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SOA Governance Frameworks

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Helsinki 20.3.2012

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Tiedekunta - Fakultet – Faculty		Laitos - Institution - Department	
Faculty of Science		Department of Computer Science	
Tekijä - Författare - Author			
Suvi Myllykangas			
Työn nimi - Arbetets titel - Title			
SOA Governance Frameworks			
Oppiaine - Läroämne - Subject			
Computer Science			
Työn laji - Arbetets art - Level	Aika - Datum - Month and year	Sivumäärä - Sidoantal - Number of pages	
Pro Gradu	24.1.2012	X pages	
Tiivistelmä - Referat - Abstract			
Suvi Myllykangas Pro Gradu			
Avainsanat – Nyckelord - Keywords			
SOA Governance Frameworks			
Säilytyspaikka - Förvaringställe - Where deposited			
Muita tietoja - Övriga uppgifter - Additional information			
ARGH			

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1 Introduction

This is the introduction chapter.

Research question RQ: How to generate an SOA Governance Framework for Company X based on comparative research made of different SOA Governance Frameworks?

RQ1: What is SOA Governance? what is the connection of SOA governance with IT governance and enterprise architecture work?

RQ2: What are the most significant similarities and differences between different SOA Governance Frameworks?

RQ3: How to generate an SOA Governance Framework that meets Company X's requirements?

$RQ = RQ1 + RQ2 + RQ3$

Thesis structure:

- Chapter 1 Introduction
- Chapter 2 SOA Governance
- Chapter 3 SOA Governance Frameworks
- Chapter 4 SOA Governance Framework for Company X
- Chapter 5 Conclusions
- Chapter 6 References

2 SOA Governance

This chapter answers to RQ1. The following subchapters are based on Thomas Erl's book about SOA Governance [Erl11, chapters 3 and 6], unless otherwise stated.

2.1 Governance

Governance means governing or administrating something, usually organizations. Therefore governance can be seen as a type of organizational system, for example as a system that is used when governing a public system. A governance system gives constraints on decisions and determines decision making responsibilities and authority. It is also used to establish constraints and parameters to control and guide decision making and to prescribe the possible consequences for non-compliance. A governance system is comprised by four primary building blocks: precepts, people, processes and metrics (see figure 1).

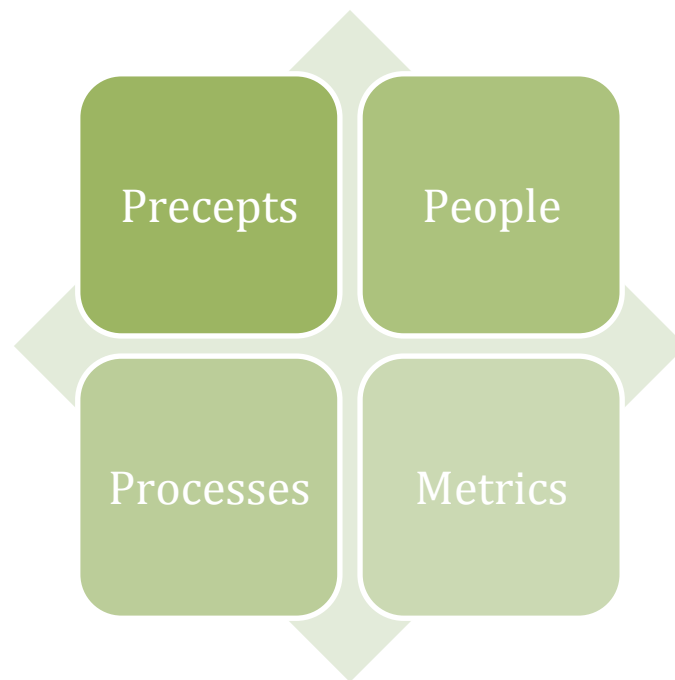


Figure 1: Governance system building blocks

2.1.1 Precepts, people, processes and metrics

A precept means an authoritative rule of action. It determines who has authority to make decisions and both establishes constraints to those decisions and

prescribes consequences for non-compliance. Precepts codify rules for decision-making using objectives, policies, standards and guidelines. Objectives define precepts' responsibility, authority and goals. Policies are used to define precepts aspects and decision-making constraints and consequences. Standards specify mandatory formats, technologies, processes and metrics that are required to use in order to implement more policies. Guidelines mean recommendations and best practises.

People are the decision-makers that make decisions in compliance with constraints set by governance precepts. Processes are an organized series of activities that provide tools for controlling decisions, enforcing policies and taking corrective actions in support of the governance system. These governance processes shouldn't be confused with regular IT processes, as those aren't directly related to carrying out a governance system.

Metrics provide information that can be used for measuring and verifying compliance with precepts. Using metrics and organization can increase visibility of the progress and effectiveness of their governance system. Metrics contain important data about precepts and processes.

2.1.2 Governance, methodology and management

Within IT, a governance system provides organization, direction and guidance to create and manage the evolution of IT assets and resources. Therefore it is essential to understand how a governance system relates to and is distinguished from methodology and management (see figure 2).

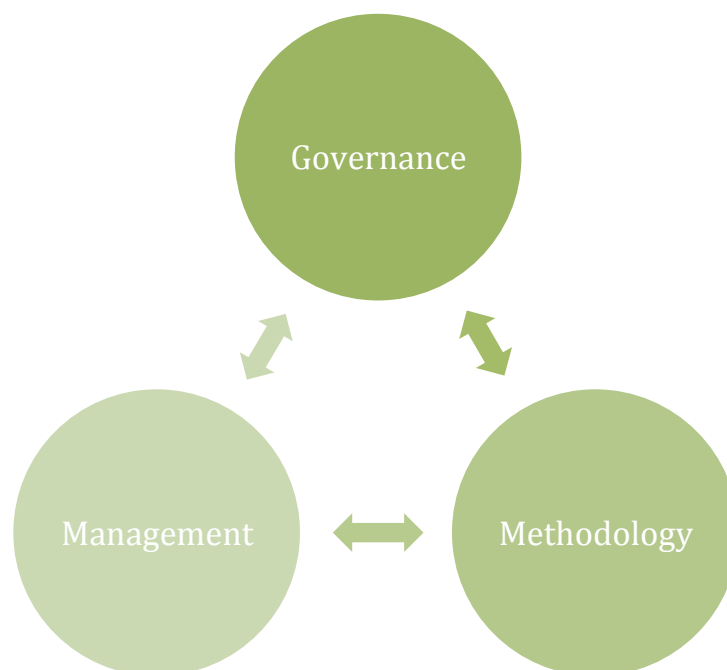


Figure 2 Governance, management and methodology [Erl11]

Methodology represents a system of methods that are step-by-step processes used to conceptualize, design, program, test and deploy software programs. Methodologies must be determined so, that they follow the constraints that governance system has established.

Management refers to the system and resources that are responsible for day-to-day operations, in other words, it enforces the rules and constraints established by governance system to ensure compliance. Management of governance system stands for the subset of overall management responsibilities. Management can as well be seen as ensuring proper process execution and project delivery in compliance with constraints set by methodologies.

2.2 SOA governance

SOA governance refers to those activities that are needed to govern a service-oriented architecture (SOA). SOA governance is a subset of IT governance, which itself is a subset of corporate governance. The distinction between SOA Governance and IT Governance will be further discussed in chapter X. Service-oriented architecture (SOA) is an architectural model for service-oriented

solutions. SOA has four base characteristics that help define requirements for a technology architecture to be fully service-oriented. These characteristics are presented in figure 3.

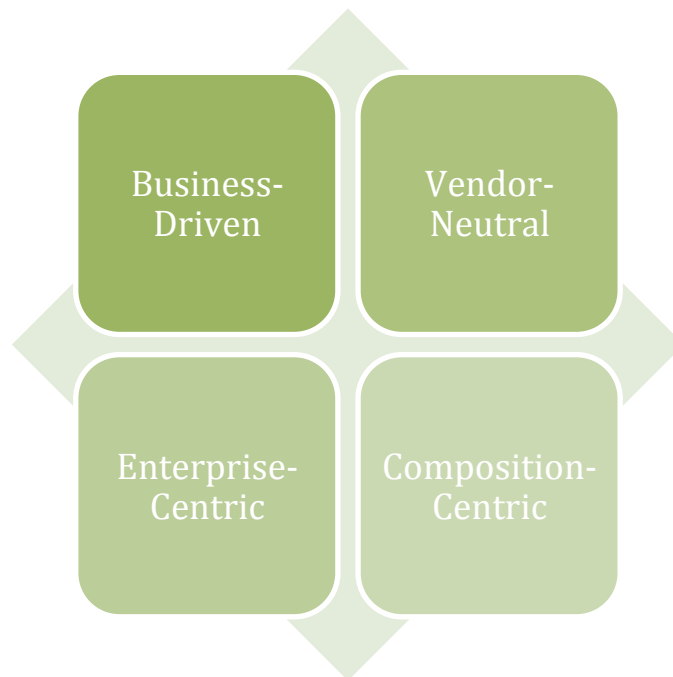


Figure 3 Four base characteristics of SOA

Business-Driven characteristic means that technology architecture is aligned with business architecture. With this coupling the technology architecture should evolve together with the business architecture. Vendor-Neutral means that the architectural model isn't just based on a proprietary vendor platform, but it should allow different vendor technologies to be combined and replaced over time. With SOA being Enterprise-Centric, it means that architecture should represent the enterprise, allowing service reuse and composition. Therefore service-oriented solutions should cross the traditional solution silos. Composition-Centric means that application accommodates constant change by the agile composition of services.

Before an organization implements SOA, it needs to invest in an SOA initiative to make sure that the benefits are worth more than the investment costs. Therefore the most important business goal for SOA Governance is to make sure that the SOA initiative achieves its targeted business goal. First an

organization should establish an SOA Governance Program Office (SGPO) that will be responsible for creating an SOA governance program that defines needed models for SOA governance. SGPO is an organizational entity that consists of different SOA professionals, such as SOA Governance Specialists, Enterprise Architects and other IT professionals. SGPO should have the authority to define and enforce activities and rules associated with SOA governance. The primary responsibility for SGPO is to compose SOA governance precepts (see chapter 2.1.1) and make sure that those precepts aren't conflicting with existing IT governance precepts, and to create collaborative relationships with other governance teams to avoid conflicts. Therefore the precepts set by SGPO should always be aligned with company's other governance systems. Figure 4 [Erl11] presents an example of organizational governance alignment where IT governance programs co-exist harmoniously side by side.

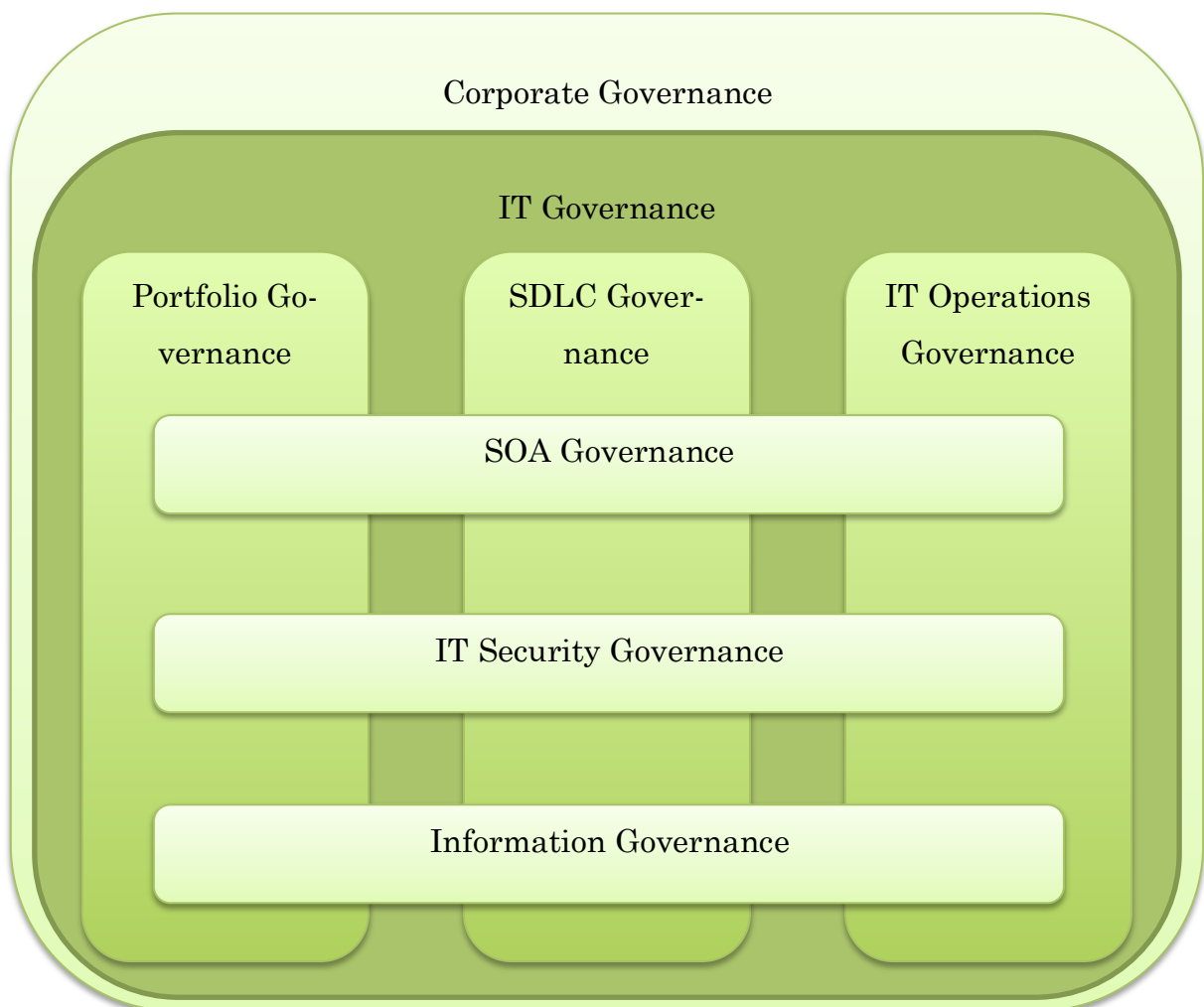


Figure 4 Organizational governance alignment [Erl11]

2.2.1 SGPO Jurisdiction Models

An SGPO will be formed based on enterprise's amount of service inventories. A service inventory (or, domain service inventory, if an organization has multiple service inventories) is a collection of services that are bound together in a way that those services either represent an enterprise or a meaningful segment of an enterprise. The amount of SGPOs is dependent on the use of domain service inventories and the cooperative relations between service inventory owners. In some cases it may not be possible to form just one SGPO for multiple domain service inventories. Therefore different SGPO jurisdiction models are represented, as follows:

2.2.1.1 Centralized Enterprise SGPO

A single SGPO will be assigned with SOA Governance responsibilities if enterprise has only one service inventory. Such a case is presented in figure 5 [Erl11]:

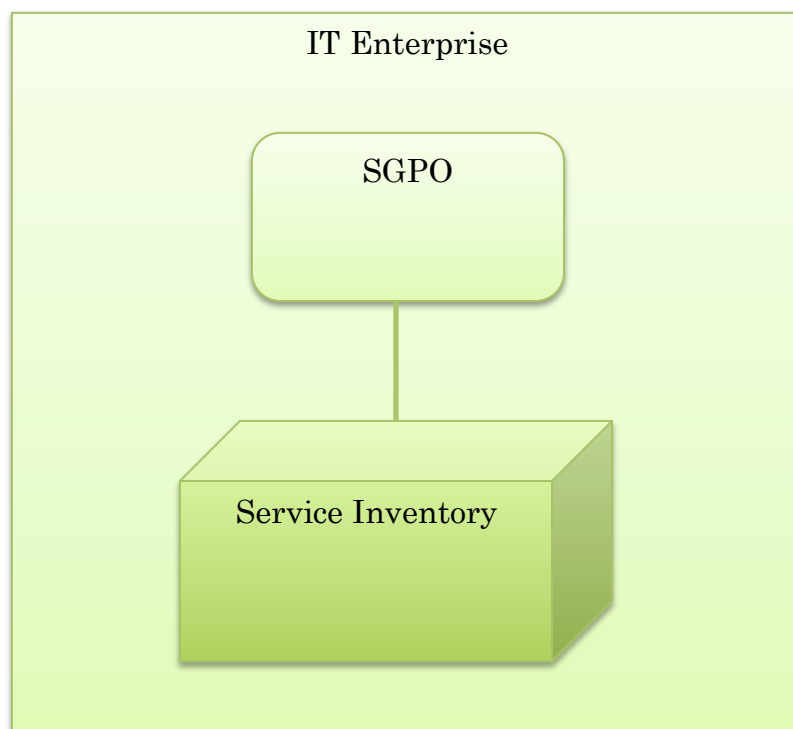


Figure 5 Centralized Enterprise SGPO [Erl11]

In a Centralized Enterprise SGPO model a single SGPO is responsible for SOA Governance for the whole IT Enterprise.

2.2.1.2 Centralized Domain SGPO

A centralized domain SGPO is established when an enterprise has multiple domain service inventories and enough cooperation between service owners to form a common SOA governance system. This model is presented below in figure 6 [Erl11].

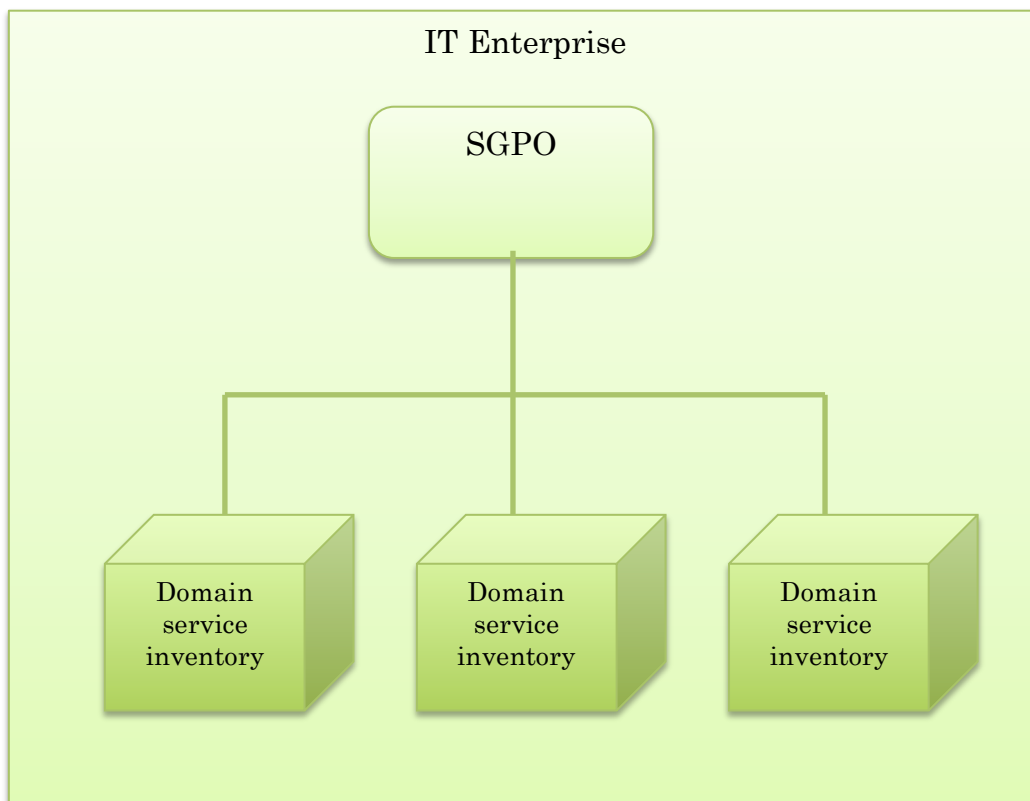


Figure 6 Centralized Domain SGPO [Erl11]

As figure 6 shows, a single SGPO is responsible for multiple domain service inventories. An alternative model is, that instead of one common governance system, multiple governance systems are established to cover specific or select domain service inventories. This maintains consistency and enterprise-wide alignment of SOA governance programs although SOA governance systems vary.

2.2.1.3 Federated Domain SGPOs

In this model multiple Domain SGPOs are responsible for separate domain service inventories, but also a central overarching SGPO is formed to govern individual SGPOs. This model is presented below in figure 7 [Erl11].

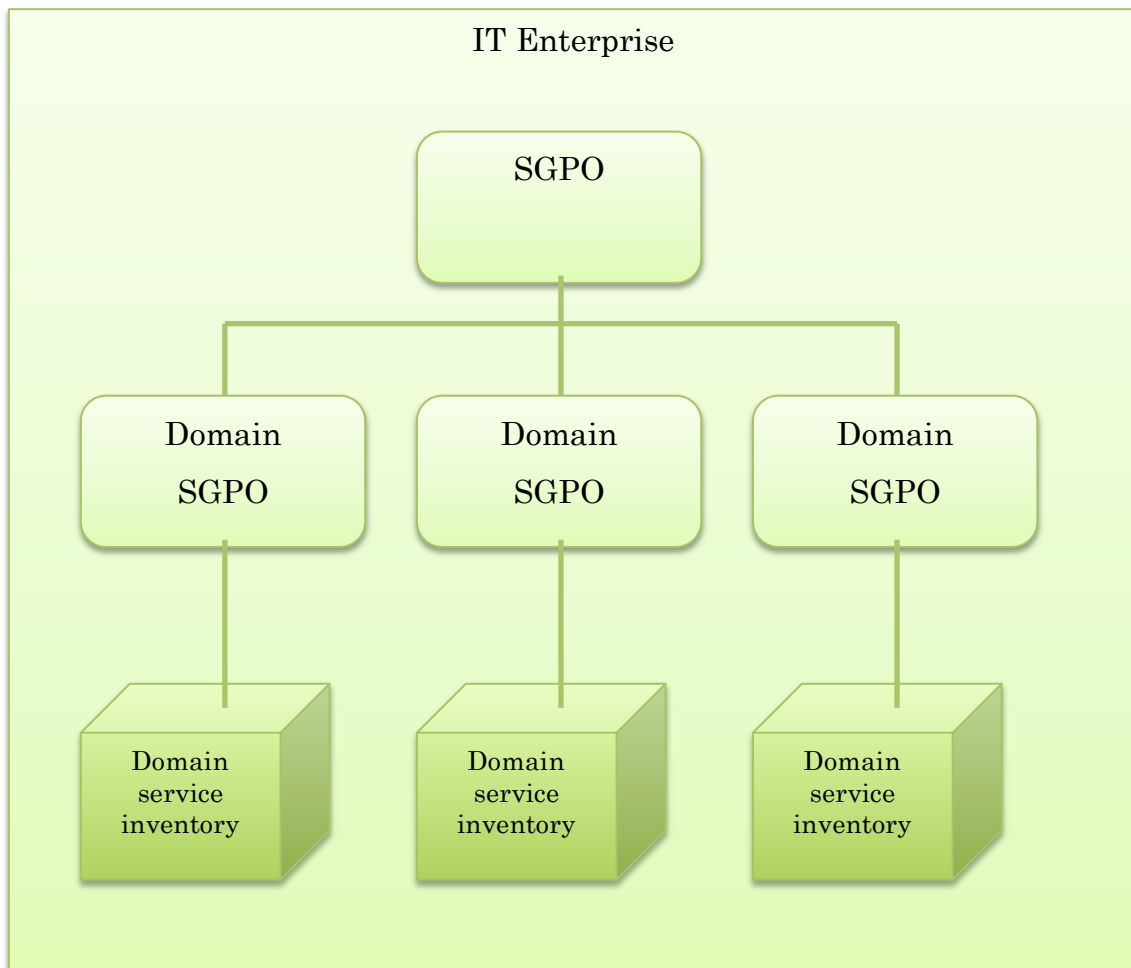


Figure 7 Federated Domain SGPOs [Erl11]

Domain SGPO's individual SOA governance programs are required to comply with conventions and standards defined by the parent SGPO. This will stabilize domain-level independence and enterprise-wide consistency.

2.2.1.4 Independent Domain SGPOs

With Independent Domain SGPO model each domain service inventory has its own separate SGPO. These separated SGPO's have full governance authority in their specific domain and complete freedom to define and execute respective SOA governance programs. This model is presented below in figure 8 [Erl11].

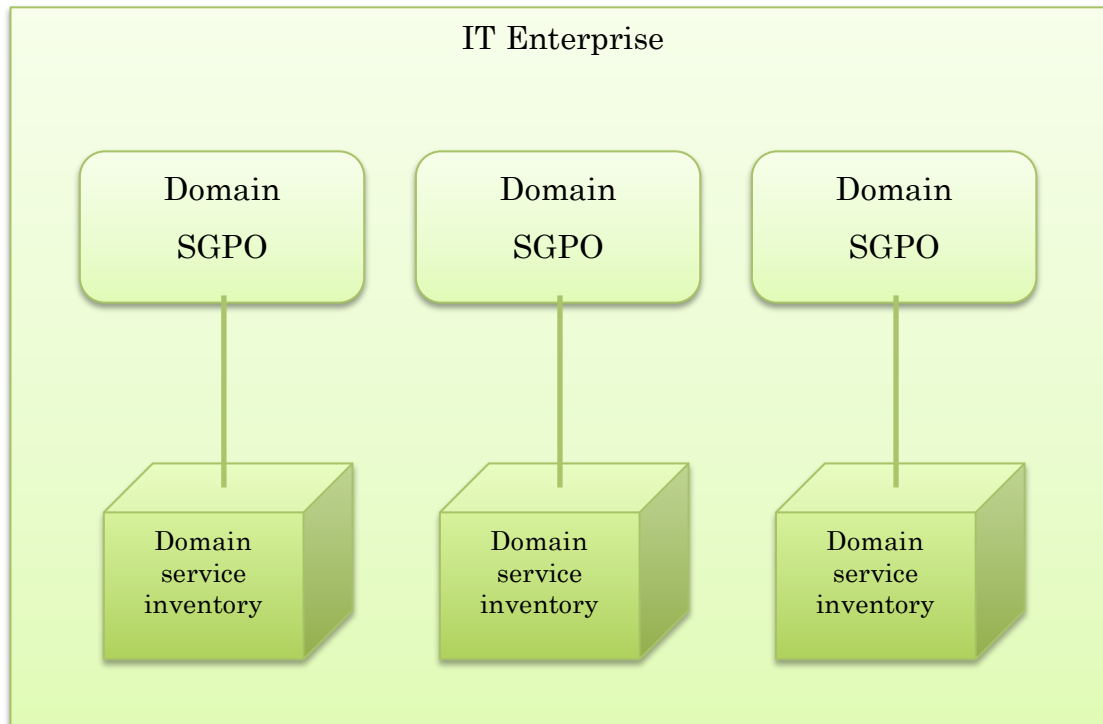


Figure 8 Independent Domain SGPOs [Erl11]

2.2.2 SOA Governance Program

An SOA Governance Program contains the SOA governance system and all related responsibilities for planning, implementing and evolving this system. SOA governance system carries precepts, roles, processes, metrics and models. SOA governance program is dedicated to establish and evolve the SOA governance system and provide project plans, budgets, schedules, milestones and The creation of an SOA Governance Program can be divided into three basic steps that are presented below in figure 9.

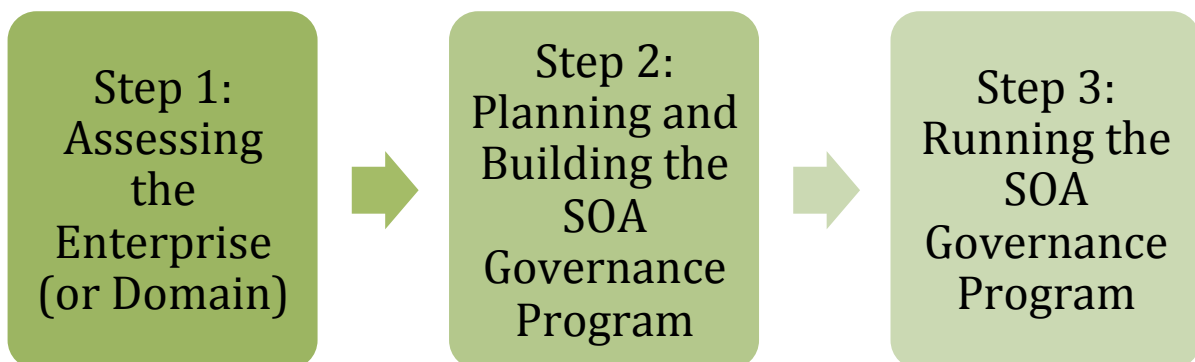


Figure 9 Basic steps for creating the SOA Governance Program

2.2.2.1 Step 1: Assessing the Enterprise (or Domain)

In step 1: Assessing the Enterprise (or Domain) SGPO will evaluate certain aspects of IT enterprise's (or domain's) current organizational state. This assessment can be limited to SGPO's operational domain, or apply to all domains. There are several specific areas that the assessment focuses:

- Current Governance Practices and Management Styles
- SOA Initiative Maturity
- Current Organizational Model
- Current and Planned Balance of On-Premise and Cloud-based IT Resources

SGPO has to study organization's current governance practices and management styles to find out how SOA governance processes and precepts can best be introduced to the organization. Therefore several issues need to be addressed. These issues are:

- Are decisions tightly controlled by a central authority or widely delegated?
- Do the various groups within the organization collaborate or do they work autonomously?
- How do other governance program offices in the company work?
- How well does the organization articulate and disseminate governance precepts?
- How rigorously do people within the organization adhere to standard practices and processes?
- How much flexibility do managers and project leaders have in adapting to processes to meet the needs of a specific project?
- How much flexibility does management have to establish or modify incentive systems?

Comprehensive answers to these questions can significantly impact on SOA governance program in order that strengths and weaknesses can be identified from governance types and management practices that are required to see through a successful SOA initiative. This, in turn, helps to define the nature of precepts and SOA governance programs impact on the existing IT culture.

Ideally an SOA governance program is established before SOA initiative is launched. However there may already be some SOA projects on the go. In this case their progress and maturity must be analyzed to make sure that the introduction of the SOA governance program supports and aligns with these existing efforts.

IT departments usually have their own hierarchical organizational models that define roles and responsibilities within an organization. When assessing the enterprise (or domain) the SGPO must assess the existing roles and responsibilities in order to identify the effect of new roles and responsibilities specific to SOA governance in the organizational model.

When authoring SOA governance precepts and processes, SGPO needs to have a clear understanding of existing cloud-based IT resources that are relevant to SOA project, and what is the organization's scope of proceeding with these cloud-based resources. This can lead to additional standards, factors and organizational roles that are required when defining precepts and processes.

2.2.2.2 Step 2: Planning and Building the SOA Governance Program

After Step 1: Assessing the Enterprise (or Domain) SGPO can start planning and creating the actual SOA governance program. As stated in chapter 2.2.2 SOA governance program includes the SOA governance system and provides components that are needed in establishing and maintaining this system. To identify main components of SOA governance program, the components of

SOA governance system (precepts, roles, processes) must first be revisited (see chapter 2.1.1).

[LIST OF PRECEPTS]

[LIST OF PROCESSES]

[LIST OF ROLES]

[ADDITIONAL COMPONENTS]

2.3 SOA Governance vs. IT Governance

3 SOA Governance Frameworks

In this chapter we compare and analyze different frameworks for SOA governance.

3.1 Introduction to SOA Governance Frameworks

3.2 Gartner SOA Governance Framework

3.3 The Open Group SOA Governance Framework

3.4 Framework 3 (TBA)

3.5 Analysis

This subchapter analyzes and compares the frameworks presented in the previous subchapters.

4 SOA Governance Framework for Company X

In this chapter we determine a SOA Governance Framework for Company X based on the framework research made in previous chapter.

4.1 Company X's requirements for SOA Governance

4.2 Framework

5 Conclusion

In this chapter we have conclusion.

6 References

[Erl11] Erl, Thomas: SOA Governance Governing Shared Services On-Premise and in the Cloud. Prentice Hall, 2011.