TOGAF® Poster Series #25

Architecture Patterns

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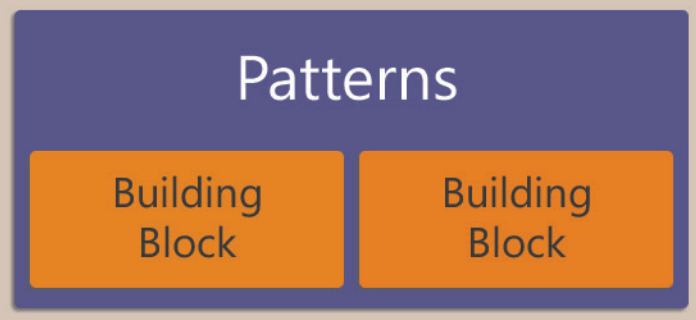
In this poster we show how Architecture Patterns help to put Building Blocks into context. Although there is a chapter in TOGAF about Architecture Patterns, they are not integrated into TOGAF.

IN TOGAF, PATTERNS ARE A WAY OF PUTTING BLOCKS INTO CONTEXT

Building Blocks are *what* you use to create an Enterprise Architecture



Patterns tell you how to use them, when, why, and what trade-offs you have to make

Patterns help architects identify combinations of building blocks (Architecture Building Blocks and/or Solution Building Blocks) that work well

TYPICAL CONTENT OF A PATTERN

Name: a meaningful and memorable way to refer to a pattern

Problem: a description of the problem the pattern addresses

Context: preconditions that apply to the pattern; a description of the initial state, before the pattern is applied

Forces: a description of attributes, factors or qualities that are relevant to the pattern – including how they interact or conflict with each other, and any trade-offs that need to be considered

Solution: a description of how the pattern achieves its intended goals and objectives, including static structure and dynamic behaviour of the pattern

Resulting Context: post-conditions after the pattern is applied; e.g. forces that are resolved or unresolved, or other patterns which apply in the new context

Examples: illustrations of the pattern in use

Rationale: justification of the pattern – why it is "good"

Related Patterns: predecessor, successor, alternative or co-dependent patterns

Known Uses: cases where the pattern is already in use

Patterns for EA are still in their infancy, but TOGAF mentions the following

TYPES OF PATTERN

- Business Patterns
- Integration Patterns
- Composite Patterns
- Application Patterns
- Runtime Patterns
- Architecture Patterns
- Design Patterns
- Idiom

EXAMPLE FORCES

- Security, robustness, reliability, fault-tolerance
- Manageability
- Efficiency, performance, throughput, bandwidth, utilization
- Scalability (incremental growth on demand)
- Extensibility, evolvability, maintainability
- Modularity, independence, re-usability, openness, composability (plug-&-play), portability
- Completeness, correctness
- Ease of construction
- Ease of use

EXAMPLE PATTERNS

TOGAF provides these IT examples from the US Treasury Architecture Development Guidance (TADG) Manageability:

- Layered Architecture
- Pipe and Filter Architecture
- Client-Proxy Server
- Customer Support
- Reactor
- Replicated Servers
- Subsystem Interface

Architecture Patterns are one of the most powerful techniques available in Enterprise Architecture, and are seen as an emerging resource in TOGAF.