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?
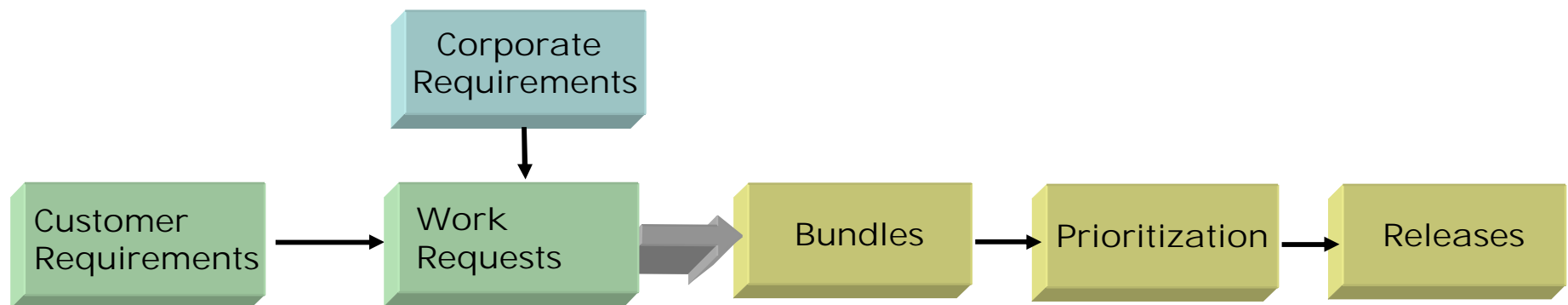
BDIM – A definition

- 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

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                        ┌──────────────┐
                        │  Corporate   │
                        │ Requirements │
                        └──────┬───────┘
                               │
                               ▼
┌──────────────┐      ┌──────────────┐      ┌─────────┐      ┌────────────────┐      ┌──────────┐
│   Customer   │─────▶│    Work      │═════▶│ Bundles │─────▶│ Prioritization │─────▶│ Releases │
│ Requirements │      │  Requests    │      │         │      │                │      │          │
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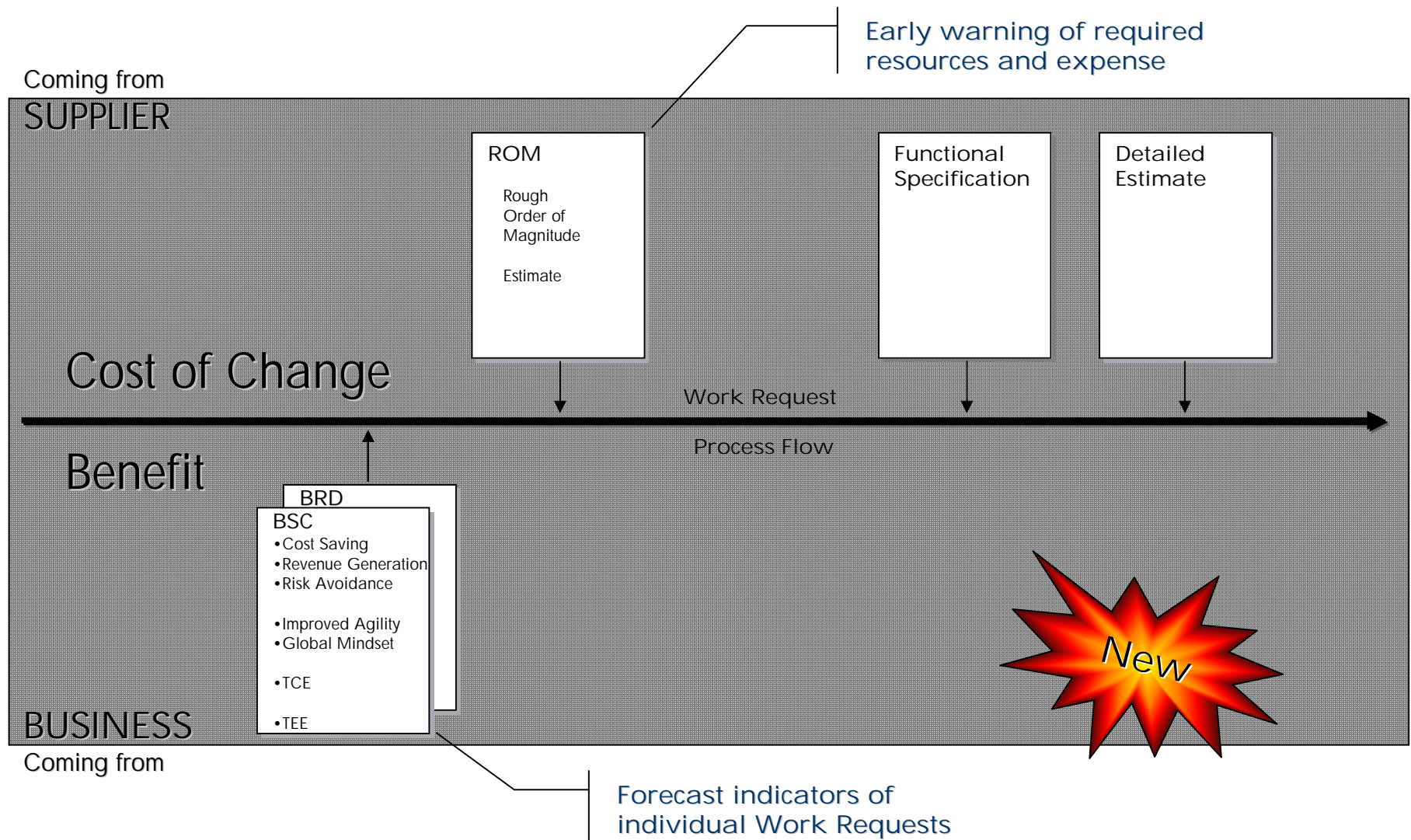
Our project's value proposition

- 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

Early warning of required resources and expense

Coming from

SUPPLIER

ROM

Rough
Order of
Magnitude

Estimate

**Functional
Specification**

**Detailed
Estimate**

Cost of Change

Work Request

Process Flow

Benefit

BRD

BSC
• Cost Saving
• Revenue Generation
• Risk Avoidance

• Improved Agility
• Global Mindset

• TCE

• TEE

BUSINESS

Coming from

New

Forecast indicators of
individual Work Requests

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			**This is the only column that should be modified.**			
3	ITEM	SCORE (Calculated)	RATING	UNITS (Standard)	Total Allocation	Notes
4	**Revenue Generation**					
5	Additional Revenue earned	9	>$1,000k Bronze <10 ▼	US$pa	20	1
6						
7						
8	**Cost Reduction**					
9	Cost Saving	20	> $5,000k ▼	US$pa	20	2
10						
11	**Risk Avoidance**					
12	Financial Penalties Avoided	7	$100k - $1,000k ▼	US$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

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

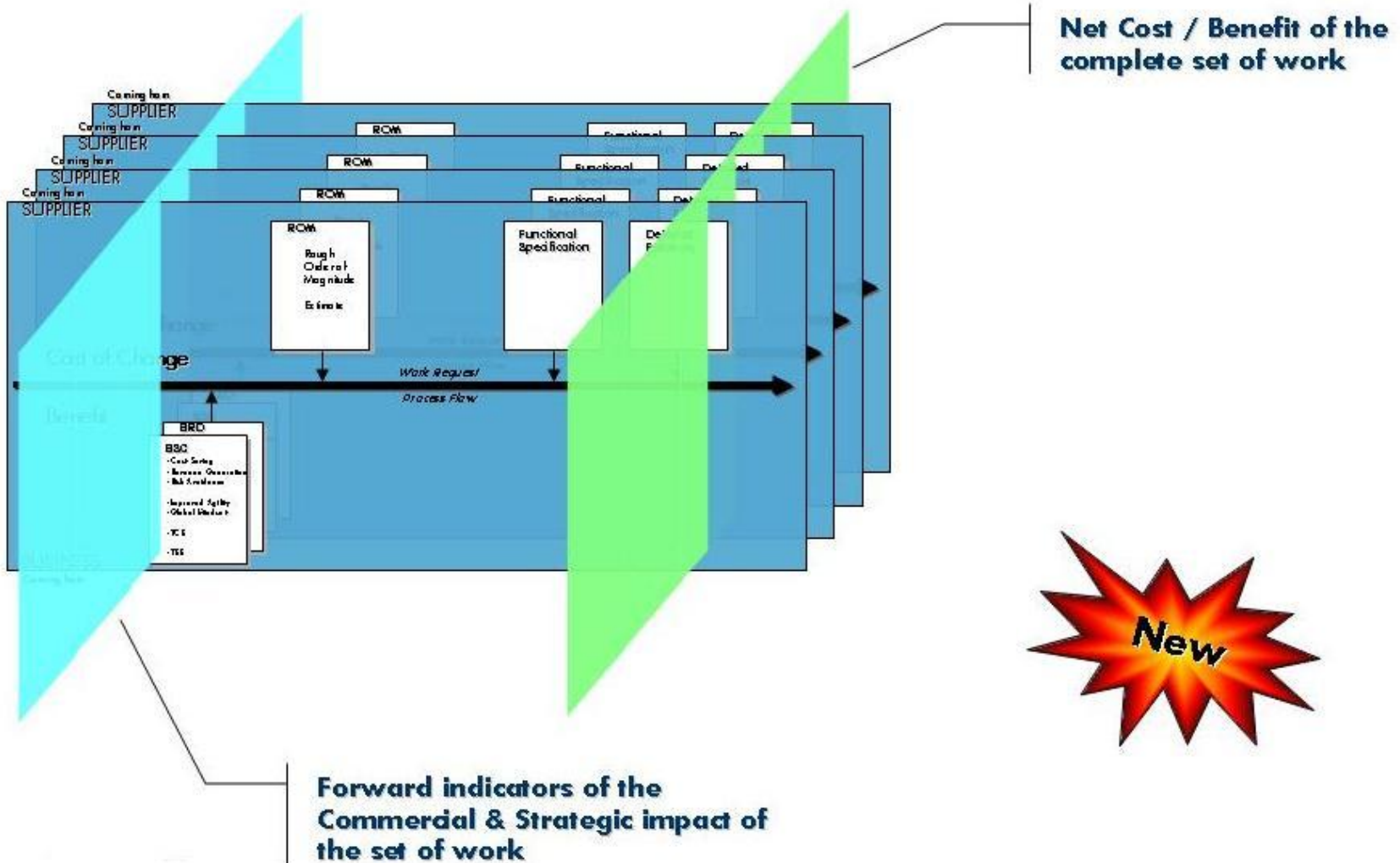**Business users**: Fill in questionnaire

Business objectives
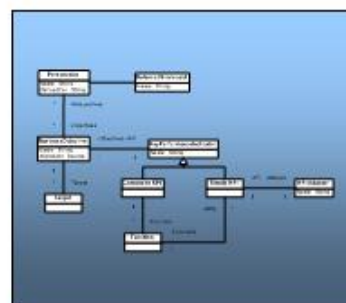
Functional dependency maintained by MBO

Questionnaire

Dependencies among work requests

Net Cost / Benefit of the complete set of work

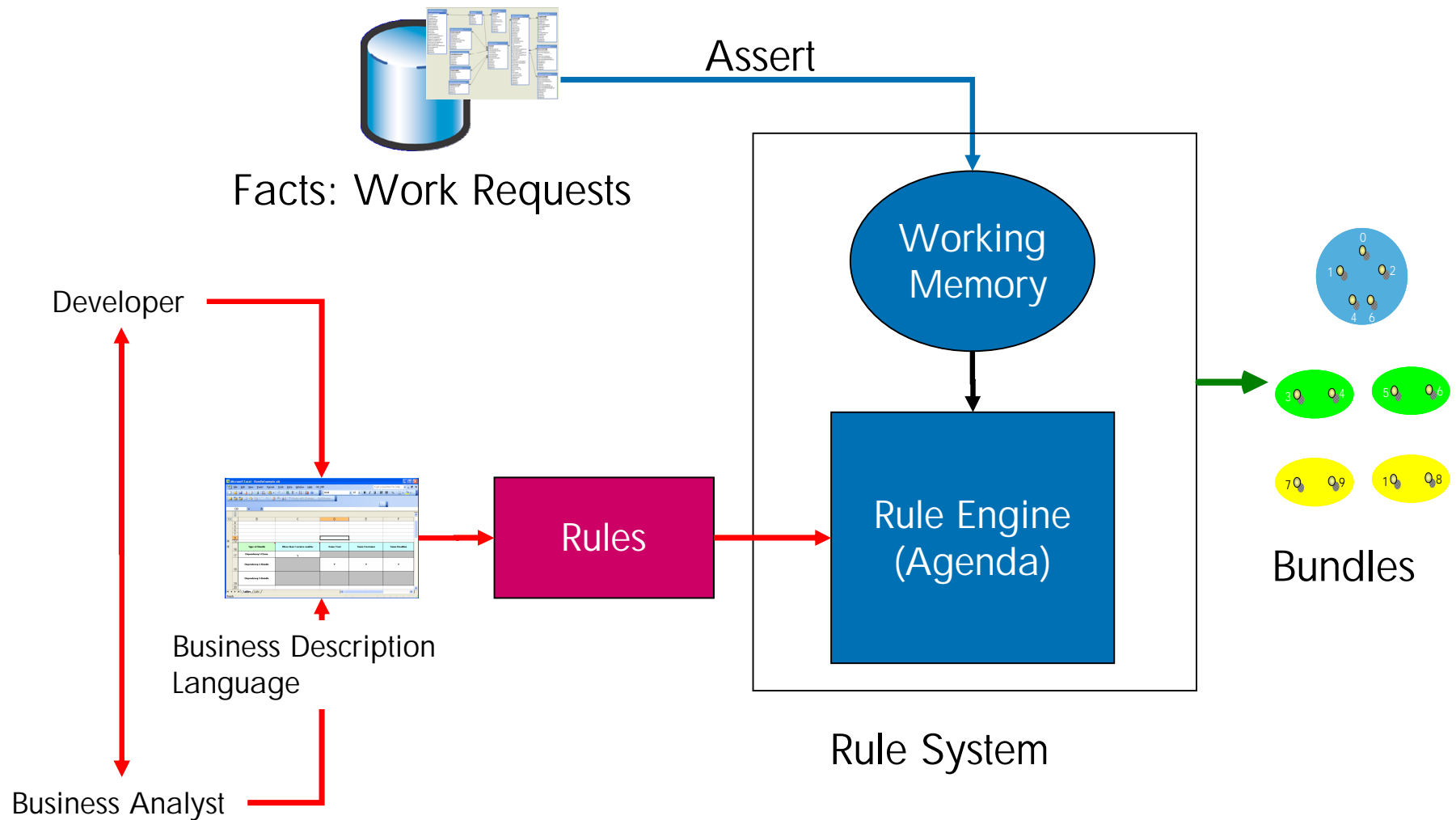Forward indicators of the Commercial & Strategic impact of the set of work

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
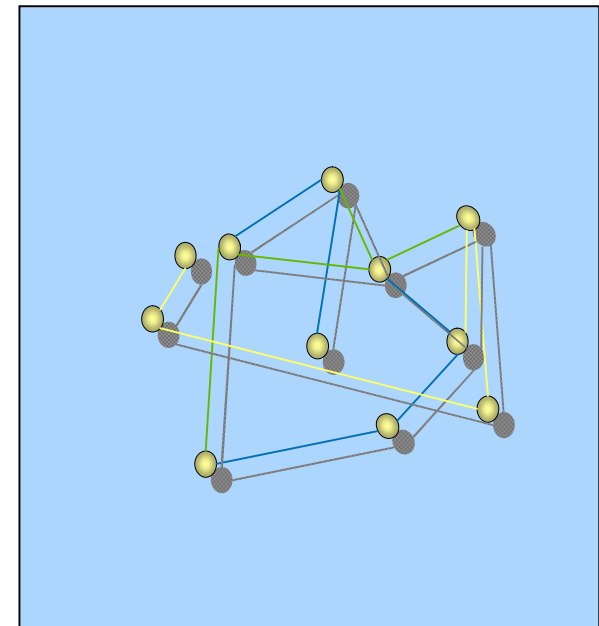
Bundling: Rule Based System

Assert

Facts: Work Requests

Working Memory

Developer

Rules

Rule Engine (Agenda)

Bundles

Business Description Language

Business Analyst

Rule 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

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