An Information Model for Landscape Management
Discussing Temporality Aspects

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Enterprise architecture aims at providing a holistic view on the enterprise

- Layers and crosscutting functions
- Relationships are more important than element details
  has, supports, consists of, depends on, uses, controls, owns, produces, consumes,…

- Planning, managing, and maintaining the evolution of the application landscape is a focal point of EA management.
Today’s application landscapes consist of $10^2 - 10^3$ networked information systems.

- Complexity ~ number of relationships
- IT agility does not keep pace with the increasing dynamicity of the business
- Number of services >> number of applications
  (smaller granularity + versioning)
- Extended enterprise: Coalitions, mergers, carve-outs, …
Visualizations of the application landscape are a commonly accepted means to document the...

- current (as-is) landscape, reflecting the actual landscape at a given point in time,
- planned landscapes, which are derived from planned projects for transforming the application landscape until a certain point in time, and
- target (to-be) landscape, envisioning an ideal landscape state to be pursued according to the strategies of the enterprise
Typical questions from practitioners in the context of application landscape management are…

- What does the current application landscape look like today? Which business applications currently support which business process at which organizational unit?
- How is, according to the current plan, the application landscape going to look like in January 2010? Which future support providers support which business process at which organizational unit?
- What was, according to the plan of 01-01-2008, the application landscape going to look like in January 2010?
- How does the target application landscape look like?
- What are the differences between the current landscape and the planned landscape, according to the current plan? What are the differences' reasons?
- What projects have to be initiated in order to change from the planned landscape (according to the current plan) to the target landscape? What planning scenarios can be envisioned and how do they look like?
The dimensions *modeled at, planned for, and variants* are relevant in landscape management.
An information model suitable for application landscape management must...

R1 contain a ternary relationship to support analyses regarding current and future business support,

R2 provide the possibility to specify envisioned business support providers to facilitate target landscape planning,

R3 support the deduction of future landscapes from the projects,

R4 foster the creation of landscape variants based on distinct project portfolios to tightly integrate project portfolio management activities, and

R5 ensure the traceability of management decisions by storing historic information of past planning states
Current EA management tools do not fulfill all these requirements....

<table>
<thead>
<tr>
<th>Requirement description</th>
<th>Fulfillment</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1 Ternary relationship</td>
<td>😞</td>
</tr>
<tr>
<td>R2 Envisioned business support providers</td>
<td>😊</td>
</tr>
<tr>
<td>R3 Deduction of future landscapes from project tasks</td>
<td>😞</td>
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<tr>
<td>R4 Creation of landscape variants based on distinct project portfolios</td>
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<tr>
<td>R5 Ensure traceability of management decisions</td>
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Developing an information model for application landscape management (1)

Fullfillment of **R1** and **R2**

![Diagram showing relationships between BusinessProcess, OrganizationalUnit, SupportProvider, EnvisionedSupportProvider, and BusinessApplication.](image)
Developing an information model for temporal application landscape management (2)

Fullfillment of R1, R2 and R3
Developing an information model for application landscape management (3)

Fullfillment of R1, R2, R3 and R5

```
OrganizationalUnit
- name : String

1
supportAt
*

SupportRelationship

BusinessProcess
- name : String

1
supportOf
*

TargetSupportRelationship
- validFrom : ModelingEvent
- validTo : ModelingEvent

* supportBy

PlannedSupportRelationship

* supportBy

TargetSupportProvider

* supportBy

SupportProvider
- name : String

1

ModelingEvent
- time : Timestamp

Project
- name : String

* introduces 0..1

DeployedApplicationSystem
- version : String

* supportBy 1

Date
- value : Date
- validFrom : ModelingEvent
- validTo : ModelingEvent

* temporal 1

* temporal 1
```
Developing an information model for application landscape management – Discussing R4

Creation of landscape variants based on distinct project portfolios

- Fulfilled by the information model until a certain extent as landscape variants can be derived

but

- These project portfolios are not stored and therefore not historized.

We do not expect this to be a major issue as

- project portfolio selection is done in the project portfolio management process leading to a certain selection to be approved and

- the storage of different selections or even more sophisticated information, e.g. different timelines for projects would introduce a number of additional concepts.
Future research topics

- Enhancement of the proposed approach from application landscape management to EA management level
- Real world application example – challenge of information gathering and maintenance
- Tailored EA information models, viewpoints and methodologies for landscape management (EAM Patterns)

For more information about the project: www.systemcartography.info