ENTREPRISE SYSTEM ARCHITECTURE

Exploring Enterprise Architecture Strategies

Prepared by GROUP 15

Members

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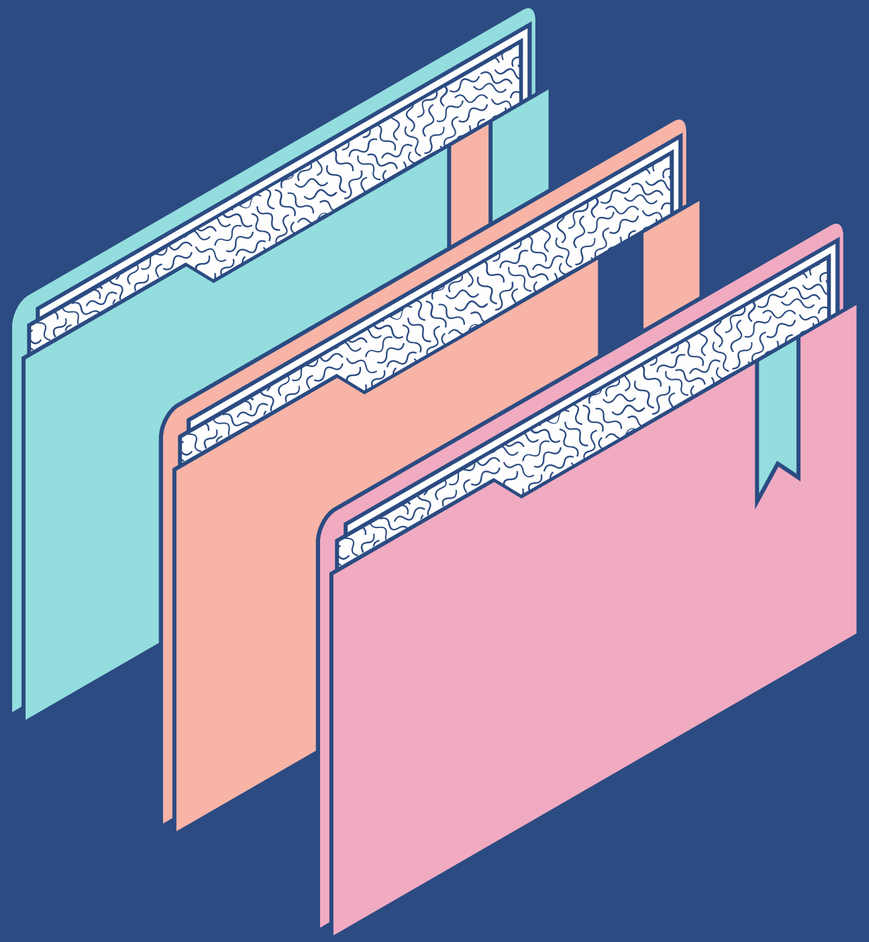


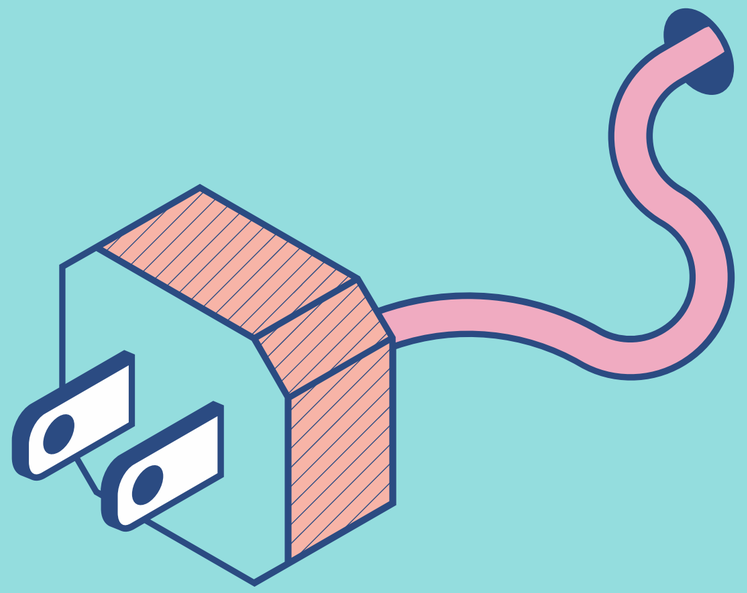
Agenda

KEY TOPICS DISCUSSED IN
THIS PRESENTATION

- Layered Enterprise Architecture (LEAD)
- Service-Oriented Architecture(SOA)
- Microservices
- Cloud Computing

Abstract

This paper contrasts Layered Enterprise Architecture (LEAD), Service-Oriented Architecture (SOA), Microservices, and Cloud Computing in Enterprise Architecture (EA). LEAD prioritizes agility with layers, SOA merges tech with business, Microservices boost scalability, and Cloud offers flexibility via IaaS and PaaS. Choose the best fit for your organization's needs.



Introduction to Enterprise System Architecture

1

What is it?

- Aligns organizational strategy and operating model.
- Outlines organizational structure and management for goal achievement.

2

Components

- Organizational structure
- Business procedures
- IT infrastructure

3

Purpose

- Aligns corporate technology frameworks with strategic objectives.

4

Challenges

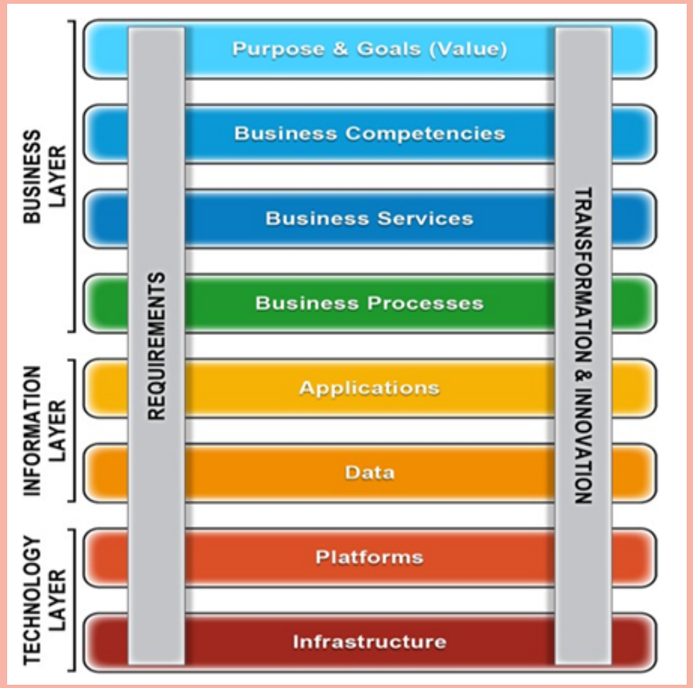
- Modern complexity surpasses traditional domain-based EA methods.
- Explore alternatives: cloud integration, Microservices, SOA, and LEAD.
- Informed decisions through understanding frameworks' tenets, pros, and cons.

Type of Enterprise Architecture

ZACHMAN FRAMEWORK FOR EA	UNIFIED ARCHITECTURE FRAMEWORK (UAF)	AGILE ENTERPRISE ARCHITECTURE	THE OPEN GROUP ARCHITECTURAL FRAMEWORK (TOGAF)
Structured approach to defining IT architecture components.	Suitable for military, government, and commercial businesses.	Focuses on flexibility and adaptability.	Method for designing, planning, and implementing IT architecture.
Focuses on six viewpoints and six primary stakeholders.	Implemented as a UML profile, offering flexibility.	Emphasizes iterative evolving structures and processes.	Consists of processes, principles, and best practices.
Ex: Used by organizations to align IT infrastructure with business goals and stakeholders' needs.	Ex: Used by the U.S. Department of Defense for system development.	Ex: Used by software development teams to quickly respond to changing requirements.	Ex: Used by various organizations worldwide to develop their enterprise architecture.

Layered Enterprise Architecture (LEAD)

FRAMEWORK FOR ORGANIZING AND STRUCTURING ENTERPRISE SYSTEMS INTO DISTINCT LAYERS OR TIERS.



Business Layer

- Focuses on organizational value, competencies, processes and services
- shaping strategic direction and operational functions.

Information Layer

- Manages application systems and data components
- supporting business processes and decision-making.

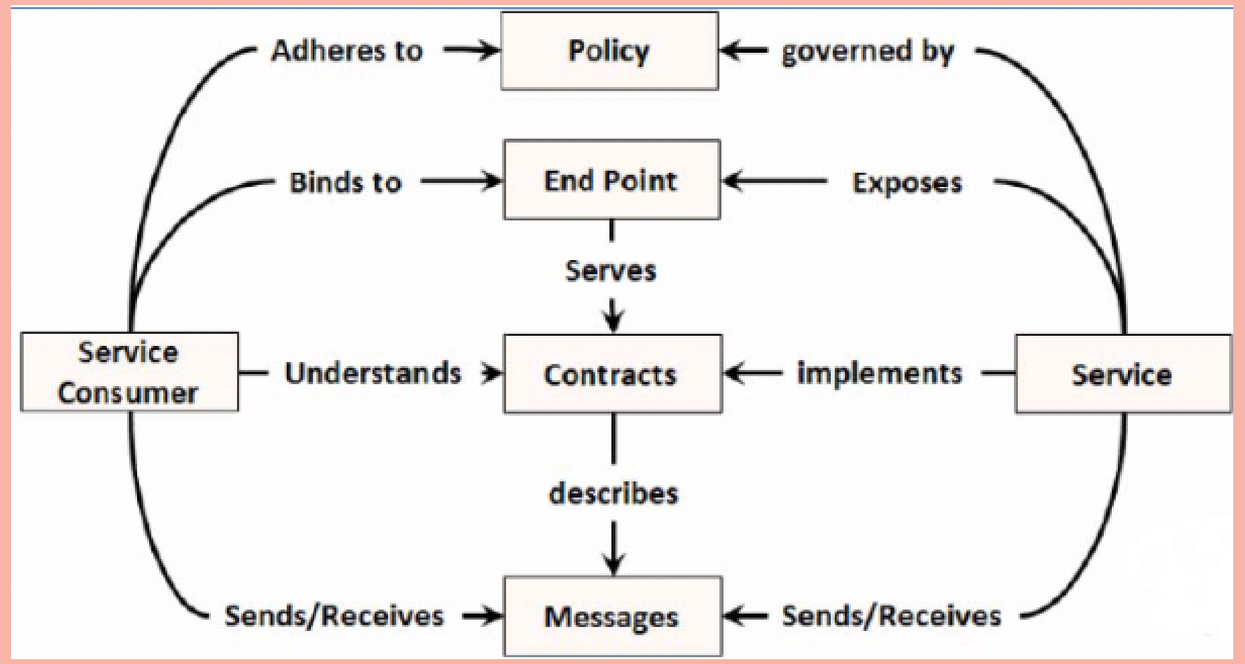
Technology Layer

- Includes platform and infrastructure components
- providing the technological foundation for business and information systems.

Example: Retail organization

Advantages	Disadvantages
• Distinct division of responsibilities • Modifications and expansions without disrupting other layers • Component reuse • Scalability	• Complexity and management burden • Delays and decreased responsiveness.

Service-Oriented Architecture (SOA)



Conceptual business architecture	Modular units of business	Shared, Reusable services
Interoperability	Design of architecture as a service	Loose Coupling

Example: Financial institution

Advantages	Disadvantages
• Shared, reusable services • Modular services • Flexibility and agility • Interoperability and composability • Effectiveness	• Intricacy • Necessitate substantial organizational modifications • Resistance to change, insufficient skills, and cultural hurdles

MICROSERVICES

AN APPLICATION AS SMALL, AUTONOMOUS SERVICES, EACH RESPONSIBLE FOR A SPECIFIC BUSINESS CAPABILITY.

Characteristics

- Independently deployable
- organized around business capabilities
- decentralized data management

Key Components

- Service Discovery
- API Gateway

Examples

- Netfilx
- Amazon
- Uber

Advantages	Disadvantages
• Flexibility and Agility • Scalability • Fault Isolation • Technology Diversity	• Complexity • Operatioanal Overhead • Consistency and Data Integrity

Cloud Computing

DELIVERY OF COMPUTING SERVICES

Cloud Computing Model

- Infrastructure as a Service(IaaS)
- Platform as a Service(PaaS)
- Software as a Service(SaaS)

Key Concepts

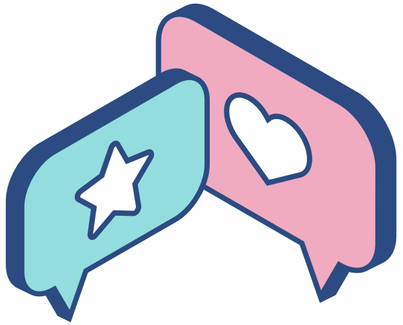
- Scalability
- Flexibility

Example: Healthcare provider

Advantages	Disadvantages
• Scalability • Flexibility • Cost Savings • Accessibility • Reliability	• Data Security • Dependency on Providers • Integration Challenges • Vendor Lock-in • Performance Concerns

Our Opinion

- Customization
- Technology Alignment
- Cloud Computing Integration
- Adaptability to Emerging Technologies



Conclusion

- EA Framework Selection
- Adapting to the Digital Age
- Strategic Decision-Making

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THANK YOU