

# The Business Service Representation Language A Preliminary Report

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# Outline

- 1 Introduction
- 2 The BSRL Meta-Model
  - Meta-Model
  - Assumptions
  - QoS Specifications
  - Penalties
- 3 Value / Strategy Modeling
- 4 Service Evolution
- 5 Summary

## Introduction.

- Part of the drivers for this research has been our work with Australian government agencies (we have modeled 100 Services and 60 Strategies across a number of departments)
- Business services as human-mediated activities and functionality through a systems lens
- Supporting the description of complex business functionality using abstract but natural definitions.

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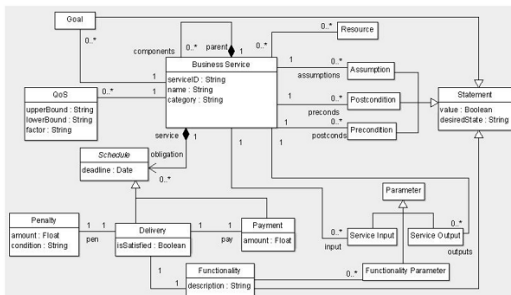
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# Standard Service Descriptions and Meta Model



## Service Description Attributes Standard for Semantic Services

- ID , Pre-condition , Post-condition , Inputs , Outputs

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## Service Descriptions for BSRL

- Assumptions are conditions whose truth values cannot always be reliably evaluated, but which are germane to the execution or abortion of a service.
- Formally assumptions are conditions whose violation may lead to the abortion of a service (but which do not need to be proven true at invocation time, as with pre-conditions).

## Service Descriptions for BSRL

- Our research trajectory led us to the notion of assumptions in the following ways:
  - 1 While modeling service repositories for government agencies we found natural descriptions of 'client responsibilities' (client responsibilities are also common in contracts)
  - 2 We also found statements of conditions that referred to aspects of the domain or business context (as opposed to assumptions about client behaviour). Force Majeure clauses are common in most contracts.
  - 3 Assumptions can be used at design time to check the validity of service compositions.

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- Quality of service specifications provides a measure that describes the effectiveness of a business service
- QoS specifications are constraints that describe operational aspects of service qualities.
- QoS factors can be described qualitatively or quantitatively. Examples of QoS Specifications include:
  - Delivery in under 30 minutes

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- Specified as condition and amount pairs
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  - e.g. If paint is spilled on carpet then penalty is cost of cleaning the carpet.



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- Is used to show how a service delivers value to a particular stakeholder
- Modeled as a service requirement that explains the purpose of the service.
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- Description of Value Modeling with respect to Service Modeling (achievement of functional goals that contribute to refined strategy models).
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# Value / Strategy Modeling

- Goals
  - Descriptions of conditions that an organization seeks to achieve.
  - “Our corporate strategy is to be the market leader in mobile handsets”
- Plans
  - A set of goals with a set of sequencing constraints
  - “First gain market acceptance in NZ, then position ourselves in the UK market, and then use UK market credibility to enter Australian market.”
- Optimization Objectives
  - An objective used to describe an optimal solution (configuration of strategy refinements).
  - “Maximize customer satisfaction”

# Service Evolution

- Drivers for such modifications might be: Re-purposing, improvement, compliance.
- Service re-purposing, necessitated by altered requirements/goals/strategies that the service was designed to realize.
- Service improvement, i.e., improving the performance of the service relative to one or more QoS factors
- Operational drivers, such as changes to service delivery platforms.
- Compliance, i.e., service re-design triggered by a finding of non-compliance.



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## Trade-off analysis

- Identification of best amongst a collection of service designs
- Impact candidate change measure

$$\delta[(\sum_{i=0}^n V_i - V'_i), (\sum_{i=0}^n V'_i - V_i)]$$

- Where  $V_i$  is the current value proposition for stakeholder  $i$  and  $V'_i$  is the to-be value proposition for stakeholder  $i$ .
- $V_i - V'_i$  is the new independant value of the to-be service for stakeholder  $i$ .
- $V'_i - V_i$  is the independant value of the as-is service for stakeholder  $i$ .
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# Summary

- We have developed a language BSRL – Business Service Requirements Language
- This will aid in describing business services using natural definitions
- Key innovations:
  - Several novel service modeling constructs
  - A focus on correlating service models with resource models (where available) to understand provisioning requirements
  - A focus on correlating service models with value models
  - A focus on principled service decomposition (which also provides an account of contract-to-subcontract decomposition)