

# *Enterprise Architecture*

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## *Video: Why Enterprise Architecture?*

More EA on [enterprisechess.com](http://enterprisechess.com) (i)



WHY ENTERPRISE  
ARCHITECTURE?

# *Architecture – What is it?*

- Is this an Architecture?



- No, this NOT the Architecture. This is the RESULT of architecture.
  - In the result you can see the Architect's "architecture"
  - The result is an implementation, an instance
- Adapted from Zachman (2012)

# Architecture – What is it?

- Is this an Architecture?



- No, this NOT the Architecture. This is the DESCRIPTION of an architecture.
- The description is an artifact that expresses an architecture.
- It is used to understand and analyse an architecture and to communicate about an architecture and as a blueprint to build something.

# Architecture – What is it?

**"Architecture"** is a conception of a system. It names that which is fundamental about a system; the set of essential properties of a system which determine its form, function, value, cost, and risk. That which is **fundamental** to a system takes several forms:

- ♦ its **elements**: the constituents that make up the system;
- ♦ the **relationships**: both internal and external to the system; and
- ♦ the **principles of its design and evolution**

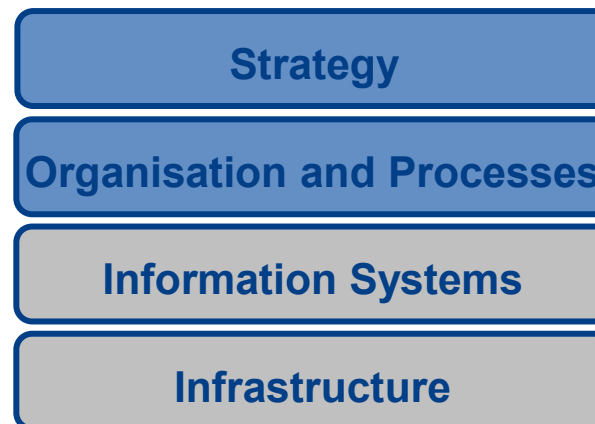
ISO/IEC/IEEE 42010 - <http://www.iso-architecture.org/ieee-1471/cm>

An architecture *may exist without ever being written down.*

# Enterprise Architecture

An **Enterprise Architecture** contains all *relevant*

- ♦ **Business structures** (e.g. organisation structure, business processes)
- ♦ **IT structures and facilities** (e.g. information systems, infrastructure)
- ♦ and their **relationships**



*What is...*

# Enterprise Architecture

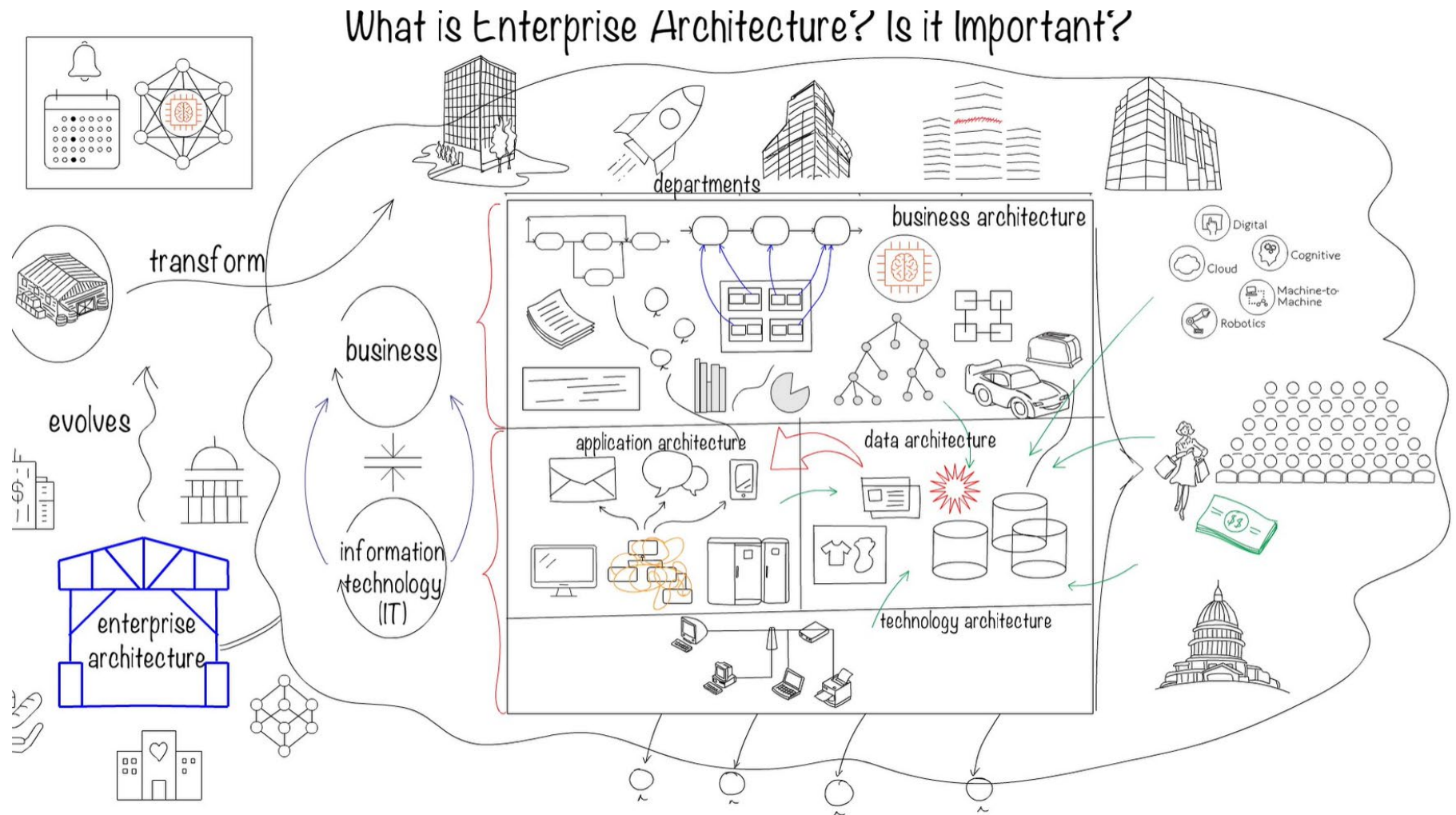
*by*

Assist Knowledge Development





# Video: What is Enterprise Architecture? Is it Important?



[https://www.youtube.com/watch?v=9TVc32M\\_gIY](https://www.youtube.com/watch?v=9TVc32M_gIY)



# *Architecture: Dealing with Complexity and Change*



- If the object you want to create or change is simple, and it is not likely to change, then you can do it directly.
- On the other hand, if the object is **complex**, you can't see it in its entirety at one time and it is likely to **change** considerably over time, you need a description or model.
- You need a description of the **Architecture**.



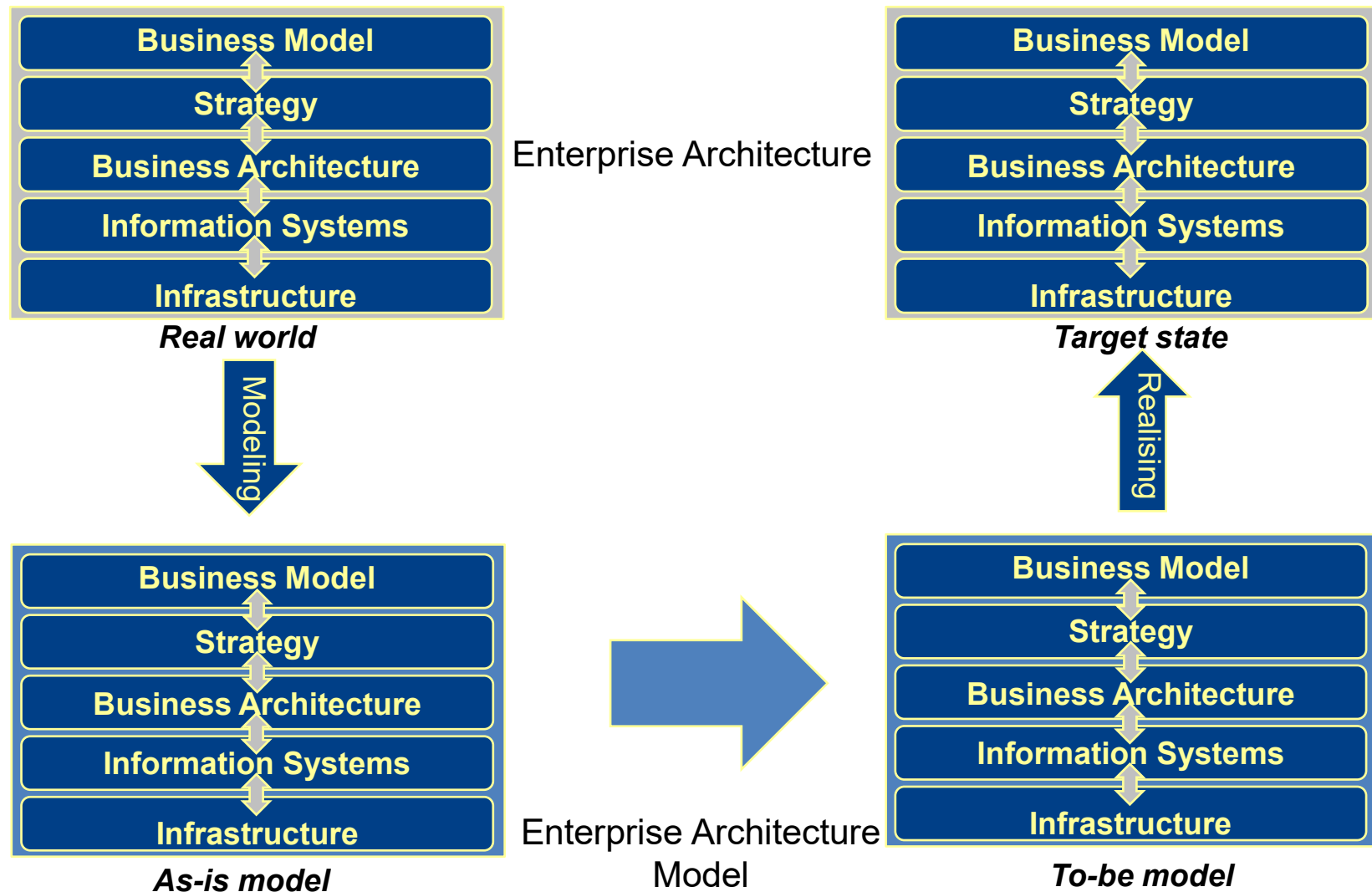
(John Zachmann, 2012)

Zachman Video 45:00 – 46:00

# Architecture Description

- It is helpful to distinguish the *architecture* from the *architecture description*.
- An **Architecture Description** (AD) is an **artifact** used to document an Architecture to share with others
- An **Architecture Description**
  - ◆ might take the form of a document, a wiki, a **collection of models**, or some other medium

# Change the Model before you change the System



# *Why Enterprise Architecture Description?*

## ■ **Manage change of complex system**

- ◆ Baseline for complex, interdependent enterprise decisions
- ◆ Communication of decisions to organization stakeholders.
- ◆ *If architecture is not explicit, there is a high risk that the implementation is not what is intended*

## ■ **Continuous, coordinated organisation change**

- ◆ Continuously update Enterprise Architecture to reflect changes
- ◆ Coordinate change between different projects

# Architecture Framework

- An *Architecture Framework consists of* conventions, principles and practices for the description of architectures <sup>1)</sup>
- In a framework one can distinguish between Ontology and Methodology <sup>2)</sup>

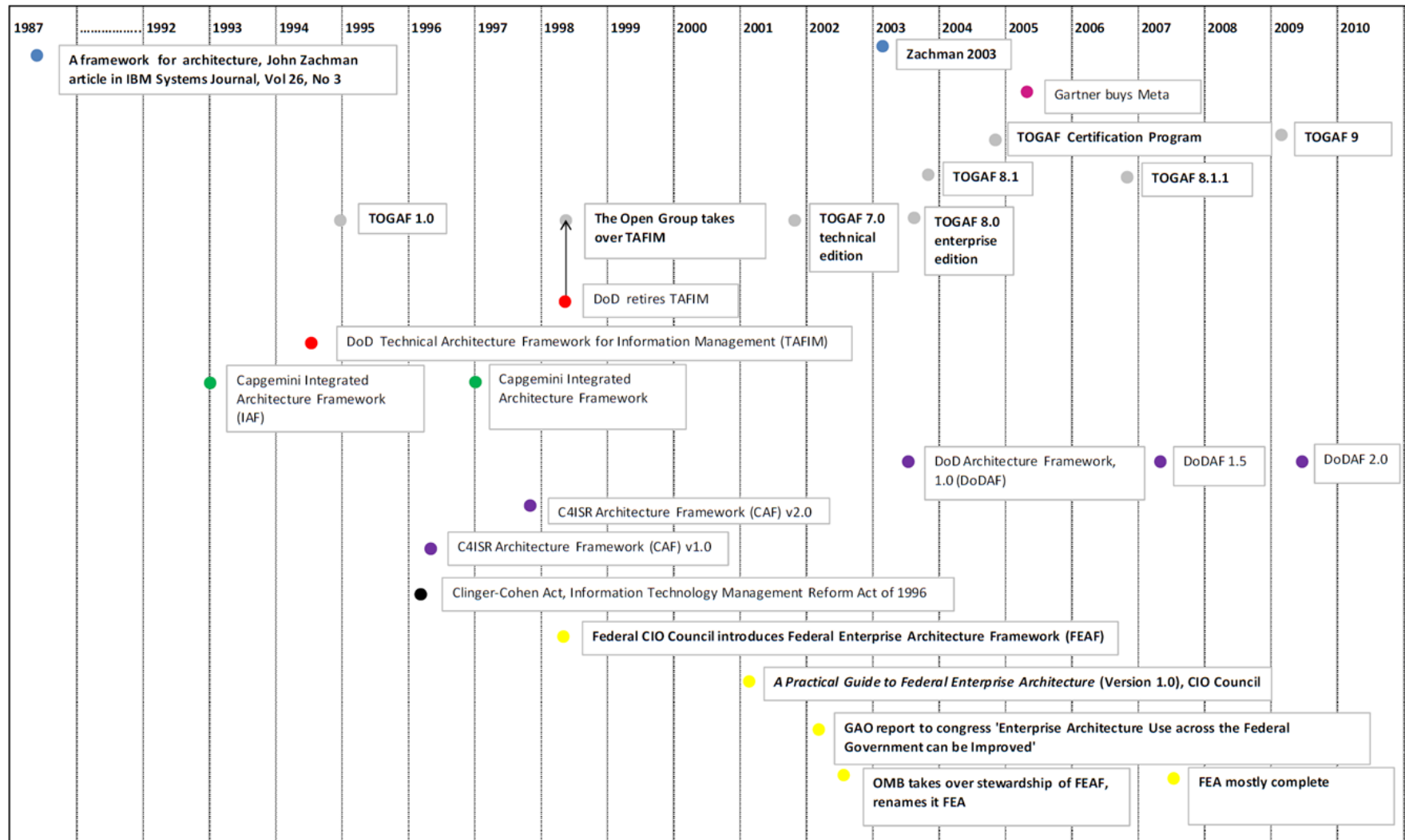
An **Ontology** is the *classification* of the total set of «*primitive*» components that exist and that are relevant in a domain

A **Methodology** is a *process* which produces «*composite*» (compound) implementations of the primitives

1) <http://www.iso-architecture.org/ieee-1471/afs/>

2) 1990 - 2015 John A. Zachman

# Timeline of Enterprise Architecture Frameworks



(Bespoke Systems 2012)



# Enterprise Architecture Frameworks

- We can distinguish two main types of structures for Enterprise Architecture Frameworks:

## ◆ *Zachmann Framework*

- **Matrix** of primitives – an enterprise ontology



## ◆ *TOGAF - The Open Group Architecture Framework*

- A methodology for architecture development
- A layered content metamodel (ontology)

