Interface Life Cycle Management for System Landscape

Workshop ExploIT Dynamics

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Software system landscape in an enterprise is not exclusive of one integrated ERP system, rather it involves heterogenous systems.

Enterprises are driven by business internally and externally so that they are in a continuous maintenance and evolution.

In order to identify the potential consequences of a change, or estimate what needs to be modified, impact of change approach raised

Changes do not affect merely the systems and their components, they have their influence on the interfaces which keep the system landscape together

Lehnert, 2011
A survey by the Gartner Group, 2001 shows that about 40% of IT budgets are spent on implementing and maintaining interfaces.

Interfaces are basics for achieving the interoperability and, on another level, the integration.

Component composition highly depends on the description of interfaces to know how a new complex component can be built in an effective way.

Gösslerand et al., 2005
CEWE COLOR AG & Co. OHG (Challenges)

- Daily changes vs. project changes (Rate, Duration, Effort)
- External vs. internal interfaces (Effort)
- In-house vs. external development (Costs)

- Different qualities in documenting interfaces
- Lack of complete overview of the system landscape by means of impact of changes
- A lot of mapping
- Increased number of interfaces
Challenges (Theoretically)

Components vs. Interfaces

- Data Warehouse
- Datahub
- SAP-ERP
- Trade Partner Master Data
- Material Master Data
- Conditions
- ICOS
Challenges (Empirically 1/2)

Scenario 1. same data, different format, different interfaces

Scenario 2. same data, different mapping, different interfaces
Scenario 3. different number of parameters, different interfaces

Scenario 4. different means of getting data
Interface Life Cycle

Define requirements means roughly say which system are involved and business roles. (what)

Design means identify the functional details for the interface. It is like defining requirements but in more details. (how)

Configuration: define the technical details, the authorization data

Return to configuration: small changes, technology changes....
Return to design: changes in requirements, frequency of call, delivery requirements...

Deactivation: When the interface is transferring data which will not be stored, or be processed in the destination system, or when an interface has more maintenance costs than its revenue.
Research Objectives

- Reduce time for detecting impact of change on interfaces
- Detect costly and risky interfaces through specified metrics
- Effective way to manage interfaces

Scientific added value:
- New approach, the interfaces as first class
- A study for estimating impact of change on system landscape

Practice added value:
- Documentation through Interface Profile
- Impartial representation and standardized documentation
- Comparison between costs of interfaces and revenue of trade partner
Research Objectives
Research Questions

- How do changes affect interfaces during their life cycle?
- How to manage interfaces effectively?
- How to make interfaces comparable?
- What are the attributes of interfaces?
- Which attributes define costly and risky interfaces?
# Interface Profile

<table>
<thead>
<tr>
<th>Interface Name</th>
<th>Target System</th>
<th>Relation Type</th>
<th>Consequences of Failure</th>
<th>Criticality</th>
<th>Output</th>
<th>Frequency of Usage</th>
<th>Effort (H) Implementation</th>
<th>Effort (H) Changes</th>
<th>Effort (H) Fix Error</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>transfers only new and changed trade partner data</td>
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Commercial IT (New Approach)

- Material Master Data
- Trade Partner Master Data
- {Filter}
- Mapping2
- Format
- Mapping
- XML
- CSV
- XYZ
- Mapping3
- «subsystem» ICOS
- «subsystem» SAP-CRM
- «subsystem» SAP-ERP
- «subsystem» Data Warehouse
- «subsystem» DECENT
- «subsystem» Datahub

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Impact of Changes on Interface Life Cycle

- Add new system
- Process outsourcing
- Change information flow
- Obsolete technology
- Remove a system
- Expand number of transmitted data
- Change data representation
Metrics of Interfaces

- **Business value**: ranges between 4 (very important) and 1 (not important)
- **Frequency of usage**: ranges between 5 (very often) and 1 (seldom)
- **Data volume**: ranges between 4 (very high) and 1 (very low)
- **Documentation**: ranges between 1 (good documented) and 4 (not documented)

- **Effort for troubleshooting**: measured in hours
- **Effort for modification**: measured in hours
- **Duration of being out of order**: measured in hours
- **Effort until implementation**: measured in hours
Conclusion

- ILCM helps in supporting the dynamic of IT systems
- Definition of interface life cycle
- Standardized documentation achieves transparency
- Effective way to manage impact of changes on interfaces by separation between content, mapping and format
- The interfaces are measurable through defined metrics
Thank you for your attention

Interfaces—live or die by them.