ITIL: Service Design

Course 02 – Service Design

WORKBOOK
Service Design

Topics Covered
- Learning Objectives
- Terms-to-Know
- Service Design
- Introduction to Service Design
- Principles of Service Design
- Summary
- Checkpoint
Introduction to Service Design

Topics Discussed
- Managing Through the Lifecycle
- Context of Service Design
- Principles & Processes
- Introduction
- Scope
- Value
- Service Solution Design
- Balanced Design
Service Design & the Service Lifecycle

- Service Strategy
  - Design, development & implementation
- **Service Design (SD)**
  - Design & Development
- Service Transition
  - Development & improvement
- Service Operation
  - Delivery & support
- Continual Service Improvement
  - Create & maintain value
Managing Across the Lifecycle

- Design Coordination
- Service Catalog Management
- Service Level Management
- Availability Management
- Capacity Management
- Continuity Management
- Security Management
- Supplier Management

**Strategy**

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**Operation**

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**Transition**

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**Improve**
### Purpose, Goals & Objectives of Service Design

- **Purpose**
  - To design new or changed services for introduction into live environment

- **Goals**
  - Consistency & integration within all activities & processes
  - End-to-end business-related functionality & quality

- **Objectives**
  - Consider impact of new or changed application on:
    - Overall service
    - Management systems & tools
    - Architectures
    - Technology
    - Service Management processes
    - Measurements & metrics
  - Address functional elements, management & operational requirements in design
<table>
<thead>
<tr>
<th>Scope of Service Design</th>
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<tbody>
<tr>
<td>• New or changed services</td>
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<td>• Service management</td>
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<tr>
<td>– Systems</td>
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<td>– Tools</td>
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<td>– Service Portfolio</td>
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<td>– Service Catalog</td>
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<tr>
<td>• Technology architecture &amp; management systems</td>
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<td>• Measurement methods &amp; metrics</td>
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Value of Service Design

- Reduces Total Cost of Ownership (ToC)
- Improves Quality of Service (QoS)
- Improves consistency of service
- Results in easier implementations
  - New service
  - Changed service
- Improves service alignment
- Enables effective service performance
- Improves IT governance
- Increases effectiveness
  - Service management
  - IT processes
- Improves
  - Information
  - Decision-making

Value and the ITSM Lifecycle

- Improve
  - Operation
    - Transition
      - Design
        - Strategy
The Context of Service Design

The design of appropriate and innovative IT services, including their architectures, processes, policies and documentation to meet current and future agreed business requirements.
“You can have it good, fast or cheap. Pick any two.”
Service Design Principles

Topics Discussed
- Principles
- SOA & BSM
- Service Provider Models
- Processes
- Implementation Considerations
- Challenges & Risks
### Principles of Service Design

- **The 5 aspects of service design**
  - Requirements
  - Management systems
    - Service portfolio
  - Architecture & technology design
  - Process design
  - Measurement design

- **4 Ps**
  - People
  - Process
  - Product
  - Partners

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The design of appropriate and innovative IT services, including their architectures, processes, policies and documentation, to meet current and future agreed business requirements.
### Service Design Package

- Requirements
- Service design
- Organizational readiness
- Service lifecycle
  - Service program
  - Service transition plan
  - Service operational acceptance plan
  - Service Acceptance Criteria (SAC)
### Requirements

- **Holistic approach – services & components**
  - Analyze business requirements
  - Review existing services & alternatives
  - Design end-to-end solutions
  - Incorporate Service Acceptance Criteria into the design
  - Evaluate alternative designs
  - Agree to budgets & spending

- **Technology domains**
  - Infrastructure
  - Environment
  - Data
  - Applications

- **Business requirements & drivers**

- **Design**
  - Activities
  - Aspects
### Management Systems

- **Support systems**
  - Lifecycle management tools
    - Service Knowledge Management System (SKMS)
    - Configuration Management Systems (CMS)
    - Service Portfolio
- **Service Portfolio**
  - Provides decision framework
    - Why should a customer buy these services?
    - Why should they buy them from you?
    - What are the pricing or chargeback models?
    - What are my strengths, weaknesses, priorities & risks?
    - How should my resources & capabilities be allocated?
  - Used to evaluate competitiveness
  - Provides means to compare services
  - Describes provider’s services in **business terms**
Architecture & Technology Design

- **Strategic “blueprints”**
  - Development
  - Deployment

- **Major technology areas**
  - Technology architectures
  - Management architectures

*Architectural design is the development and maintenance of IT policies, strategies, architectures, designs, documents, plans and processes for the deployment and subsequent operation and improvement of appropriate IT services and solutions throughout an organisation.*
A process is a structured set of activities designed to accomplish a specific objective. It takes one or more inputs and turns them into defined outputs. A process includes all of the roles, responsibilities, tools and management controls required to reliably deliver the outputs.
Measurement Design

- What process metrics measure
  - Progress ➔ milestones & deliverables
  - Compliance ➔ governance requirements
  - Effectiveness ➔ accuracy & correctness
  - Efficiency ➔ optimized use of resources

“If you can’t measure it, you can’t manage it. If you can’t manage it, you can’t control it.”
– Unknown Management Consultant
Service-Oriented Architecture

- Define & determine service
- Understand & identify interfaces & dependencies
- Utilize common technology
- Understand impact of shared services
- Ensure common support capabilities

SOA is a paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains. It provides a uniform means to offer, discover, interact with and use capabilities to produce desired effects consistent with measurable preconditions and expectations.

Organization for the Advancement of Structured Information Standards (OASIS)
## Selecting Service Design Models

- Consider business drivers & requirements
- Understand demands, targets & requirements
- Define scope & capability of
  - Existing Service Provider
  - External suppliers
- Assess
  - Organizational culture
  - Infrastructure, application, data, services, etc.
  - Governance & level of ownership & control required
  - Staff levels & skills
<table>
<thead>
<tr>
<th>Service Provider Models</th>
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<tbody>
<tr>
<td>• In Source</td>
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<td>• Outsource</td>
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<td>• Co-source</td>
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<td>• Partnership (Multi-source)</td>
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<td>• Business Process Outsource (BPO)</td>
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<tr>
<td>• Application Service Provision (ASP)</td>
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<td>• Managed Service Provision (MSP)</td>
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<td>• Knowledge Process Outsource (KPO)</td>
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<td>Service Design Implementation Considerations</td>
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<tr>
<td>• Business impact</td>
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<td>• Service Level Requirements</td>
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<td>• Service &amp; process risks</td>
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<td>• Service implementation</td>
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<td>• Measurement</td>
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Service Design Technology & Design

- **Design tools**
  - Hardware
  - Software
  - Environment
  - Process
  - Data

- **Management tools**
  - Support process efficiency & effectiveness
  - Cost savings & improved productivity
  - Support centralization of key processes
  - Data
    - Collection
    - Analysis
    - Reporting
### Business Impact Analysis

- Identification of critical services
- Evaluate service levels
- Identify critical service periods
- Understand unavailability-related costs
- Security implications due to loss of service
Service Level Requirements

- Determine Service Level Requirements
- Understand ability to meet requirements
- Define new service requirements
<table>
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<tr>
<th>Service &amp; Process Risks</th>
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<tbody>
<tr>
<td>• Minimize impact to existing services</td>
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<td>• Consider transition risks</td>
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<td><strong>Service Implementation</strong></td>
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<tr>
<td>• Vision &amp; leadership</td>
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<td>• Acceptance of “the new normal”</td>
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<td>• Stakeholder involvement</td>
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<td>• Value of IT to the business</td>
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<td>• Communication</td>
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<td>• Adequate time</td>
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<td>• Technological awareness</td>
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### Service Measures

- **Build in improvement**
  - Define, measure, analyze, design & verify
- **Prerequisite for Success (PFS)**
- **Critical Success Factors (CSF)**
- **Key Performance Indicators (KPI)**
**Service Design Challenges & Risks**

- **Challenges**
  - “A test of one’s abilities or resources in a demanding but rewarding undertaking.” – American Heritage Dictionary

- **Risks**
  - “To expose to danger; to lay open to the possibility of loss.” – Kernerman English Multilingual Dictionary

*Managing risk is not about not taking a risk. When managing risk you mitigate what you can, transfer what is appropriate and the rest you accept; but with full knowledge.*
## Service Design Challenges

- Business/IT alignment
- Technological complexity
- Adherence to practices
- Unclear requirements
- Lack of overall awareness
- Organizational & individual resistance
- Wasted effort & resources
- Poor internal relationships
- Etc.
## Service Design Risks

- Prerequisites not met
- Lack of management commitment
  - Leadership
  - Vision
- Inadequate resources
- Lack of communication
  - Silos & cowboys
Service Design Critical Success Factors

- Critical Success Factors (CSFs)
  - Necessary to achieve the mission
- Key Performance Indicators (KPIs)
  - Measures that quantify objectives
  - Enable measurement of performance
- Establish baseline for tracking performance
- Establish small sub-set
  - Change over time as processes mature
- Performance is judged by achieving clearly defined objectives
- Compare today with the past
<table>
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<th>Topics Discussed</th>
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### Service Design Summary

**Purpose** – To design new or changed services for introduction into live environment.

**Goal** – Consistency & integration within all activities & processes and end-to-end business-related functionality & quality.

**Objective** – Consider impact of new or changed application on all aspects of the service and service management processes. Design addresses functional elements, management & operational requirements.

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<tr>
<th>Principles</th>
<th>Scope</th>
<th>Processes</th>
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<tr>
<td>• 5 aspects of Service Design – requirements, management systems, architecture &amp; technology design, process design, measurement design</td>
<td>• New or changed services</td>
<td>• Service Level Management</td>
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<tr>
<td>• 4 Ps – people, process, product, partners</td>
<td>• Service management – systems, tools, service portfolio, service catalog</td>
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<td>• Service Design Package</td>
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**Value**

Service Design brings value to the organization by reducing Total Cost of Ownership (TCO), improving Quality of Service (QoS), improving service consistency, easing implementation, improving service alignment, achieving more effective service performance, service management & IT processes, improving IT governance, and improving information and decision-making.
Review Questions:

1. Match the Key Goal Indicator (KGI) metric to what it measures:
   A. Milestones & Deliverables 1. Compliance
   B. Governance Requirements 2. Efficiency
   C. Accuracy & Correctness 3. Progress
   D. Optimized Use of Resources 4. Effectiveness
   
   A. A-4; B-2; C-1; D-2
   B. A-3; B-1; C-4; D-2
   C. A-4; B-1; C-3; D-2
   D. A-2; B-3; C-1; D-4

2. What are the major architectural design areas in an IT organization?
   A. Service, Application, Tools, IT Infrastructure, Environmental
   B. Business, People, Processes, Tools, Technology
   C. Service, Application, Data/Information, IT Processes, Environmental
   D. Service, Application, Data/Information, IT Infrastructure, Environmental Architecture

3. What are the 4Ps of Service Design?
   A. People, Process, Products/Technology, Partners/Suppliers
   B. Perspective, Position, Plan, Pattern
   C. People, Process, Plan, Partners/Suppliers
   D. Perspective, Process, Plan, Pattern

4. The five aspects of Service Design include:
   A. Gathering system specifications, managing the service catalog, technology acquisition, process design and measurement systems
   B. Gathering requirements, managing and controlling the service through its lifecycle, designing both the architecture and supporting technology, design of supporting processes, and measurement systems
   C. Gathering system specifications, develop technical design, manage the Service Portfolio, gather requirements for supporting processes and develop a measurement lifecycle
   D. Gathering requirements, managing and controlling the service through its lifecycle, technology acquisition, design of supporting processes, and measurement systems
5. The Enterprise Architecture consists of:
   A. The Service Architecture, Application Architecture, Information Architecture, Product Architecture and Environmental Architecture
   B. The Service Architecture, Application Architecture, Information Architecture, Management Architecture and Environmental Architecture
   C. The Service Architecture, Application Architecture, Information Architecture, IT Infrastructure Architecture and Environmental Architecture
   D. The Service Architecture, Application Architecture, Information Architecture, IT Infrastructure Architecture and Business Architecture

6. The major process metrics are:
   A. Efficiency, Effectiveness, Compliance and Progress
   B. Availability, Performance, Capacity, Failures and Changes
   C. Quality, Feedback, Complaints and Functionality
   D. Efficiency, Effectiveness, Performance and Quality

7. The Service Design Package (SDP) is a major output from the Service Design phase of the IT Service Lifecycle. Which of the following represent the composition of the SDP?
   A. Service Program, Service Transition Plan, Service Operational Acceptance Plan and the Service Acceptance Criteria, Service Program and the Service Transition Plan
   B. Requirements, Service Design, Organizational Readiness and Service Lifecycle
   C. Service Design, Utility Plan, Warranty Plan, Supplier Acceptance Criteria and Service Lifecycle
   D. Service Design, Service Program, Service Transition and Service Retirement Plan

8. While the process of the service Design phase of the IT Service Management Lifecycle is involved in the design of new or changed IT Services, the scope of Service Design extends to what other lifecycle phases?
   A. Service Transition, Operation and Continual Service Improvement
   B. Service Strategy, Transition, Operation and Continual Service Improvement
   C. Service Strategy, Transition and Operation
   D. No other lifecycle phases
9. An IT Service's design can be said to be in balance when:
   A. The functionally of the design and the resources required to realize the design meet the requirements for the IT Service
   B. The resources required to realize the design and the timeframe in which it is to be delivered meet the requirements for the IT Service
   C. The functionally of the design, the resources required to realize the design, the timeframe in which it is to be delivered, and the organizational readiness meet the requirements for the IT Service
   D. The functionally of the design, the resources required to realize the design, and the timeframe in which it is to be delivered meet the requirements for the IT Service

10. The design for a company's new retail website includes the use of a credit card clearing house, a third-party hosted shopping cart and third-party monitoring of the customer's web experience. Which Service Provider Models are being utilized in the new service's design?
   A. In Source, Outsource and Managed Service Provision
   B. In Source, and Application Service Provision
   C. In Source, Outsource, Application Service Provision and Managed Service Provision
   D. In Source, Application Service Provision and Managed Service Provision
1. B
Milestones and deliverables indicate Progress; adherence to governance requirements indicates compliance; accuracy and correctness measurements indicate effectiveness; and the optimized use of resources indicates efficiency.

2. D
The major architectural areas within an IT organization are Service, Application, Data/Information, IT Infrastructure and Environmental Architecture.

3. A
People, Process, Products/Technology and Partners/Suppliers are the 4Ps of Service Design.

4. B
Gathering requirements, managing and controlling the service through its lifecycle, designing both the architecture and supporting technology, design of supporting processes, and measurement systems, is a complete list.

5. C
The Service Architecture, Application Architecture, Information Architecture, IT Infrastructure Architecture and Environmental Architecture

6. A
Efficiency, Effectiveness, Compliance and Progress

7. B
Requirements, Service Design, Organizational Readiness and Service Lifecycle

8. B
Service Strategy, Transition, Operation and Continual Service Improvement

9. D
The functionally of the design, the resources required to realize the design, and the timeframe in which it is to be delivered meet the requirements for the IT Service.
10.C
In Source, Outsource, Application Service Provision and Managed Service Provision.