Architectural Principles => general rules and guidelines, enduring, seldom amended, Related to Architecture Work

Purpose of Architecture Principles

Purpose	Key Words	Principle Example
Enabling Decision Making	• Setting Precedence During Trade-off Discussions • Authority of “Tie-breaking”	"Prefer Open Systems"
Aligning the Enterprise	• Removing Subjectivity and Bias • Driving Objective Critical Conversations • Alignment to the Enterprise’s Values	"Business Continuity"
Ensuring Governance	• Right Decisions Surfaced at the Right Time • Right Decision-Makers • Monitoring Decisions and Approach	"Data Governance and Quality"
Understanding Values and Cultures	• Providing a Better Understanding of the Enterprise’s Culture and Values • Offering an Approach to Understanding Enterprise's Reaction to Change	"User-Centric Design"

Components of Architecture Principles

- ⇨ **Name**: essence of the rule as well as be easy to remember, Avoid ambiguous words
- ⇨ **Statement**: succinctly and unambiguously communicate the fundamental rule
- ⇨ **Rationale**:
  - Should highlight the business benefits of adhering to the principle, using business terminology,
  - describe the relationship to other principles,
  - balanced interpretation,
  - Describe situations where one principle would be given precedence or carry more weight than another for making a decision.
- ⇨ **Implications**:
  - Should highlight the requirements, both for the business and IT, for carrying out the principle — in terms of resources, costs, and activities/tasks
  - impact to the business and consequences of adopting a principle should be clearly stated
  - The reader should readily discern the answer to: "How does this affect me?".

Criteria that distinguish a good set of principles

1. **Understandable**: clear and unambiguous, so that violations, whether intentional or not, are minimized.
2. **Robust**:
    a. enable good quality decisions.
    b. support consistent decision-making in complex, potentially controversial situations.
3. **Complete**: every potentially important principle governing the management of information and technology for the organization is defined — the principles cover every situation perceived
4. **Consistent**:
    a. strict adherence to one principle may require a loose interpretation of another principle.
    b. allows a balance of interpretations.
    c. should not be contradictory to the point where adhering to one principle would violate the spirit of another.
5. **Stable**:
    a. principles should be enduring,
    b. yet able to accommodate changes.
    c. An amendment process should be established for adding, removing, or altering principles after they are ratified initially.

Business Principles

- **Principle 1: Primacy of Principles** => These principles of information management apply to all organizations within the enterprise.
- **Principle 2: Maximize Benefit to the Enterprise** => Information management decisions are made to provide maximum benefit to the enterprise as a whole.
- **Principle 3: Information Management is Everybody's Business** => All organizations in the enterprise participate in information management decisions needed to accomplish business objectives.
- **Principle 4: Business Continuity** => Enterprise operations are maintained in spite of system interruptions.
- **Principle 5: Common Use Applications** => Development of applications used across the enterprise is preferred over the development of similar or duplicative applications which are only provided to a particular organization.
- **Principle 6: Service Orientation** => The architecture is based on a design of services which mirror real-world business activities comprising the enterprise (or inter-enterprise) business processes.
- **Principle 7: Compliance with Law** => Enterprise information management processes comply with all relevant laws, policies, and regulations.
- **Principle 8: IT Responsibility** => The IT organization is responsible for owning and implementing IT processes and infrastructure that enable solutions to meet user-defined requirements for functionality, service levels, cost, and delivery timing.
- **Principle 9: Protection of Intellectual Property** => The enterprise's Intellectual Property (IP) must be protected. This protection must be reflected in the IT architecture, implementation, and governance processes.

Data Principles

- **Principle 10: Data is an Asset** => Data is an asset that has value to the enterprise and is managed accordingly.
- **Principle 11: Data is Shared** => Users have access to the data necessary to perform their duties; therefore, data is shared across enterprise functions and organizations.

- **Principle 12: Data is Accessible** => Data is accessible for users to perform their functions.
- **Principle 13: Data Trustee** => Each data element has a trustee accountable for data quality. A trustee is different than a steward — a trustee is responsible for accuracy and currency of the data, while responsibilities of a steward may be broader and include data standardization and definition tasks.
- **Principle 14: Common Vocabulary and Data Definitions** => Data is defined consistently throughout the enterprise, and the definitions are understandable and available to all users.
- **Principle 15: Data Security** => Data is protected from unauthorized use and disclosure. In addition to the traditional aspects of national security classification, this includes, but is not limited to, protection of pre-decisional, sensitive, source selection-sensitive, and proprietary information.

Application Principles

- **Principle 16: Technology Independence** => Applications are independent of specific technology choices and therefore can operate on a variety of technology platforms.
- **Principle 17: Ease-of-Use** => Applications are easy to use. The underlying technology is transparent to users, so they can concentrate on tasks at hand.

Technology Principles

- **Principle 18: Requirements-Based Change** => Only in response to business needs are changes to applications and technology made.
- **Principle 19: Responsive Change Management** => Changes to the enterprise information environment are implemented in a timely manner.
- **Principle 20: Control Technical Diversity** => Technological diversity is controlled to minimize the non-trivial cost of maintaining expertise in and connectivity between multiple processing environments.
- **Principle 21: Interoperability** => Software and hardware should conform to defined standards that promote interoperability for data, applications, and technology.