

### **ITSM 101**

### An ITSM Essentials Introduction

### **Course Objectives**

- Awareness
- Define ITSM and ITIL
- Discuss the IT Service Management Lifecycle
  - Requirements through Retirement
- Exposure to Key Concepts, Processes and Functions of ITIL



## Pay Attention to ABC's

### WIIFU – What's in it for us?

- IT
- Business
- Individual contributor



### **Section Overview**

### ITIL

- IT Infrastructure Library
- Best practice Framework -> ITSM

### ITSM

- IT Service Management
- Specialized organizational capabilities

### Service

• Consumable unit of people, process, and technology

## What is ITIL? - IT Infrastructure Library

- Books providing guidance on best practices for implementing IT Service Management
- Created by Office of Government
   Commerce
- Creates a common language
- Drives continual improvement
- Highest "brand" recognition
- Common Sense Approach
- Flexible and adaptable framework





### ITIL v3



Time

### **5 Core Books = Lifecycle**





Service Strategy

Service Design



Service Transition







Continual Service Improvement

- Service Strategy: Achieving business objectives.
- Service Design: Designing from IT and business perspective.
- Service Transition: Changing the live production infrastructure
- Service Operation: Day-to-day IT business, operating.
- Continual Service Improvement: Building better services.

### What is IT Service Management?

Service Management is a method to enable Apollo IT to improve its ability to provide value to customers via the delivery of services by managing and improving a "specialized set of organizational capabilities."



strong relationships

## Why do ITSM and ITIL matter?

### Yesterday's IT Organizations

- Focused on Technology
- Firefighting Mode
- Organizational Silos
- Unknown Costs
- Technical Metrics

### **Tomorrow's IT Organizations**

- Customer Outcomes
- Demand-Driven
- Enterprise Services and Process
- Financial Transparency
- Business Value

### **Gartner Quote:**

8/10

Paraphrased: "... by 2012 you will either be in ITSM or you will not BE"

## **The Shift**

## We can use ITSM to

prove we deliver value to our meet expectations customers

be internally and externally consistent

deliver a quality product be a service provider, not a technology provider

Our customers want these things from us too.

### **Focus on Service**

What's the difference between a technology & service provider?



## **ITSM Objectives**

- Align IT Services with the business objectives
- Improve the Quality of IT Services delivered
- Reduce long term Cost of providing Service



### **Business Drives IT – IT Enables the Business**

In order to support our...



### **IT and Business Alignment Typical Start Point**



## **IT and Business Alignment End Objective**



### Service Level Agreements Scope



## **Improve Quality of IT Service Delivered**





80% of Incidents are caused by Changes to the environment.

RFC

### What is the *business impact* of unplanned IT Service interruption?

- Lost customers/students
- Lost opportunities
- Lost capacity

- Idle or unproductive labor
- Legal action
- Cost of restoration
- **Bad publicity**

**Penalties** 

## **Reduce long term Cost of providing Service**



### **IT Service**

A service is a combination of people, process, and technology that together form a consumable unit that customers are willing to purchase from a provider (like Apollo IT) rather than create for themselves.



Providing a service means we ensure that the service:

- is available when the customer needs it
- has the right level of security, is compliant, and is prepared for disaster situations
- performs well
- includes the timely and accurate fulfillment of service requests
- is fixed quickly when needed

The terms of the service's delivery are defined in a Service Level Agreement.

### **A Note on Services**

Some examples:

Some IT Services deliver systems (applications) which enable the customer to perform a particular business process.

Some services are provided by IT to itself (not directly to the customer), in order to support other services.\*

Database Administration

Enrollment

Support Service

Network Service

**Process Design** 

Some IT Services provide the standard infrastructure that enables business productivity.

Some IT Services are professional services that can be requested by the customer or used internally.

\*They are called IT "internal" services.

### **Utility + Warranty = Service Value**





#### System Status

(Last updated: 06-09-2009 8:42 AM)

System Status All University of Phoenix services are available.

#### System Availability

Student and Faculty Website:	Available
OLS Classrooms Using Web Browser:	Available
OLS Classrooms Using Outlook Express:	Available
Application Website:	Available

#### **Classroom Availability**

All classes beginning Tuesday, June 2, 2009 are currently available.

## **Email Service**

### UTILITY

- When will I be able to use it?
- How much storage do I get?
- Can I get my email on my phone?

### WARRANTY

- What's the guarantee on delivery?
- How will my records be protected?
- What are my options if Outlook is not available?



### **Section Overview**



8/10



"...a series of planned activities that convert a given input into a desired output"

# PROCESS





# Terminology typically enters a discussion of processes and our terms should be used consistently.

#### Service / Process Hierarchy

Service	A combination of people, processes and technology delivered to one or more customers by a service provider.
Process	A structured set of activities designed to accomplish a specific objective. A process takes one or more defined inputs and turns them into defined outputs.
Activity	A set of actions designed to achieve a particular result. Activities are usually defined as part of Processes or Plans, and are documented in Procedures
Task	A basic unit of work required to be executed in one or more activities. Typically it is the lowest level that needs to be specified in the documentation of a process, as there is little or no flexibility in what is executed.
Procedure	A document describing work instructions for one or more related actions by a single set of actors within a process.
Instruction	Detailed documentation within a procedure on how to use a tool, technology or form, or how to apply a policy or rule.

## **Components of a Process**



## **Process Lifecycle**

### Focus on continuous improvement



## **ITIL Identifies 4 Functions**

• Function: *people* & *tools* to perform *process* or *activity* 



## **Types of Contacts any IT Department Might Get?**



## **Two Broad Categories: Request or Incident**



user for information or advice, or for a standard change, or for access to an IT service. An incident is an unplanned interruption to an IT service, or a reduction in the quality of an IT service. Failure of a configuration item that has not yet impacted service is also an incident.

#### The face of IT

## **Service Desk Function**

- Service Desk: (Service Operation) The Single Point of Contact between the Service Provider and the Users.
- A typical Service Desk manages Incidents and Service Requests, and also handles communication with the Users.



(SO) To provide a single point of contact for users and an operational single point of contact for information on unresolved incidents.



- The face of IT
- Ownership, Monitoring
- Communications, Escalation
  - Functional, Hierarchical
- 1st Level Support
- Initial Investigation and Diagnosis (Matching)
- Manage incidents and service requests
- Provide first time fixes at first point of contact, where possible
- Record changes
- Provide status updates
- Handle complaints
- Improve customer service
- It is important to *develop an effective and efficient* Service Desk

#### Day to day ops

### **IT Operations Management Function**

- IT Operations Management: (Service Operation) The Function within an IT Service Provider which performs the daily Activities needed to manage IT Services and the supporting IT Infrastructure. IT Operations Management includes IT Operations Control and Facilities Management
- (SO) To perform the daily operational activities needed to manage the IT Infrastructure.

- IT Operations Control provide centralized monitoring and control, including Console Management, Job Scheduling, Backup and Restore, and Print and Output Management.
- Facilities Management is responsible for management of data centers, computer rooms and recovery sites



#### Infrastructure

## **Technical Management Function**

- Function responsible for providing technical skills in support of IT Services and management of the IT Infrastructure. Technical Management defines the Roles of Support Groups, as well as the tools, Processes and Procedures required.
- (SO) To provide the detailed technical skills and resources needed to support the ongoing operation of the IT Infrastructure.

Supports the *design*,
 *testing*, *release* and
 improvement of IT
 Infrastructure



## **Application Management Function**

(SD, SO) To provide the detailed technical skills and resources needed to support the ongoing operation of applications within the IT Infrastructure.



- Managing application through the lifecycle
- Usually different or separate from Application Development
- Custodian of application knowledge and expertise
- Contribute to application design, build, test and support activities
- Assist in the recovery of service and root cause analysis
- Applications are not services, applications are just one component needed to provide a service.

### Roles: *responsibilities*, *activities*, and *authorities*

### Service owner:

 Quality of service; ensures customers are satisfied (Payroll service)

#### **Process owner:**

 overall quality & development;
 ensuring activities are undertaken (Availability Management process)

### Process manager:

- operational management of a process

### **Process performer:**

executing one or more tasks

Roles are the sets of
responsibilities,
activities, and
authorities defined in a
process and assigned to
a person or team.



• One person or team may have multiple roles.

### **RACI Model**

- Responsible for, Accountable for, Consulted, and Informed
- Accountability = ownership
- Responsibility = work



Process Activities:	Service Desk	Desktop	Applications	Operations Manager
Logging	RACI	I	1	CI
Classification	RACI	RCI	RCI	CI
Investigation	ACI	RCI	RCI	CI
## **Putting It All Together**



### **Section Overview**

#### Service Lifecycle

• Requirements to retirement

#### Lifecycle Stages

• Strategy, Design, Transition, Operations, Continual Service Improvement

#### **ITIL Processes**

• Described in 5 books, applicable in all

## **Service Lifecycle**

Managing Services from Requirement to Retirement



### **The Five Stages**



## Impact of ITIL Best Practices to the Business

### Stage of the LifeCycle

- Service Strategy
- Service Design
- Service Transition
- Service Operation
- Continual Service
   Improvement

### Creating Value at Every Stage

- The right services
- In an efficient way
- Right timing and positive return
- Right support planned
- Ongoing evaluation for improvement





## Service Strategy (SS)– 1<sup>st</sup> v3 Book

#### Goals and objectives:

 Provides the guidance on how to design, develop, and implement service management as an organizational capability and strategic asset.

#### ✓ Benefits

- Cost Effectiveness
- Value for the customer
- Standardized processes
- Value creation



# Who, what, when, where, why, and how Strategy Generation

 (SS) To establish an overall strategy for IT services and for IT Service Management. [SS]







- ☐ Define the market
- C3 Develop the offerings
- C3 Develop strategic assets
- C3 Prepare for execution

A Strategic Plan to achieve defined business Objectives.

### Doing things at the right cost IT Financial Management

(SS) To provide cost-effective stewardship of the IT assets and resources used in providing IT services. [SS–SD–ST–SO]





- C3 Valuate Services
- C3 Model demand
- C3 Optimize Service Portfolio
- C Optimize Service provisioning Plan
- C Analyze Service investments
- C3 Account
- C3 Analyze Variable Cost Dynamics (VCD)
- Variable Cost: A Cost that depends on how much the IT Service is used, how many products are produced, or the number and type of Users.

# Services past, present, and future Service Portfolio Management (SPM)

(SS) To determine a strategy for serving customer needs and to develop service offerings and capabilities. [SS]



- €3 Define
- €∃ Analyze
- €∃ Approve
- Charter





Retired Services Decommissioned Services

Service Portfolio: The complete set of Services that are managed by a Service Provider.
 Manage the entire Lifecycle of all Services, and includes three Categories: Service Pipeline (proposed or in Development); Service Catalog (Live or available for Deployment); and Retired Services.

# Balance business needs and IT capacity Demand management

(SS) To understand and influence customer demand for services and the provision of capacity to meet these demands. [SS-SD-ST-SO]





- C3 Analyze and codify Patterns of Business Activity (PBA)
- C3 Match User Profiles (UP)
- C3 Develop Service Packages
- C3 Define Service Level Packages

- Pattern of Business Activity (PBA): A Workload profile of one or more Business Activities.
- User Profile (UP): A pattern of User demand for IT Services.
- Service Package: A detailed description of an available IT Service.
- Service Level Package (SLP): A defined level of Utility and Warranty for a particular Service Package.



# Menu of live services Service Catalog Management (SCM)

(SD) To provide a single source of consistent information on all of the agreed services, and to ensure that it is widely available to those who are approved to access it. [SD–ST–SO]



- C∃ Document and agree on Service definition
- C∃ Build and Agree on Catalogue contents
- Produce and maintain Service
   Catalogue (Business & Technical views)
- C3 Publish Live Services



A menu of all live IT Services, including those available for Deployment. The Service Catalog includes information about deliverables, prices, contact points, ordering and request Processes.

### Delivery contracts – who are we counting on and for what? Service Level Management (SLM)



(SD, CSI) To maintain and improve IT service quality through a constant cycle of negotiating, monitoring and reporting to meet the customer's business objectives. [SD–ST–SO–CSI]



- C3 Determine requirements & make SLAs
- C∃ Monitor & report
- Improve customer satisfaction
- Conduct service review
- C Revise SLAs/OLAs and underpinning contracts
- C3 Manage issues & develop relationships
- C3 Report Achievements



Service level Agreement (SLA): An agreement between IT and the customer that describes the IT Service, documents the Service Level Targets, and specifies customer and IT responsibilities.

### Forecasting resources – can we meet the demand? Capacity Management

(SD) To ensure that all current and future capacity and performance aspects of business requirements are provided cost effectively. [SD–ST–SO]



Performance Reports

Capacity Data

C3 Monitor demand

Process

Input

Build plan to improve capacity

Activities

- C3 Analyze performance
- Forecast requirements through modeling and trending
- C3 Adjust and tune as needed

Capacity: The maximum Throughput that a Configuration Item or IT Service can deliver while meeting agreed Service Level Targets.

**Component Capacity** 

# Hours of operation Availability Management

(SD) To optimize the capability of the IT infrastructure, services and supporting organization to deliver a cost effective and sustained level of availability enabling the business to meet its objectives. [SD–ST–SO]



- C Monitor, measure, analyze, report & review
- Investigate and instigate
- C3 Assess and manage risk
- C3 Implement countermeasures
- C∃ Plan and design
- C3 Review and test





Availability is the ability of a service or system to perform its required functions over a stated period without error. Availability is determined by Reliability, Maintainability, Serviceability, Performance, and Security.

### Preparing for a rainy day IT Service Continuity Management (ITSCM)

(SD) To ensure that the required IT technical and service facilities can be restored within negotiated and required timescales. [SD–ST–SO]



- C∃ Determine vulnerabilities and assess risk
- C∃ Determine continuity requirements and produce strategy
- C3 Develop plans and implement strategy
- C∃ On going operation to test and improve
- C∃ (Invoke the continuity plan)



IT Service Continuity Plan: Defines the steps required to Recover IT Services. The Plan will also identify the triggers for Invocation, people to be involved, communications etc. The IT Service Continuity Plan should be part of a Business Continuity Plan.

### Ensuring CIA Information Security Management (ISM)

(SD) To ensure a level of security in the IT infrastructure such that the level of service availability is not compromised. [SS–SD–ST–SO]



- Produce and maintain information security policy
- Implement security policy
- C3 Implement & improve security controls
- C Monitor, analyze and trend
- C3 Manage and reduce security breaches
- Perform reviews, audits and penetration tests

Confidentiality – information is available only to those who have a right to know

SMIS

Information Security Policy Security reports & Information Security controls Security risks & responses

- Integrity information is complete & accurate
- Availability information is available when needed

# Managing external resources Supplier Management

(SD) To manage suppliers and the services they supply in order to provide seamless quality of IT service to the business, ensuring value for money is obtained. [SS-SD-ST-SO]



- C3 Evaluate
- C3 Establish
- Categorize suppliers and maintain Supplier Contract Database (SCD)
- C3 Manage performance
- C Renew and/or terminate









Supplier and Contract Database (SCD): A database or structured Document used to manage Supplier Contracts throughout their Lifecycle.

## Service Transition (ST) – 3<sup>rd</sup> v3 Book

- Goals and objectives:
- Provides guidance for the development and improvement of capabilities necessary to transition new and changed services into Operations.

#### ✓ Benefits

- Handle more changes and releases
- More successful changes
- Improved service alignment to business needs
- Service Operations staff trained
- Minimize impact to operations
- Improved end use productivity
- Traceable changes back to requirements



# Traffic cop Change Management

(ST) To ensure that standardized methods and procedures are used for efficient and prompt handling of all changes to minimize the impact of change-related incidents and improve daily operations. [SS–SD–ST– SO]



- Create and record Request for Change (RFC)
- C3 Review RFC
- ☐ Assess and evaluate change
- C Prioritize and Categorize
- C∃ Authorize change
- Coordinate change implementation
- C Review and close change





Service Change is the addition, modification or removal of an authorized, planned or supported service or service component and its associated documentation.

#### Knowing what we have, where it is, and it's critical relationships Service Asset & Configuration Management (SACM)

(ST) To identify, record and report on all IT components that are under the scope and control of Configuration Management. [SS–SD–ST–SO]





- Configuration Item (CI): CI's include IT Services, hardware, software, buildings, people, and documentation such as Process procedures and Service Level Agreements.
- Configuration Management Data Base (CMDB): Logical representation of the IT environment



- C Management and planning
- Configuration identification
- Configuration control
- C3 Status accounting and reporting
- C3 Verification and audit
- C Maintenance of Asset Inventory

Sharing the 411

## **Knowledge Management**

(ST) To enable organizations to improve the quality of management decision making by ensuring that reliable and secure information and data is available throughout the service lifecycle. [SS-SD-ST-SO]



- Define Knowledge Management strategy
- Capture information and knowledge transfer
- C3 Manage data and information
- C3 Store information (SKMS)
- C3 Transform to usable knowledge
- C Transfer and disseminate



# Checks and Balances Service Validation and Testing

(ST) To assure that a service will provide value to customers and their business. [ST]



- ☐ Manage validation and test
- C3 Plan and design tests
- C Verify test plan and test designs
- C Prepare test environment
- C3 Perform tests
- C3 Evaluate exit criteria and report
- Clean up test environments and close



Service Validation and Testing: Ensures that the new or Changed IT Service matches its Design Specification and will meet the needs of the Business.

#### Project Management

## **Transition Planning and Support**

(ST) To identify, manage and control the risks of failure and disruption across transition activities. [ST]



- C3 Define transition strategy
- C3 Prepare for Service transition
- C Plan and coordinate Service transition
- C3 Provide administration
- C3 Monitor and report progress



# Risk Management **Evaluation**

(ST) To provide a consistent and standardized means of determining the impact of a change in the context of existing and proposed services and IT infrastructure. [ST-SO].





- C3 Plan evaluation
- C3 Evaluate predicted performance
- C3 Evaluate actual performance

### Holistic end-to-end release process **Release and Deployment Management**

(ST) To take a holistic view of a change to an IT service and ensure that all aspects of a release, both technical and non-technical, are considered together. [SD–ST–SO]



- Plan deployment of release package
- Build and test f.7
- Plan and prepare for deployment £3
- Perform transfer, deployment & £3 retirement
- C3 Verify deployment
- Support early life
- Review and close deployment £3





Release Package







Service Outage (PSO)

Schedule

Release: A collection of hardware, software, documentation, Processes or other Components required to implement one or more approved Changes to IT Services.

## Service operation (SO) – 4<sup>th</sup> v3 Book

- Goals and objectives:
- Provides guidance on achieving effectiveness and efficiency in the delivery and support of services such that value is achieved for the customer and captured by the service provider.

#### ✓ Benefits:

- Where the value recognition occurs
- Monitor and control
- Manage day to day activities
- Generate metrics
- Collect and report on information for CSI
- Deliver services at defined levels
- Achieve balance
  - Status quo vs change
  - IT Services vs technology
  - Stability vs responsiveness
  - Proactive vs reactive



Lending a helping hand Request Fulfillment

(SO) To provide a channel for customers and users to request and receive IT services. [SO]





- C3 Record details of Service Request
- C3 Approve Service Request
- C3 Fulfill Service Request
- Close Service Request



Change Advisory Board (CAB)

Service Request: A request from a User for information, or advice, or for a Standard Change or for Access to an IT Service.

Standard Change: Pre-approved, low risk Change

Keys to the castle

### **Access Management**

SO) To provide the right for users to be able to use a service or group of services. [SO]









- C3 Request Access
- C3 Verify request
- C3 Provide rights
- C∃ Monitor identity status and maintain users, roles and groups
- □ Log and track access
- C3 Remove or restrict rights

- Access Management helps to protect the Confidentiality, Integrity and Availability of Assets by ensuring that only authorized Users are able to access or modify the Assets.
  - Also referred to as Rights
     Management or Identity
     Management.

# Paying attention to signals Event Management

SO) To detect events, make sense of them (information, warning, exception) and determine the appropriate control action. [SO]



- C3 Detect Event
- **Filter Event**
- Categorize Event
- Correlate Events
- Trigger response
- Select response
- C3 Review actions
- Close Event



Event: A change of state which has significance for the management of a Configuration Item or IT Service. Also an Alert or notification created by any IT Service, CI or Monitoring tool. Putting out the day-to-day fires

## **Incident Management**

(SO) To restore normal service operation as quickly as possible and minimize adverse impact of incidents on business operations. [ST–SO]



- Identify Incident
- C Log Incident
- Categorize Incident
- C3 Prioritize Incident
- Carry out initial diagnosis
- Escalate Incident
- C3 Investigate and diagnose Incident
- C Resolve and recover Incident
- Close Incident



Incident: An unplanned interruption to an IT Service or a reduction in the Quality of an IT Service. Failure of a Configuration Item that has not yet impacted service is also an Incident.

# Finding the underlying cause Problem Management

(SO) To minimize the adverse impact on the business of incidents that are caused by errors in the IT infrastructure and to prevent recurrence of incidents related to those errors. [ST–SO]



- C3 Detect Problem
- C3 Log Problem
- Categorize Problem
- Prioritize Problem
- Investigate and diagnose Problem
- €∃ Find a Workaround
- C Raise a Known Error
- Resolve Problem
- Close Problem



- Workaround: reducing or eliminating the impact of an Incident/Problem for which a full resolution is not yet available
- Known Error: The known root cause of a problem that has a workaround.
- Known Error Database (KEDB): database containing Known Error records

#### Continual Service Improvement (CSI) – 5<sup>th</sup> v3 Book

#### Goals and objectives:

- Provides guidance on the creation and maintenance of customer value through better design, introduction, and operation of services
- ✓ Benefits
- Staying Relevant and Growing with the Business
- Improve IT Services: quality, cost, effectiveness
- Governance
- Service measurement
- Organizational change





## **7 Step Improvement Process**

(CSI) To implement changes to existing services and processes in order to provide greater value to the Customer. [SD–ST–SO–CSI]





- C3 Define what you should measure
- C3 Define what you can measure
- Gather the data
- Process the data
- C∃ Analyze the data
- C3 Present and use the Information
- C3 Implement corrective action

# We cannot improve what we cannot measure **Service Measurement**

(CSI) To combine component and other measures into a meaningful view of services as experienced by the Customer. [SD–ST–SO–CSI]



- C∃ Develop a Service Measurement framework
- C Define what to measure
- C3 Set targets
- Create a measurement framework grid
- C3 Interpret and use metrics
- Create scorecards and reports



Service Metrics	The results of the end-to-end service
Process Metrics	CSFs, KPIs and activity metrics for the service management processes
Technology Metrics	Component and application based metrics such as utilisation, performance, availability

#### Measure: A specific test to determine if a goal was met.
# Empowering management decisions Service Reporting

(CSI) To produce and deliver reports of achievement and trends against Service Levels. [SD– ST–SO–CSI]







- C3 Define reporting policies and rules
- Collate
- C∃ Translate and apply
- C3 Publish

- Data that is of real interest to the business
  - What happened
  - What IT did
  - How IT will ensure it does not happen again
  - How IT is improving service in general

## **ITILv3 Service Lifecycle Context**

Service Lifecycle Processes				
Service Lifecycle Governance Processes		Operational Service Lifecycle Processes		
Service Strategy Processes	Continual Service Improvement Processes	Service Design Processes	Service Transition Processes	Service Operation Processes
IT Financial Management				
Supplier Management	Seven Step Improvement Process Service Measurement Service Reporting	Service Catalogue Management Service Level Management Availability Management Capacity Management Service Continuity Management Information Security Management		
Service Asset and Configuration Management				
Knowledge Management				
			Transition Planning Release and Deployment Manage Evaluation and Early Life Support	ement Event Management Incident Management Request Fulfilment Problem Management Access Management Common Service Operation Activities

#### **ITIL End to End Process Map**





### **ITSM is Evolution not Revolution**

"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change." -Charles Darwin.



## Thank you!

• Visit the ITSM SharePoint site for a full ITIL glossary, reference material, and much more!



