Information Systems Architecture in TOGAF ADM (Phase C)

The **Information Systems Architecture** phase in the ADM cycle focuses on the systems and data needed to support the business. It is divided into two parts:

1. **Data Architecture:** Defines how data is stored, managed, and shared across the organization.
2. **Application Architecture:** Identifies the applications required and how they interact to deliver business capabilities.

In simple terms, this phase answers:

- **"What data do we need, and how do we organize it?" (Data Architecture)**
- **"What applications do we need, and how do they work together?" (Application Architecture)**

Purpose of the Information Systems Architecture Phase

- To ensure that the right data and applications are in place to support the **Business Architecture** (from Phase B).
- To define the relationships between data and applications and their alignment with business processes.
- To provide a foundation for the **Technology Architecture** (Phase D).

Outputs of the Information Systems Architecture Phase

1. Data Architecture Artifacts

- **Conceptual Data Model:** High-level representation of the types of data used (e.g., customer, product, order).
- **Logical Data Model:** Details of relationships between data entities.
- **Data Flow Diagram:** Shows how data moves between systems and processes.
- **Data Management Policies:** Guidelines for data governance, security, and quality.

2. Application Architecture Artifacts

- **Application Portfolio:** List of current and future applications required to support the business.
- **Application Interaction Diagram:** Visualizes how applications communicate and share data.
- **Application/Data Matrix:** Maps applications to the data they use.
- **User Roles and Interfaces:** Defines who interacts with each application and how.

3. Gap Analysis Results

- Highlights missing or outdated applications, and inconsistencies in data management.

4. Updated Architecture Requirements:

- Refined stakeholder needs based on analysis.

5. Baseline and Target Architectures:

- Baseline: Existing data and application landscape.
- Target: Desired state of data organization and application functionality.

Example in Simple Terms

Scenario: A hospital wants to create a seamless patient experience by integrating its systems.

- **Inputs:**
  - Business Architecture: "Provide patients with online appointment scheduling and medical record access."
  - Current Systems: Separate systems for appointments, billing, and medical records.
  - Stakeholder Requirements: Easy access to patient data for doctors and patients.
- **Activities:**
  - **Data Architecture:** Define the patient data needed, such as appointments, medical history, and billing info. Create a data flow diagram showing how this data is shared across systems.

- ○ **Application Architecture:** Identify required applications like a patient portal, scheduling system, and billing system. Define how they integrate.
- **Outputs:**
  - ○ **Data Artifacts:** A logical data model showing patient data relationships.
  - ○ **Application Artifacts:** Application interaction diagram showing the integration between systems.
  - ○ **Gap Analysis:** Current systems don't communicate effectively; an integration platform is needed.

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