




ENTERPRISE SYSTEM ARCHITECTURE: ZACHMAN FRAMEWORK

Group 17

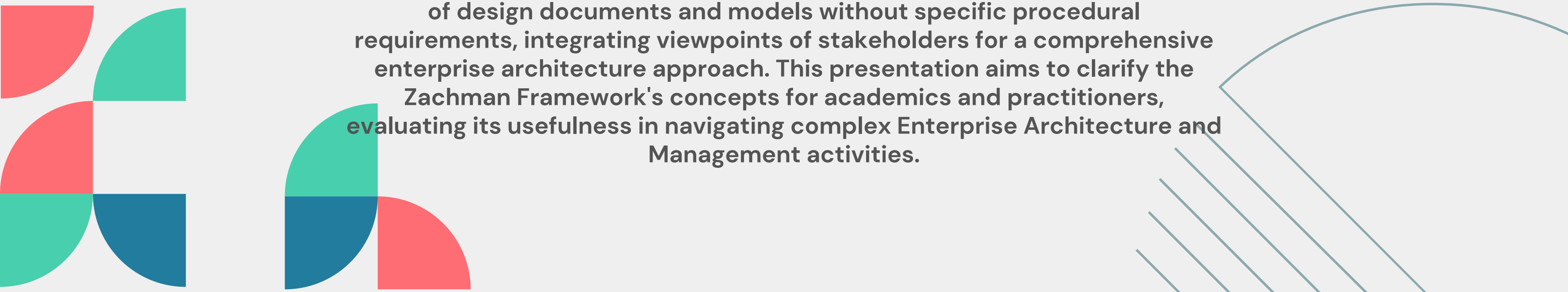
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INTRODUCTION

Enterprise System Architecture, at the intersection of business and technology, simplifies information flow and organizational strategies. The Zachman Framework, developed by John Zachman, offers diverse viewpoints for understanding organizational structure. Initially introduced in 1984 and expanded in 1987, this framework transcends technological limitations to bridge corporate strategy with technological execution. It employs a two-dimensional matrix with fundamental questions ('What', 'How', 'When', 'Who', 'Where', 'Why') to represent organizational architecture visually. The framework is versatile, enabling the organization and analysis of design documents and models without specific procedural requirements, integrating viewpoints of stakeholders for a comprehensive enterprise architecture approach. This presentation aims to clarify the Zachman Framework's concepts for academics and practitioners, evaluating its usefulness in navigating complex Enterprise Architecture and Management activities.



DEFINITION ENTERPRISE ARCHITECTURE

Enterprise architecture (EA) helps organizations respond to changes and achieve their business goals through effective implementation.

EA defines organizational structure and procedures, forming the basis for technology development and operational strategies.

It covers technical infrastructure, software applications, data structures, business processes, governance, and human resources.

Michael Platt categorizes EA into four components: business architecture, application architecture, data architecture, and technology architecture.

Data

Data architecture manages and plans an organization's data resources and governance.

Application

Application architecture involves selecting and integrating software to improve business operations.

Technology







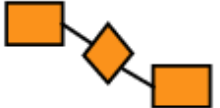
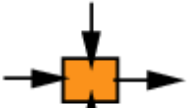

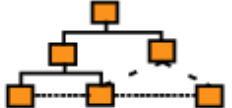


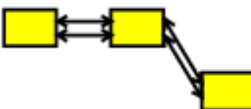
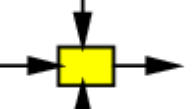
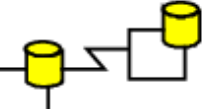
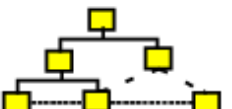


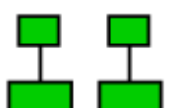











Technology architecture supports IT infrastructure, standards, and security.

Business

Business architecture aligns company strategy and processes with technology solutions.

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DEFINITION: ZACHMAN FRAMEWORK

	DATA <i>What</i>	FUNCTION <i>How</i>	NETWORK <i>Where</i>	PEOPLE <i>Who</i>	TIME <i>When</i>	MOTIVATION <i>Why</i>
SCOPE (CONTEXTUAL)	List of Things Important to the Business 	List of Processes the Business Performs 	List of Locations in which the Business Operates 	List of Organizations Important to the Business 	List of Events Significant to the Business 	List of Business Goals/Strat 
<i>Planner</i>	ENTITY = Class of Business Thing	Function = Class of Business Process	Node = Major Business Location	People = Major Organizations	Time = Major Business Event	Ends/Mean=Major Bus. Goal/ Critical Success Factor
ENTERPRISE MODEL (CONCEPTUAL)	e.g. Semantic Model 	e.g. Business Process Model 	e.g. Business Logistics System 	e.g. Work Flow Model 	e.g. Master Schedule 	e.g. Business Plan 
<i>Owner</i>	Ent = Business Entity ReIn = Business Relationship	Proc. = Business Process I/O = Business Resources	Node = Business Location Link = Business Linkage	People = Organization Unit Work = Work Product	Time = Business Event Cycle = Business Cycle	End = Business Objective Means = Business Strategy
SYSTEM MODEL (LOGICAL)	e.g. Logical Data Model 	e.g. Application Architecture 	e.g. Distributed System Architecture 	e.g. Human Interface Architecture 	e.g. Processing Structure 	e.g., Business Rule Model 
<i>Designer</i>	Ent = Data Entity ReIn = Data Relationship	Proc. = Application Function I/O = User Views	Node = I/S Function (Processor, Storage, etc.) Link = Line Characteristics	People = Role Work = Deliverable	Time = System Event Cycle = Processing Cycle	End = Structural Assertion Means = Action Assertion
TECHNOLOGY MODEL (PHYSICAL)	e.g. Physical Data Model 	e.g. System Design 	e.g. Technology Architecture 	e.g. Presentation Architecture 	e.g. Control Structure 	e.g. Rule Design 
<i>Builder</i>	Ent = Segment/Table/etc. ReIn = Pointer/Key/etc.	Proc.= Computer Function I/O = Data Elements/Sets	Node = Hardware/System Software Link = Line Specifications	People = User Work = Screen Format	Time = Execute Cycle = Component Cycle	End = Condition Means = Action
DETAILED REPRESENTATIONS (OUT-OF-CONTEXT)	e.g. Data Definition 	e.g. Program 	e.g. Network Architecture 	e.g. Security Architecture 	e.g. Timing Definition 	e.g. Rule Specification 
<i>Sub-Contractor</i>	Ent = Field ReIn = Address	Proc.= Language Stmt I/O = Control Block	Node = Addresses Link = Protocols	People = Identity Work = Job	Time = Interrupt Cycle = Machine Cycle	End = Sub-condition Means = Step
FUNCTIONING ENTERPRISE	e.g. DATA	e.g. FUNCTION	e.g. NETWORK	e.g. ORGANIZATION	e.g. SCHEDULE	e.g. STRATEGY

The framework consists of two dimensions: the first dimension includes six interrogatives ('What', 'How', 'When', 'Who', 'Where', 'Why') that define stakeholder perspectives.

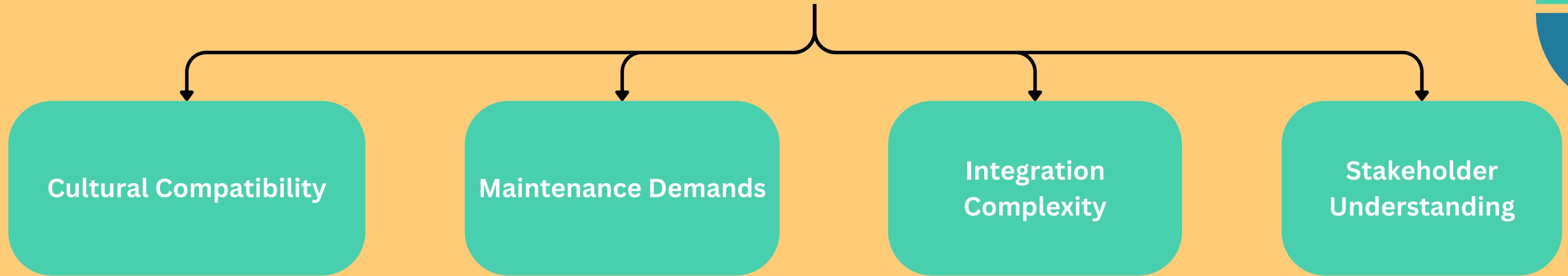
- **'What':** Data, business concepts, facts, and semantics.
- **'How':** Methods, functions, and technology implementation procedures.
- **'When':** Timing, occurrences, and sequences of events.
- **'Who':** Individuals, their responsibilities, and roles.
- **'Where':** Specific network characteristics like location.
- **'Why':** Motivation and reasons behind goals and objectives.

The second dimension connects to the first using concepts like data, function, network, people, time, and motivation.

COMPARATIVE ANALYSIS

	Zachman Framework	TOGAF (The Open Group Architecture Framework)
<i>Characteristics</i>	<ul style="list-style-type: none">• Descriptive• Conceptual• Matrix Structured	<ul style="list-style-type: none">• Prescriptive• Adaptable• Open Standard
<i>Pros</i>	<ul style="list-style-type: none">• Common Vocabulary• Holistic View• Flexible	<ul style="list-style-type: none">• Methodology• Interoperability• Scalability
<i>Cons</i>	<ul style="list-style-type: none">• Lack of Implementation Guidance• Complexity• Limited Scalability	<ul style="list-style-type: none">• Complexity• Lack of Agility• Dependency on Documentation

CRITICAL ANALYSIS ON THE CHALLENGES



While the Zachman Framework offers a robust model for enterprise architecture, overcoming these challenges requires strategic planning, change management, and stakeholder engagement.



CONCLUSION

The Zachman Framework is key in enterprise system architecture, offering a structured approach to manage complex information systems. Its six perspectives enable thorough analysis and collaboration, aligning technical implementation with business goals. Despite challenges, its adaptability and ongoing evolution demonstrate enduring relevance in navigating technology and business dynamics, helping organizations thrive in today's evolving landscape.