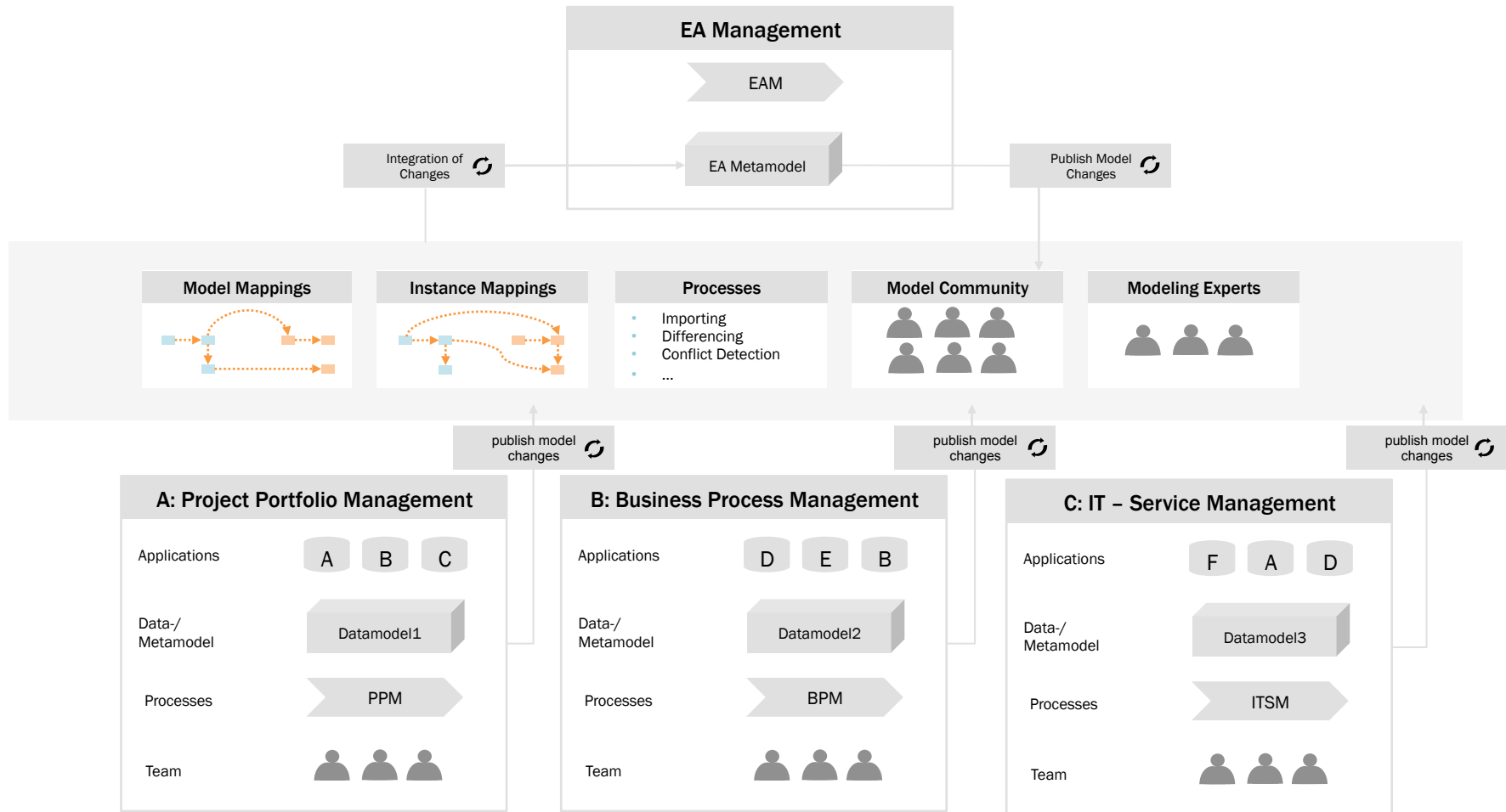


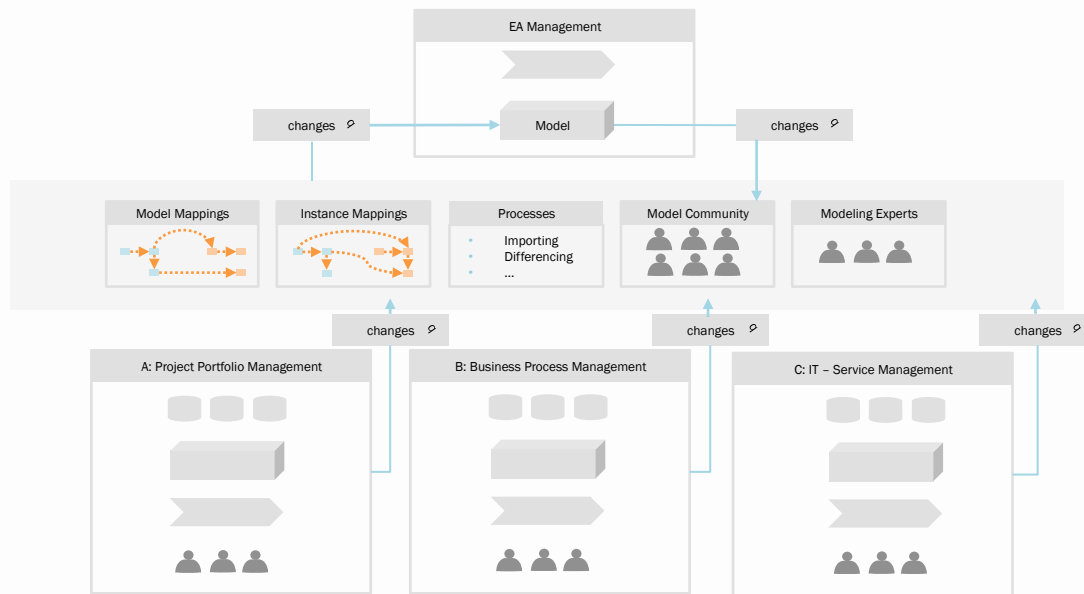
Evaluation of Governance and Process Structures of the federated EA Model Management

Munich, 17th June 2014, Pouya Aleatrati Khosroshahi

- **Introduction to Federated EA Model Management**
- **Research Question**
- **Research Approach**
- **Findings**
- **Literature**



To develop and maintain an integrated enterprise architecture model, additional activities (e.g. model mapping, data extraction) and organizational changes (e.g. role allocation, definition of policies) are needed.

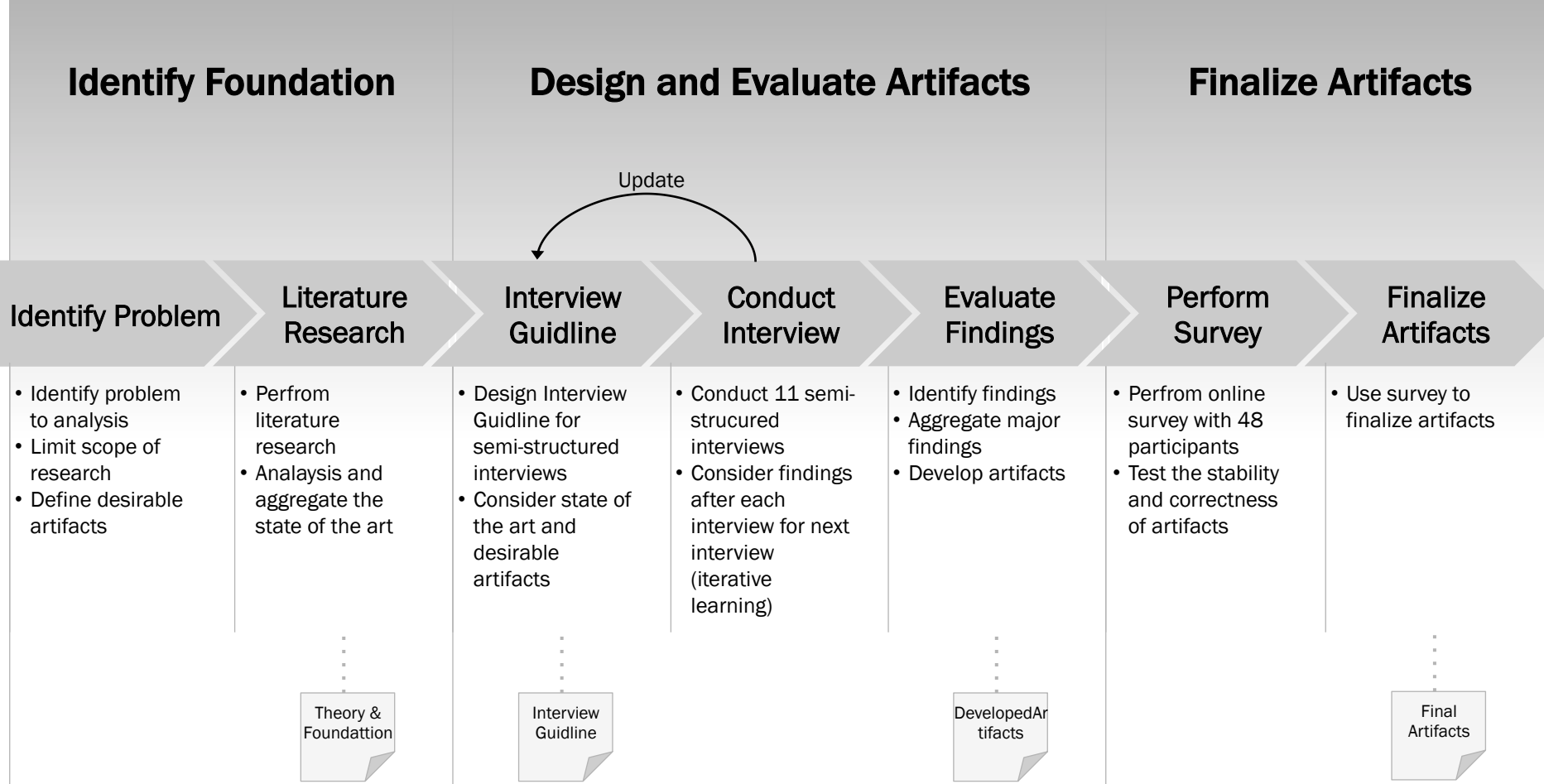


Our research will focus on governance specific aspects of federated EA management. These could be for instance:

- 1) **Role allocation:** Which roles are involved within the federated EA management? Which responsibilities are defined?
- 2) **Processes:** What kind of standard processes will be used to avoid technical issues? What kind of processes have to be conducted, when an issue occur?
- 3) **Policies / Standards:** To maintain such a complex EA model, all participants have to stick to defined policies and established standards. Which polices and standards are necessary? Which are a mandatory?
- 4) Are there further governance-specific “best-practices” that need to be established?

Research question

Which Governance specific changes and structure are needed to develop and maintain a Federated EA Management?

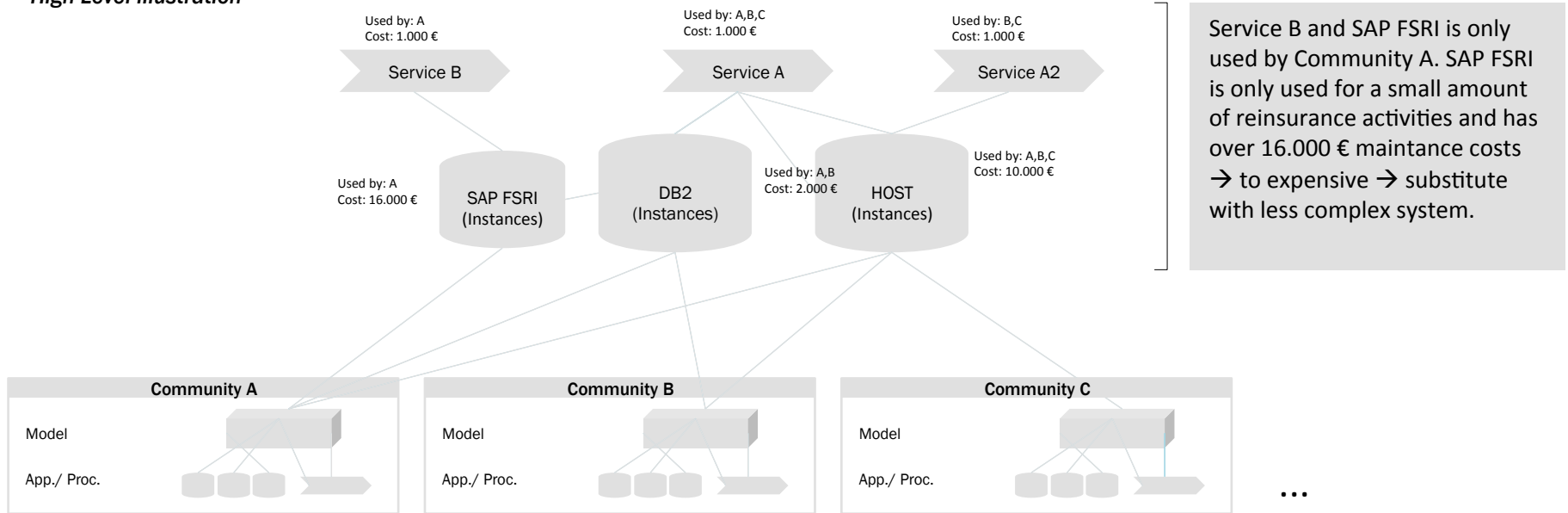


Value of Federated EA Model Management: Specific Scenarios

IT - Controlling

7 out of 10 companies mentioned that a federated EA Modell Management could be used for IT Controlling purposes. *E.g.: One participant mentioned that his organization assess the opportunity to get an overview of the running SAP components, which requires intensive additional customizing activities: Before putting further effort in these additional customizing activities they decided to setup an EA Model to get an overview of the whole EA.*

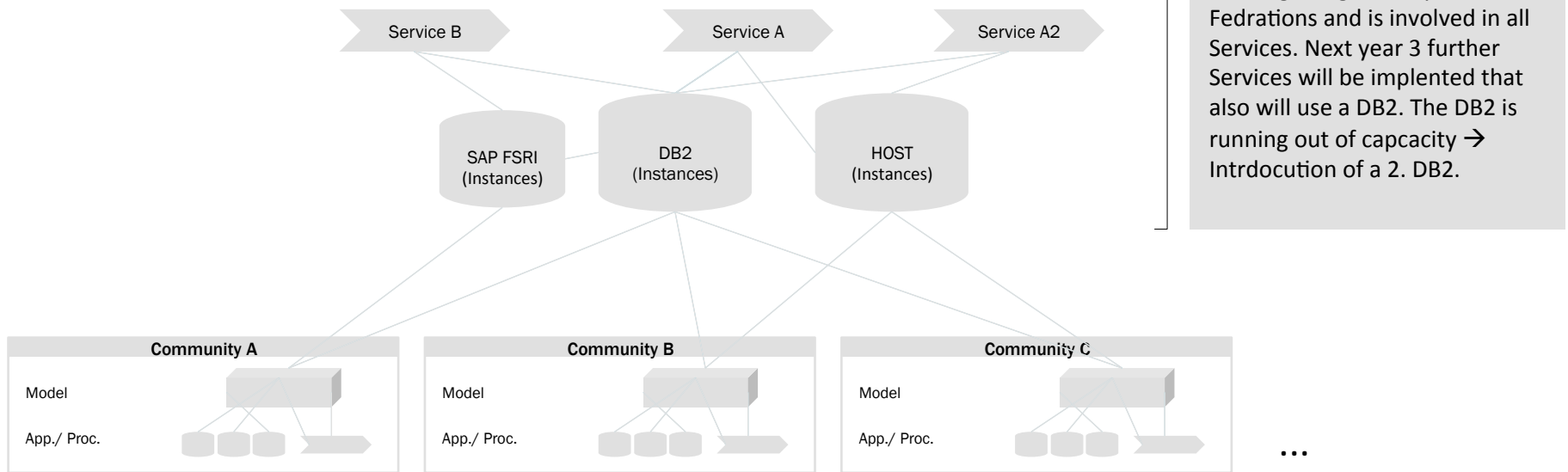
High Level illustration



Trends and Forecasting

5 out of 10 companies mentioned that a federated EA Model Management help to identify trends and run forecasts regarding the development of their IT – landscape.

High Level illustration



Regulatory requirements

3 out of 10 companies (both in the insurance sector) mentioned that the setup of an EA Model could help to analyze existing data flows between the productive systems. Thereby several requirements (e.g. QRT reporting, SCR calculation) could benefit from this overview.

Control and planning future IT – landscape

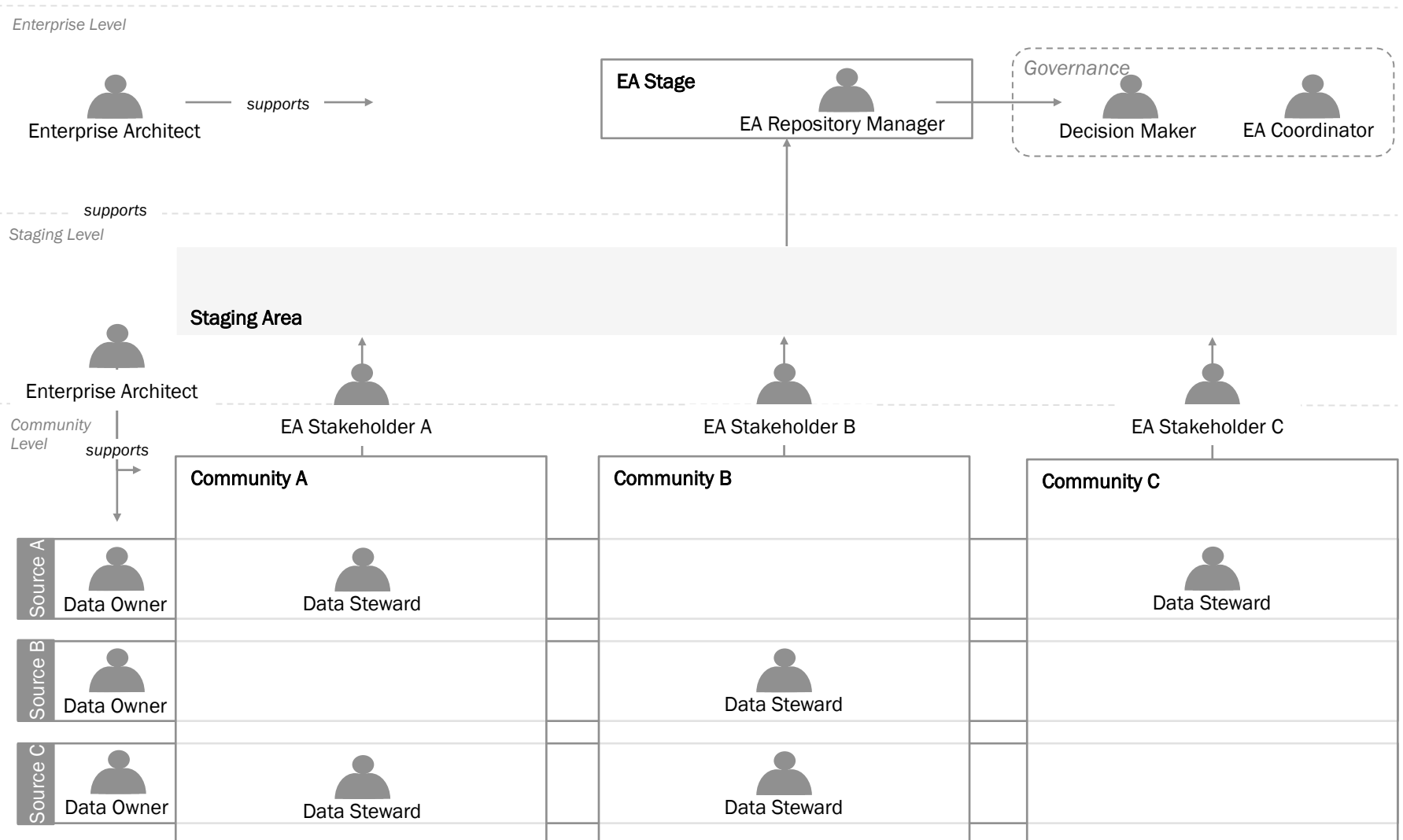
4 out of 10 companies would use the federated EA Model to control and plan their IT – landscape more efficient. *Case: 1 participant described that their organization has over 150 productive IT – systems. Due to the fact that a huge amount of these systems were developed by single persons, freelancers, etc., documentations about these systems are missing. A federated EA Model with participation of the major communities could help the organization to get an overview of the whole IT – landscape and also serves some kind of documentation about the current IT – landscape.*

Further: Bechmarking between communities, effective CIO reporting, less conflicts, seperation of duties

Role Allocation

Findings

Role Allocation (Definition in current Research)



Overview of defined roles in industry

Enterprise Architect	x	x			x	x	x	x	x	x	x	Architect on organizational / company level	8 / 10
EA Coordinator												Responsible for architecture strategy on company level	0 / 10
Modelling Expert												Deals with modeling specific issues, helps within modeling conflicts	0 / 10
EA Repository Manager												Responsible for technical issues, defines models to EA model	0 / 10
Data Owner		x			x							Expert from the community	2 / 10
Data Stewart												Provide the data from the community to the EAM	0 / 10
EA Stakeholder												First contact between IT and community	0 / 10
Decision Maker												Benefit from the federated EA Model	0 / 10
Business Architect		x					x			x		Architect with specific Business Knowledge	3 / 10
Domain Architect	x	x	x	x	x	x	x	x	x	x	x	Architect for one specific platform, technology, etc.	9 / 10
Security Architect											x	Only Security related Aspects	1 / 10

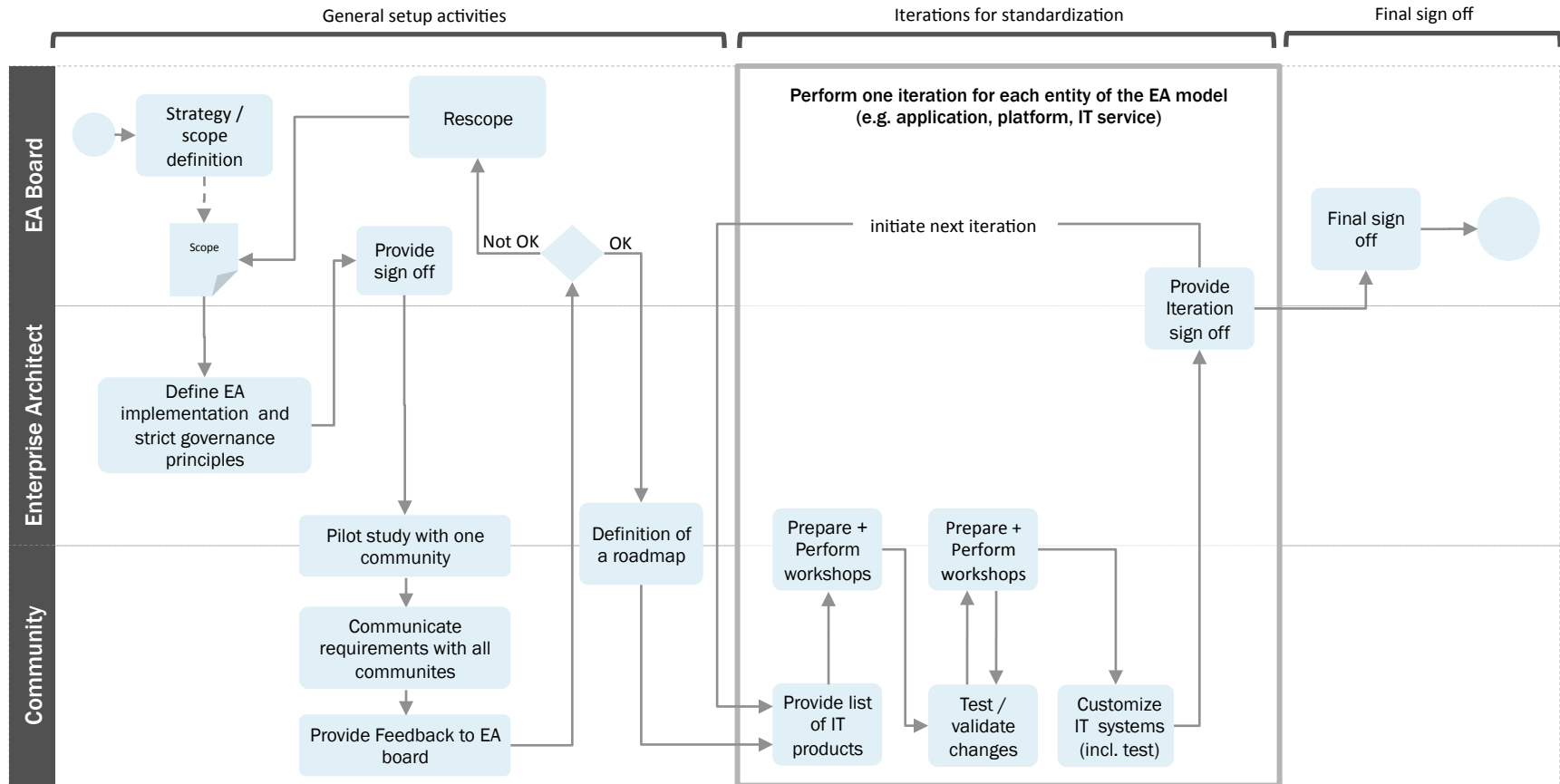
Enterprise Architects and **Domain Architects** have the most significant role within the setup of a federated EA Model Management. 10 out of 10 participants mentioned that they defined Domain Architects (for specific platforms, applications, etc.) . These architects knows their specific domain and can provide the most accurate information for the EA Model. **Business Architects** (3 out of 10) should be also part of the organizational setup, to provide information regarding the requirements from business (e.g. Solvency II within Insurance sector). Furthermore 3 out of 10 participants that they would not split the technical role in **Modeling Experts**, **EA Repository Manager**, etc. Modeling and repository maintenance issues should be conducted by the Enterprise Architects. Furthermore, a too granular split of the roles could lead to an oversized organization that could lead to political challenges. **Data Owner** (2 out of 10) are responsible for a specific community. 2 out of 10 participants mentioned that these community members should also be part of the organizational setup. Reason: One participant explained that the attendance of community members is the best way to communicate new standards, frameworks, etc. to the communities. **EA Coordinators** or **Data Stewards** are not necessary within the organization of a federated EA Model Management team.

→ Consider dedicated specialists in case of granular conflicts (such as the Data Steward)

Generated Artifacts

Standardize the General Understanding of IT

To perform an adequate mapping without major conflicts, there should be a standardized understanding of the IT – products and synchronized Meta – Models across the communities.

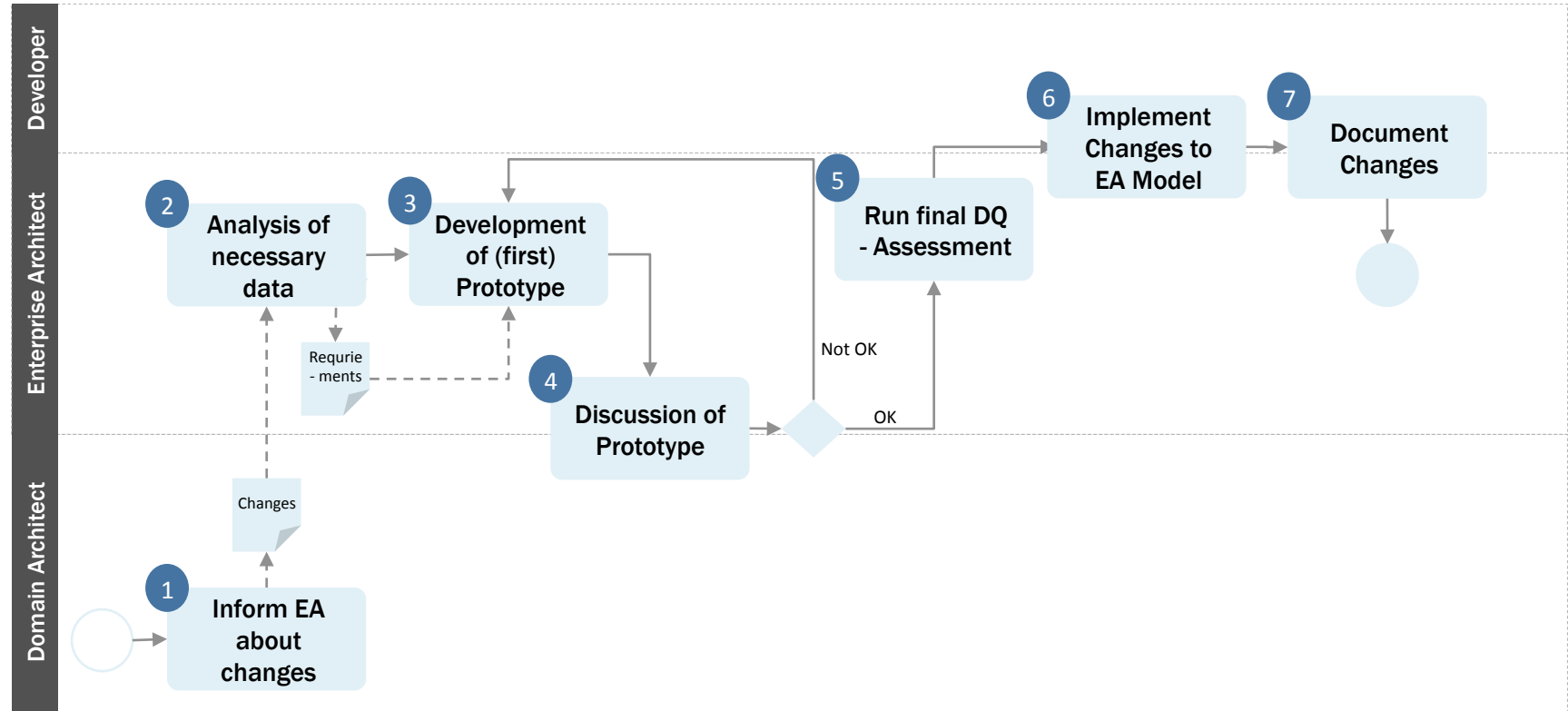


The implementation of Escalation flows to the EA Board within each activity is a mandatory, to ensure the finalization of the defined roadmap in budget and in time. Nevertheless, 2 participants also prefer an more “pragmatic” approach (just start!).

Further information from online survey → Stronger involvement of business stakeholder

Process of Schema Update (Change of EA Meta Model)

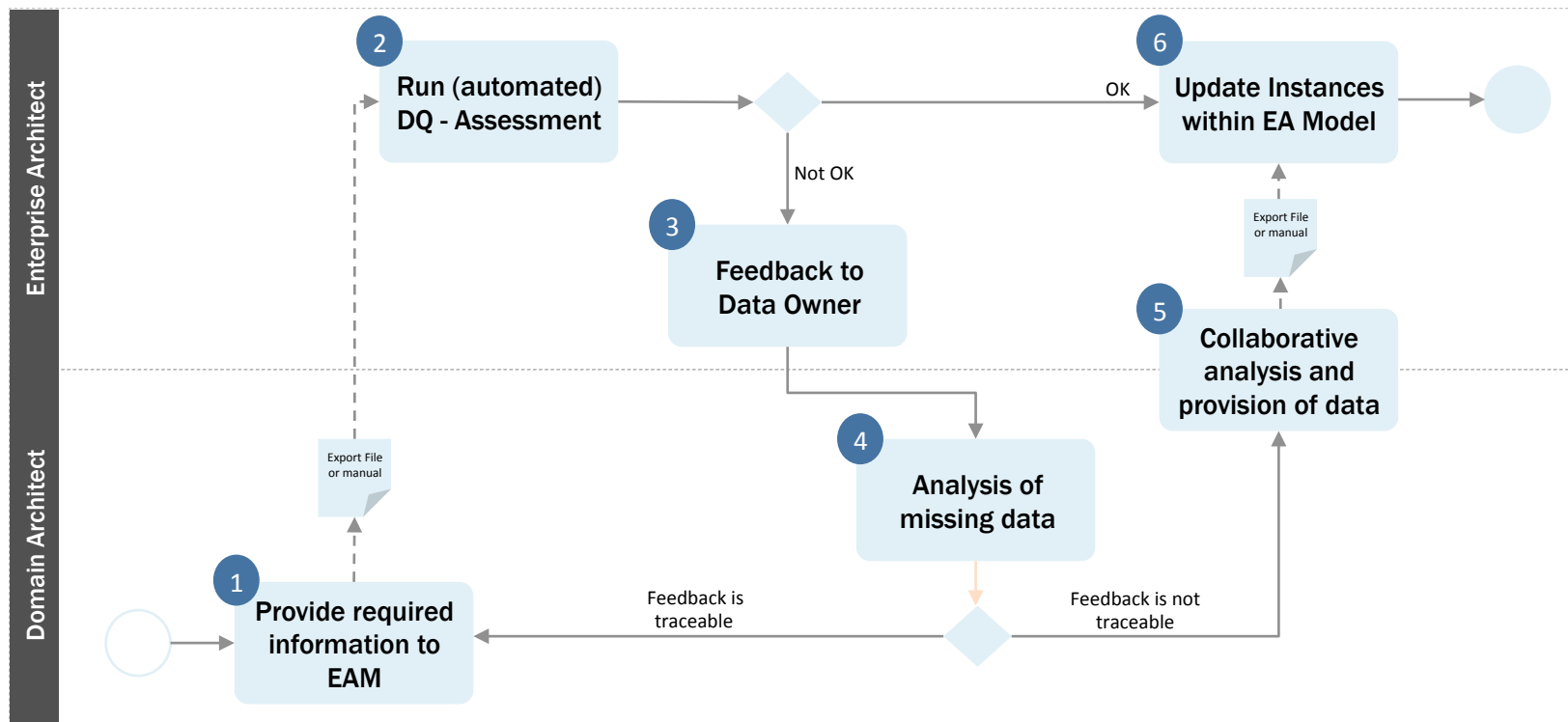
The following process illustrates, the implementation process of schema changes. As mentioned the conflict resolution will be conducted manual and without any automated activities. Most of the conflicts reflect unique situations that require unique solutions. The participation of all stakeholders (Data Owner, EAM, etc.) is required. During the expert – interviews, it turns out that the following process fits most to this process:



The implementation of the changes to the EA Model depends on the complexity of the change and the used EA Model Documentation Tool. **The participation of a developer is not an Mandatory.** Depending on the severity of the change, further stakeholder (e.g. other community member) should also participate to the change.

Process of automated Instance Mapping (no Changes of Schema)

The following process illustrates the automated instance mapping. As mentioned the conflict resolution will be conducted manual and without any automated activities. Most of the conflicts reflect unique situations that require unique solutions. The participation of all stakeholders (Data Owner, EAM, etc.) is required. During the expert – interviews, it turns out that the following process fits most to this process:



Depending on the change related processes(e.g. architecture audit within a transformation project), might also transfer updated instances to the EA model.

Initialization

1 Support:

- Business stakeholder rarely participate in EA activities
- Participation of various stakeholder required
- Ensure management support for the project purpose

Ensure Management Support

Initialize Project

2 Initialize:

- Inform relevant stakeholder about upcoming project
- Communicate purpose, responsibilities
- Setup governance principles and timeline

Design and Development

3 Terminology:

- Define scope of alignment
- Inform communities about alignment purpose
- Conduct EA terminology alignment

Align EA Terminology

Define Model Scope

4 Scope:

- Define, which EA entities should be considered within the EA model
- Define, which attributes should be considered within each entity

5 Meta Model:

- Definition of a holistic EA meta model
- Implement or document defined EA meta model
- Communicate EA meta model to relevant stakeholder

Setup Meta Model

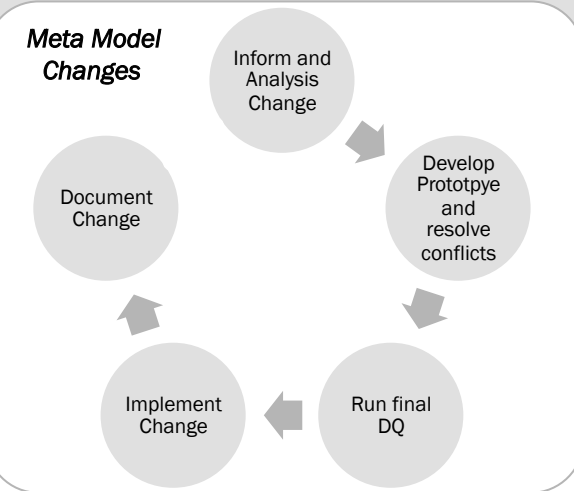
Import Instances

6 Import:

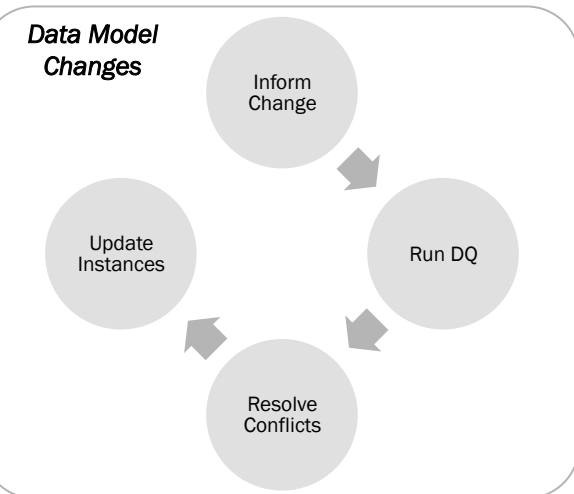
- Conduct, first import of instances for each entity
- Resolve upcoming conflicts and consider conflicts for potential Meta model changes and DQ activities

Maintenance

Meta Model Changes

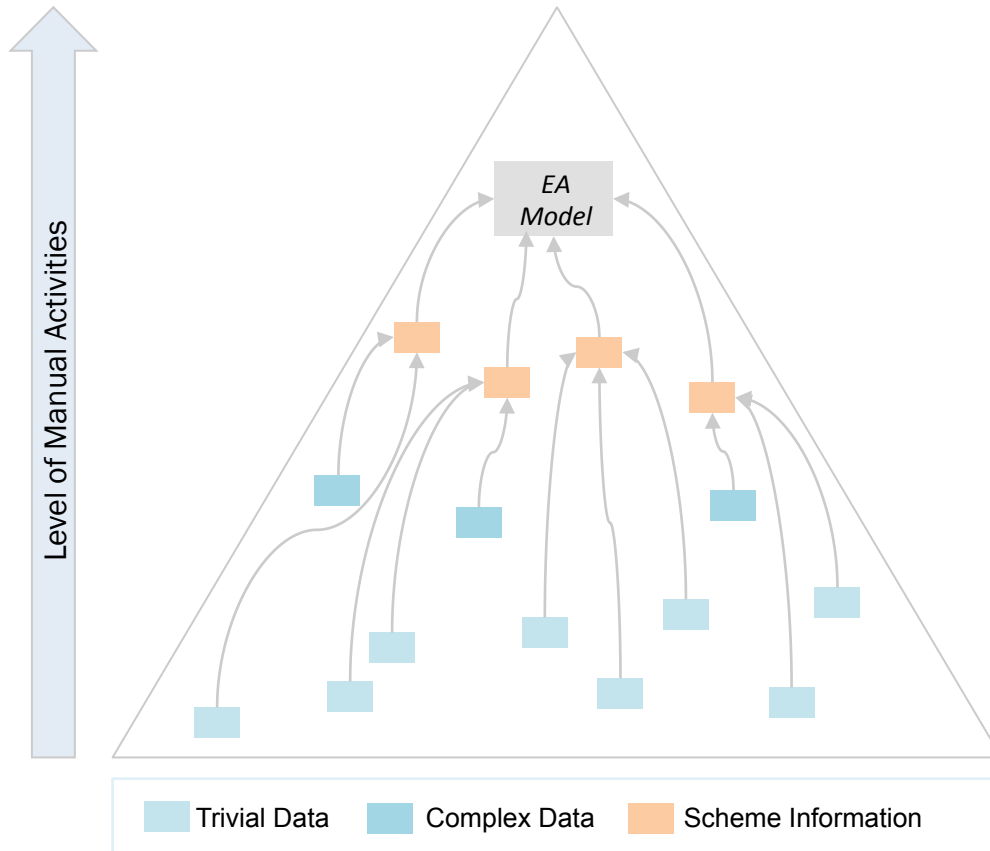


Data Model Changes



Generated Model Setup

Manual vs. Automated Information Transfer



Automated	Manual
0	11

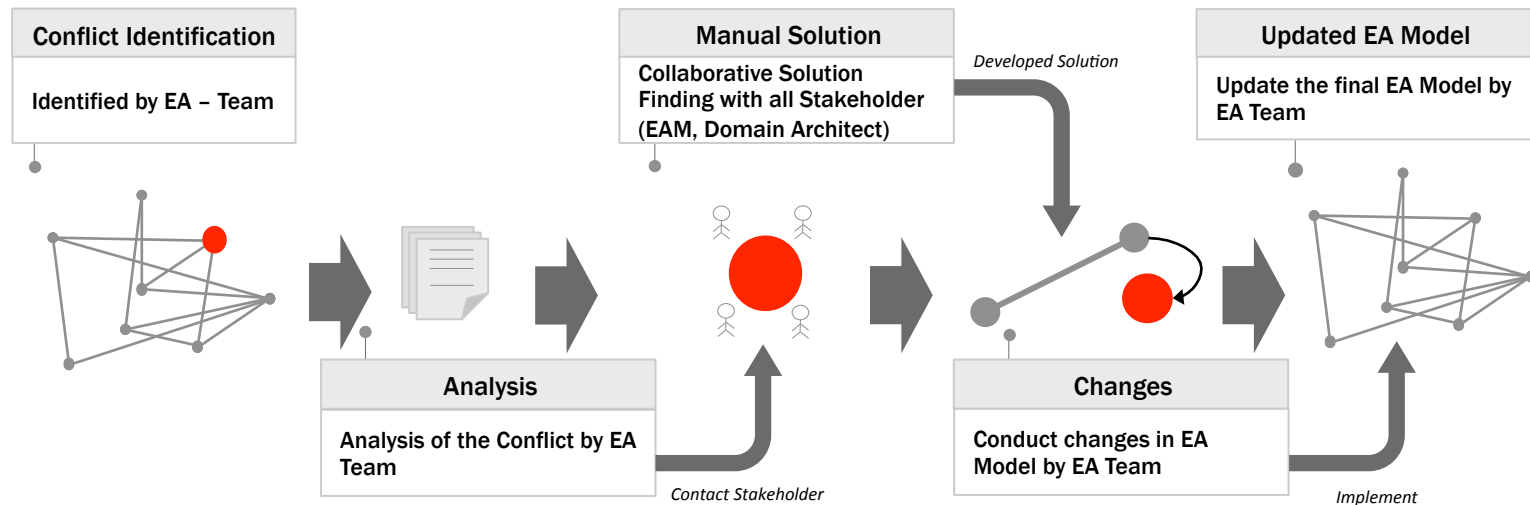
11 out of 11 companies confirm that major operations of a federated EA Model Management (conflict management, mapping operations, etc.) can only be performed with manual activities.

Reasons:

- Complexity and uniqueness of conflicts (see Conflict Resolution) and lack of Data Quality
- Most companies plan major changes in their EA (over all communities) at the beginning of the year by defining a clear roadmap. Further changes in the IT landscape (e.g. introduction of a new SAP system) are not usual and have to be planned, signed off and communicated to the supervisory as soon as possible. Due to the fact that such complex changes have a complex impact on the EA Model and the participation of all stakeholders (Business, Domain Architect, EAM, supervisory, etc.) is required the customization of these changes will be performed manually
- 2 out of 9 participants also mentioned the missing Know How about the IT – landscape that is necessary to provide automated activities on complex data.
- Automated changes are possible for trivial and high frequented data (e.g. virtual machines, information about licenses, etc.)

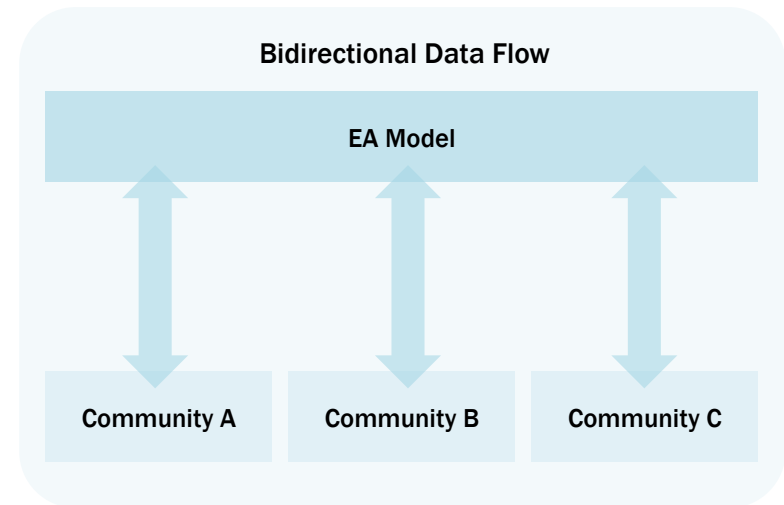
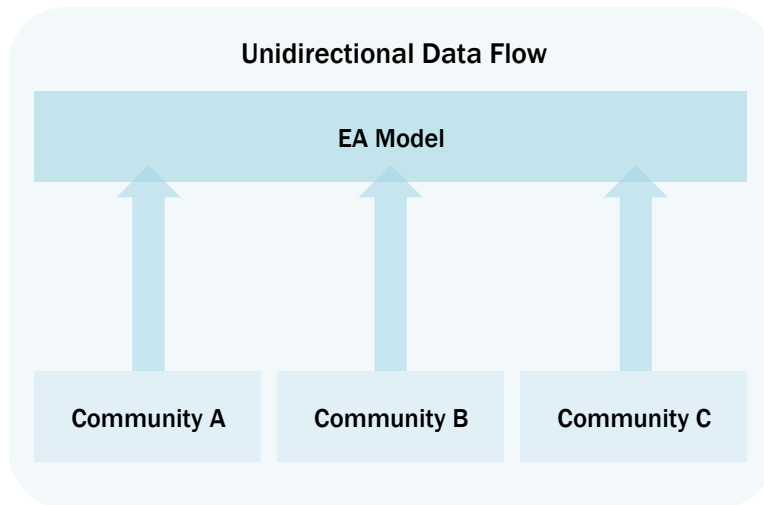
Process of Conflict Resolution

As mentioned the conflict resolution will be conducted manual and without any automated activities. Most of the conflicts reflect unique situations that require unique solutions. The participation of all stakeholders (Data Owner, EAM, etc.) is required. During the expert – interviews, it turns out that the following process fits most to this process:



There might be granular differences within the process, depending on the complexity of the conflict (e.g. major changes are required).

Unidirectional vs. Bidirectional Flow of Data



4 out of 9 companies prefer a directional data flow

- Communities still has the lead about their own business and their operational data
- Technical boundaries: One participant is facing the problem of legacy systems. For instance: **The company has a database that is productive since 1976. Due to the missing documentation and knowledge about this system, customization activities are not possible.**

5 out of 9 companies prefer a bidirectional data flow

- Best way to communicate organizational standards to communities → Further steps towards Standardization
- More effective interactions between EAM and other Management functions

Use of Ontologies

All participants confirmed that Ontologies cannot be used in term of federated EA Model Management. Main structure of an Ontology involve standardized classes, types, structure of instances, relations, inheritance and axioms. It turns out that ontologies can be defined as an academic and oversized concept that will not work out within industry.

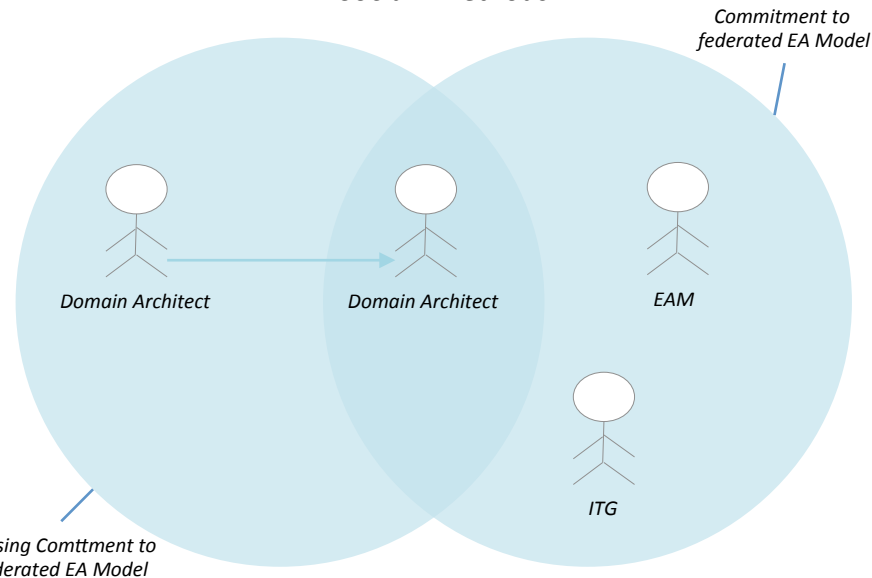
Reasons:

- Missing standardization within the IT – landscape of companies (*Talanx case*)
- Missing Know How about these academic structures
- Cost factor (Major standardization activities necessary)
- Missing definition of Ontology components within the IT – landscape of the companies

→ **Online Survey: Could be a possibility in future**

Only two participants confirm that there is a wide range of support by all communities/domain Architects across the organization regarding federated EA Model Management (Business and IT). Most of the participants mentioned that the EAM department has difficulties to convince (especially Non IT) departments to provide the necessary information in the required format, due to missing value for these departments. During the expert interview, it turns out, there are two different ways to get the required information from the communities:

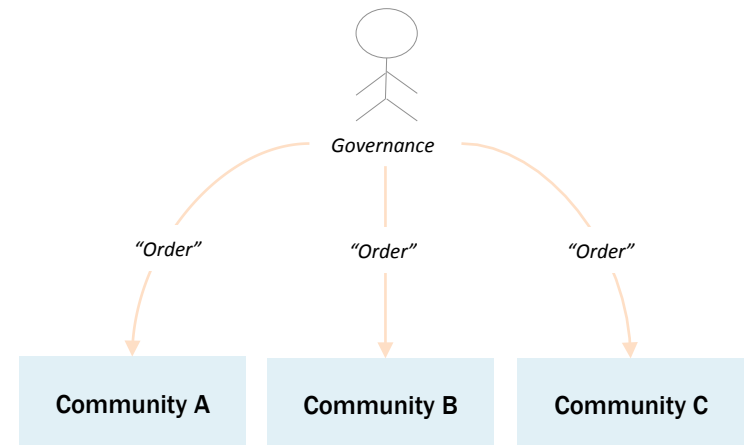
"Social" Methods



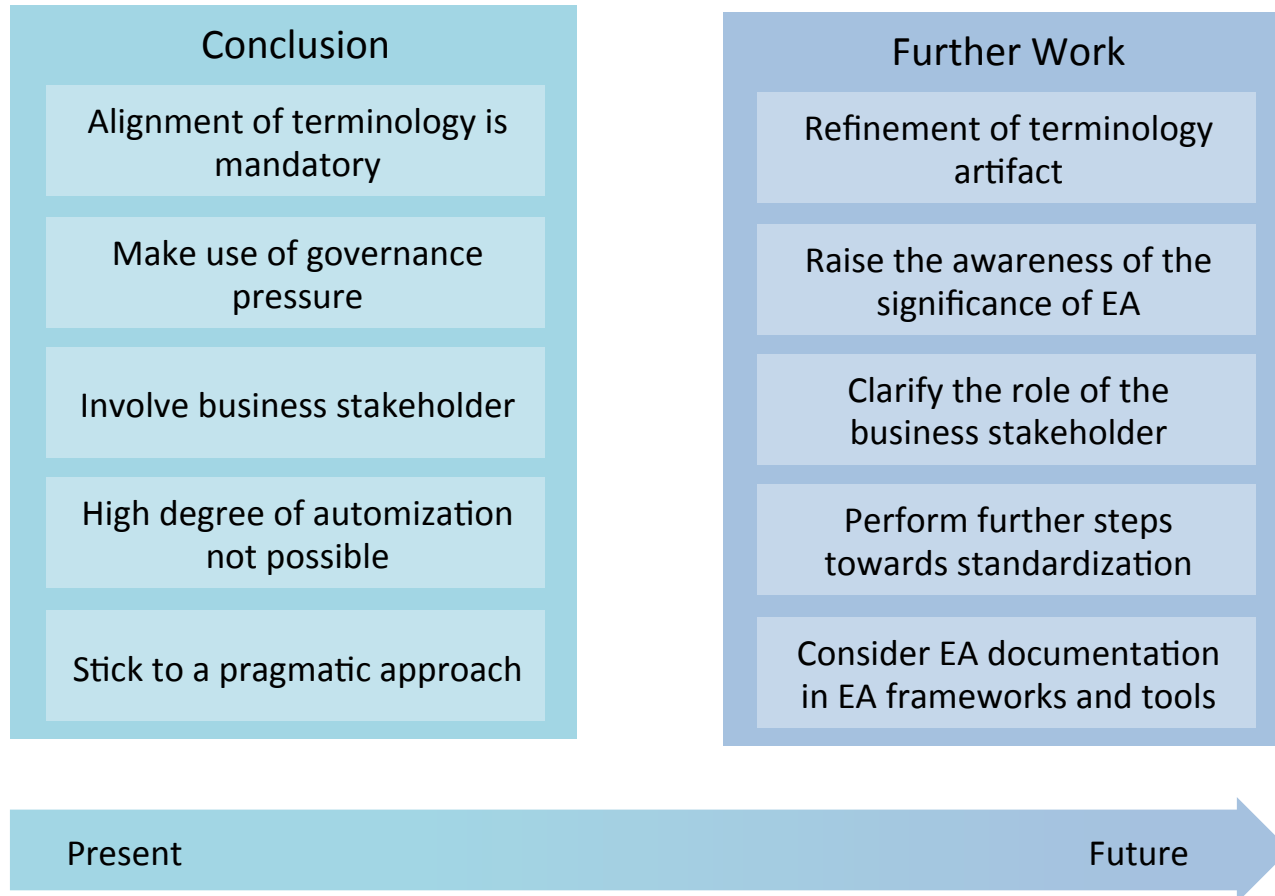
4 out of 9 participants tries to convince Data Owners for providing the necessary information without Governance pressure. Used Methods are:

- Agreement on Objectives
- Extra bonus
- Convince about the benefit

Governance Pressure



5 out of 9 participants make use of Governance pressure to get the provided information from the communities. The companies differ in their grade of IT complexity and the size of the group (<3.000 – 60.000 employees).



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