Chief Principles of Service-Oriented Modeling
VISION, MISSION, AND STRATEGY
What is?
The service-oriented modeling framework methodology offers “used to be”, “as is”, and “to be” business and technological transformation models for service and environment development.

How?
By employing service-oriented modeling principles.
Plan small, dream big; test small, execute big!

What is the mission?
Proposing a solution to an organizational problem by

- Creating a *miniature mockup* of a final software product
- Forming a *small replica* of a service and *simulating* a *service ecosystem*
- Envisioning a *virtual computing world*
- Verifying assumptions

Why?
- Promoting expenditure reduction and asset consolidation
- Fostering asset reusability
- Accelerating time-to-market
- Increasing communication between stakeholders

How?
- Transforming service internal and/or external environments by employing models
- Adhering to service modeling best practices
- Using tools
- Employing modeling environments
What is?

Service and environment transformation to offer a solution by employing four chief perspectives: in the box, above the box, below the box, and out of the box.

How?

**In the Box:** Internal Service Design
**Out-of-the-Box:** Environment Design, such as Service distribution, interoperability, Integration, and deployment
**Above-the-Box:** Best Practices, Governance, Business Imperatives, Business Requirements
**Below-the-Box:** Separation of Concerns, Granularity Management, Loose Coupling
TERMINOLOGY
**What is a Service?**

**What is?**
Any piece of software, process, concept, and idea that has a life span and offers a solution to a problem

**Service Attributes**
- **Contextual formation:** Capability, Abstraction, Functionality
- **Structural formation:** Atomic Pattern, Composite Pattern, Cluster Pattern

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If a piece of software, a process, a concept, or an idea has not been born, by definition it does not have a lifespan, and thus it is not a service.
What is Service Modeling Life Cycle?

Service Life Span

What is?

A life span of a service during which its continuous evolution commences at the inception stage and progresses through design, architecture, construction, and operations. When necessary, this venture retracts back to earlier development stages.
What is Service and Environment Modeling?

Service Metamorphosis

What is?
Transforming a service and an environment during their life cycle to provide a solution

How?
By employing transformation models and adhering to best practices
What is a Transformation Model?

What is?
A unit of work that enables service and environment transformation
For example a model can be a design model, an analysis and discovery model, and more

What are Model Components?
The necessary tools, methodologies, disciplines, processes, best practices, time frame, languages, and score card that are employed to transform a service and/or its environment
Again, any model that transforms a service and/or its environment must offer best practices, methodology, disciplines, languages, tools, scorecard, timeframe, and a process.
What is a Dynamic Transformation Model?

**What is?**
A model that accommodates the transformation of a service and/or an environment during multiple development life cycle stages by offering different best practices, tools, methodologies, and other model components.

**Example**
The depicted discovery and analysis dynamic model accommodates service identification and inspection in different life cycle stages, for each of which distinct methodologies, best practices, and other model components are offered.

![Diagram of Service Discovery and Analysis during design, construction, and run time stages.](image-url)
Forward and Backward Service Transformation

**What is?**

**Forward Transformation**
Service and environment development that progress towards the production state of a life cycle

**Backward transformation**
Service and environment are reevaluated, reanalyzed, or redesigned

**How?**

By employing transformation models
What is?
A modeling framework identifies modeling practices, modeling environments, modeling disciplines, modeling artifacts, and solution entities.
MODELING PRACTICES
Contextual Modeling Practice

What is?
Semantic transformation of a service or operating environment in a certain direction: generalization, specification, expansion, or contraction

Semantic means service and environment capabilities, functionality, specialties, abstraction levels, dependencies, relationships, and contracts

How?
Generalization: elevating abstraction level of capabilities
Specification: reducing abstraction level of capabilities
Expansion: expanding service offerings boundaries across a distributed computing environment
Contraction: trimming down service offerings boundaries across a distributed computing environment
**Structural Modeling Practice**

**What is?**
Transformation of a service or operating environment logical or physical formation in a certain direction: generalization, specification, expansion, or contraction

Logical or physical formation means service and environment distribution, integration, deployment, configuration, and granularity

**How?**

- **Generalization**: increasing service logical and physical boundaries
- **Specification**: decreasing service logical and physical boundaries
- **Expansion**: expanding a distributed environment across an organization and beyond
- **Contraction**: contracting a distributed environment
Modeling Transparency

**What is?**

Business, technological, architectural, and operational aspects of service and environment modeling operations should be transparent to stakeholders.

**How?**

- **Used-to-Be**: depiction of service and environment past states
- **As-Is**: illustration of service and environment current states
- **To-Be**: description of service and environment target states
Modeling Granularity

**What is?**
Applying different service and environment transformation levels in four different perspectives: business, architectural, technological, abstraction

**How?**

*Business granularity*: using different levels of business processes — small or large scale of business activities

*Abstraction granularity*: employing different levels of abstractions to offer a solution

*Technological granularity*: applying different levels of technological solutions to a problem

*Architectural granularity*: applying different levels of design and architecture remedy to offer a solution
Service Typing

**What is?**
Classification of services by origin, logical or physical structure, and context

**How?**
By employing a categorization method
**Service Taxonomy**

**What is?**
Categorization of services based on their business, technical, architectural, and abstraction attributes

**How?**

**Leading categories:** business and technical services

**Subcategories:** classifying business and technical services into sub-types
Modeling Patterns and Anti-Patterns

What is?
Repeatable template solutions that are road tested and offer modeling best practices

How?
By employing five categories of modeling patterns:

- **Modeling roadmap patterns**: modeling strategy patterns
- **Service discovery and analysis patterns**: patterns that enable service identification and inspection
- **Service categorization patterns**: patterns that assist with service classification and taxonomy establishment
- **Service contextual modeling patterns**: patterns that guide semantic service and environment modeling
- **Service structural modeling patterns**: patterns that assist with logical and physical service and environment modeling