Course: Software Technologies and Enterprise Architecture

WEEK 2: Enterprise Architecture Frameworks

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Week-2: Enterprise Architecture Frameworks

Contents

Week-2. Lecture Learning Outcome

After completing this lecture, students should be able to:

- Define Enterprise Architecture (EA) and explain what an enterprise is
- Describe the purpose and importance of Enterprise Architecture Frameworks
- Identify the main types of EA frameworks (comprehensive, industry, domain)
- Explain key features of major frameworks, TOGAF, Zachman, FEAF
- Describe the Architecture Development Method (ADM) phases in TOGAF
- Explain the structure of the Zachman Framework
- Compare TOGAF vs Zachman Framework
- Identify the benefits and challenges of EA frameworks
- Understand how EA frameworks improve IT alignment, planning, and efficiency

Enterprise Architecture Framework

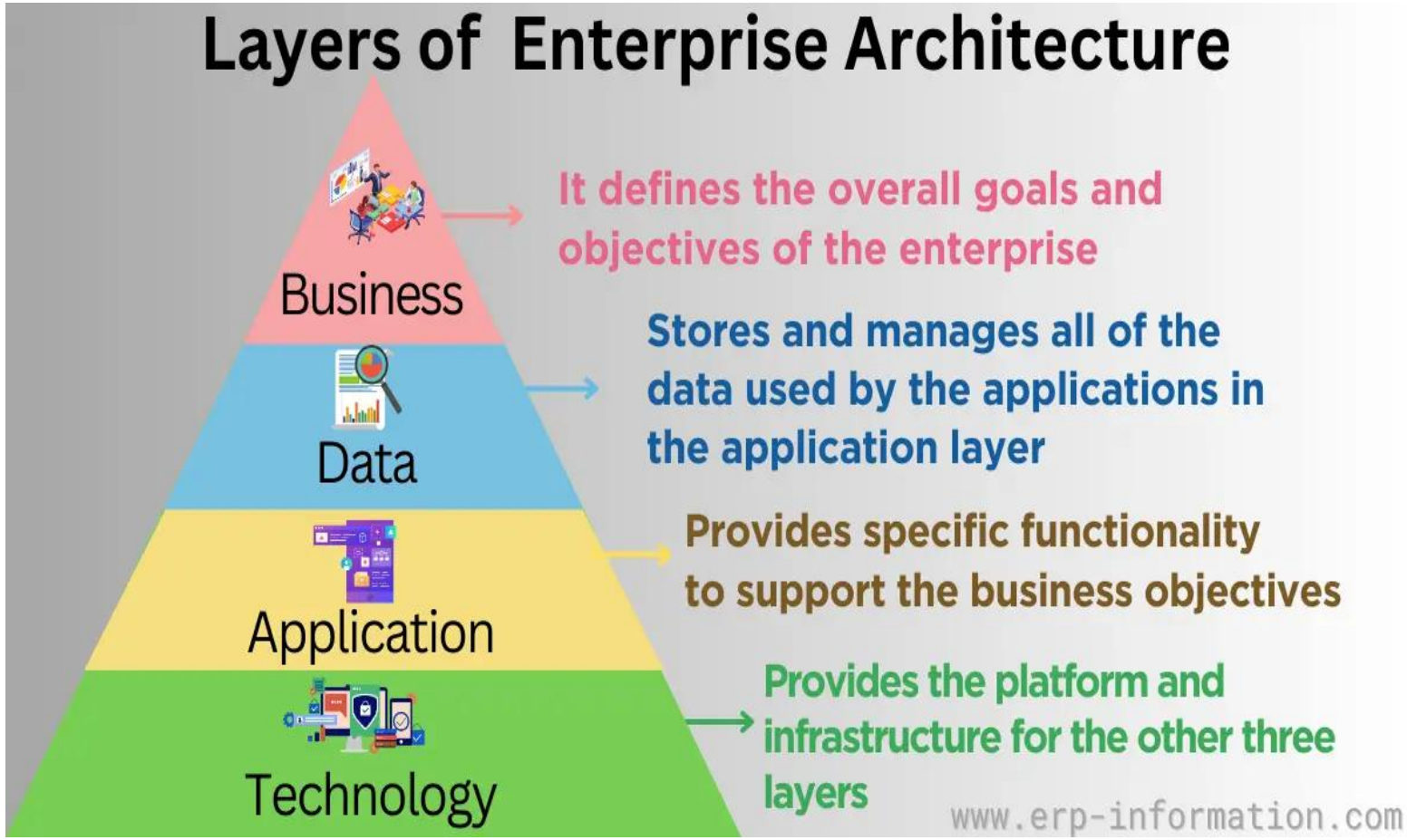
What is An "Enterprise"?

- Any collection of organizations that has a common set of goals can be a government agency, a whole corporation, a division of a corporation, a single department, or a chain of geographically distant organizations linked together by common ownership.
- The term **"enterprise architecture":** the architecture of an entire enterprise, encompassing all its information systems, and the architecture of a specific domain within the enterprise.

[1]. Enterprise Architecture, TOGAF 10 & Enterprise Agility, Rajesh Verma, Towardsai, 2023. https://towardsai.net/p/l/enterprise-architecture-togaf-10-enterprise-agility

Cont. ...Enterprise Architecture Framework

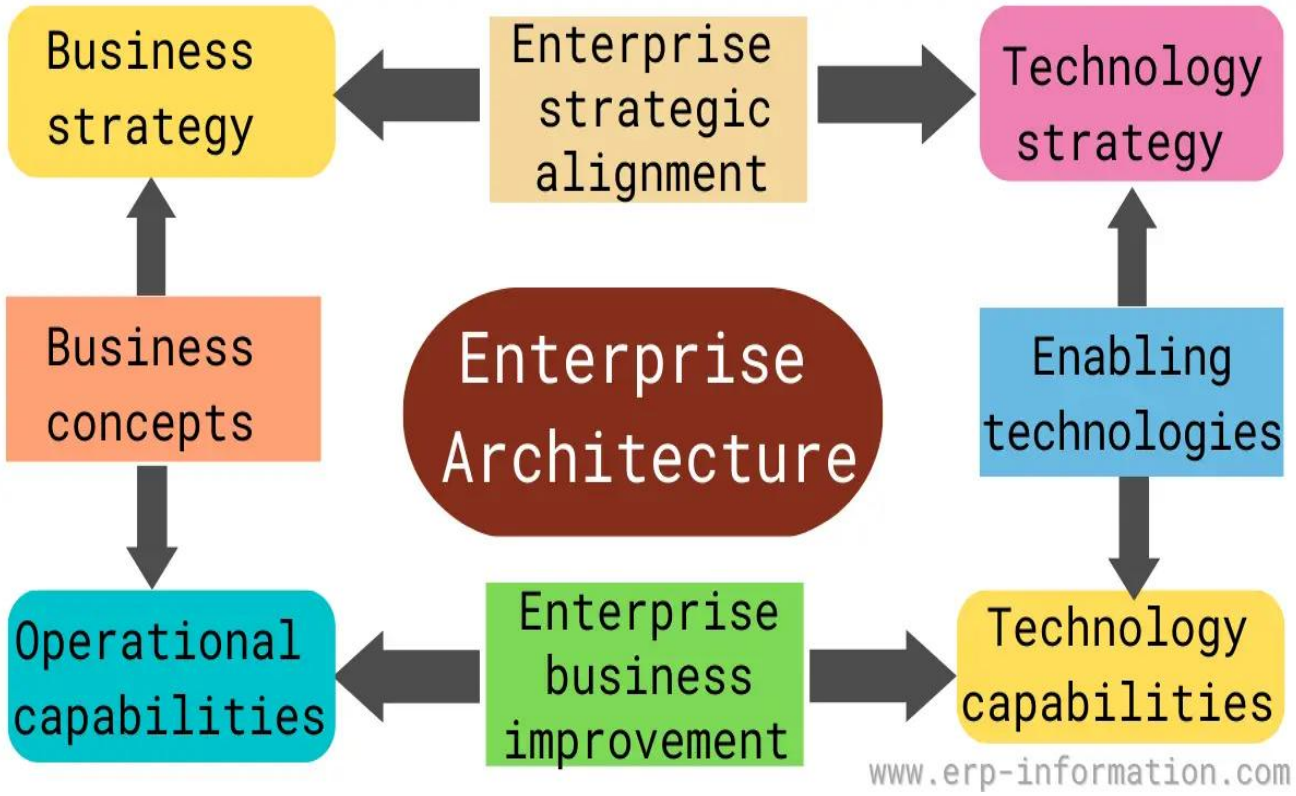
EA frameworks focus on four architectural domains



[2]. What is an Enterprise Architecture Framework? (Types, Methods, Benefits), N/A, ERP Information, 2022. https://www.erp-information.com/enterprise-architecture-framework

Cont. ...Enterprise Architecture Framework

- An enterprise architecture framework is a set of guidelines and rules that help you design, plan, and manage your enterprise IT systems.
- The figure shows the holistic view of an enterprise architecture framework.



[2]. What is an Enterprise Architecture Framework? (Types, Methods, Benefits), N/A, ERP Information, 2022. https://www.erp-information.com/enterprise-architecture-framework

Cont. ...Enterprise Architecture Framework

Types of Frameworks Used in Enterprise Architecture?

1. Comprehensive Enterprise Architecture Frameworks

- Frameworks in this category are suitable for all sectors and purposes, making them excellent default options when flexibility is desirable.
- Their breadth can make them tougher to apply, however, and can produce unnecessary levels of complexity when they're implemented without appropriate trimming.

Example:- Open Group Architecture Framework (TOGAF).

[3]. Enterprise Architecture Framework, Ardoq, 2023.
https://www.ardoq.com/knowledge-hub/enterprise-architecture-framework

Cont. ...Enterprise Architecture Framework

2. Industry Architecture Frameworks

- These frameworks are geared toward specific industries, allowing them to efficiently cover key metrics and considerations when applied to the right organizations.

Example: Federal Enterprise Architecture (FEAF)

3. Domain Architecture Frameworks

- When an organization identifies a persistent need to renovate one particular aspect of its architecture, it can choose a framework in this category.
- These frameworks focus on specific domains, which can include (business, data, software, and technology) as well as other views such as cybersecurity.

[3]. Enterprise Architecture Framework, Ardoq, 2023. https://www.ardoq.com/knowledge-hub/enterprise-architecture-framework

Cont. ...Enterprise Architecture Framework

Benefits of using an EA framework :

- Improved communication and coordination between different parts of the enterprise
- A better understanding of enterprise goals and objectives
- Improved planning and execution of enterprise projects
- Increased efficiency and effectiveness of enterprise IT systems

[2]. What is an Enterprise Architecture Framework? (Types, Methods, Benefits), N/A, ERP Information, 2022. https://www.erp-information.com/enterprise-architecture-framework

Cont. ...Enterprise Architecture Framework

Types of enterprise architecture frameworks

- They are used together or separately to optimize the performance of an organization's IT systems.
  - **TOGAF:**- is an open-source framework that helps organizations develop and use an enterprise architecture.
  - **Zachman**: - Framework is a classification system that comprehensively covers all aspects of an enterprise.
  - **FEAF**:- helps organizations develop a high-level view of their IT system, while
  - **DoDAF**:- provides the structure for organizing data into actionable information.

[3]. Enterprise Architecture Framework, Ardoq, 2023.
https://www.ardoq.com/knowledge-hub/enterprise-architecture-framework

The Open Group Architecture Framework (TOGAF)

Key components of TOGAF:

It focuses on the structures and architecture development through:

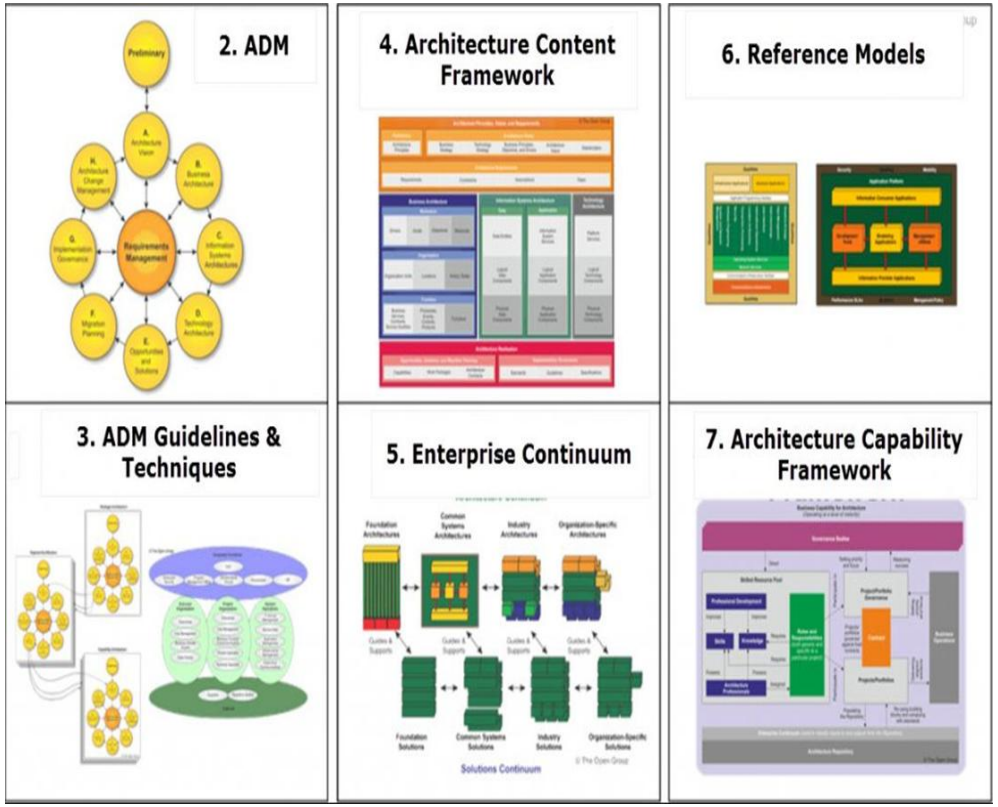
- **Architecture Development Method (ADM):** The core of TOGAF, the ADM, provides a step-by-step approach to developing an enterprise architecture.
- It is iterative and cyclic, fostering continuous improvement.
- **Architecture Content Framework:** This defines the artifacts produced during an architecture project, including catalogs, matrices, and diagrams.

[4]. Enterprise Architect - TOGAF (The Open Group Architecture Framework), GeeksforGeeks, GeeksforGeeks, 2024. https://www.geeksforgeeks.org/software-engineering/enterprise-architect-togafthe-open-group-architecture-framework/

Cont. ..The Open Group Architecture Framework (TOGAF)

Cont. …Key components of TOGAF:

- **Enterprise Continuum:** A repository for all the architecture assets, including models, patterns, and standards.
- **TOGAF Reference Models**: These include the Technical Reference Model (TRM) and the Integrated Information Infrastructure Reference Model (III-RM).
- **Architecture Capability Framework:** This ensures that the enterprise has the capability to operate the architecture framework effectively.



https://www.archimetric.com/what-is-togaf/

[4]. Enterprise Architect - TOGAF (The Open Group Architecture Framework), GeeksforGeeks, GeeksforGeeks, 2024. https://www.geeksforgeeks.org/software-engineering/enterprise-architect-togafthe-open-group-architecture-framework/

Cont. ..The Open Group Architecture Framework (TOGAF)

TOGAF: - The ADM Phases

- TOGAF defines how the company should create architecture.
- Contains 10 phases which are loosely ordered, though a core aspect of the ADM is that they can be performed in other sequences.
- Each phase describes the transformation and governance necessary to facilitate change based on the architecture vision

https://share.google/XjMcMpo21EDkNgH0O

[5]. TOGAF: The Open Group Architecture Framework, Kyrylo Iusov, Jelvix. https://jelvix.com/blog/togaf-open-group-architecture-framework

Cont. ..The Open Group Architecture Framework (TOGAF)

The Preliminary Phase

- To identify persons interested in the implementation process and discuss the functions of the EA with them.
- Architecture Guiding Principles are being developed based on the organization's business principles, which describe the processes and criteria for overseeing the AP implementation process.

[5]. TOGAF: The Open Group Architecture Framework, Kyrylo Iusov, Jelvix. https://jelvix.com/blog/togaf-open-group-architecture-framework

Cont. …The Open Group Architecture Framework (TOGAF)

Phase A: Architecture Vision

- The primary objective of this phase is to define the high-level vision for the architecture and the guiding star for subsequent phases, ensuring alignment with business goals and stakeholder expectations.

Key Activities

- Define the architecture effort's scope, objectives, and stakeholders.
- Create a high-level vision that articulates the desired future state of the architecture.
- **Obtain approval**: Secure stakeholder buy-in and approval for the architecture vision.

[6]. Mastering TOGAF: An Introduction to the TOGAF Framework and ADM Phases, CIO Portal, 2009.https://cioindex.com/reference/part-1-introducing-the-open-group-architecture-framework-togaf/

Cont. ...The Open Group Architecture Framework (TOGAF)

Phase B: Business Architecture

- Focuses on understanding and documenting the business context and requirements, aiming to create a detailed business architecture that supports the organization's strategic objectives.

Key Activities

- **Define business goals and objectives**: Clarify the business drivers and objectives that the architecture needs to support.
- **Develop business architecture**: Create models and documentation representing current and target business architecture.
- **Identify gaps and opportunities**: Analyze the differences between the current and target states to identify areas for improvement.

Cont. ...The Open Group Architecture Framework (TOGAF)

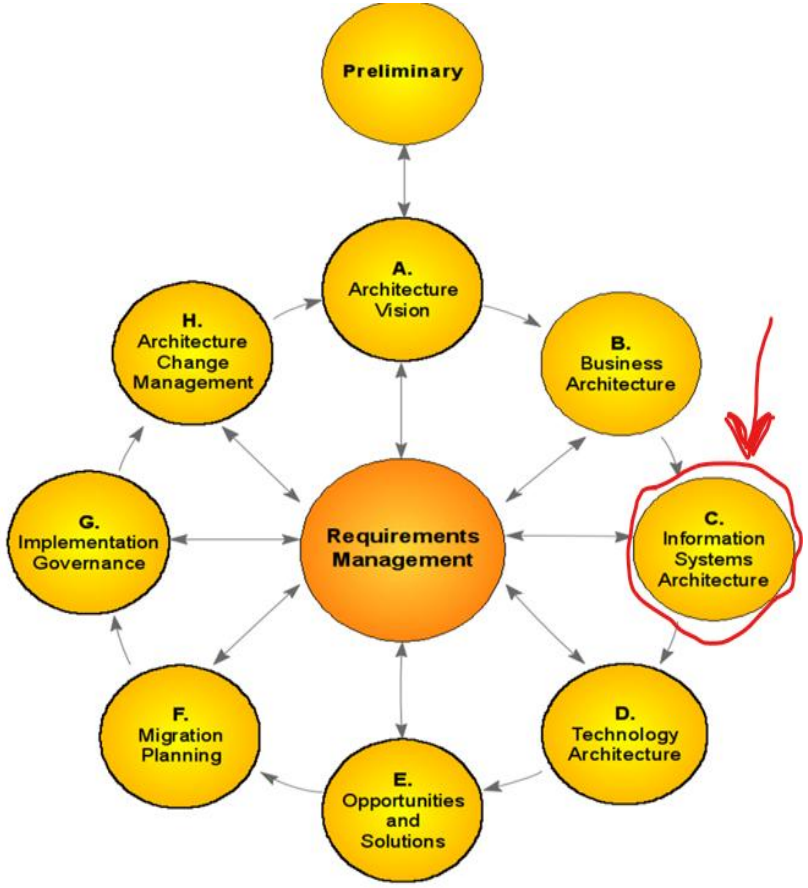
Phase C: Information Systems Architectures

Divided into two sub-phases: *Data Architecture* and *Application Architecture*.

- The Data Architecture sub-phase aims to define the structure and management of data within the enterprise.

Key Activities

- **Define data requirements**: Identify the organization's data needs based on business and application requirements.
- **Develop data models**: Create models that represent the data structures and relationships within the enterprise.
- **Identify data governance requirements**: Establish policies and procedures for data management and governance.



Cont. …The Open Group Architecture Framework (TOGAF)

Cont. …Phase C: Information Systems Architectures

Application Architecture

- Defines the structure and interactions of applications within the enterprise. It ensures that applications are designed and integrated to support business processes effectively.

Key Activities

- **Define application requirements**: Identify the requirements based on business and data requirements.
- **Develop application models**: Create models that represent the application structure and interactions.
- **Identify integration requirements**: Establish guidelines for integrating applications with other systems and data sources.

[6]. Mastering TOGAF: An Introduction to the TOGAF Framework and ADM Phases, CIO Portal, 2009. https://cioindex.com/reference/part-1-introducing-the-open-group-architecture-framework-togaf/.

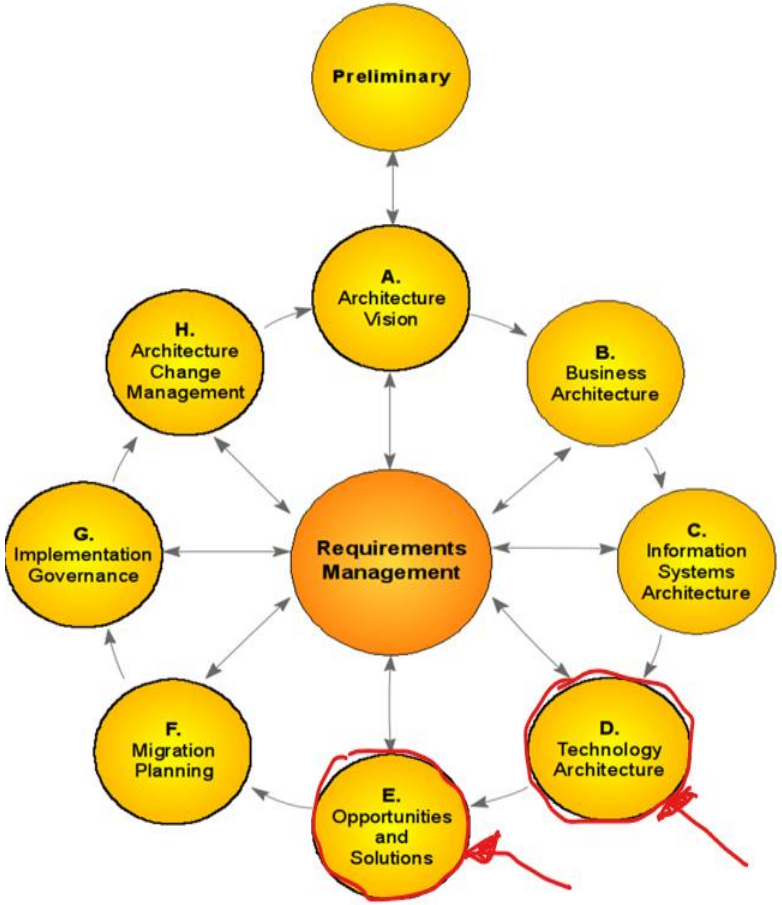
Cont. ..The Open Group Architecture Framework (TOGAF)

Phase D: Technology Architecture

- This phase aims to define the technology infrastructure that supports the business, data, and application architectures.
- It ensures the technology environment is robust, scalable, and aligned with business needs.

Key Activities

- **Define technology requirements**: Identify the technology needs based on business, data, and application requirements.
- **Develop technology models**: Create models that represent the technology infrastructure and components.
- **Identify technology standards and guidelines**: Establish standards and guidelines for technology selection and implementation.



Cont. ..The Open Group Architecture Framework (TOGAF)

Phase E: Opportunities and Solutions

- This phase identifies and evaluates potential solutions to address the gaps and opportunities identified in previous phases.

Key Activities

- **Identify potential solutions**: Explore and evaluate solutions to address gaps and opportunities.
- **Develop solution architecture**: Create detailed architecture for the selected solutions.
- **Develop implementation roadmap**: Create a roadmap that outlines the steps and timeline for implementing the target architecture.

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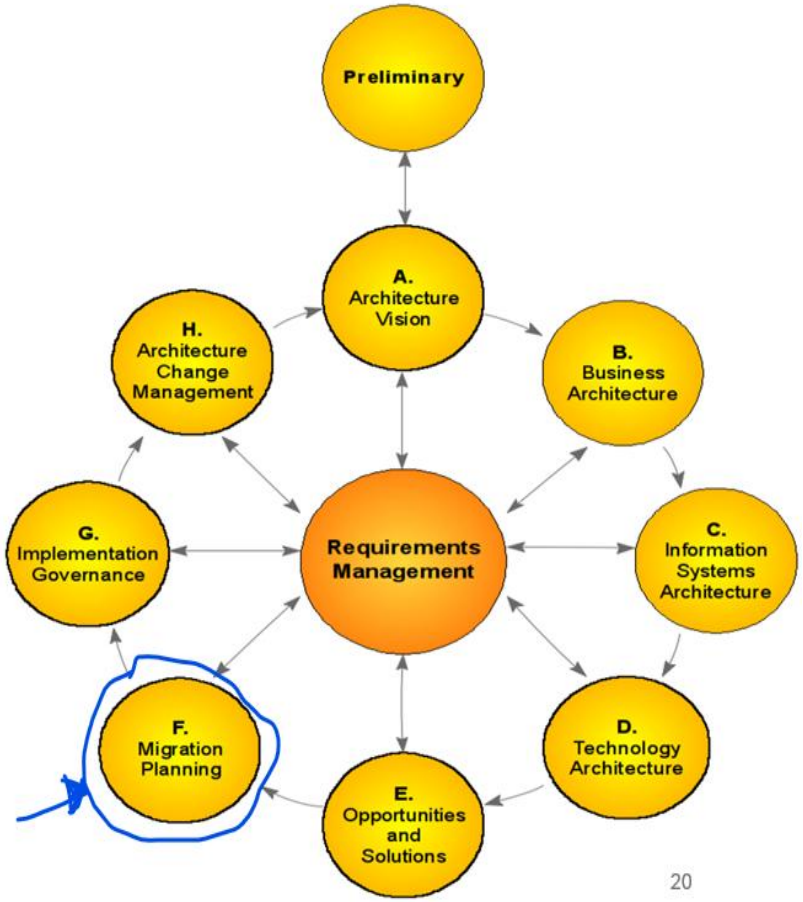
Cont. ..The Open Group Architecture Framework (TOGAF)

Phase F: Migration Planning

- This phase aims to develop a detailed plan for transitioning from the current architecture to the target architecture.

Key Activities

- **Develop migration plan**: Create a detailed plan that outlines the steps, timeline, and resources required for the transition.
- **Identify risks and mitigation strategies**: Identify potential risks and develop strategies to mitigate them.
- **Obtain approval**: Secure stakeholder buy-in and approval for the migration plan.



Cont. ..The Open Group Architecture Framework (TOGAF)

Phase G: Implementation Governance

- This phase focuses on overseeing the implementation of the target architecture.
- It ensures that the implementation aligns with the architecture vision and objectives.

Key Activities

- **Establish governance framework**: Develop a framework for overseeing the implementation process.
- **Monitor implementation**: Track progress and ensure that the implementation aligns with the architecture vision and objectives.
- **Address issues and changes**: Manage any issues or changes that arise during the implementation process.

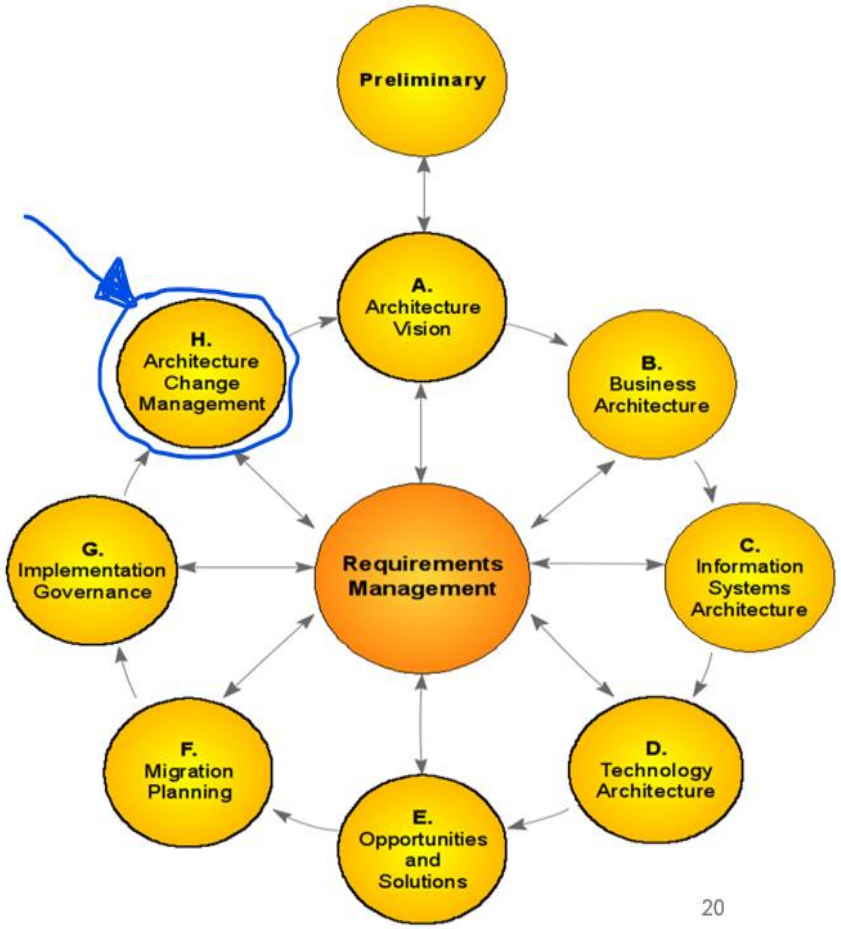
Cont. …The Open Group Architecture Framework (TOGAF)

Phase H: Architecture Change Management

- This phase aims to manage changes to the architecture over time.
- It ensures the architecture remains aligned with business goals and adapts to changing requirements.

Key Activities

- Establish change management process:
- **Monitor architecture**: Track the performance and alignment of the architecture with business goals.
- **Implement changes**: Manage the implementation of changes to the architecture



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[6]. Mastering TOGAF: An Introduction to the TOGAF Framework and ADM Phases, CIO Portal, 2009. https://cioindex.com/reference/part-1-introducing-the-open-group-architecture-framework-togaf/.

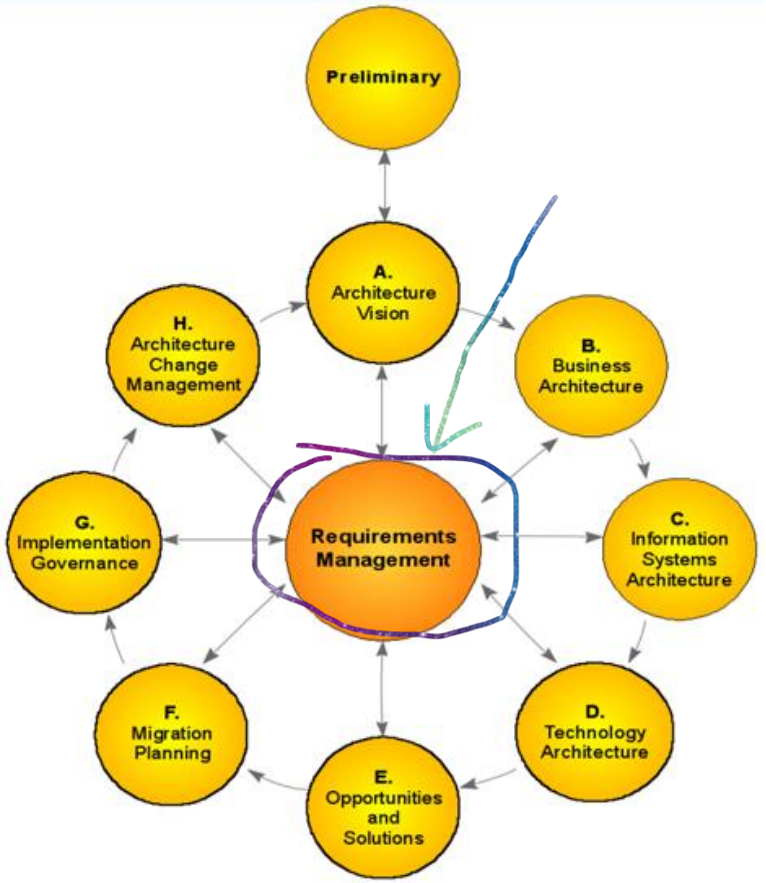
Cont. …The Open Group Architecture Framework (TOGAF)

Requirements Management

- It is a continuous process that runs throughout the ADM cycle.
- It ensures that the architecture remains aligned with the evolving needs and requirements of the organization.

Key Activities

- **Capture requirements**: Identify and document the requirements for the architecture.
- **Manage requirements:** Track and manage requirements throughout the ADM cycle.
- **Ensure alignment:** Ensure that the architecture remains aligned with the captured requirements.



Cont. …The Open Group Architecture Framework (TOGAF)

Enterprise continuum.

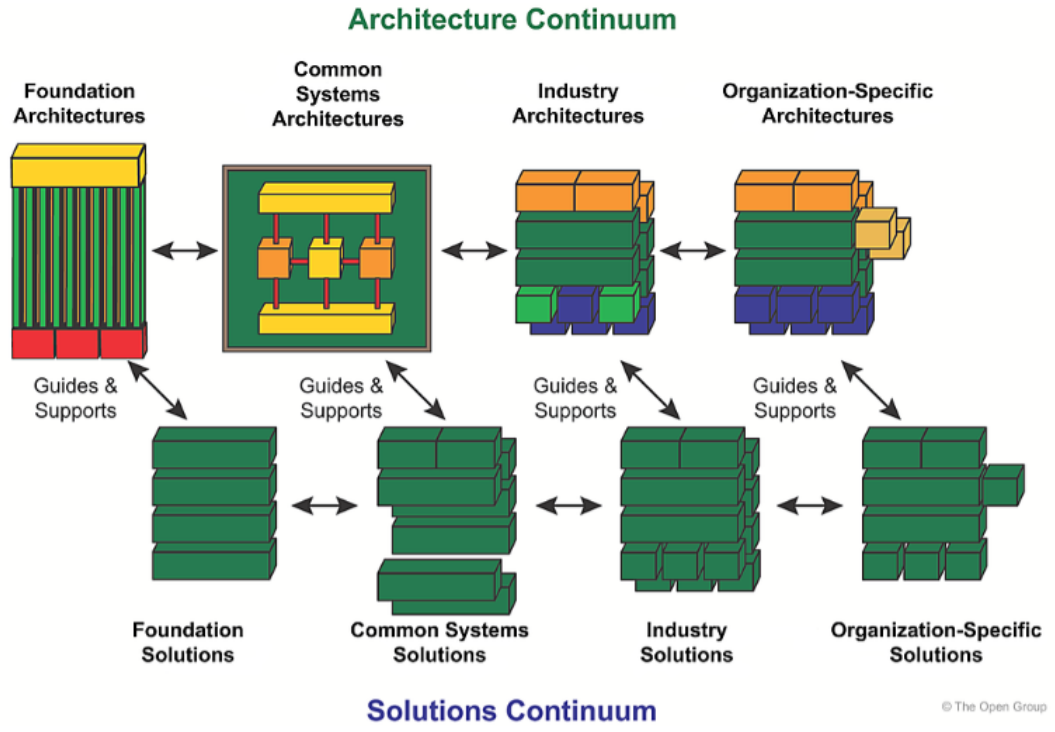
- It is a way to classify and organize architectural assets and artifacts.
- It serves as a map that helps us understand where each component fits within the broader landscape and how these pieces evolve over time within the architecture.
- It spans from foundational principles to specific implementations, offering a spectrum that aligns with the changing needs of the organization.

[7]. 5 Key Components of TOGAF, Paradigma Digital. https://en.paradigmadigital.com/dev/5-key-components-togaf/

Cont. …The Open Group Architecture Framework (TOGAF)

… Enterprise continuum

- It also promotes reusability and ensures that solutions adhere to industry standards and organizational goals.
- It introduces two essential concepts as reference frameworks: Architecture Continuum and Solutions Continuum.
- Provide a structured approach for developing and implementing architectural assets, offering a roadmap for organizations seeking clarity and efficiency in their IT landscape



[7]. 5 Key Components of TOGAF, Paradigma Digital. https://en.paradigmadigital.com/dev/5-key-components-togaf/

Benefits of Using TOGAF

1. Streamlined IT Operations

- By clearly framing available processes, roles, and assets, TOGAF can improve the overall understanding of how things work, improving IT efficiency.

2. Better Strategic Alignment

- TOGAF helps bridge the gap between business and IT by providing a framework for aligning IT strategies and capabilities with business goals and requirements.

3. Improved Interoperability

- Mapping everything out through TOGAF can show where the gaps between different IT systems are slowing things down and inform the production of interoperability standards and guidelines capable of establishing tight-knit processes

[8]. What Is TOGAF? Definition and Uses of This EA Framework, Ardoq, Ardoq, 2024. https://www.ardoq.com/knowledge-hub/togaf

Cont. …Benefits of Using TOGAF

4. Standardized Architectural Framing

- As TOGAF is ubiquitous within Enterprise Architecture, adapting it to map an organization makes it easier to work with third-party consultants and saves time and effort by using established methods designed to suit TOGAF modules.

5. Risk Management and Appliance

- TOGAF integrates governance and risk management practices, thereby assisting organizations in identifying and managing the risks associated with IT architecture.
- Its adoption promotes compliance with industry regulations, security standards, and organizational policies.

The Zachman Framework

What Is the Zachman Framework?

- It is for Enterprise Architecture (EA). Developed by John Zachman in 1987.
- It provides a formal and structured way of defining and analyzing an organization's information infrastructure.
- It aims to organize and classify an organization’s perspectives and models, thereby ensuring interoperability, business, and IT alignment, and enabling detailed analysis and design of an enterprise system.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. …The Zachman Framework

- The Zachman Framework structure consists of a **6x6 matrix** that organizes and categorizes Enterprise Architecture based on different perspectives (rows) and aspects (columns).
- The defined matrix structure ensures that all aspects of an enterprise's architecture are included.

Rows (Perspectives)

- Represent different perspectives that correspond to a specific stakeholder's viewpoint.
- Each perspective answers the question of "**Who is looking at it?"** They range from high-level strategic views to detailed implementation views.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. …The Zachman Framework

Rows (Perspectives)

- **Scope (Planner's View)**: provides a high-level view of the enterprise from an external perspective, defining the overall context and objectives.
- **Business Model (Owner's View):** focuses on the business concepts, processes, organizational structure, and how the business operates.
- **System Model (Designer's View):** details the information systems architecture, defining data models and system functionality.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. …The Zachman Framework

Cont. …Rows (Perspectives)

- **Technology Model (Builder's View)**: concentrates on the technology infrastructure and implementation necessary to support the information systems.
- **Detailed Representations (Sub-contractor's View):** shows the detailed specifications for components and configurations necessary for construction and deployment.
- **Functioning Enterprise (User's View**): is the actual operation of the systems and processes within the enterprise. It focuses on how the system is used.

Cont. …The Zachman Framework

Columns (Aspects)

- The columns represent different aspects or interrogatives concerning the Enterprise Architecture. These columns answer **"What aspect are we considering**?" and are designed to explore each perspective fully:

1. **What (Data/Catalogs)** information or data, such as data models, entities, and relationships, is needed and used in the enterprise?
2. **How (Function/Processes)** processes and functions perform, including business processes, workflows, and transformations.
3. **Where (Network/Locations)** includes the spatial distribution of the enterprise's operations, such as physical locations, networks, and connectivity.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. …The Zachman Framework

Cont. ….Columns (Aspects)

4. Who (People/Actors) covers the people and organizations involved, together with their roles, responsibilities, and organizational units.

5. When (Time/Events) relates to the temporal aspects and timing of operations such as schedules, events, and time-based conditions.

6. Why (Motivation/Goals) are the motivation, rationale, and goals, including business goals, objectives, and motivations that drive business outcomes.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024.
https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. …The Zachman Framework

Matrix

- Each cell in the 6x6 matrix corresponds to the intersection of a specific perspective and aspect, creating an environment for analyzing and organizing Enterprise Architecture.
- An example of what this might look like, as shown on the table below:

Aspect/ Perspective	Scope	Business Model	System Model	Technology Model	Detailed Representations	Functioning Enterprise
What (Data)	Objectives/Lists	Business Entities	Logical Data Models	Physical Data Models	Data Definitions/ Schemas	Data Transactions/ Records
How (Function)	Business Processes	Activities/ Workflows	Application Architecture	System Architectures	Programs/ Configurations	Functioning Processes
Where (Network)	Locations/ Facilities	Business Locations	Distributed Systems	Network Configurations	Locations of Components	Operational Sites
Who (People)	Organizational Units	Actors/Roles	User Interfaces/ Access	Identity Management	Security and Access Control	Active Users/Operators
When (Time)	Events/ Cycles	Business Events	Processing Structures/ Timing	Scheduling/ Timing Specs	Timing Definitions	Actual/Event Logs
Why (Motivation)	Business Goals/ Objectives	Business Rules/Policies	Rule Models	Implementation Strategies	Detailed Rules	Performance Metrics

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Benefits of the Zachman Framework

The Zachman Framework offers significant benefits for organizations aiming to optimize their Enterprise Architecture.

1. Comprehensive Coverage

- The holistic view provided by the Framework offers a full view of the enterprise, including data, processes, technology, and organizational relationships.

2. Improved Alignment

- The gap between business goals and IT initiatives is bridged, ensuring that technology supports strategic objectives.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. …Benefits of the Zachman Framework

3. Enhanced Communication

- The Zachman Framework establishes a common language for discussing complex systems and enabling better communication among business and IT stakeholders.

4. Streamlined Decision-Making

- Informed decision-making is facilitated by organizing vital information and showing the relationships between different enterprise components.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. ..Benefits of the Zachman Framework

5. Scalability and Flexibility

- The Framework can be tailored to fit organizations of all sizes, from small businesses to large enterprises.

6. Risk Management

- Risks can be identified and mitigated through a thorough understanding of all architectural components and their interdependencies.

7. Operational Efficiency

- Resource management can be improved through the identification of inefficiencies and the optimization of processes and systems.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. ..Benefits of the Zachman Framework

8. Strategic Planning and Transformation

- The Framework guides the strategic planning process, ensuring alignment with long-term business goals.

9. Consistency and Standardization

- Ensures consistency in architectural practices and methodologies across the organization, and its standardization of documentation and architectural practices makes it easier to maintain and update systems.

10. Integration with Other Frameworks

- The Framework can be combined with other practices, such as TOGAF, Agile, or ITIL, enhancing their effectiveness and providing a more robust architecture.

Challenges of the Zachman Framework

1. Complexity

- The complete breadth and depth of the framework can make it overwhelming, particularly for smaller organizations or projects.

2. Difficult to Understand

- The framework can be challenging, and organizations often struggle with translating its theoretical structure into practical use.

3. Resource-intensive

- The framework is a classification scheme rather than a methodology, providing a structure but no process.

[9]. Zachman Framework, Ardoq, Ardoq. https://www.ardoq.com/knowledge-hub/zachman-framework

Cont. …Challenges of the Zachman Framework

4. Scalability Issues

- Applying the framework across different levels of granularity and ensuring consistency can be difficult, especially in large and complex organizations.

6. Rigidity

- The Zachman Framework sometimes promotes a sequential approach that does not align with, for example, Agile practices.

7. Lack of Implementation Guidance

- The framework focuses on planning and documentation but lacks emphasis on execution and practical delivery of systems. As a result, there can be gaps between design and implementation.

TOGAF vs Zachman

- Both serve different but complementary roles in EA.
- TOGAF provides a methodology and toolset for developing and managing EA, including specific steps and guidelines for implementation through its Architecture Development Method.
- In contrast, the Zachman Framework is a classification schema that organizes architectural artifacts into a 6x6 matrix, addressing various perspectives and aspects of an enterprise.
- TOGAF is process-oriented and emphasizes implementation, while Zachman is structure-oriented and focuses on organizing information. T
- Together, they can provide a robust approach to Enterprise Architecture.

[9]. Zachman Framework, Ardoq, Ardoq, 22 Oct 2024. https://www.ardoq.com/knowledge-hub/zachman-framework

The Federal Enterprise Architecture Framework(FEAF)

- The Federal Enterprise Architecture Framework (FEAF) is a framework specifically for designing enterprise IT systems for the federal government.
- The U.S. Federal Government develops this framework in the year 2006.
- It is the combination of both the Zachman framework and ToGAF.
- It has five reference models and five points, including business, components, service, data, and technical.

	Data architecture	Application architecture	Technology architecture
Planner perspective	List of business objects	List of business processes	List of business locations
Owner perspective	Semantic model	Business process model	Business logistics system
Designer perspective	Logical data model	Application architecture	System geographic deployment architecture
Builder perspective	Physical data model	Systems design	Technology architecture
Subcontractor perspective	Data dictionary	Programs	Network architecture

www.erp-information.com

[2]. What is an Enterprise Architecture Framework? (Types, Methods, Benefits), N/A, ERP Information, 2022. https://www.erp-information.com/enterprise-architecture-framework.

Cont. ..The Federal Enterprise Architecture Framework(FEAF)

Key Features of FEA

1. **Building on the Past**: FEA is an evolution of the Federal Enterprise Architecture Framework (FEAF), which began in 1996. It combines the best aspects of the Zachman Framework and TOGAF.
2. **Five Reference Models**: Business Reference Model (BRM): Organizes the business functions of federal agencies.
3. **Segment Model:** allows differentiation and connection among various organizations, providing a clear perspective for implementing enterprise architecture.
4. **Foundation for Restructuring:** FEA played a crucial role in the extensive restructuring of the US Federal Government, making it a reliable framework for building a strong foundation for any organization.

Cont. …The Federal Enterprise Architecture Framework(FEAF)

…Key Features of FEA

- **Service Reference Model (SRM):** Categorizes service components that support business and performance objectives.
- **Components Reference Model (CRM):** Identifies and categorizes applications and components used in business functions.
- **Technical Reference Model (TRM):** Defines the standards and technologies supporting service components and capabilities.
- **Data Reference Model (DRM)**: Describes data and information supporting business operations.

[2]. What is an Enterprise Architecture Framework? (Types, Methods, Benefits), N/A, ERP Information, 2022. https://www.erp-information.com/enterprise-architecture-framework.

Summary

- Enterprise Architecture (EA) is a structured approach used to design and manage an organization’s IT systems aligned with business goals.
- Enterprise Architecture frameworks improve communication and coordination, support better planning and decision-making, and increase efficiency and system integration within organizations.
- An EA framework provides guidelines, tools, and standards for developing and managing enterprise systems.
- TOGAF is A process-based framework using the Architecture Development Method (ADM), and it includes phases such as vision, business, data, application, technology, implementation, and change management.
- Zachman Framework is a classification model (6×6 matrix). Organizes architecture based on perspectives (planner → user) and aspects (what, how, where, who, when, why). Focuses on structure rather than process.
- FEAF is an enterprise architecture framework designed for government systems that combines ideas from TOGAF and the Zachman Framework and uses reference models such as business, data, and technical to organize IT architecture.
- The Zachman Framework faces challenges such as complexity, difficult implementation, and high resource requirements, making it harder to apply in practice.
- TOGAF is process-oriented and explains how to develop architecture, while Zachman is structure-oriented and explains how to organize it, and both can be used together for better results.

References

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Thank you!