Towards a
Service Management Information Base
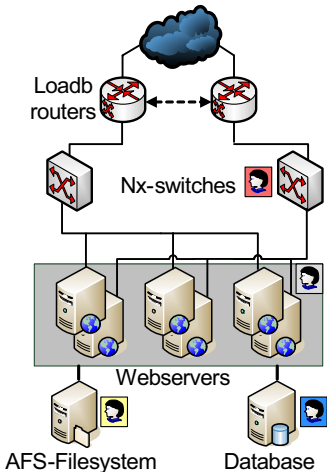
Martin Sailer

Munich Network Management Team

IBM PhD Student Symposium, December 2005

Challenges

- Share service management information across departments
- Current MIBs are service agnostic, how to establish service view?
  - Which management information is required?
  - How do services relate to resources?

$\Rightarrow$ Comprehensive service management repository is required

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Loadb routers

Nx-switches

Webservers

AFS-Filesystem   Database

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Service Design and Launch

- Identify end-to-end service delivery path (technical resources, service topology)
- Determine relevant service/component quality parameters
- Set up Service Level Agreement (SLA) and create service instance

⇒ Establish Service MIB definition

Service Usage Phase

- Monitor service quality parameters, review SLAs
- Determine root cause of service faults
- Report to customers

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Specification of Service Attributes

- Alignment with provider's information needs
- Account for all management areas (FCAPS)
- Cover whole service lifecycle
- Span multiple administrative domains

Formalization of service-resource dependencies

- Express complex dependencies (e.g., quality degradations)
- Means to map information from network and systems management MIBs to service information
- Independent from particular implementation/technologies

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Web Services Distributed Mgmt.

- Only few service management attributes
- Does not take into account service resource dependencies

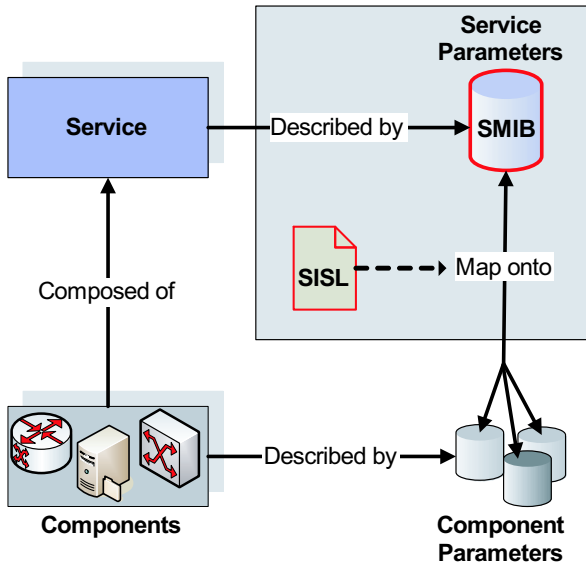## Shared Information/Data Model

- Sound modeling framework
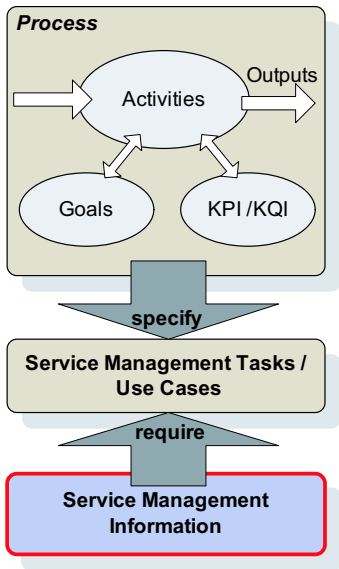- Shows deficits regarding definition of common service attributes/templates

Common Information Model

- Focuses on low-level services (e.g., time service)
- Offers association classes to express dependencies

Internet Information Model

- Used by the vast amount of network management tools
- Rigid, data-centric modeling approach

Approach

TEAM

MNM

Approach
Specification of Service Attributes

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Process

Activities → Outputs

Goals ↔ KPI / KQI

specify

Service Management Tasks / Use Cases

require
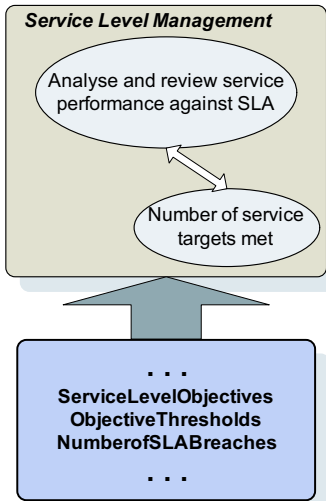
Service Management Information

Use-case based approach

- Strong trend towards process-orientation
  - Process-oriented frameworks provide guidance for deploying IT service management processes
  - Processes contain specification of service management tasks

⇒ Derive service management information needs from process framework (IT Infrastructure Library)

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Service Level Management

Analyse and review service performance against SLA

Number of service targets met

. . .
**ServiceLevelObjectives
ObjectiveThresholds
NumberofSLABreaches**

. . .

- Service Level Management Process deals with planning, monitoring and reviewing of Service Level Agreements (SLAs)
- Required Service Management Information includes:
    - Service Level Objectives and Objective Thresholds
    - Consequences for not meeting Objectives
    - Number of SLA Breaches

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Service Information Specification Language (SISL)

- Declarative language to specify aggregation of component data into service management data
- Specification of data types, sources, delivery triggers
- Features predefined functions and constraints

Proof of Concept

- Monitoring Architecture to compose service management data according to SISL specification

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Summary

- Common service attributes and service resource dependencies are a prerequisite for service management
- CIM and SID can be utilized as modelling frameworks
- IT Infrastructure Library provides use-cases for deriving common service management information
- Declarative language based approach to formalization of service resource dependencies (SISL)

Further Work

- Current work mainly dealt with incident management, will be extended towards other ITIL processes
- Further Work on SISL will target more complex scenarios