

Written and published for CIO Source via SMB Advisors. Rewritten for portfolio presentation.

An Introduction to Enterprise Architecture and Modern Business

The Basics of Enterprise Architecture and Its Contributions to Modern Business

Enterprise architecture (EA) is a framework that provides a high-level view of how a company's business capabilities, information, and technology work together. Think of it as a blueprint for strategically defining and optimizing your organization's operations. A well-designed EA can help you identify the most effective ways to achieve your company's current and future goals.

The Components of Enterprise Architecture

Since an effective EA is meant to provide a comprehensive view of your company, it should encompass all components of your organization. A true enterprise architecture typically consists of five elements:

1. **Business Architecture:** Defines your business capabilities and functions, including finance, manufacturing, marketing, and sales, and shows how they relate to one another.
2. **Process Architecture:** Outlines your business process streams and value streams, such as Prospect-to-Customer, Order-to-Cash, Manufacturing-to-Distribution, and Request-to-Service.
3. **Information/Data Architecture:** Identifies and classifies the data important to your company, how it is structured, how it is related, and how it will be maintained. This includes customer data, product data, and other types of information stored in documents, spreadsheets, databases, images, and more.
4. **Application Architecture:** Describes the systems and applications needed to support your business capabilities and value streams. It also explains how these systems interact with your processes and standards and helps you plan application roadmaps, including when new applications may be needed or when existing ones should be upgraded, replaced, or retired.
5. **Technical Architecture:** Defines the underlying technical infrastructure, including hardware, operating systems, networking solutions, and software components.

Together, these components provide a framework for understanding your organization and its operations, helping you identify strategies that support your company's goals.

The Origins of Enterprise Architecture

Although modern EA focuses on the use of technology across an organization, the process itself dates back to the 1960s, long before companies became as dependent on technology as they are today. The term “enterprise architecture” comes from a series of documents written by Professor Dewey Walker on Business Systems Planning. One of his students, John Zachman, helped organize Walker’s documents into the format we now recognize as EA. Zachman published the framework in 1987 in the *IBM Systems Journal*.

During the 1980s, the use of business technology grew rapidly, particularly as computer systems became more common in the workplace. Zachman’s EA framework responded to the need for companies to adopt long-term strategies to manage technological growth. While the framework initially focused only on information technology (IT), modern enterprise architecture applies the same principles to align the entire business with both technological development and broader digital transformation.

Primary Focus And Goals of Enterprise Architecture

EA can seem incredibly broad, but its main goal is to improve the efficiency, relevance, and reliability of your business information, ultimately supporting better long-term decision-making. This involves using your organization’s business requirements to evaluate processes that may need to change, manage those changes effectively, develop more efficient business procedures, and facilitate communication across the organization.

Organizational Structure Designing

Enterprise architecture planning (EAP) can help you design your organization’s structure by identifying workflows, procedures, systems, and overall structures, and determining whether they need realignment to support current business goals. If realignment is necessary, plans can then be made to implement the required changes.

Business Processes Standardization

Enterprise architecture also allows you to evaluate all of your business processes and standardize them based on their effectiveness and efficiency. Standardizing processes establishes clear rules for employees to follow. Implementing standardized processes can:

- Increase clarity and reduce ambiguity for employees.
- Boost productivity by ensuring everyone knows which processes to follow.
- Enhance quality by defining and optimizing processes for efficiency and effectiveness.
- Improve the overall customer experience.

Project Portfolio Management

Project portfolio management is a process that lets you analyze the potential return of proposed projects while providing a big-picture view of past, current, and upcoming initiatives. EA can improve the effectiveness of project portfolio management by fostering collaboration and communication among stakeholders. This makes it easier to identify dependencies necessary to achieve business goals during project planning.

EA also supports project portfolio management by highlighting the strategic application portfolio and guiding investment and prioritization decisions.

Engineering Design Process Requirements

Defining, documenting, and maintaining requirements in your engineering design process is crucial for the success of software and systems development. EA can help define these requirements more quickly and accurately.

System Development

When developing and testing new systems, EA helps streamline system designs and ensures the most efficient allocation of resources.

IT Management

EA can improve IT management by increasing IT value, reducing complexity, and helping manage risk. This is achieved by lowering system implementation and operational costs, consolidating data and applications to simplify IT environments and improve interoperability, and minimizing the risks caused by system failures or data breaches.

The Benefits of Enterprise Architecture

EA helps increase the efficiency and effectiveness of your business processes by providing a comprehensive view of how technology is used and integrated across your organization. Your business can gain several specific benefits from EA:

Meet Business Objectives Faster

EAP can improve business processes and data management in multiple ways, such as by enabling integration agility, eliminating redundancies, implementing automation, introducing modularity, and standardizing processes. These improvements boost your organization's efficiency, agility, and ability to make informed decisions quickly, helping you achieve business objectives faster.

Reduce Risk and Regain Control Over Portfolio

EAP provides a clearer overall view of your application portfolio, giving you greater control over the systems you use and what they are designed to achieve. It also helps you select new applications more effectively by aligning them with your strategic objectives and enterprise architecture. This ensures you avoid investing in unnecessary applications that may not add value—or that could hinder your business processes.

Remove Unnecessary Duplications in Application Portfolio

Redundant applications can exist across different parts of an organization. EAP allows you to inventory all applications in use, identify overlaps, and decide which systems to keep. By removing unnecessary duplicates, you can reduce costs, streamline processes, and improve overall organizational efficiency.

Enterprise Architecture Planning Methodologies

Because EA is a high-level framework designed to address your entire organization, it's helpful to use different methodologies that focus on specific needs and business units. Many methodologies are in practice today, but here are a few of the most commonly used for EAP:

The Open Group Architectural Framework (TOGAF)

TOGAF is arguably the most popular EA framework, with Open Group claiming that 80 percent of the world's leading enterprises have adopted it. It provides a standardized approach to enterprise architecture, including a common vocabulary, recommended tools and software, suggested standards, compliance methods, and guidance for defining best practices.

The Zachman Framework

Named after John Zachman, this framework helps standardize and define your organization's IT architecture components and outputs through six architectural focal points and six primary stakeholders. The Zachman framework is often described as a taxonomy (the practice of classification) by the Computing Technology Industry Association (CTIA), one of the top trade associations in the IT industry.

Federal Enterprise Architecture Framework (FEAF)

In 1996, the Clinger-Cohen Act was passed, establishing mandates to improve how federal agencies acquire, use, and dispose of technology. In response, the Federal Enterprise Architecture Framework (FEAF) was introduced. While specifically designed for federal agencies to support the shared development of common processes and information, it can also be adapted by private companies for their own use.

Department of Defense Architecture Framework (DoDAF)

DoDAF was developed for the U.S. Department of Defense (DoD) to help managers make better decisions at all levels by organizing and sharing information effectively across the department. Because it was designed for the DoD, DoDAF is geared toward large systems and addresses complex interoperability and integration challenges.

Gartner

When Gartner acquired The Meta Group in 1995, it introduced best practices for EAP that were later integrated into its broader consulting services. While these practices do not form a single framework, CompTIA recognizes Gartner's methodology as a practical way to align EA with business outcomes.

Hybrid / Custom Approach

Every EA framework is different. They serve different purposes, have different scopes, are based on different principles, are supported by different approaches, and have different structures.

You may find that no single framework is capable of meeting your specific needs. If this is the case, consider a custom or hybrid approach. This involves selecting components from multiple frameworks, combining them to build your architecture, customizing the framework for your needs, and defining guiding principles for your practices.

Your Enterprise Architecture Reflects Your Entire Business Architecture

Modern businesses need to remain flexible when adopting and implementing new technologies across their organization. They also need to ensure that these technologies are used efficiently and effectively, in alignment with business goals. Achieving this requires a clear view of your organization's structure and how its information, business processes, and technology work together. This is why enterprise architecture planning is so important.

A well-designed enterprise architecture can help lower costs, streamline processes, enhance outcomes, and support a sustainable business.