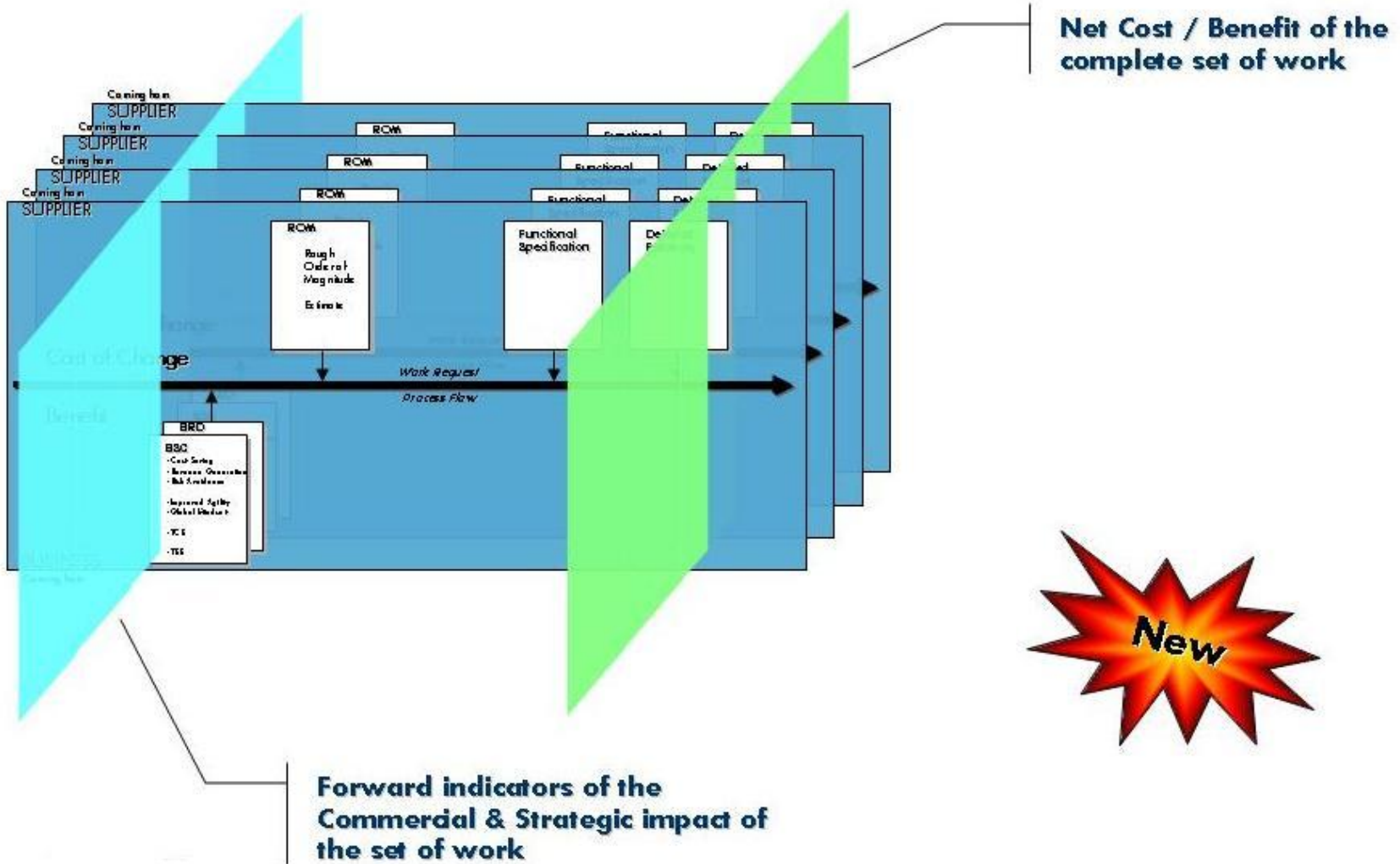
Business objectives



ITEM	SCORE (Calculated)	RATING	UNITS (Standard)	Total Allocation	Notes
4 Revenue Generation					
5 Additional Revenue earned	9	+ \$1,000 - bronze coin	US\$ps	20	1
8 Cost Reduction					
9 Cost Saving	20	+ \$5,000	US\$ps	20	2
11 Risk Avoidance					
12 Financial Penalties Avoided	7	\$200 - \$1,000	US\$ps	10	3
				50	

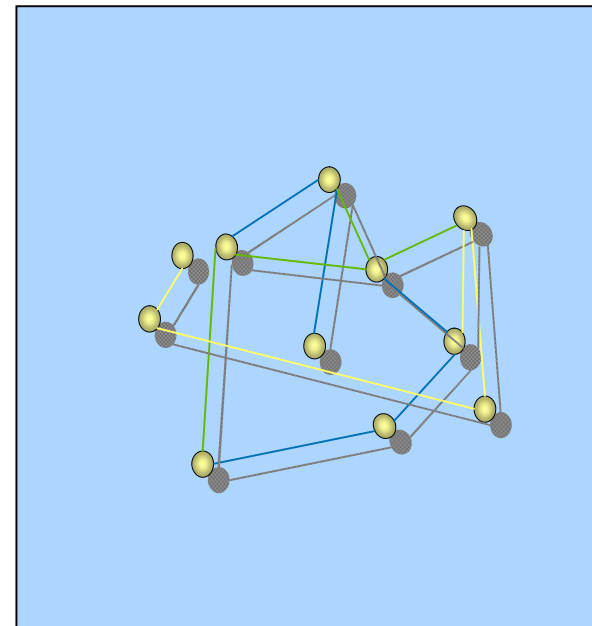
Questionnaire

Dependencies among work requests

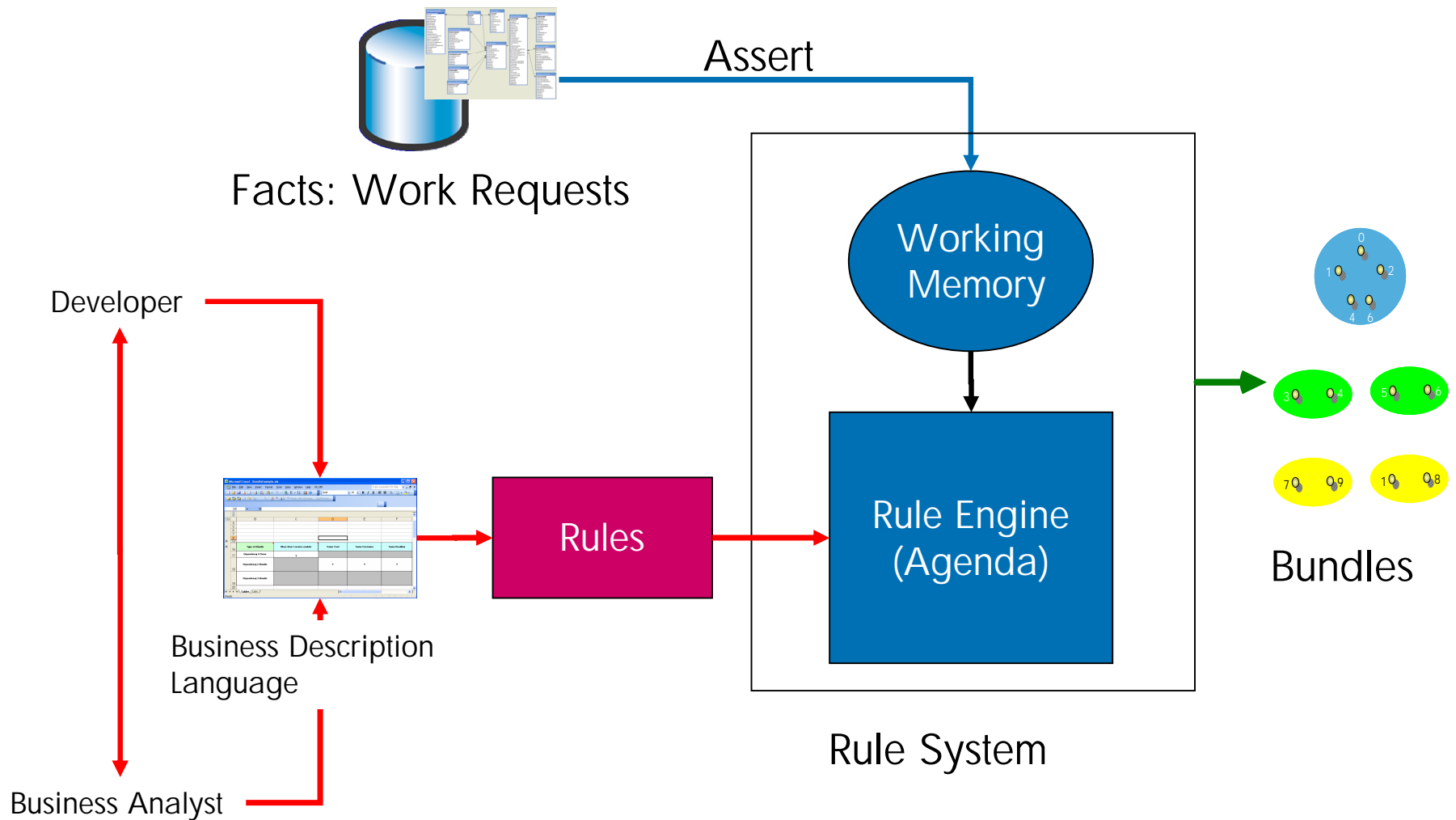


Bundling Work Requests

- Grouping of work requests exhibiting a given relationship
- The different types of relationships are:
 - Similarity: Duplication of requests or Duplication of requirement
 - Commonality: Common deadline, common alignment
 - Synergy: Similar resources required or same code base being modified
 - Technical Dependency: A WR may trigger an additional body of work not originally foreseen
 - Business Dependency: multiple requests that must all be completed in tandem



Bundling: Rule Based System



Business Rule Description Language: Decision Tables



- Decision tables are a compact way to represent decision logic
- Separation of business and technical view of decision logic: business rules
- Business View : Using a spreadsheet template, enter the rules into the spreadsheet by filling it.
- Technical View : Translation of business needs into code, Hidden from business analyst
- A workflow governs the collaboration between the business analyst and the developer.



Decision Tables: An Example

Microsoft Excel - BundleExample.xls

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	B	C	D	E	F
9		RuleSet	Bundling Example		
10		Import	com.hp.mbo.dime.VR		
11		Sequential	false		
12					
13		RuleTable Cloning(VR a)			
14		CONDITION	CONDITION	ACTION	
15	(descriptions)	a.getnumSE() > 1	!a.getCloned()	a.setCloned();a.addToBundle(a.getId(), "\$param");System.out.println("VR:" + a.getId() + " has been cloned \n");	
16	Type of Clone	More than 1 service enabler	Not Cloned	Clone	
17	Dependency 1-Clone	Y	Y	Dependency 1-Clone	
18					
19		RuleTable Bundling(VR a, VR b)			
20		CONDITION	CONDITION	CONDITION	CONDITION
21	(descriptions)	a.getTool()==b.getTool()	a.getCustomer()==b.getCustomer()	a.getDeadline().equals(b.getDeadline())	a.getType()==b.getType()
22	Type of Bundle	Same Tool	Same Customer	Same Deadline	Same Type
23	Dependency 2-Bundle	Y	Y	Y	
24	Dependency 3-Bundle				Y
25					

Tables /

Ready

Building Rules: Typical Workflow

1. Business analyst take a template decision table (from a repository, or from IT)
2. Decision table business language descriptions are entered in table
3. Decision table rules are entered (roughly)
4. Decision table is handed to a technical resource, who maps the business language (descriptions) to code
5. Technical person hands back and reviews the modifications with the business analyst.
6. The business analyst can continue editing the rule rows as needed.
7. In parallel, the technical person can develop test cases

Conclusion

- Rule-based approach for identifying synergies, duplications and commonality in work requests and grouping them together into bundles
- Part of a wider project on IT work requests prioritization
- In the context of a wider research effort on Business-driven IT management (BDIM)
 - Resources:
 - BDIM org www.businessdrivenitmanagement.org
 - claudio.bartolini@hp.com