

## ICTEC

### IT Services Issues

3.4.2008

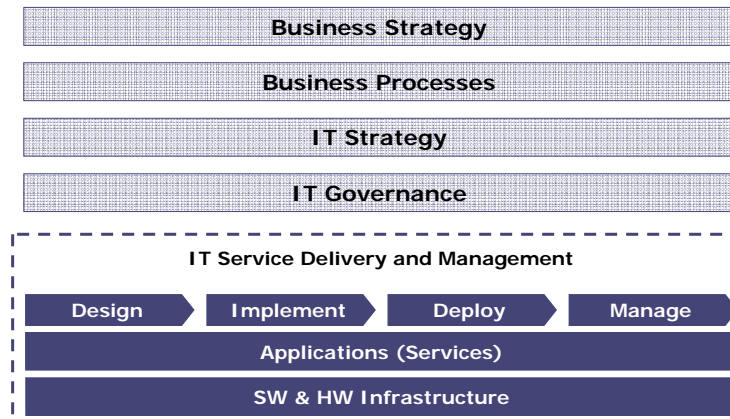


## IT Services ?

- IT Services include (for example)
  - Consulting
    - Management, IT Strategy, IT Architecture, Process, ...
  - Software
    - Software development, deployment, maintenance, operation, ...
    - Custom build, customized, COTS products, integration, ...
  - Hardware (delivery, operation, management, servicing, ...)
    - Computers, Storage, Printers, ...
    - Networking & Communication, ...
    - Low level "SW" services; hosting, email, ...
  - ...



## IT Services in Enterprise



## Corporate Governance

- Governance has become a hot topic in recent years, as financial scandals have eroded confidence in many professional and corporate organizations
- CEO's are now personally responsible to ensure accuracy of their company's accounts and reports (*SOX etc.*).
- Corporate Governance is about establishing and enforcing laws and decision processes within an organization.
- Supported by management, the CEO has to ensure that organizational objectives are attained and the organization's resources and assets are optimally used to create value.



## IT Strategy and Governance

- IT spending and budgeting ?
- What are the key business processes to be supported ?
- Which IT services will be provided ?
- What is done internally and what will be outsourced ?
- What Service Level is needed by the business ?
- What are the risks and how to prepare for those ?
- What kinds of controls and structures are needed ?
- ...



## IT Strategy and Governance

- Buy or Make ?
  - Develop internally or buy ? → Outsourcing, Partnering, Vendors, ...
- How to Buy ?
  - Buy / Lease Technology
    - Acquiring and operating technology; HW, SW, Networks, ...
  - Buy IT Services
    - Accessing technology through IT Services
    - Application services (SaaS), On-Demand, Pay-per-Use, ...
  - Buy Relationships
    - Accessing services through long-term relationships
    - Business Process –level services, Outsourcing, ...



## IT Governance

- Integral part of corporate governance and consists of the leadership and organizational structures and processes that ensure that the IT sustains and extends the organization's strategies and objectives.
- Main goals include:
  - Align IT with enterprise demands
  - Realize promised benefits
  - Utilize IT to increase the enterprise's value
- IT Service Management is one of key areas of ITG



## Why IT Governance ?

- Business is changing...
  - Business is more dependent on IT
  - The quality of IT has a direct impact on business
  - 7x24x365 availability
  - User requirements and expectations increase
  - Tightening regulations; threat for financial claims
- IT has to change...
  - IT is a critical enabler in developing new businesses
  - Has to mature – Higher quality, more efficient, flexible, agile, ...
  - Justification of costs
  - 70 – 80% of IT budget is spend on operating it.



## IT Service Management (ITSM)

- A discipline for managing large-scale information technology (IT) systems.
- Philosophically centered on the customer's perspective of IT's contribution to the business.
- Stands in deliberate contrast to technology-centered approaches to IT management and business interaction.

*"Providers of IT services can no longer afford to focus on technology and their internal organization, they now have to consider the quality of the services they provide and focus on the relationship with customers. [1]"*



## IT Service Management (ITSM)

- ITSM is process-focused and in this sense has ties and common interests with the process improvement movement (e.g. TQM, Six Sigma, BPM, CMMI).
- Focuses on providing a framework to structure IT-related activities and the interactions of IT technical personnel with business customers and users.
- ITSM is generally concerned with "back office" information technology for enterprises, not technology that is a company's primary product.



## IT Service Management (ITSM)

- The concept of "Service" in an IT sense has a distinct operational connotation, but IT Service Management is not limited to IT operations only.
- However, it does not encompass all of IT practice, and this can be a controversial matter.
  - Typically does not include project or program management
- Has a distinct practitioner point of view, and is more introspective (i.e. thinking about the delivery of IT to the business) as opposed to the more academic and outward facing connotation of MIS (thinking about the 'information' needs of the business).

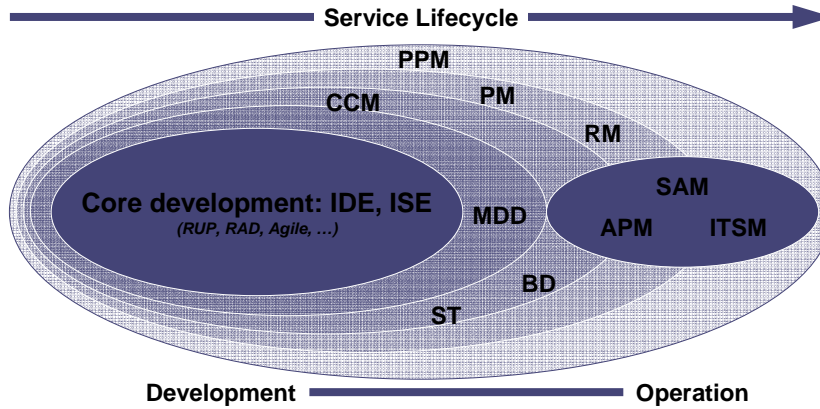


## IT Service Management (ITSM)

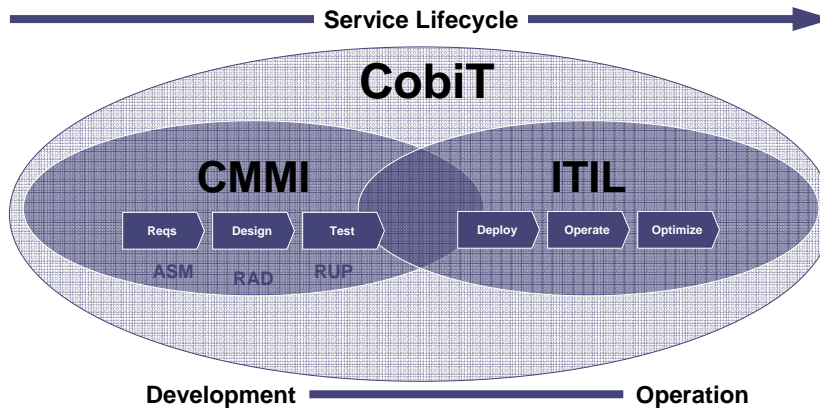
- IT Service Management in the broader sense overlaps with the discipline of IT portfolio management
- The degree to which software engineering is an ITSM concern is unclear.
  - Current ITSM literature has a distinct operational flavor
  - But it also shades into software quality and architectural concerns (especially related to infrastructure, capacity, and operability) while usually steering clear of project management and actual software development.
  - Similarly, the relationship to the field of Enterprise Architecture is unclear.



## IT Service Management (ITSM)



## IT Service Management (ITSM)



## COBIT ?

- Control Objectives for Information and related Technology
- It is a domain and process framework that presents activities in a manageable and logical structure.
  - "To provide the information that the organization needs to achieve its objectives, IT resources need to be managed by a set of naturally grouped processes."
- From Concept in 1992 to COBIT 4.0 in 2005

2005 Governance	
2000 Management	
1996 Assurance	1998 Control



## COBIT ?

- Scope and Objectives
  - Generally applicable and accepted standard for good practice for information and information technology (IT) control
  - From application to enterprise-wide IT, starting from a framework for control in IT
  - Based on the IT Governance Institute's Control Objectives
  - Aligned with "de jure" and "de facto" standards and regulations
  - Based on critical review of tasks and activities regarding business re-engineering
  - In order to provide the information that the organization needs to achieve its objectives, IT resources need to be managed by a set of naturally grouped processes.





## COBIT "IPR" Model

Information Requirements	IT Processes	Resources
<ul style="list-style-type: none"> <li>▪ Effectiveness</li> <li>▪ Efficiency</li> <li>▪ Confidentiality</li> <li>▪ Integrity</li> <li>▪ Availability</li> <li>▪ Compliance</li> <li>▪ Information Reliability</li> </ul>	<ul style="list-style-type: none"> <li>▪ Plan and Organize</li> <li>▪ Acquire and Implement</li> <li>▪ Deliver and Support</li> <li>▪ Monitor and Evaluate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Applications</li> <li>▪ Information</li> <li>▪ Infrastructure</li> <li>▪ People</li> </ul>



## COBIT Processes

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>▪ <b>Planning and Organization</b></li> <li>▪ PO 1 Define a Strategic IT Plan</li> <li>▪ PO 2 Define the Information Architecture</li> <li>▪ PO 3 Determine Technological Direction</li> <li>▪ PO 4 Define the IT Organization and Relationships</li> <li>▪ PO 5 Manage the IT Investment</li> <li>▪ PO 6 Communicate Management Aims and Direction</li> <li>▪ PO 7 Manage Human Resources</li> <li>▪ PO 8 Ensure Compliance with External Requirements</li> <li>▪ PO 9 Assess Risks</li> <li>▪ PO 10 Manage Projects</li> <li>▪ PO 11 Manage Quality</li> </ul> | <ul style="list-style-type: none"> <li>▪ <b>Acquisition and Implementation</b></li> <li>▪ AI 1 Identify Automated Solutions</li> <li>▪ AI 2 Acquire and Maintain Application Software</li> <li>▪ AI 3 Acquire and Maintain Technology Infrastructure</li> <li>▪ AI 4 Develop and Maintain Procedures</li> <li>▪ AI 5 Install and Accredite Systems</li> <li>▪ AI 6 Manage Changes</li> </ul> |
|---|--|



## COBIT Processes

### ■ Delivery and Support

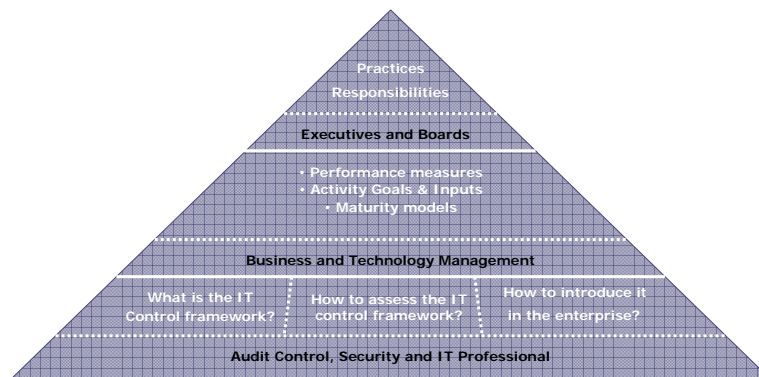
- DS 1 Define and Manage Service Levels
- DS 2 Manage Third-Party Services
- DS 3 Manage Performance and Capacity
- DS 4 Ensure Continuous Service
- DS 5 Ensure Systems Security
- DS 6 Identify and Allocate Costs
- DS 7 Educate and Train Users
- DS 8 Assist and Advise Customers
- DS 9 Manage the Configuration
- DS 10 Manage Problems and Incidents
- DS 11 Manage Data
- DS 12 Manage Facilities
- DS 13 Manage Operations

### ■ Monitoring

- M 1 Monitor the Processes
- M 2 Assess Internal Control Adequacy
- M 3 Obtain Independent Assurance
- M 4 Provide for Independent Audit



## COBIT ?

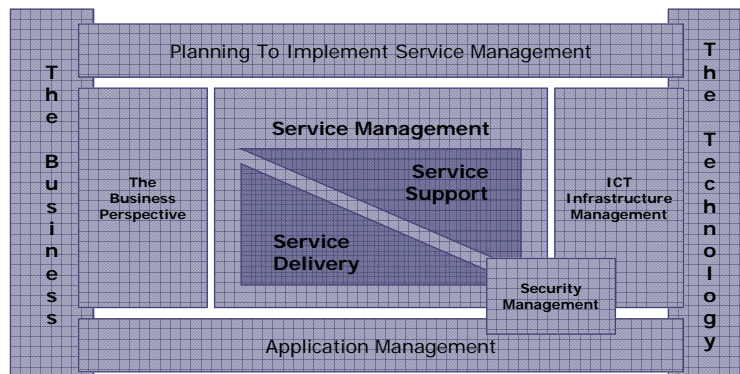


## ITIL ?

- ITIL (Information Technology Infrastructure Library) was developed more than 15 years ago to document best practice in IT Service Management
- It has evolved over time and become a “de facto” standard around the world in both the private and public sectors
- The core IT service management processes are addressed within the Service Support and Service Delivery publications
- Is a set of “Best practices” – not a formal method.



## ITIL Framework

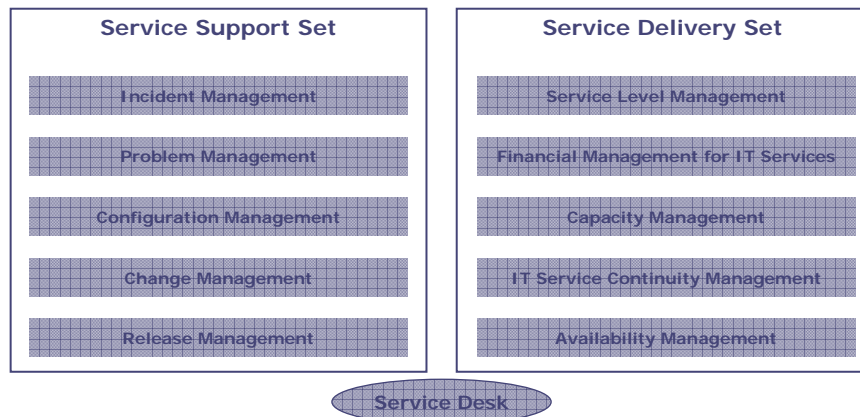


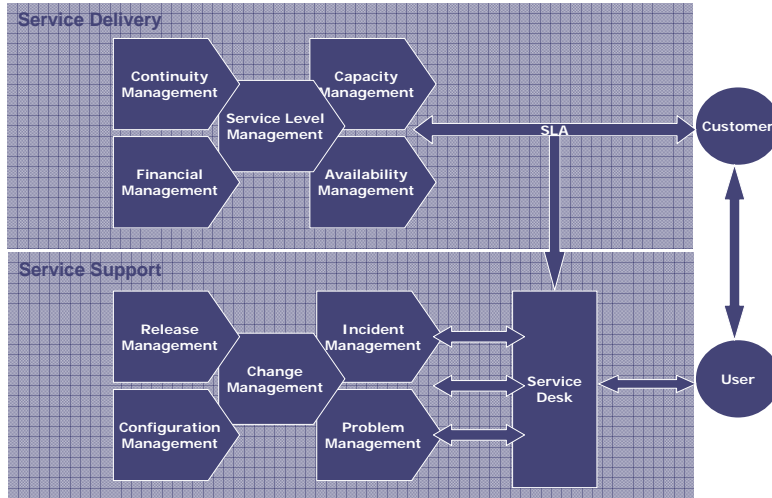
## The ITIL Books

- Service Support Set
- Service Delivery Set
- Infrastructure Management Set
- Applications Management Set
- Business Perspective Set
- Managers Set
- Planning & Implementation



## "The 10 processes"





## Service Support (Operational)

- The Service Support is focused on the User of the ICT services and is primarily concerned with ensuring that they have access to the appropriate services to support the business functions.
  - The **service desk** is the single contact point for the customers to record their problems. It will try to resolve it, if there is a direct solution or will create an incident.
  - Incidents initiate a chain of processes: Incident Management, Problem Management, Change Management, Release Management and Configuration Management
  - Chain of processes is tracked using the Configuration Management Database (CMDB), which records each process, and creates output documents for traceability (Quality Management)



## Service Desk

- The single point of contact between users and ITSM
  - Tasks include handling incidents and requests, and providing an interface for other ITSM processes.
  - The primary functions are
    - Incident Control (life cycle management of all Service Requests)
    - Communication (keeping the user informed of progress and advising on workarounds)
  - Comes in various forms: Call Centre, Helpdesk, Service Desk, ...
- Note: Service Desk is a function and not a process; as there is no manipulation of input for output.



## Service Delivery (Tactical)

- The Service Delivery is primarily concerned with the proactive and forward-looking services that the business requires of its ICT provider in order to provide adequate support to the business users. It is focused on the business as the Customer of the ICT services.
- The discipline consists of the following processes:
  - Service Level Management
  - Capacity Management
  - IT Service Continuity Management
  - Availability Management
  - Financial Management



## Service Level Management

- Service Level Management provides for continual identification, monitoring and review of the levels of IT services specified in the Service Level Agreements (SLAs).
- Service Level Management is the primary interface with the Customer (User → Service Desk).
- Service Level Management is responsible for
  - ensuring that the agreed IT services are delivered when and where they are supposed to be
  - together with Availability, Capacity, Incident and Problem Management to ensure that the required levels and quality of service are achieved within the resources agreed with Financial Management
  - ensuring that appropriate IT Service Continuity plans have been made to support the business and its continuity requirements.



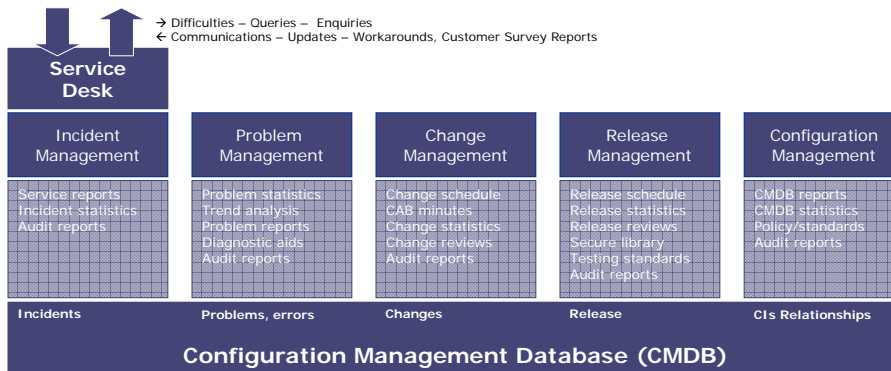
## Service Level Agreement

- Service Level Agreement (SLA) is key concept in any service level management model or practice.
  - An SLA defines the support relationship between a service provider and its customer. The agreement describes the products and/or services the customer receives, each party's responsibilities, the financial agreement (if any) and how the service provider measures and reports services.
  - The objective of the SLA is to present a clear, concise and measurable description of what the service provider does for the customer.
  - An OLA (Operative Level Agreement) defines the interdependent relationships among the support groups working to support an SLA. The objective of the OLA is to present a clear, concise and measurable description of the service provider's internal support relationships.



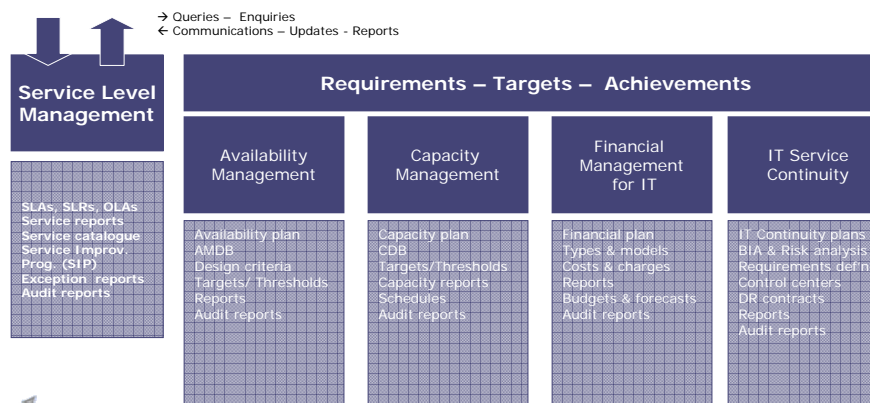
## The Service Support Processes

The Business, Customers, or Users



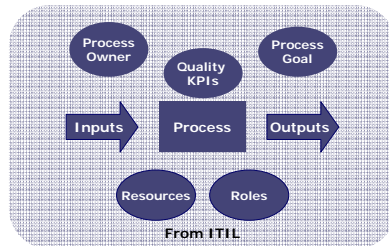
## The Service Delivery Processes

The Business, Customers, or Users





## COBIT + ITIL

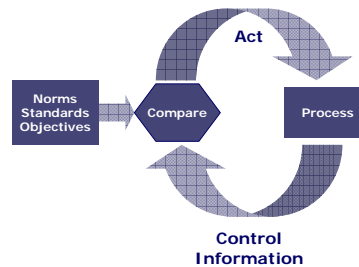


### Application and General Controls

Data Origination/Authorization Controls	5 AC1-5
Data Input Controls	3 AC6-8
Data Processing Controls	3 AC9-11
Data Output Controls	5 AC12-16
Boundary Controls	2 AC17-18

### Process Controls

PC1	Process Owner
PC2	Repeatability (Defined)
PC3	Goals and Objectives
PC4	Roles and Responsibilities
PC5	Process Performance
PC6	Policies, Plans and Procedures



## CMMI ?

- CMMI is a framework that describes the key elements of an effective process.
  - It describes an evolutionary improvement path from an ad hoc, immature process to a mature, disciplined process.
  - CMMI contains five levels of progressive process maturity (Initial, Repeatable, Defined, Managed, and Optimizing), and indicates the Process Areas (PA) that are addressed at each level.
  - De facto industry standard for process improvement
- It tells you which areas you (as software developer) should be improving, but not how you should be doing in that area



## CMMI ?

### ■ Project Management

- Project Planning
- Project Monitoring and Control
- Supplier Agreement Management
- Integrated Project Management
- Integrated Supplier Management
- Risk Management
- Quantitative Project Management

### ■ Engineering

- Requirements Management
- Requirements Development
- Technical Solution
- Product Integration
- Verification
- Validation

### ■ Support

- Configuration Management
- Process and Product Quality Assurance
- Measurement and Analysis
- Causal Analysis and Resolution
- Decision Analysis and Resolution
- Organizational Environment for Integration

### ■ Process Management

- Organizational Process Focus
- Organizational Process Definition
- Organizational Training
- Organizational Process Performance
- Organizational Innovation and Deployment



## Questions ?

