# Enterprise architecture

An enterprise architecture (EA) is a conceptual blueprint that defines the structure and operation of organizations. The intent of enterprise architecture is to determine how an organization can effectively achieve its current and future objectives. Enterprise architecture involves the practice of analyzing, planning, designing and eventual implementing of analysis on an enterprise.

Enterprise architecture helps businesses going through digital transformation, since EA focuses on bringing both legacy applications and processes together in an attempt to form a seamless environment. The use of EA frameworks rose in response to increases in business technologies during the 1980s, when a need for a way to respond to rapid technology growth was integral to business strategy. This process later expanded to the entirety of a business, not just IT. This way, the rest of the business would be ensured to be aligned with digital transformation.

Concepts of enterprise architecture are variable, so it will not look the same for each organization. Different parts of an organization may also view EA differently. For example, programmers and other technical IT professionals regard enterprise architecture strategies in terms of the infrastructure, application and management components under their control. However, enterprise architects are still responsible for enacting business structure analysis.

## The importance of enterprise architecture

Enterprise architecture will help multiple departments in a business understand the broader business model and articulate challenges and business risks. Because of this, enterprise architecture has an important role in unifying and coordinating departmental processes across an organization. Being able to access and understand business capability should also help individuals identify gaps in their business, and from there, they can make more informed decisions.

## The purpose of enterprise architecture

The main goals of enterprise architecture may be to create a map or blueprint of the structure and operations of an organization. This blueprint should include information such as a map of IT assets and business processes.

Other common goals include promoting team alignment and standardization. This can be done in part by unifying environments across teams and organizations. Guidance is normally based on an organization's business requirements.

## The enterprise architecture process

Microsoft's Michael Platt, a director in the strategic projects group, offers a view of enterprise architecture as containing four points of view: the business perspective, the application perspective, the information perspective and the technology perspective. The business perspective defines the processes and standards by which the business operates on a day-to-day basis. The application perspective defines the interactions among the processes and standards used by the organization. The information perspective defines and classifies the raw data (such as document files, databases, images, presentations and spreadsheets) that the organization requires to operate efficiently. The technology perspective defines the hardware, operating systems, programming and networking tools used by the organization.

The term may have various meanings to professionals in different areas who work with different EA frameworks. For example, programmers and other technical IT professionals regard enterprise architecture strategies in terms of the infrastructure, application and management components under they have control over.

High-level programmers will use enterprise architecture when referring to the hardware and software components in a design. For a website, that might comprise a web server, database, the NoSQL database cache, the API endpoints and the content delivery network.

For technical enterprise architecture descriptions, EA could revolve around the context of software architecture, systems architecture deployment types and other steps like testing.

Others could view enterprise architecture based on quality attributes. These are attributes that must exist for software to work and are unlikely to fit in a specification document. Examples include reliability, capacity, scalability and security. Quality elements are not functional requirements, but are ways to determine acceptable operating conditions and necessary tradeoffs to get there.

Enterprise architecture, in a business context, may have organizations distinguish their enterprise architecture from the technical architecture required to build and run applications. Working from within an enterprise architecture framework will help define this.

## Enterprise architecture models and methodologies

Enterprise architectures are typically implemented as frameworks. There are many different frameworks, and some will be a better fit than others when it comes to any one organization. For example, a framework focused on consistency and relationships between various parts of an overarching enterprise will be more helpful to larger organizations with many moving parts

compared to small ones. In this case, a framework like the Unified Architecture Framework (UAF) may work.

Some example frameworks include:

- The Zachman Framework for Enterprise Architecture -- which covers six architectural points as well as six primary stakeholders that aid in defining and standardizing IT architecture components.
- Unified Architecture Framework (UAF) -- which is a complex but flexible enterprise architecture framework suitable for military and government software development as well as use in commercial businesses. It's implemented as a UML profile.
- Agile enterprise architecture -- which focuses an organization around a flexible, extended collection of structures and processes that can grow. It can become an important part of Agile software delivery.
- Federal Enterprise Architecture Framework (FEAF) – which is a reference model that was introduced in 1996 for IT effectiveness. It was designed for the U.S. government but can be used in private companies as well.

Other frameworks include The Open Group Architectural Framework, the European Space Agency Architectural Framework, the SAP Enterprise Architecture Framework or the Ministry of Defence Architecture Framework.

## Benefits of enterprise architecture

Possible advantages of having an enterprise architecture include:

- Improved decision-making;
- Improved adaptability to changing demands or market conditions;
- Elimination of inefficient and redundant processes;
- Optimization of the use of organizational assets;
- Minimization of employee turnover;
- Support organization changes for redesigns and reorganization;
- Makes it easier to evaluate architecture against long-term goals;
- Can give views of IT architectures to those outside of IT;
- Can help with the unification of processes in IT;

- Can help simplify finance teams; and
- Facilitates collaboration with project management.

## Enterprise architecture vendors, tools and certifications

Several third-party vendors and tools sell enterprise architecture products, as well as some certifications that center around certain skills.

Some example vendors include Orbus Software, Software AG, Planview, Avolution and Sparx Systems.

ServiceNow Project Portfolio Management is an example of one EA tool, used for full visibility. It can keep everyone from different departments on the same page, from Sales to IT. It is relatively easy to configure and allows users to pick the management type -- such as agile -- for each project. However, it may be difficult to use for resource management.

Oracle Enterprise Architecture Framework is another example of an EA tool. The software helps users in developing strategic roadmaps and architectures that enable business and IT alignment. This software is driven by business strategies and simplifies technical architectures; however, it may be difficult to use for beginners.

Some example certifications include:

- Salesforce Certified Technical Architect
- The Open Group Certified Architect
- AWS Certified Solution Architect
- Professional Cloud Solutions Architect Certification
- Certified Information Systems Security Professional-Information Systems Security Architecture Professional