ITS – Information Technology Infrastructure Library

Wed 5/20/09
Mt. Oxford – 3rd Floor
8:30 am – 10:30 am

Piers McMahon
VP, Principal Architect, CA Inc
Abstract

Information Technology Section: Jeff Schukkind, New York, Chair
Brick Morff, Missouri, Vice-Chair
Diane Silver, Texas, Second Vice-Chair

ITS has scheduled four independent breakout sessions, and will participating in a number of joint sessions during the conference. We are excited about the IT agenda and look forward to seeing you in Denver.

Agile Development – We have been fortunate to get Bob Hartman to provide a session on Agile Development. Agile is an iterative and incremental (evolutionary) approach to software development which is performed in a highly collaborative manner by self-organizing teams with “just enough” ceremony that produces high quality software in a cost effective and timely manner which meets the changing needs of its stakeholders. http://www.agilemodeling.com/essays/agileSoftwareDevelopment.htm “Bob Hartman is an Agile trainer and coach with over 30 years of experience developing software … Over the past 10 years he has grown from being an early adopter of Agile to his current status as a Certified Scrum Master (CSM) and Certified Scrum Practitioner (CSP).”
http://www.agileuniversity.org/trainer.jsp?id=648

Information Technology Service Management – “ITIL is best practice in IT Service Management, developed by OGC and supported by publications, qualifications and an international user group. ITIL is intended to assist organizations to develop a framework for IT Service Management. Worldwide, ITIL is the most widely used best practice for IT Service Management.”
http://www.itil-officialsite.com/faq.asp#1

Collaboration in the Workplace: Putting the “I” Back in Team – Chip Bullock, one of the founders of CCIS, has over 25 years of experience in the IT industry and is CEO. He is responsible for the company’s overall strategic direction, including market segmentation, partnerships, alliances and growth strategy. http://www.ccis-inc.com/people.php

ITS Round Table Discussion – Automated Systems – Existing and Planned – This session will be devoted to sharing information about the different technologies that are being used in different states to support the business of Business and Public Filings. The attendees will exchange information about their current automated systems, plans for, or experiences in migrating to new platforms, re-writing applications using newer development languages, etc., with special focus on “lessons learned.” This has always been a successful and popular session.
Agenda

> Services
> ITIL History and Myths
> ITIL V2 - Core Concepts
> ITIL V3 – What’s New
> Walkthrough of the Core ITIL Processes
> Controls and Metrics – COBIT, ISO 20K
> Application Lifecycle Management
> ITIL Value and Case Studies
> Barriers to adoption
> Where to start?
IACA ITS Member Challenges

> State IT budgets flat or being cut
> Delivering automation solutions on time, within budget
> Management of change arising from new regulations
> Customer demands for new services
> Maintaining availability and performance of on-line services
> Security risks
> Others?
IT Service Management

> Costs accounts for 65%-80% of IT expenditure

> Covers:
  - Keeping the lights on
  - Managing change

> Primarily labor costs

> Technically focused

> Not always clearly aligned with enterprise mission
Services, Service Management, & Value

Services are a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks. Outcomes are possible from the performance of tasks and are limited by the presence of certain constraints.

Service management is a set of specialized organizational capabilities for providing value to customers in the form of services. The capabilities take the form of functions and processes for managing services over a lifecycle, with specializations in strategy, design, transition, operation, and continual improvement. The capabilities represent a service organization’s capacity, competency, and confidence for action. The act of transforming resources into valuable services is at the core of service management. Without these capabilities, a service organization is merely a bundle of resources that by itself has relatively low intrinsic value for customers.

Service value

- Utility
  - Outcomes
  - Risks Avoided
- Warranty
  - Availability
  - Capacity
  - Continuity
  - Security
Services

ENTERPRISE OPERATIONS

BUSINESS PROCESS

SERVICE MANAGEMENT

Application Middleware Database Storage System Network

IT OPERATIONS
Fundamental Svc Mgt Questions

> What services should we offer and to whom?
> How do we differentiate ourselves from competing alternatives?
> How do we truly create value for our customers/citizens?
> How do we capture value for our stakeholders?
> How can we make a case for strategic investments?
> How can Financial Management provide visibility and control over value creation?
> How should we define service quality?
> How do we choose between different paths for improving service quality?
> How do we efficiently allocate resources across a portfolio of services?
> How do we resolve conflicting demands for shared resources?
ITIL History – The Original Challenge

> Mid to late 1980s

> CCTA (Central Computer and Telecoms Agency) was a major UK government department, with an IT budget of around £8 billion

> Major political pressure to reduce IT spend

> Government Technology Infrastructure Management (GITIM)

> Focus on Service Delivery and Support

> 1st IT Infrastructure Library 1987

> Published by UK Office of Government Commerce (OGC)
ITIL History - Timeline

1980’s
- ITIL V1

1990’s
- BS 15000-1
- ITIL V2

2000
- BS 15000-1

2001
- ITIL V2

2002
- BS 15000-2

2003
- BS 15000-2

2005
- ISO 20000
  1:2

2007
- ITIL V3
Why ITIL?

- Vendor neutral
- Non-proprietary
- Built from experience
- Comprehensive and consistent
- Allows for structure
- Common language
- Provides a framework
Myths and Misconceptions

> ITIL is for Technologists
  - ITIL is a shared business and IT commitment

> ITIL is the only answer
  - ITIL Complements other best practices and quality improvement programs

> ITIL tells you how to implement
  - Deployment approach is up to you

> The Major Investment is Education
  - ITIL Complements other best practices and quality improvement programs

> ITIL is only about People and Process
  - Use Technology to Integrate, Automate and Optimize programs

> Take it one process at a time
  - All ITIL processes are inter-related and inter-dependant
Myths and Misconceptions (ctd)

> **ITIL Certification**
  - People can be certified
  - Products can be scanned for ITIL support
  - No Product gives “ITIL in a box”

> **ITIL is just processes**
  - NO... it defines a Best Practice for the Processes of Service Management ..plus a whole lot more

> **ITIL will make me more efficient**
  - ITIL is primarily a Quality Initiative
  - Efficiency depends on deployment choices

> **We MUST follow the ITIL Best Practices**
  - They are RECOMMENDATIONS.. Not Commandments
ITIL: 21+ Years of Service Improvement

> **ITIL Version 3**
  - Business-IT service integration and value generation
  - Service Management for business and technology

> **ITIL Version 2**
  - Business-IT alignment
  - Quality/efficiency of IT processes
  - Basis for ISO 20000

> **ITIL Version 1**
  - Stability and control of IT infrastructure
  - IT Infrastructure Management process
ITIL V2

> Comprehensive set of best practices for IT

> Describes the IT activities needed to support IT services

> Core areas:

  - **Service Delivery**
    - Plan and deliver quality IT services
    - Transforms IT activities into strategic business value

  - **Service Support**
    - Day-to-day activities to support and maintain IT services
    - A foundation upon which to build business value
Service Support

The Business, Customers and Users

Incidents
- Incidents
- Incidents
- Service Desk

Communications
- Enquires
- Updates
- Work-arounds

Changes
- Customer survey reports
- Releases

Problem Management
- Problem statistics
- Trend analysis
- Problem reports
- Problem reviews
- Diagnostic aids
- Audit reports

Change Management
- Change schedule
- CAB minutes
- Change statistics
- Change reviews
- Audit reports

Release Management
- Release schedule
- Release statistics
- Release reviews
- Secure library
- Testing standards
- Audit reports

Configuration Management
- CMDB reports
- CMDB statistics
- Policy/standards
- Audit reports

Incidents
- Problems
- Known errors
- Changes
- Releases
- CI relationships

Configuration Management Database

Service reports
- Incident statistics
- Audit reports

Management Tools

Incident Management
Service Delivery

The Business, Customers and Users

Queries Enquiries
Communication Updates Reports

Service Level Management

SLAs, SLRs, OLAs Service reports Service Catalogue SIP Exception reports Audit reports

Requirements Targets Achievements

Financial Management for IT Services

Financial Plan Types and models Costs and Charges Reports Budgets and Forecasts Audit reports

IT Service Continuity Management

IT Continuity Plans BIA and Risk Analysis Requirements Def’n Control centres DR contracts Reports Audit reports

Availability Management

Availability Plan AMDB Design criteria Targets/Thresholds Reports Audit reports

Capacity Management

Capacity Plan CDB Targets/Thresholds Capacity Reports Schedules Audit reports

System Management Tools

Alerts and Exceptions Changes

Audit reports
ITIL ..More than Service Management
ICTIM Processes

> Design and Planning

- The development and maintenance of ICT strategies and processes for the deployment and implementation of appropriate ICT infrastructure solutions throughout the organization.

> Deployment

- Concerned with the implementation and roll-out of the business, and/or ICT solution as designed and planned, with minimum disruption to business processes.

> Operations

- All activities and measures to enable and/or maintain the intended use of the ICT infrastructure.

> Technical Support

- The development of knowledge for the evaluation, support and proofing of all current and future ICT infrastructure solutions.
The Mission of ICTIM...

... to reduce the overall Total Cost of Ownership (TCO) of ICT, while maintaining the overall quality of the ICT services provided.
Service Dependency Model

- Services
  - E-Banking
    - User Experience
      - Availability
    - Application
      - SLA
      - Business Logic
  - E-Sales
    - Application
    - User Experience
      - Business Logic
      - SLA
      - Availability
  - Application Infrastructure
    - Data Centre
      - Network topology
      - Name Service
      - Authentication
  - Messaging
  - Data Services
  - Web Services
  - Application Infrastructure
    - Data Centre
    - Network topology
    - Name Service
    - Authentication
Alignment of Service
ITIL V2 – The BIG(ger) Picture
ITIL Changes from V2 to V3

> V3 Focus: IT to Business Integration

- **Service Strategy**: service portfolio
- **Service Design**: define & design
- **Service Transition**: build & deploy
- **Service Operation**: maintain day-to-day operations
- **Continual Service Improvement**: improve quality of service
The Service Strategy volume provides guidance on how to design, develop, and implement service management not only as an organizational capability but also as a strategic asset.

Service Strategy is about ensuring that organizations are in a position to handle the costs and risks associated with their Service Portfolios, and are set up not just for operational effectiveness but also for distinctive performance. Decisions made with respect to Service Strategy have far-reaching consequences including those with delayed effect.
Service Design

The Service Design volume provides guidance for the design and development of services and service management processes. It covers design principles and methods for converting strategic objectives into portfolios of services and service assets. The scope of Service Design is not limited to new services. It includes the changes and improvements necessary to increase or maintain value to customers over the lifecycle of services, the continuity of services, achievement of service levels, and conformance to standards and regulations. It guides organizations on how to develop design capabilities for service management.
The Service Transition volume provides guidance for the development and improvement of capabilities for transitioning new and changed services into operations. This publication provides guidance on how the requirements of Service Strategy encoded in Service Design are effectively realized in Service Operation while controlling the risks of failure and disruption.
This volume embodies practices in the management of service operations. It includes guidance on achieving effectiveness and efficiency in the delivery and support of services so as to ensure value for the customer and the service provider. Strategic objectives are ultimately realized through service operations, therefore making it a critical capability. Guidance is provided on ways to maintain stability in service operations, allowing for changes in design, scale, scope and service levels. Organizations are provided with detailed process guidelines, methods and tools for use in two major control perspectives: reactive and proactive.
This volume provides instrumental guidance in creating and maintaining value for customers through better design, introduction, and operation of services. It combines principles, practices, and methods from quality management, Change Management and capability improvement. Organizations learn to realize incremental and large-scale improvements in service quality, operational efficiency and business continuity. Guidance is provided for linking improvement efforts and outcomes with service strategy, design, and transition. A closed-loop feedback system, based on the Plan, Do, Check, Act (PDCA) model specified in ISO/IEC 20000, is established and capable of receiving inputs for change from any planning perspective.
ITIL V3 = V2 + New Processes

> New enablers include

- **Strategy**: Service Portfolio
- **Transition**: Control changes, IT Asset & Configuration Mgt
- **Security**: Integrated with IT Ops
- **Design**: Catalogue of services
- **Request**: Delineated from incident

> Investment Protection & Value Add

While v.3 doesn’t require organizations to “start over” from scratch, those that have implemented v.2 will need to carefully assess how they can leverage specific improvements.

*Gartner, 5 June 2007*
### ITIL V2 Service Support mapping to V3

<table>
<thead>
<tr>
<th>ITIL V2 Process</th>
<th>Primary ITIL V3 Book</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Management</td>
<td>Service Transition</td>
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<tr>
<td>Configuration Management</td>
<td>Service Transition</td>
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<tr>
<td>Incident Management</td>
<td>Service Operation</td>
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<tr>
<td>Problem Management</td>
<td>Service Operation</td>
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<tr>
<td>Release Management</td>
<td>Service Transition</td>
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<tr>
<td>Service Desk</td>
<td>Service Operation</td>
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<tr>
<td>Service Asset and Configuration Management including the CMDB</td>
<td>Service Transition</td>
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<tr>
<td></td>
<td>CMBD is part of the Configuration Management system (CMS)</td>
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<tr>
<td>Fault Management (ICT Volume)</td>
<td>Service Operation</td>
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<tr>
<td>Knowledge Management</td>
<td>Service Transition</td>
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</tbody>
</table>
## ITIL V2 Service Delivery mapping to V3

<table>
<thead>
<tr>
<th>ITIL V2 Process</th>
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<tbody>
<tr>
<td>Financial Management</td>
<td>Service Strategy</td>
</tr>
<tr>
<td>Availability Management</td>
<td>Service Design</td>
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<tr>
<td>Capacity Management</td>
<td>Service Design</td>
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<tr>
<td>IT Service Continuity Management</td>
<td>Service Design Referenced in Service Transition, Service Operation and Continual Service Improvement</td>
</tr>
<tr>
<td>Service Level Management</td>
<td>Service Design</td>
</tr>
<tr>
<td>Service Catalog Management</td>
<td>Service Design</td>
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</tbody>
</table>
## Processes in Version 3

<table>
<thead>
<tr>
<th>Governance processes</th>
<th>Lifecycle Stages</th>
<th>Continual Service Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Measurement</td>
<td></td>
<td>CSI</td>
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<td>Service Reporting</td>
<td></td>
<td>CSI</td>
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<tr>
<td>Service Improvement</td>
<td></td>
<td>CSI</td>
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<tr>
<td>Demand Management</td>
<td>Service Strategy</td>
<td>SS</td>
</tr>
<tr>
<td>Strategy generation</td>
<td>Service Design</td>
<td>SS</td>
</tr>
<tr>
<td>Service Portfolio Management</td>
<td>Service Transition</td>
<td>SS</td>
</tr>
<tr>
<td>IT Financial Management</td>
<td>Service Operation</td>
<td>SS</td>
</tr>
<tr>
<td><strong>Operational processes</strong></td>
<td></td>
<td>Continual Service Improvement</td>
</tr>
</tbody>
</table>
Design suggestions in ITIL V3
ITIL V3 Challenges

> ITIL remains descriptive - no actionable guidelines
  - Now 23 processes across 5 inter-related books—depending on who is counting

> Strategic emphasis requires strong IT governance
  - The why and how – fact based decisions
  - Strategic controls - Demand Management, Financial Management, Service Portfolio Management
Summary of Primary ITIL Process Areas

**Strategic Goals**
- Quality Management
- Application Lifecycle Support
- IT Service Design (including policies and architecture)
- Planning and Control
- Capacity Management
- SLM

**Tactical Goals**
- Customer Liaison
- Supplier Liaison (including FM, Third Party Maintenance)
- Cost Management for IT
- Business Continuity/Contingency Planning
- Availability Management
- Change Management
- Software Control & Distribution (including testing software)
- Problem Management
- Service Desk
- Event and Incident Management
- Operations (including unattended operations)
- Networks
- Catalogue

**Operational Goals**
- Environmental Infrastructure
Incident Management

- From Event Management
- From Web Interface
- From User Phone Call
- From Email

1. Incident Identification
2. Incident Logging
3. Incident Categorization
4. Service Request?
   - Yes: To Request Fulfillment
   - No: Next
5. Incident Prioritization
6. Major Incident?
   - Yes: Major Incident Procedure
   - No: Next
7. Initial Diagnosis
8. Hierarchic Escalation Needed?
   - Yes: Management Escalation
   - No: Next
9. Functional Escalation Required?
   - Yes: Functional Escalation 2/3 Level
   - No: Next
10. Investigation & Diagnosis
11. Resolution and Recovery
12. Incident Closure
13. End
Incident Management
Problem Management
Change Management

- Change Management
- Execute Changes (Urgent, Standard)
- PLAN
- Test
- CAB
- CHECK
- ACT
- RFC Analysis
- Prioritize
- Categorize
- Build Schedule
Release Management
Configuration Management
Service Support Interactions
Availability Management
Capacity Management
Service Level Management

- Plan
- Do
- Check
- Act

Catalog Services

Meet Business Requirements

Monitor Agreements

Service Request

Negotiate OLA

Negotiate SLA
IT Service Continuity Management
Service Delivery Interactions
ITIL V2 in Summary

Service Support

Service Delivery

Release Management

Incident Management

Availability Management

Capacity Management

Configuration Management

Problem Management

Financial Management

IT Service Continuity Management

Service Level Management

Change Management
ITIL V3 in Summary

Service Strategy

Service Design
- Service Catalog Management
- Availability Management
- Info Security Management
- Capacity Management
- IT Service Continuity Management
- Service Level Management

Service Transition
- Release and Deployment Management
- Transition Planning and Support
- Change Management
- Service Asset and Configuration Management
- Service Validation and Testing

Service Operation
- Incident Management
- Request Fulfillment
- Event Management
- Access Management
- Problem Management
- Knowledge Management

Continual Service Improvement
ISO Framework
IT Governance, Service & Security Management

> Governance Framework
> Certifiable
> Defensible position with audit community (internal & external)
> Predictable Risk Model
> Operational Excellence
ISO 20000

Service Management Framework

Management System
- Management Responsibility
- Documentation Requirements
- Competence, Awareness and Training

Planning and Implementing Service Management
- Plan
- Do
- Act
- Check

Planning and Implementing New or Changed Service

Service Delivery Processes
- Service Level Management
- Service Reporting
- Information Security Management
- Budgeting & Accounting for IT Services

Control Processes
- Configuration Management
- Change Management
- Business Relationship Mgmt
- Supplier Management

Release Processes
- Release Management

Resolution Processes
- Incident Management
- Problem Management

Relationship Processes

PDCA Process Integration

Managed Services
- Management Responsibility

Plan
- Plan Service Management

Act
- Continuous Improvement

Check
- Monitor, Measure & Review

Do
- Implement Service Management

Business Requirements
- Request for new or changed Services
- Other process, business, supplier customer
- Other teams, e.g. Security

Customer Requirements

Business Results
- New or Changed Service
- Other process, business, supplier customer
- Teams & People Satisfaction

Customer Satisfaction
## ISO/IEC 20000-1

**Management and Planning**
- Management responsibility
- Documentation requirements
- Competence, awareness and training
- Plan service management (Plan)
- Implement service mgmt & provide services (Do)
- Monitoring, measuring & reviewing (Check)
- Continual improvement (Act)
- Planning & implementing new or changed svcs

**Service delivery processes**
- Service level management
- Service reporting
- Service continuity and availability management
- Budgeting and accounting for IT services
- Capacity management
- Information security management

**Relationship processes**
- Business relationship management
- Supplier management

**Resolution processes**
- Incident management
- Problem management

**Control processes**
- Configuration management
- Change management
- Release management process

## ITIL

**Service Strategy**

**Service Design**
- Service catalog management
- Service level management
- Capacity management
- Availability management
- IT Service continuity management
- Information security management
- Supplier management

**Service Transition**
- Transition Planning and Support
- Change Management
- Service asset and configuration management
- Release and deployment management
- Service validation and testing
- Evaluation
- Knowledge Management

**Service Operation**
- Event management
- Incident management
- Request Fulfillment
- Problem management
- Access management
- Operational activities of SS, SD, ST, CSI

**Continual Service Improvement**
- Service reporting, measurement, and ROI
Carnegie Mellon CMM - Capability Maturity Model®
Applied to IT Service

> 0 = Absence. No controls documented or in place.
> 1 = Initial. The IT service delivery process is characterized as ad hoc, and occasionally even chaotic. Few processes are defined, and success depends on individual effort and heroics.
> 2 = Repeatable. Basic service management processes are established. The necessary discipline is in place to repeat earlier successes on similar services with similar service levels.
> 3 = Defined. The IT service processes are documented, standardized, and integrated into standard service processes. All services are delivered using approved, tailored versions of the organization’s standard service processes.
> 4 = Managed. Detailed measurements of the IT service delivery process and service quality are collected. Both the service processes and the delivered services are quantitatively understood and controlled.
> 5 = Optimizing. Continuous process improvement is enabled by quantitative feedback from the processes and from piloting innovative ideas and technologies.
Control objectives translate the concepts presented in the framework into specific controls applicable to each IT process.
COBIT and ISO 20000

COBIT: Control Framework for IT Governance

Control Objectives

Maturity Levels

Critical Success Factors

KGI & KPIs

Supporting Processes for IT Governance

App Lifecycle

Management System
- Management Responsibility
- Documentation Requirements
- Competence, Awareness and Training

Planning and Implementing Service Management

Planning and Implementing New or Changed Service

Planning Process
- Plan
- Act
- Check
- Do

Service Delivery Processes
- Configuration Management
- Change Management
- Incident Management
- Problem Management
- Service Continuity & Availability Management

Release Processes
- Release Management

Control Processes
- Information Security Management
- Budgeting & Accounting for IT Services

Relationship Processes
- Business Relationship Management
- Supplier Management
## Example Compliance Imperatives

### CobiT Internal Control Concepts Aligned to Functional Software Technology

<table>
<thead>
<tr>
<th>Compliance Management Imperatives</th>
<th>CobiT Processes</th>
<th>Functional Software Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Operations</td>
<td>DS 2 — Manage third-party services</td>
<td>BPM</td>
</tr>
<tr>
<td></td>
<td>DS 7 — Educate and train users</td>
<td>Customer relationship management</td>
</tr>
<tr>
<td></td>
<td>DS 13 — Manage operations</td>
<td>E-learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E-mail and other forms of messaging</td>
</tr>
<tr>
<td>Manage Risk and Controls</td>
<td>PO 9 — Assess risks</td>
<td>Identity management</td>
</tr>
<tr>
<td></td>
<td>PO 8 — Ensure external compliance</td>
<td>Real-time and team collaboration</td>
</tr>
<tr>
<td></td>
<td>M1 — Monitor</td>
<td>Storage, backup and recovery</td>
</tr>
<tr>
<td></td>
<td>M2 — Assess internal control adequacy</td>
<td></td>
</tr>
<tr>
<td>Manage Reliability</td>
<td>DS 10 — Problems and incidents</td>
<td>Business activity monitoring</td>
</tr>
<tr>
<td></td>
<td>DS 5 — Ensure system security</td>
<td>Performance assessment and monitoring</td>
</tr>
<tr>
<td>Manage Systems</td>
<td>DS 9 — Manage the configuration</td>
<td>Application integration and middleware</td>
</tr>
<tr>
<td></td>
<td>PO 5 — Manage the IT investment</td>
<td>Network management</td>
</tr>
<tr>
<td></td>
<td>AI 4 — Develop and maintain procedures</td>
<td>Security</td>
</tr>
<tr>
<td>Manage Change</td>
<td>AI 6 — Manage change</td>
<td>Database management systems</td>
</tr>
<tr>
<td></td>
<td>PO 11 — Manage quality</td>
<td>Data warehouse/data marts, extract-transform-load tools</td>
</tr>
<tr>
<td></td>
<td>AI 5 — Install and accredit systems</td>
<td>Network and system management</td>
</tr>
<tr>
<td>Manage Records and Data</td>
<td>DS 11 — Manage data</td>
<td>Application development tools</td>
</tr>
<tr>
<td></td>
<td>PO 2 — Define IT architecture</td>
<td>Business intelligence and reporting</td>
</tr>
</tbody>
</table>

Source: Gartner Dataquest
Example metrics

Incident & Problem Management

> Metrics for ISO 20,000

- Define and track maturity score for key processes
- Define and track equivalent performance indicators for each process using equivalent COBIT controls as starting point
- Rate KPI, PGI, KGIs using COBIT DS8—Manage Service Desk and Incidents

> Caveat

- Not intended to replace third party audit, or guarantee consistency with auditors’ interpretations
Standard model for ISO 20,000 Processes

Example scorecard content

ISO 20000 Management Dashboard

ISO 20000 Process Maturity

ISO 20000-COBIT 4 Mapping
Application Lifecycle Management

Best Practices

- Requirements
- Optimize
- Design
- Operate
- Build
- Deploy

Note:
- Application Lifecycle Management model from ITIL V3 Service Operations
Application Lifecycle Management

Requirements

Optimize  Design  Operate  Build  Deploy

This is the phase during which the requirements for a new application are gathered based on the business needs of the organization.

There are six types of requirements for any application, whether developed in-house, outsourced, or purchased:

- Functional requirements
- Manageability requirements
- Usability requirements
- Architectural requirements
- Interface requirements
- Service level requirements

Address the need for a responsive, available, and secure service, and deal with such issues as deployment, operations, system management and security.

Specify how the service should perform, the quality of its output and any other qualitative aspects measured by the user or customer.
This is the phase during which requirements are translated into specifications.

Design includes the design of the application itself, and the design of the environment, or operational model that the application has to run on.

In the case of purchased software ... it is important that Application Management is able to provide feedback to the software vendor about the functionality, manageability, and performance of the software.
In the Build phase, both the application and the operational model are made ready for deployment.

Application components are coded, or acquired, integrated, and tested.

Testing is an integral component of both the Build and Deploy phases – even if it uses different environments.

Testing in the build phase focuses on whether the application meets its functional and manageability specifications.
In this phase, both the operational model and the application are deployed.

The operational model is incorporated in the existing IT environment and the application is installed on top of the operational model using the Release and Deployment Management process.

Testing also takes place during this phase, although here the emphasis is on ensuring that the deployment process and mechanisms work effectively.

Early Life Support covers a pre-defined period (of) testing, validation and monitoring of a new application or service.
In the Operate phase, the IT services organization operates the application as part of delivering a service required by the business.

The performance of the application in relation to the overall service is measured continually against the Service Levels and key business drivers.

(Note that) applications are but one component of many needed to provide a business service.

(Note also that) the Operate phase is not exclusive to applications.
In the Optimize phase the results of the Service Level performance measurements are measured, analyzed and acted upon.

The two main strategies in this phase are to maintain and/or improve Service Levels and to lower cost.

This could lead to iteration in the lifecycle or to justified retirement of an application.
Service Lifecycle and IT Service Design

Stages of a structured method:
- Specify
- Design
- Code
- Deploy
- Operate
- Modify
- Maintain
- Enhance
- Decommission

Timeline:
- Procurement
- ITIL RFC
- Project management

IACA International Association of Commercial Administrators
## Summary of ALM and Svc Design / Mgt

<table>
<thead>
<tr>
<th>ALM Phase</th>
<th>Service Design</th>
<th>Service Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements</td>
<td>Define Support requirements Define impact on Service Mgt</td>
<td>Planning and Implementing IT Services Budgeting and accounting for IT Services Change management Release management</td>
</tr>
<tr>
<td>Plan</td>
<td>Define Support requirements Define impact on Service Mgt</td>
<td>Capacity management Supplier management Service Level Management</td>
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<tr>
<td>Design</td>
<td>Develop Service Introduction Plan</td>
<td>Capacity management Information security management</td>
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<td>Build</td>
<td>Develop Service Introduction Plan</td>
<td>Request management Change management Configuration management</td>
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<tr>
<td>(Test)</td>
<td>Prepare Service Mgt for Application Deployment</td>
<td>Problem management Knowledge management Information Security Management</td>
</tr>
<tr>
<td>Deploy</td>
<td>Prepare Service Mgt for Application Deployment</td>
<td>Change management Release management Configuration management</td>
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<tr>
<td>Operate</td>
<td></td>
<td>Service level management Availability management Supplier Management Incident management Request management Change management Configuration management</td>
</tr>
<tr>
<td>Optimize</td>
<td></td>
<td>Service level management Capacity management Problem management Change management Configuration management</td>
</tr>
</tbody>
</table>
Barriers to Adoption are Cultural and Organizational

> IT departments traditionally organized around **functions**, not **services**

> **Wild West culture** - “Heroes, legends, and troubleshooters”

> Fix first, ask questions later!

> Continuously revisit, rather than **continuously improve**

> Business **measures the value** not problem-solving capability
CMP ITIL Survey – Key Findings

> **55%** are working with ITIL or will do so in the next 6 months

> **35%** of those cite the need to improve service quality

> **67%** are implementing ITIL processes across Service Support and Service Delivery
  - Change Management ranked #1
  - Service Level Management ranked #1

> **33%** cited “IT silos” as the biggest barrier

> ITIL is increasingly visible among senior management
  - **58%** named the CIO as their chief sponsor
ITIL – Adoption Rates

**What describes the current state of ITIL in your organization?**

- **42%** No immediate plans to adopt
- **43%** Early stages of implementation or plan to adopt during the next 6-12 months
- **12%** Mature ITIL implementations are driving service quality
- **3%** No progress or meaningful results
Transformational Journey

Silos

“Hero Culture”

Integrated Processes

“Team Culture”

Shared Services

“Repeatable Best Practices”

Value Generator

Reactive

Proactive

Efficiency

Service Center

Value

Cost-Center

Innovator / Value Center
ITIL Benefits

> Improve IT service quality
  - Standardized, repeatable processes drive continuous improvement
  - Absorb more changes with improve success rates

> IT business alignment
  - Customer focus
  - SLAs
  - Services described in a common language

> Reduce costs and improve efficiencies
  - Economies of scale
  - Uniform frame of reference
## Case Study - Service Management

<table>
<thead>
<tr>
<th>Area</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring System</td>
<td>Track, alert, and report service levels, operating levels, and underpinning contracts for systems, networks, and applications.</td>
</tr>
<tr>
<td>Provisioning System</td>
<td>Automatic, pre-approved implementation of configuration change for user access, release, and availability management</td>
</tr>
<tr>
<td>User</td>
<td>End-user and business request, approval, knowledge, and incident reporting</td>
</tr>
<tr>
<td>Business</td>
<td>Business provides requirements, change requests, request approvals Business point of contact gives local guidance &amp; knowledge transfer</td>
</tr>
<tr>
<td>Help Desk</td>
<td>Perform recording, filtering, categorization, prioritization, initial diagnosis/resolution, and routing for incidents and requests</td>
</tr>
<tr>
<td>Application Specialist</td>
<td>Perform diagnosis, workaround, resolution for incidents, knowledge documentation, and fulfill requests where change is pre-approved</td>
</tr>
<tr>
<td>Engineering</td>
<td>Implement application, system, and configuration change to resolve incidents, fix problems/known errors, and fulfill change requests</td>
</tr>
<tr>
<td>Third Party Supplier</td>
<td>Maintain service levels per underpinning contract, and resolve incidents with service/configuration items</td>
</tr>
</tbody>
</table>
# Cost, skill, and career

<table>
<thead>
<tr>
<th>Area</th>
<th>Cost</th>
<th>Skill</th>
<th>Support Career</th>
</tr>
</thead>
<tbody>
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</table>
# Service Management

## Process responsibilities by Actor

<table>
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<tr>
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<th>Request</th>
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<tr>
<td>Business</td>
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<td>- Support from local point of contact - Request approval</td>
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<td>Help Desk</td>
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<td>Application Specialist</td>
<td>- Documentation - Workaround</td>
<td>- Request approval - Standard requests</td>
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<tr>
<td>Engineering</td>
<td>- Resolution</td>
<td>- Request fulfillment</td>
<td>- Problem / KE identification - KE resolution</td>
<td>- IT opens RFC - Change implementation</td>
<td>- Open Emergency RFC - Emergency Change implementation</td>
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<tr>
<td>Third Party Supplier</td>
<td>- Resolution</td>
<td>- Request fulfillment</td>
<td>- KE resolution</td>
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</table>
## Service Management Best Practices

### Incident Management

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<td>Third Party Supplier</td>
<td>Resolution</td>
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</tbody>
</table>

**Goal:** Lower costs and improve service quality through proactive incident detection via monitoring

**Goal:** Lower costs through maximizing use of self-serve for incidents

**Goal:** Use lower cost resources for resolving common incidents

**Goal:** Lower costs and improve service quality through proactive incident detection via monitoring
### Service Management Best Practices

#### Request Management

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</tbody>
</table>

**Goal:** Improve request service levels, and reduce request fulfillment costs through automation.

**Goal:** Lower costs through maximizing use of self-serve for requests, and also for approvals.

**Goal:** Use lower cost resources for fulfilling frequent requests.
## Service Management Best Practices

### Change Management

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</tbody>
</table>

**Goal:** focus resource on planned changes for service improvement

**Goal:** reduce # of change approval cycles through standardizing change requests
## Service Management Best Practices
### Problem Management

<table>
<thead>
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<th>Area</th>
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**Goal**: focus resource on proactive service improvement
Case Study - Incident Management Process Benchmark

1.1 Detection and Recording
1.2 Classification and Support
1.3 Investigation and Diagnosis
1.4 Resolution and Recovery
1.5 Incident Closure
1.6 Monitor
1.7 Evaluate Process Performance

Legend
- **Process or System does not exist in current environment**
- **Process or system exists in current environment. Area of improvement or potential automation**
Incident Management Process

Current State Assessment

Incident Management Capability Analysis

Assessment Rationale:

- Does not Leverage technologies for automation of processes
- Some Definition of metrics to measure performance and resolution of Incidents
- No consistent prioritization process
- Mostly reactive, driven by customer reported Incidents
- Current System limitations prevent good automation and integration

Manual
Partially Automated
Automated & Integrated

IT/Business Alignment
Accurate Reporting
Reduced support costs
Reactive
Uncoordinated

Sempra

PROCESS MATURITY
INTEGRATION/AUTOMATION
### Incident Management

#### Gaps and recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Gap</th>
<th>Business Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing Standardized Incident Classification Categories</td>
<td>Need to create a new approach to Categorization</td>
<td>Increased efficiency Decreased resolution times Better reporting</td>
</tr>
<tr>
<td>Implement an Incident Escalation Policy</td>
<td>Need to define policy, then identify Individuals involved.</td>
<td>Increased efficiency Decreased resolution times</td>
</tr>
<tr>
<td>Implement an Incident Alerting Strategy</td>
<td>Need to identify key communication points within the process and understand what needs to be communicated to who, and how we are going to communicate it.</td>
<td>Increased efficiency Decreased resolution times Improved client communications Improved communication within IT</td>
</tr>
<tr>
<td>Implement Incident Logging and Recording Audit Procedures</td>
<td>Need to documentation standards, review procedures, and Audit standards.</td>
<td>Ensure compliance with policies and governance Better Reporting Better data quality</td>
</tr>
<tr>
<td>Implement an Incident Knowledge Base</td>
<td>Need to define how the knowledge tool will be employed in support of the incident management process. (Scripts, and KEDB, etc.)</td>
<td>Increased efficiency Decreased resolution times Better knowledge retention Improved Client experience</td>
</tr>
<tr>
<td>Implement an Incident Logging Tool</td>
<td>Need to define how the tool will need to be configured to support the Incident Management process</td>
<td>Increased efficiency Decreased resolution times Better knowledge retention Improved Client experience Ensure compliance with policies and governance Better Reporting Better data quality</td>
</tr>
<tr>
<td>Generate Logged Incidents from System Events</td>
<td>No current strategy exists for Event Management in this stage of ESM. Will need to understand current capabilities and possible approaches.</td>
<td>Increased efficiency Decreased resolution times</td>
</tr>
</tbody>
</table>
# Incident Management

## Key Recommendations

<table>
<thead>
<tr>
<th>Process</th>
<th>System</th>
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<tbody>
<tr>
<td>1. Focus on high volume low impact incident routing and management</td>
<td>1. Simplify Incident Categorization</td>
</tr>
<tr>
<td>2. Focus on improving communications during incident management process</td>
<td>2. Improve Workgroup Structure</td>
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<tr>
<td>(both internally with IT Actors and externally to impacted Clients)</td>
<td>3. Effectively employ notification and</td>
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<td>automation capabilities</td>
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<tr>
<td>3. Define clear and concise Incident documentation standards</td>
<td>4. Define appropriate workflow automation</td>
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<td>for routing and escalation</td>
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</tbody>
</table>
Recommended Logical Organization of Process Roles

Governance

Incident Process Owner

Incident Manager

Service Providers

Incident Coordinator

The process owner has the overall strategic responsibility for ensuring the suitability of the Incident Management process to the organization.

Responsible for the tactical operational execution of the Incident Management process.

Responsible for the troubleshooting and resolution of Incidents.

Assists Process Manager in tactical administration of key process activities. May be multiple Coordinators assigned to logical areas.
# RACI Matrix

*Responsible, Accountable, Consulted, Informed*

<table>
<thead>
<tr>
<th>Process Area</th>
<th>Sub-Process or Activity</th>
<th>Business Stakeholder</th>
<th>Service Manager</th>
<th>Service &amp; Tool Architecture</th>
<th>Financial Manager</th>
<th>Service Level Manager</th>
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<tr>
<td><strong>Service Design</strong></td>
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<td>Service Definition</td>
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<td><strong>Service Transition</strong></td>
<td>Service Publishing</td>
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<td><strong>Service Operation</strong></td>
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<td><strong>Service Improvement</strong></td>
<td>Quality Review</td>
<td>CI</td>
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<td>Report &amp; Update</td>
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<td><strong>Service Retirement</strong></td>
<td>Service Decommission</td>
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North American communications service provider **doubled its call volume** without increasing the size of the support staff.

A midsize European IS group was able to **bill 1 M euros** for services provided but not previously tracked/charged for.

Australian government agency **reduced IT costs** by $2 M annually – a **20 percent** reduction compared to outsourcing.
Recommendations for Overcoming Barriers

> ITIL is an exercise in organizational change
  - Change requires time, money and resources

> Build business cases based on short term wins and improvements

> ITIL is a common language
  - Use it to communicate within IT and across the business

> Invest in training programs and team building workshops
  - Facilitate collaboration
  - Build awareness

> Senior management support is critical!

“Every improvement is a Change”
Recommendations for Overcoming Barriers (ctd)

> **Practical experience** trumps ITIL theory
> Avoid leaving process development to “specialists”
> **Be flexible** – avoid bureaucratic constructs
> **Walk before you run.** Assess core capabilities across ITIL processes.
> Don’t swap one set of **silos** for another:
  - Incident vs. Problem
  - Process vs. Technology
  - Etc.
Where to start: Example Alignment of Value of Processes with Customer Goals

**Incident Management**
- Quickly restore incidents
- Accurately and rapidly use knowledge to restore incidents
- Escalate recurring incidents to problems

**Problem Management**
- Reduce problem reoccurrence via problem root cause analysis
- Resolution developed and RFC initiated

**Change Management**
- Minimize business risk by simulating change impact analysis
- Reduce problems caused by changed through a controlled changes process
Where to start: Examples of efficiency value

**Change Management**
- Centralize and standardize RFCs
- Workflow driven approvals and authorization
- Impact analysis via CMDB integration

**Release Management**
- Automate software build procedures for audit and control
- Use asset management and software distribution for rollouts

**Incident Management**
- Incident auto-detect and prioritization per business impact
- Knowledge Management for quick-fixes and workarounds

**Problem Management**
- Build proactive capability by correlating information analysis across the technology stack
Recap of Goal

> **Service** is the *destination*

> **ITIL** is a *journey*
  - Based on a continuous quality improvement cycle
  - **Service Support**
    - Day-to-day support
    - Greater efficiency
  - **Service Delivery**
    - Planning
    - Quality
    - Value
    - *The ultimate goal!*

The goal is to improve Service and reduce cost – *not* implement ITIL
Agenda

- Services
- ITIL History and Myths
- ITIL V2 - Core Concepts
- ITIL V3 – What’s New
- Walkthrough of the Core ITIL Processes
- Controls and Metrics – COBIT, ISO 20K
- Application Lifecycle Management
- ITIL Value and Case Studies
- Barriers to adoption
- Where to start?