ENTERPRISE ARCHITECTURE BASICS

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Outline

- Enterprise Architecture
- Stakeholders
- Architecture development process
- Enterprise drivers

Architecture

- A similar frame of reference is needed in designing an enterprise.
- To create an overview of the structure of an organisation, its business processes, their application support, and the technical infrastructure, you need to express the different aspects and domains, and their relations.
- Architecture: fundamental concepts and properties of a system in its environment, embodied in its elements, relationships, and in the principles of its design and evolution.
- This definition accommodates both the blueprint and the general principles. More succinctly, we could define architecture as '**structure with a vision**'. An architecture provides an integrated view of the system being designed or studied.

Stakeholders

- **Stakeholder**: an individual, team, or organisation (or classes thereof) with interests in, or concerns relative to, a system.
- Most **stakeholders** of a system are probably not interested in its architecture, but only in the impact of this on their concerns.
- However, an architect needs to be aware of these concerns and discuss them with the **stakeholders**, and thus should be able to explain the architecture to all stakeholders involved, who often have completely different backgrounds.

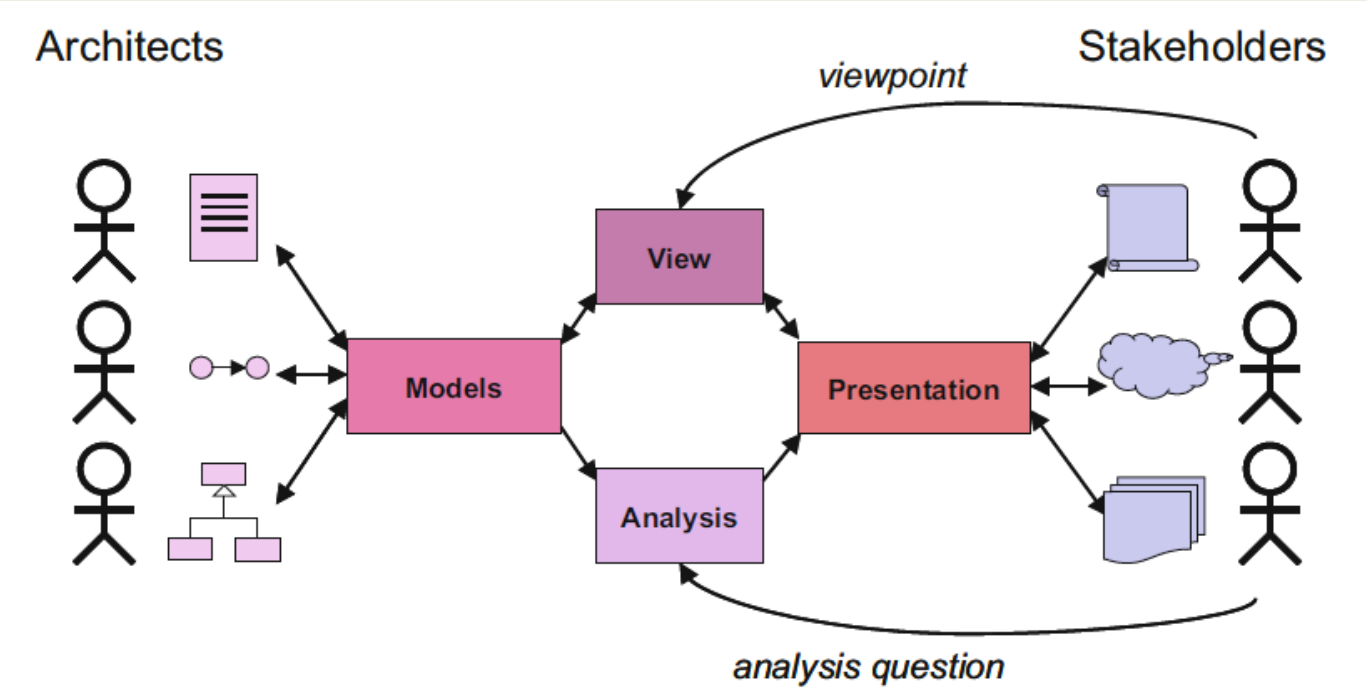
Stakeholders: Definition and Explanation

- Stakeholders - A person or organization that has a (direct or indirect) influence on a system's requirements. Indirect influence also includes situations where a person or organization is impacted by the system. (Glinz and Wieringa 2007) [interests and concerns]
- Problems of requirements analysis related to stakeholders:
  - *a) **Stakeholders** don't know what they really want;*
  - *b) **Stakeholders** express requirements in their own terms;*
  - *c) Different **stakeholders** may have conflicting requirements;*
  - *d) Organizational and political factors may influence the system requirements;*
  - *e) The requirements change during the process of analysis (new **stakeholders** may emerge and business environments may change).*

Enterprise Architecture

- The emerging discipline of Enterprise Engineering views enterprises as a whole as purposefully designed systems that can be adapted and redesigned in a systematic and controlled way.
- An ‘enterprise’ in this context can be defined as follows (The Open Group 2011):
- **Enterprise: any collection of organisations that has a common set of goals and/or a single bottom line**.
- Enterprise architecture: a coherent whole of principles, methods, and models that are used in the design and realisation of an enterprise’s organisational structure, business processes, information systems, and infrastructure.

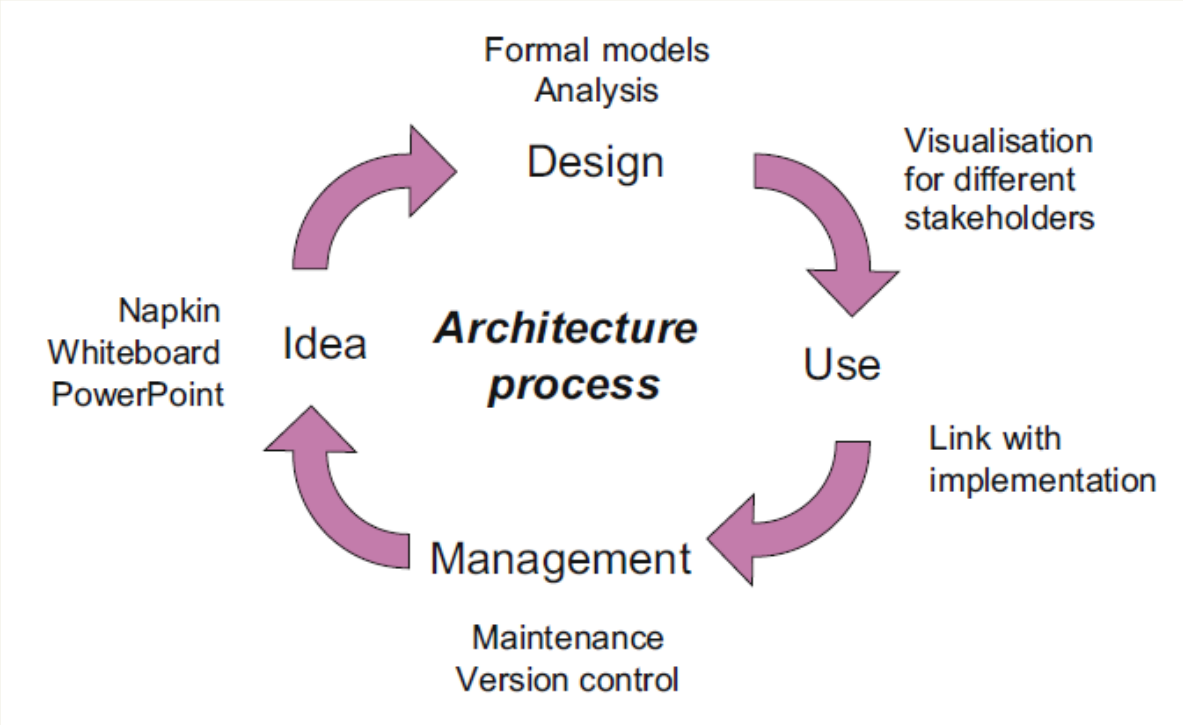
Communicating about architecture



- Different stakeholders have different views. Tell what stakeholders with what views on the enterprise.

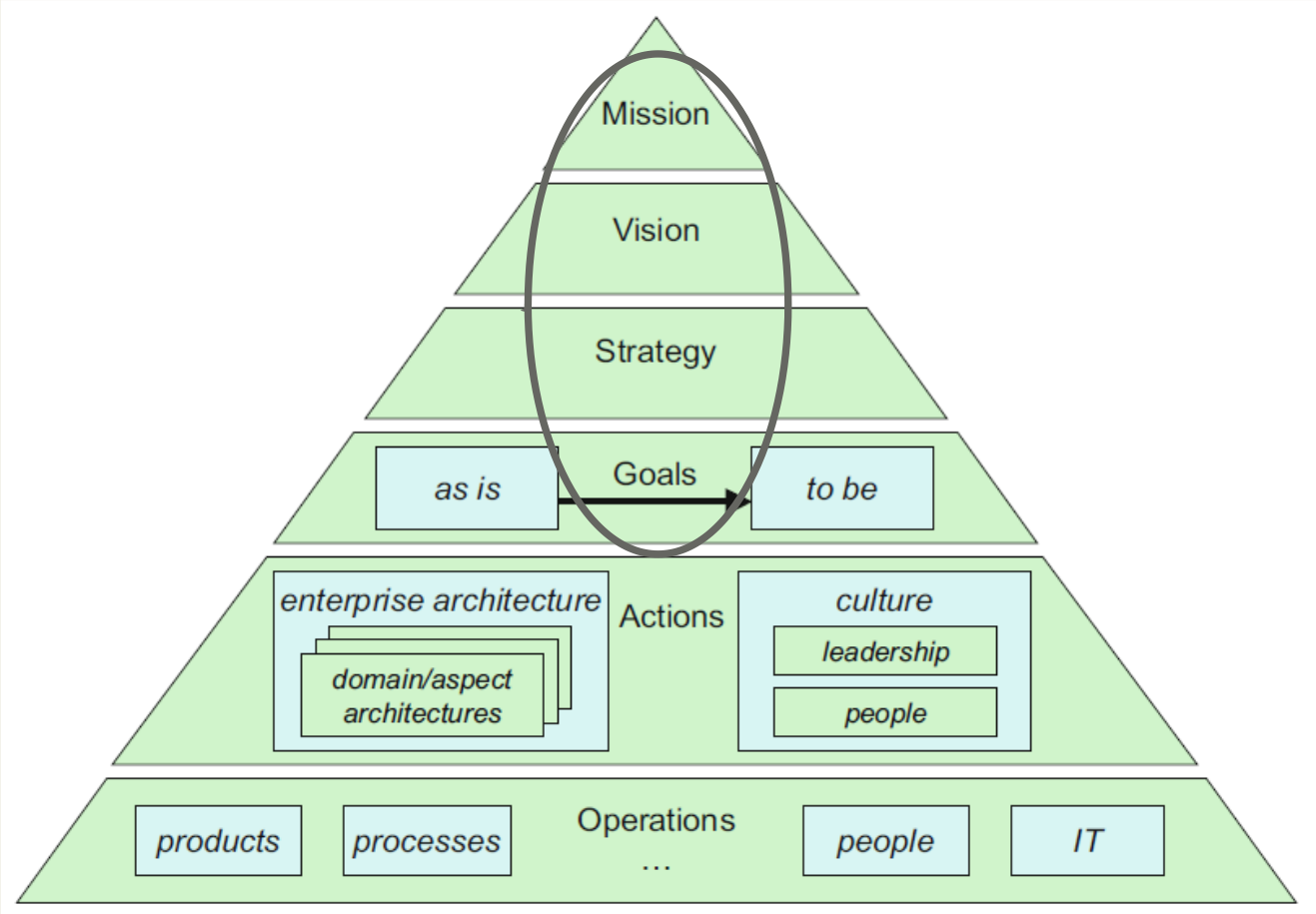
Architecture process

- Architecture is a process as well as a product.
- The product serves to guide *managers* in designing business processes and *system developers* in building applications in a way that is in line with business objectives and policies.
- The effects of the process reach further than the mere creation of the architecture product—the awareness of **stakeholders** with respect to **business objectives** and **information flow** will be raised.
- Also, once the architecture is created, it needs to be maintained. Businesses and IT are continually changing. This constant evolution is, ideally, a rational process.
- Change should only be initiated when people in power see an opportunity to strengthen business objectives.



ARCHITECTURE PROCESS

Enterprise architecture as a management instrument



Drivers

- It need not be stressed that any organisation benefits from having a clear understanding of its structure, products, operations, technology, and the web of relations tying these together and connecting the organisation to its surroundings.
- The factors, particularly, the players around a business, that have the significant impact on performance results are referred to as drivers.
- There are **external pressures** to take into account, both from **customers**, **suppliers**, and other **business partners**, and from **regulatory bodies.**
- Especially if a company becomes larger and more complicated, good architectural practice becomes indispensable. Here, we briefly outline the most important and commonly recognised **internal** and **external drivers** for establishing an enterprise architecture.

Internal drivers

- Next to its architecture, which could be viewed as the ‘hard’ part of the company, the ‘soft’ part, its culture, is formed by its people and leadership, and is of equal if not higher importance in achieving these goals.
- Moreover, architecture is a strategic instrument in guiding an organization through a planned course of development.
- Finally, in an increasingly networked world, no enterprise can focus solely on its own operations.
- Internal drivers refer to factors, individuals or groups, that originate from within an organization or business entity itself. These factors are typically under the direct control or influence of the organization's management.

External drivers

GDPR

- Next to the internal drive to execute effectively an organisation's strategy and optimise its operations, there are also external pressures that push organisations towards adopting enterprise architecture practice.
- The regulatory framework increasingly demands that companies and governmental institutions can prove that they have a clear insight into their operations and that they comply with the applicable laws on, say, financial transactions.
- External drivers are factors, individuals, organizations, or groups, that are beyond the control of an organization but can significantly impact its performance and success. These factors often relate to the broader economic, social, and competitive landscape.

External drive example - GDPR

Art. 1 GDPR

Subject-matter and objectives

1. This Regulation lays down rules relating to the protection of natural persons with regard to the processing of personal data and rules relating to the free movement of personal data.
2. This Regulation protects fundamental rights and freedoms of natural persons and in particular their right to the protection of personal data.
3. The free movement of personal data within the Union shall be neither restricted nor prohibited for reasons connected with the protection of natural persons with regard to the processing of personal data.

Summary

- Architecture is the art and science of designing complex structures. **Enterprise architecture**, more specifically, is defined as a coherent whole of principles, methods, and models that are used in the design and realisation of an enterprise's organisational structure, business processes, information systems, and infrastructure. Architecture models, views, presentations, and analyses all help to bridge the '**communication gap**' between architects and stakeholders.
- Architecture is an indispensable instrument in controlling the complexity of the enterprise and its processes and systems. On the one hand, we see **internal drivers** for using an architectural approach, related to the strategy execution of an organisation. Better alignment between business and IT leads to lower cost, higher quality, better time-to-market, and greater customer satisfaction.
- On the other hand, **external drivers** from regulatory authorities and other pressures necessitate companies to have a thorough insight into their structure and operations. All of these drivers make a clear case for the use of enterprise architecture.