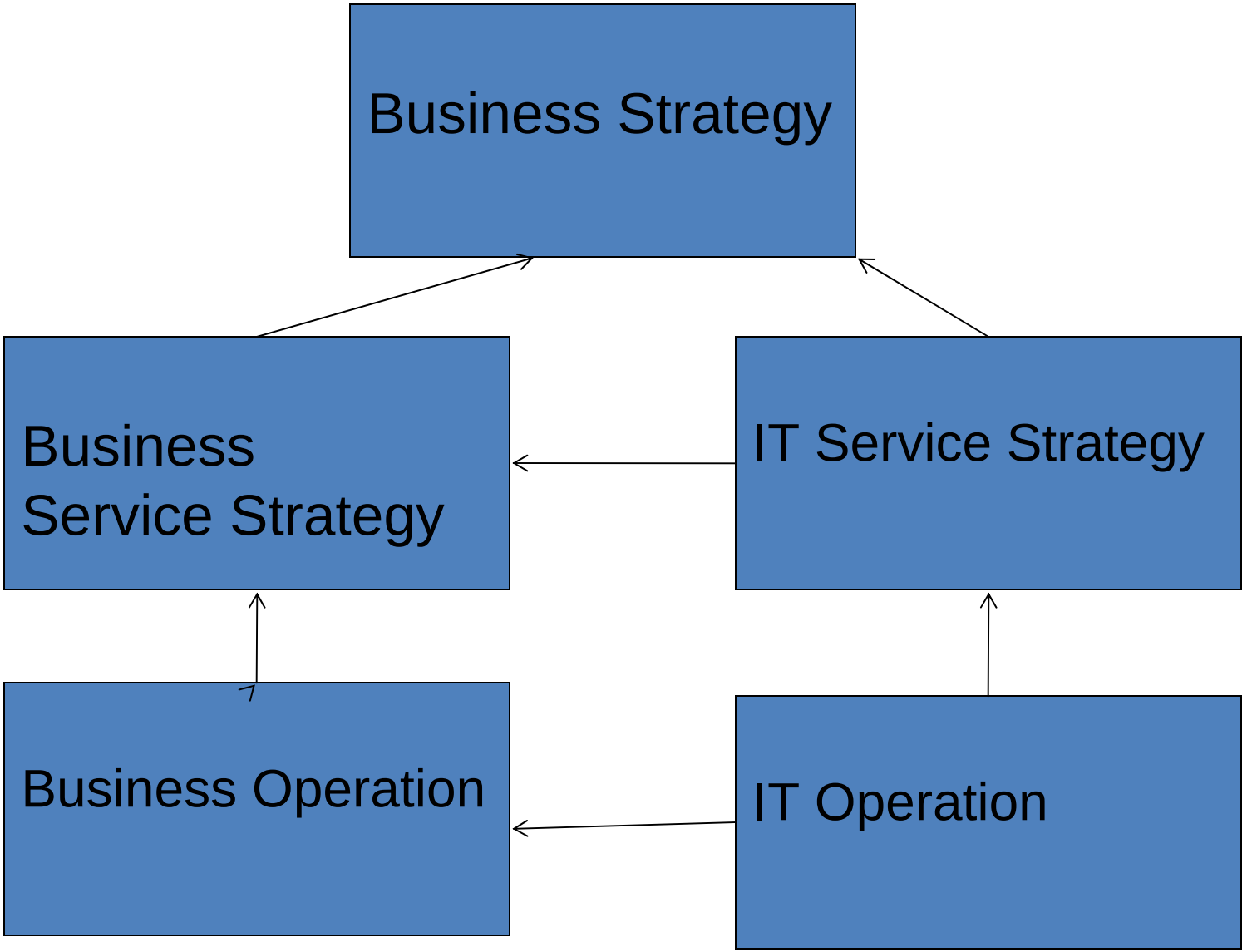
# Recap: Strategy -> Operation



# Framework Recap

- Business Strategy framework
  - Business Balanced Scorecard
- IT Service Strategy Framework
  - IT Balanced Scorecard
- IT Infrastructure Support Service Management Framework ( Existing Services )
  - ITIL

# 1. IT Service Challenges

# IT Service Challenge Case 1

- Date: July 14, 2010
- Background: DBS bank outsourced its mainframe equipment
- Incident: A procedure error in applying fix to a storage system triggered a complete system outage ( even though the system has redundancy )
- Impact: branch, ATM, internet services remained down for 10 hours
- Lesson learned:  enhance training related to procedures, increase resiliency of DBS infrastructure

# IT Service Challenge Case 2

- Date: May 6, 2008
- Incident: Loss of USB flash drive containing hospital files of Prince of Wales Hospital (PWH). The files contain personal data of patients, including name, ID and lab test items
- Impact: Luckily, no patients file report on leakage of data
- Lesson Learnt: (a) avoid using non-encrypted USB (b) avoid patient data download (c ) staff training
- Comment: Similar incidents have repeatedly occurred.

# IT Service Challenge Case 3

- Date: June 9 2011
- Incident: Unauthorized access ( by hackers ) to Citigroup's online system, data leakage of one percent of Citigroup's 21Million credit card accounts ( information includes names, account numbers, email addresses )
- Impact: Replace credit cards of affected customers

# Challenges in providing IT services

- Hundreds of user call – need incident management
- Frequent changes ( fix application, version upgrade, configuration change) – need change management
- Operational challenge ( Oops, the backup tape malfunctions and data cannot be restored; scheduled jobs aborted at mid-night )

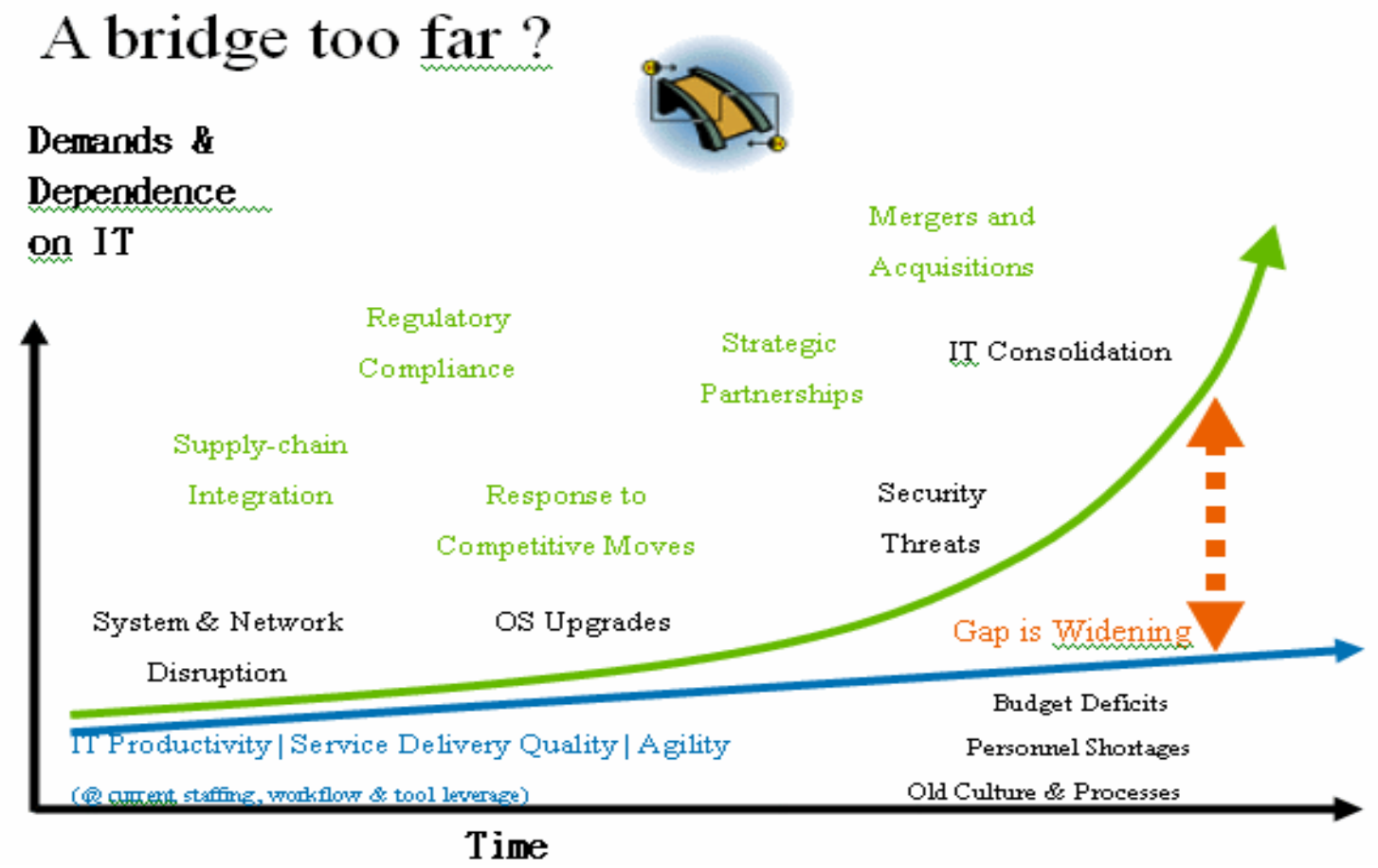
# IT service challenge ( Cont'd )

- How to measure service performance ( users expectation too high; no service level agreement ) – need service level management
- Security Threat ( hackers get into the Internet server, virus infection, Leak of information stored in USB/home PC ) – need security management

# IT service challenge ( Cont'd )

- Too expensive infrastructure ( IT services strategy: financial management, charge-back, outsourcing)
- Inadequate vendor support or poor performance of outsourced vendor (Service Level Management )
- Slow web site during specific days  (examination results available, stock trading web site) -> performance management

# IT challenges



# What can we learn from business service management

- Treat internal users as customers?
- Any internal customer satisfactions survey?
- Promotion(Marketing) of IT services?
- Process Analytics – Measurements and Analysis?
- Service Commitments – Do users know?
- Integrated Services? Single Point of Contact?
- Continuous Improvement? Frequent Complaints?

# Summary of challenges

- How to better manage IT services???!!!
- Need framework/best practices to manage IT services

# 2. Service Science Research

# Lessons learnt from IBM

- Transformation of IBM from selling computers to selling services
- Watson launched System/360 mainframe in 1964
- 1969 – 70% of market share
- 1990 – mainframe revenue dropped from $13 billion to $7 billion; loss of $16 Billion
- CEO Lou Gerstner joined IBM in 1993. He turned a then small sub-unit called “service organization” into standalone business

# Lessons learnt from IBM (Cont'd)

- IBM become more open, less hierarchical
- Expands into system integration, application development
- 2002 – bought the consulting arm of PricewaterhouseCoopers, an accounting firm and expand into higher-value consulting
- IBM also created something called "Service Science" to study ways to model, measure, improve and automate services.

# Service Systems, Service Scientists, SSME, and Innovation

Maglio et. al.

# Examples of Service Studies

- Example 1: Education as a Service System
- Example 2: IT Service Delivery Centres as a Service System
- Example 3: Call Centres as a Service System
- Example 4: Patents as a Service System

# IT Service Delivery Centres as a Service System

- Visits to 14 large IT service providers
- Observed and interviewed >= 30 system administrations and managers over 50 days
- Goal: Examine work practices, tools and organizational structure in IT service delivery

# Interviewing administrators

- For example, an administrator said many Unix servers are patched given special considerations. Most patches need to be negotiated individually. Despite formal processes and communication channels, he relies on informal communications ( e.g. e-mail, phone calls ) to take special considerations.

# Findings

- Informal work is prevalent in IT operations; informal work activities account for much system administrator  time such as negotiating work items and schedules, seeking and providing information, using and sharing tools and practices
- Informal activities never considered in cost analyses and never supported with tools. This is the challenges generic for service productivity measurement, i.e. “IT IS NOT EASY TO MEASURE SERVICE PRODUCTIVITY!!!”

# Call Centres as a Service System

- Call centres employ 6 Million people in US, over $160 billion in labor costs
- Stakeholders: customers that has outsourced its help desk, the service provider, call takers, quality management team etc.
- Call takers vary in skill and responsibility
- Schedulers forecast demand based on statistics and Service Level Agreement

# Findings

- Should take an end-to-end view, focusing on mechanisms facilitating various stakeholders
- Unnecessary routing of calls to high skilled, expensive call takers; inexpensive call takers should be trained better
- Self-service for end-users

# Conclusion of Maglio's paper

- The challenge lies not simply in formally modeling the technology or organizational interactions, but in modeling the people and their roles as knowledge workers in the system
- Service system complexity is a function of the number and variety of people, technologies, and organizations linked in the value creation global networks

# 3. IT Service Framework

# IT Services Characteristics

- Intangible ( not like a IT product such as iPhone)
- High involvement of people in the delivery
- Inability to place inventory
- Cannot readily be displayed, demonstrated or communication ( that is users and programmers often misunderstand the system specifications )

# IT Service Strategy

- Alignment with Business Strategy
- KPI ( Key Performance Indicator ) in IT services linked IT performance to business Strategy
- IT Service Framework facilitates IT Service Management

# Examples on IT Infrastructure Support Service Strategies

- Implement ITIL
- Implement User charge-back
- Downsizing
- Consolidate diversified platforms into single, unified platform
- Adopt new IT architecture, e.g. integrating data-voice network

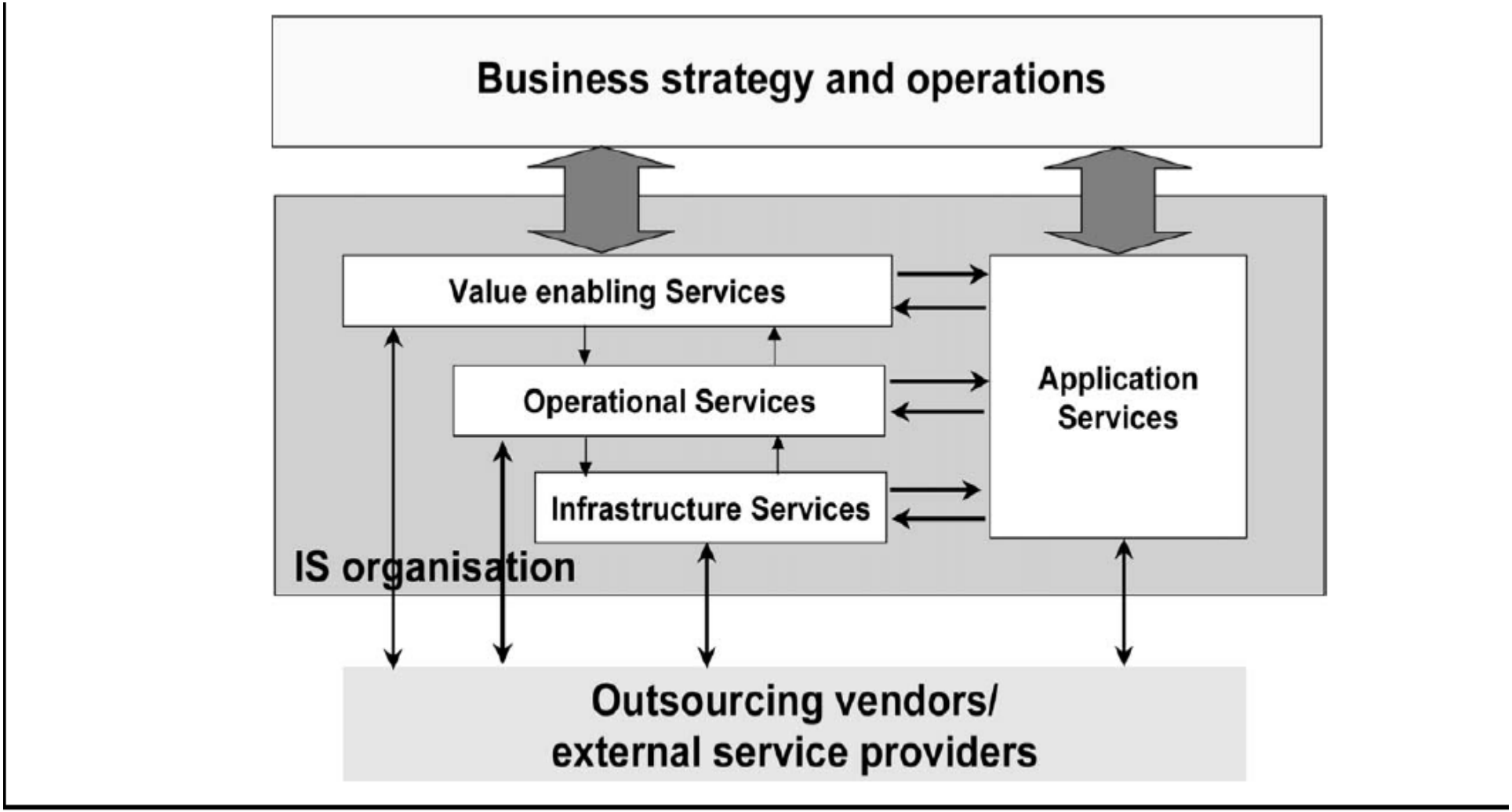
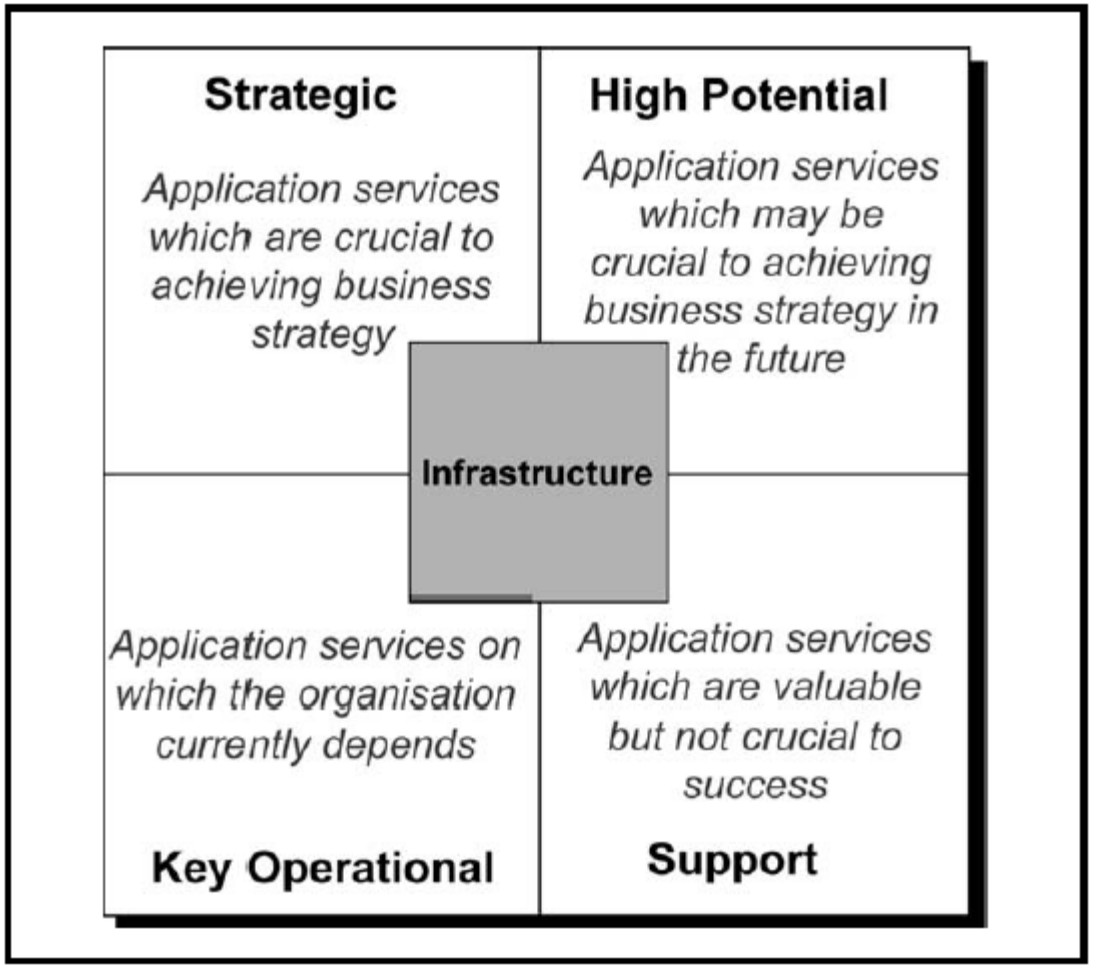



**Figure 1 Relationships Between the Four IST Service Categories and Business Strategy and Operations**

# The Application Services Portfolio and IT Infrastructure



# Service-Process Matrix for IS Services

| DEGREE OF USER INVOLVEMENT | DEGREE OF CUSTOMIIZATION OF SERVICE | | |
|---|---|---|---|
| | LOW | HIGH |
| LOW INTENSITY | SERVICE FACTORY (installation of PC) | SERVICE SHOP ( Infrastructure design, program development ) |
| HIGH INTENSITY | SERVICE MALL ( help desk ) | SERVICE BOUTIQUE (consultation, training, requirement study) |

# Practical Issues on IT Service Management

- Often no competition ( employees can only use the services provided by the internal IS department)
- Users generally expect high availability and service quality whenever required
- Users are reluctant to pay for IS/IT services
- Those who pay for the service and those who benefit from the service may be different
- IT staff lack service orientation.

# Academic Issues on IT Service Management

- A lack of management framework for the management of services provided inside an organization by an internal function ( Davis, 1993)
- Fragmented research studies on
  - IS function as a service operation
  - IS and service quality
  - Building IS Service Culture
  - Impact of outsourcing IS function on Service Quality

# Service Orientation

- What did Actor Andy Lau Tak Wah say on “service”?

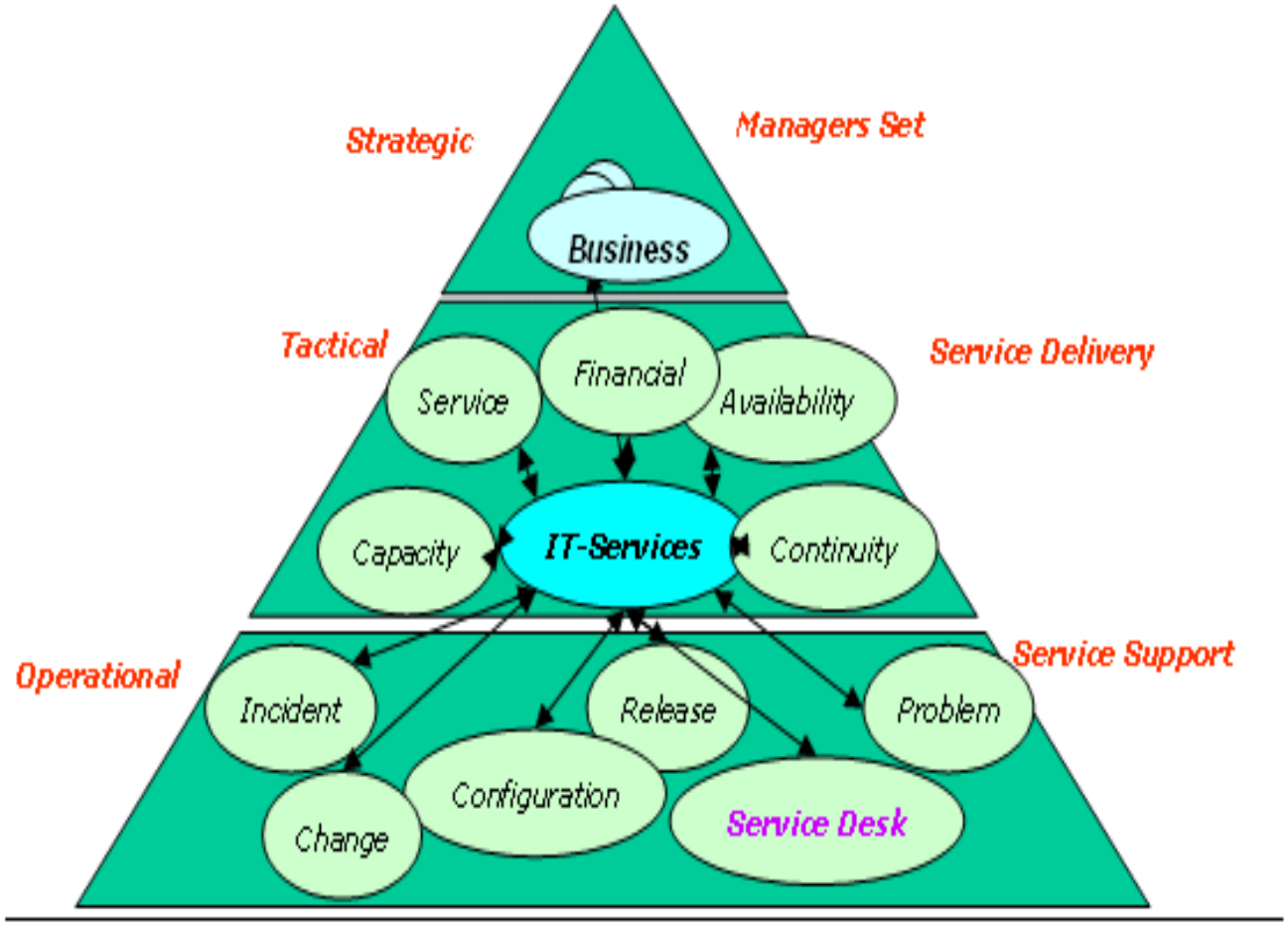
# Introduction to ITIL

- ITIL – Information Technology Infrastructure Library
- Developed by the Office for Government Commerce (OGC) in UK
- Best practices focused on the management of IT service processes

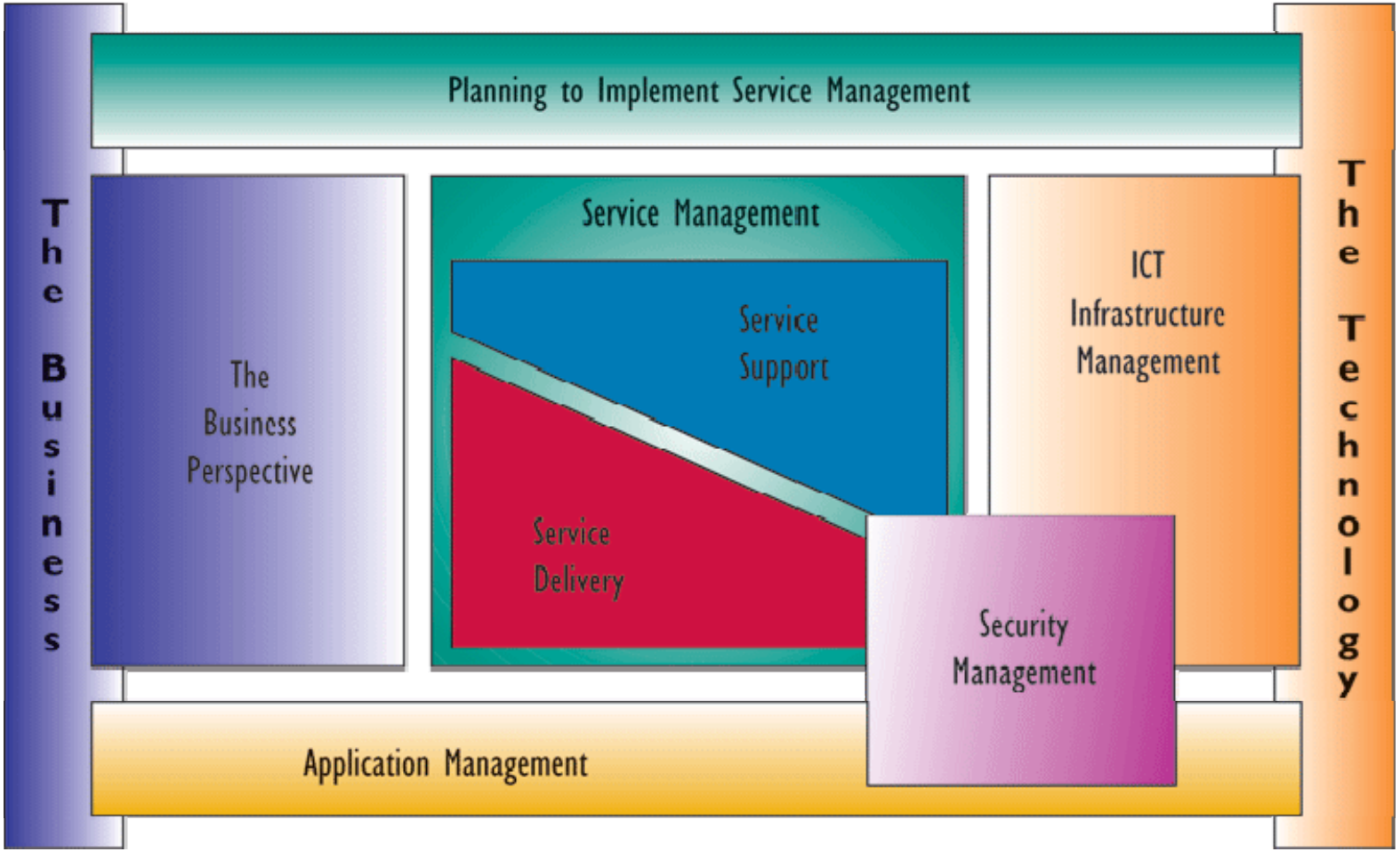
# ITIL Service Management Goals

- Ensure that IT services are aligned to the needs of customers and users
- Improve availability and stability of services
- Improve communication within IT and with users
- Improve efficiency of internal processes

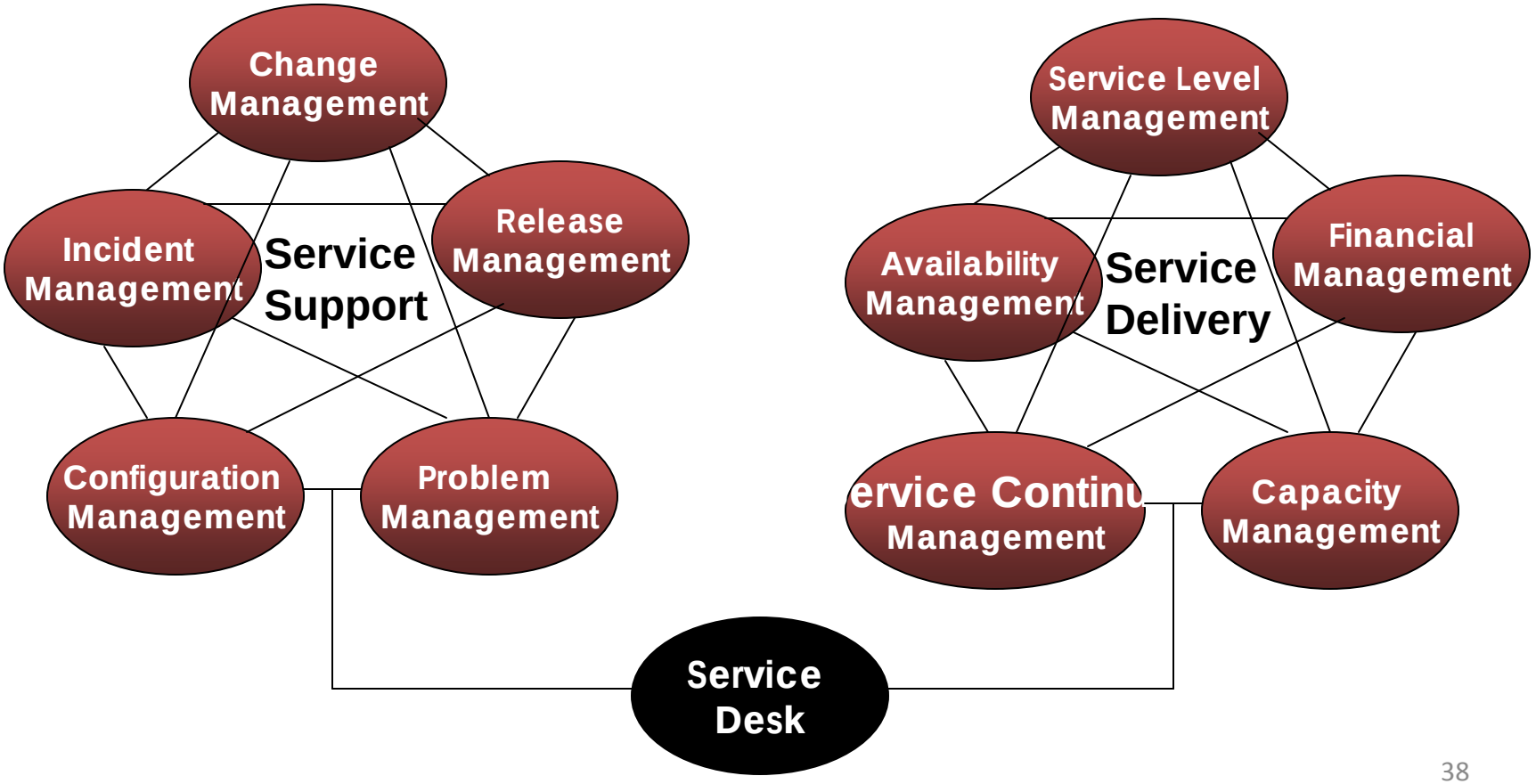
# From Operations to Strategy



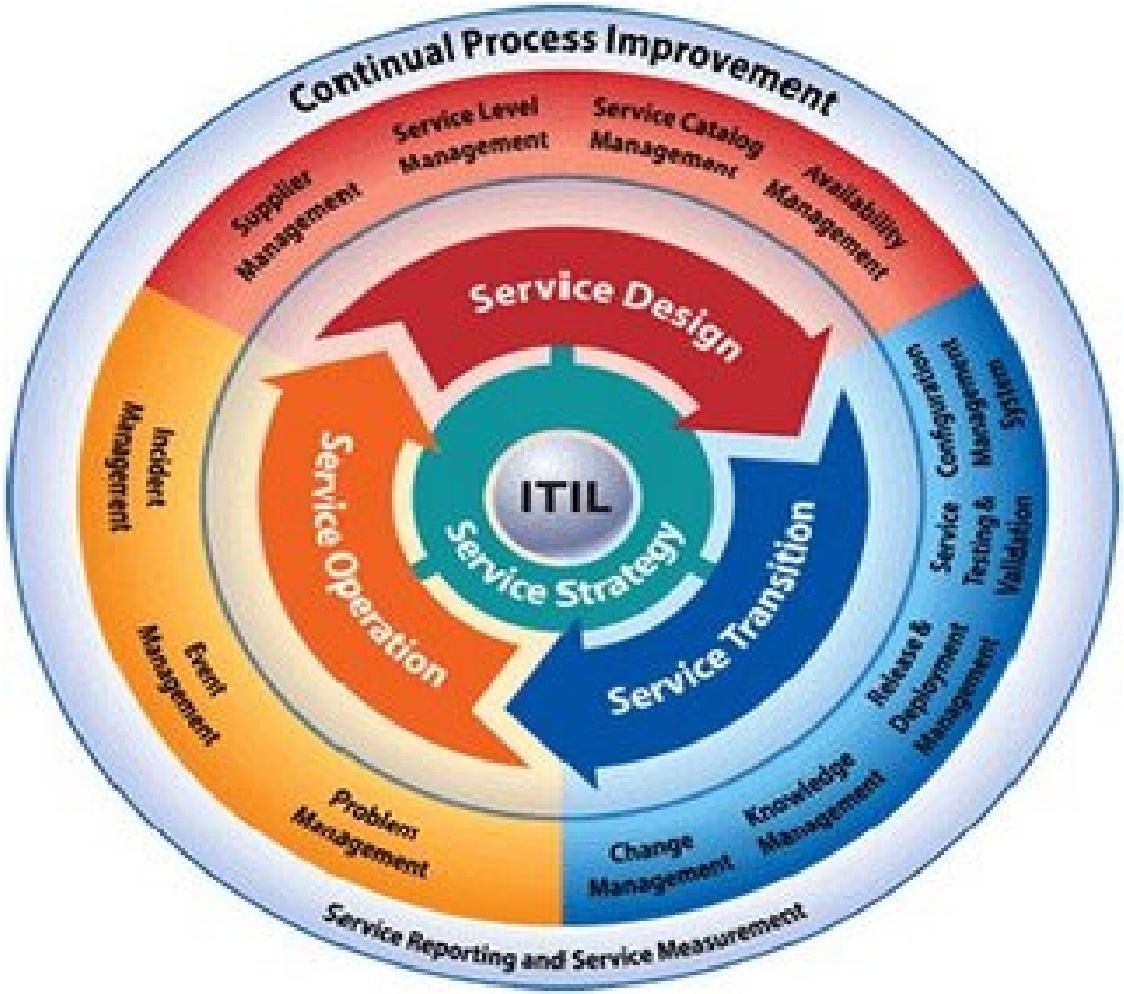
# From Business to Technology

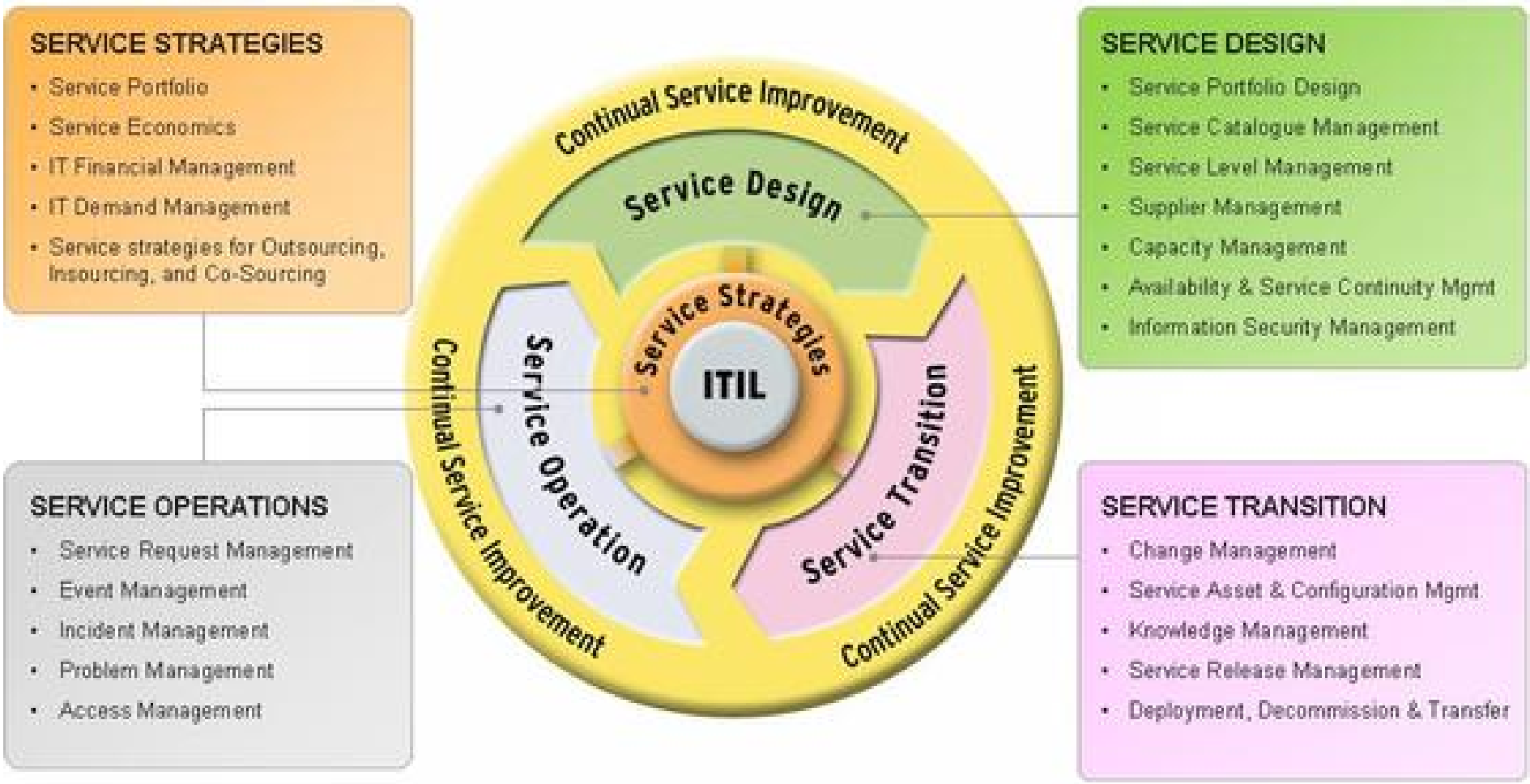


# ITIL Service Management (ITIL V2 – old version )



# Service LifeCycle (ITIL V3 )




SERVICE STRATEGIES
• Service Portfolio
• Service Economics
• IT Financial Management
• IT Demand Management
• Service strategies for Outsourcing, Insourcing, and Co-Sourcing
SERVICE DESIGN
• Service Portfolio Design
• Service Catalogue Management
• Service Level Management
• Supplier Management
• Capacity Management
• Availability & Service Continuity Mgmt
• Information Security Management
SERVICE OPERATIONS
• Service Request Management
• Event Management
• Incident Management
• Problem Management
• Access Management
SERVICE TRANSITION
• Change Management
• Service Asset & Configuration Mgmt
• Knowledge Management
• Service Release Management
• Deployment, Decommission & Transfer
Continual Service Improvement
Service Design
Service Strategies
ITIL
Service Operation
Service Transition
Continual Service Improvement
Continual Service Improvement

# Benefits

JP Morgan Chase ( ITIL implementation on service desk )

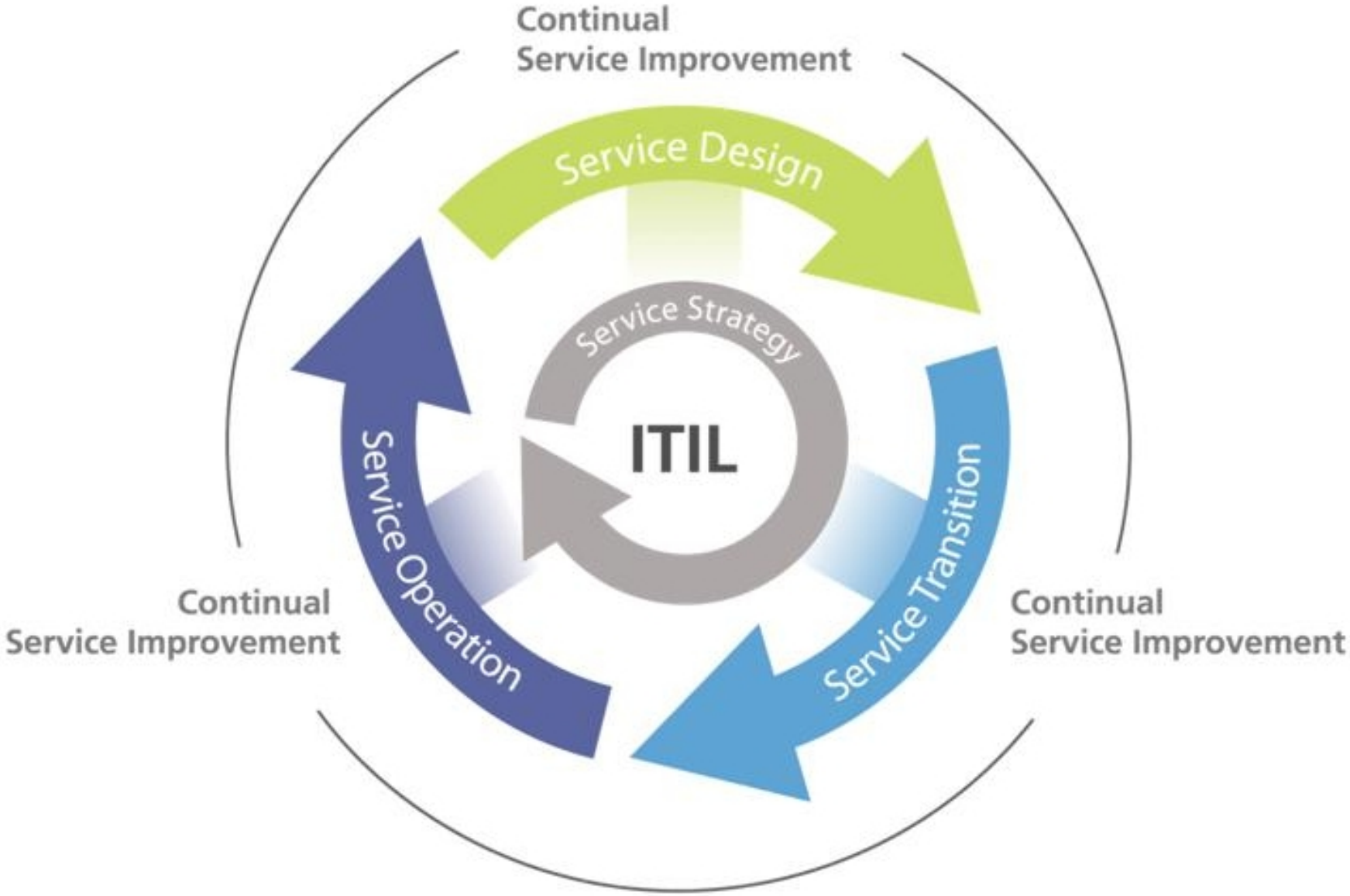
- 75% first call resolution, 93% customer satisfaction
- 80% calls answered within 20 seconds
- Elimination of 500,000 calls to service desk by tracking common problems and providing fixes

# Framework deficiencies

- Best practices may not work in all different companies with different environment
- Best practices may always be further improved due to emerging technologies and better processes understanding
- Need further research studies in Service Science to explore issues and improve process management

# 4. Overview of ITIL framework

By Dr. Franklin Leung


Continual
Service Improvement
Service Design
Service Strategy
ITIL
Service Transition
Service Operation
Continual
Service Improvement
Continual
Service Improvement

# ITIL® V3 SERVICE LIFECYCLE

ITSM CONSULTANCY 煜程電腦服務管理顧問公司

Quintica

www.q-campus.net





## Certification Scheme

ITIL Master

ITIL Expert

v3 Manager Bridge 5

v3 Manager Bridge 5

5 Managing Across the Lifecycle 5

SS = Service Strategy
SD = Service Design
ST = Service Transition
SO = Service Operation
CSI = Continual Service Improvement

| 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
|---|---|---|---|---|---|---|---|---|
| SS | SD | ST | SO | CSI | QSA | PPO | RCV | SOA |

OSA = Operational Support & Analysis
PPO = Planning, Protection & Optimization
RCV = Release, Control & Validation
SOA = Service Offerings & Agreements

Lifecycle Modules | Capability Modules

2 credits

ITIL v3 Foundation for Service Management 2

ITIL Service Managers Certificate v1 or v2 17

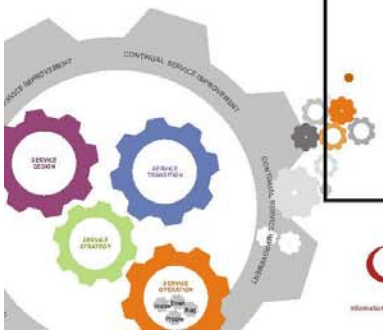
v3 Foundation Bridge 0.5

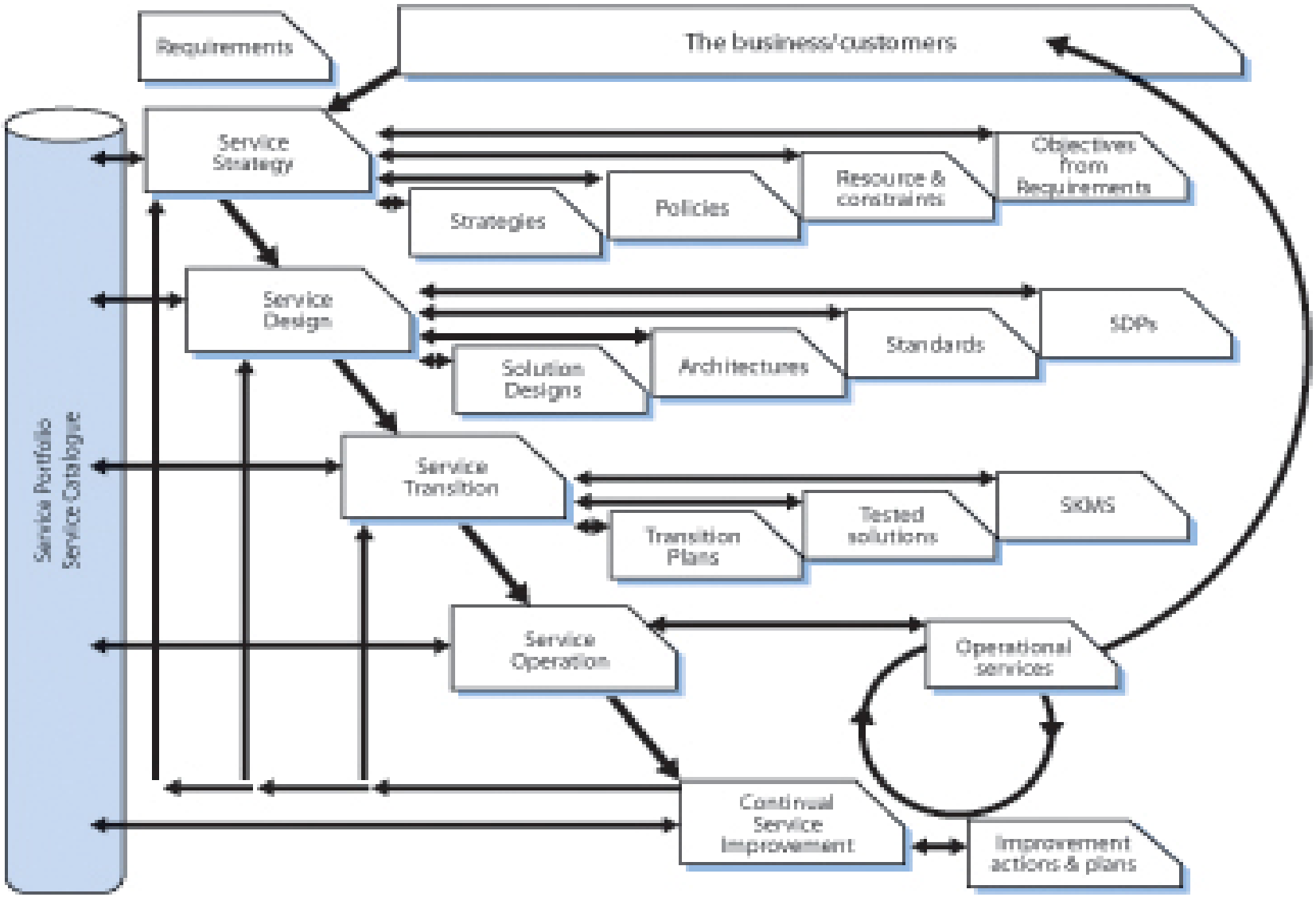
v2 Foundation Certificate 1.5

V2 Practitioners Modules

| | |
|---|---|
| IPPI 3.5 | SDIM 2 |
| | SLM 2 |
| | RM 2 |
| IPAD 3.5 | PM 2 |
| | IT SCM 2 |
| IPSR 3.5 | FM 2 |
| | COM 2 |
| | CHM 2 |
| IPRC 3.5 | CAM 2 |
| | AM 2 |

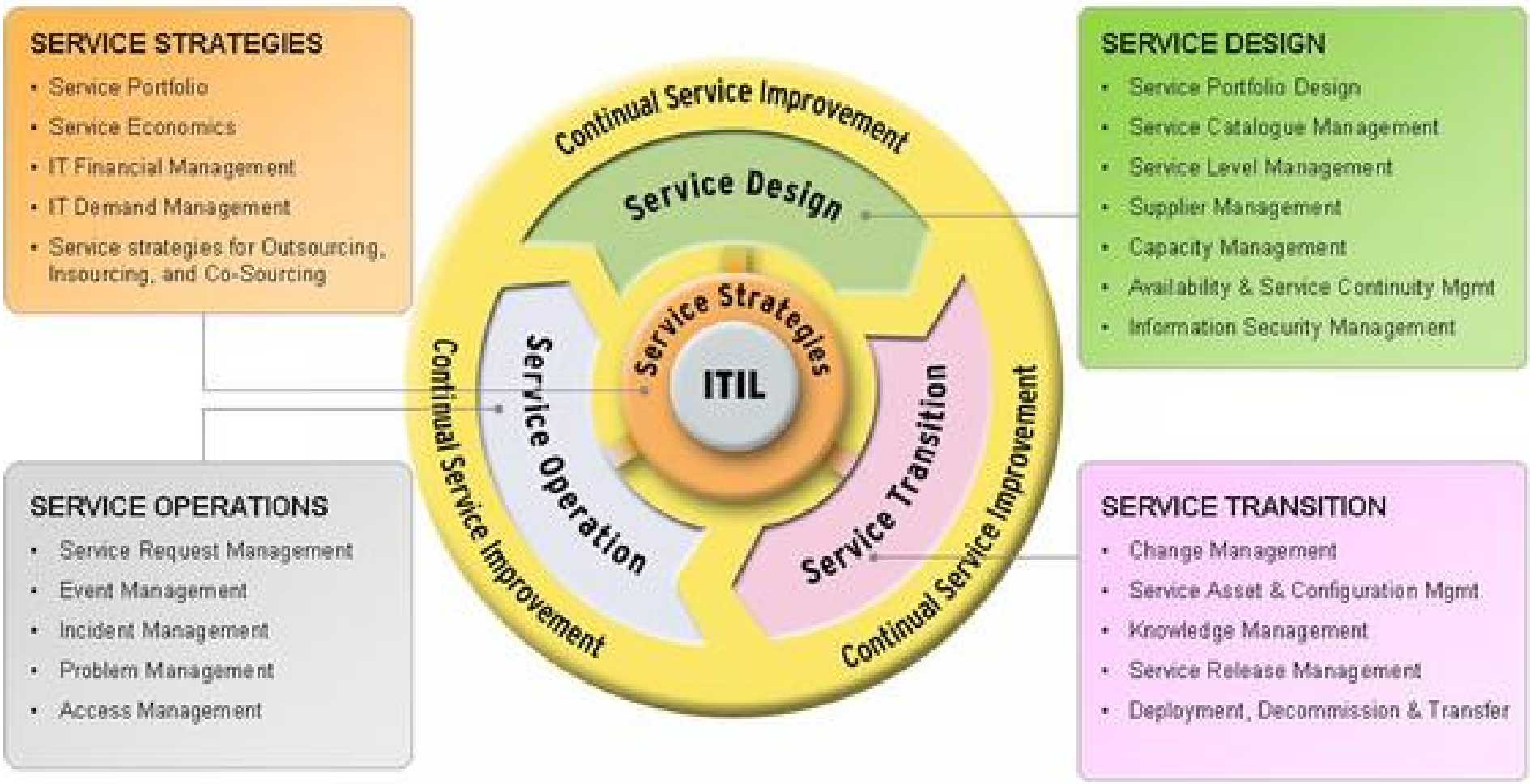
IPPI = ITIL Practitioner Plan & Improve - Availability Capacity ITSC
IPAD = ITIL Practitioner Agree & Define - Finance SLM
IPSR = ITIL Practitioner Support & Restore - Service Desk Incident Problem
IPRC = ITIL Practitioner Release & Control - Change Configuration Release




Requirements
The business/customers
Service Strategy
Objectives from Requirements
Resource & constraints
Policies
Strategies
Service Design
SDPs
Standards
Architectures
Solution Designs
Service Transition
SKMS
Tested solutions
Transition Plans
Service Operation
Operational services
Continual Service Improvement
Improvement actions & plans
Service Portfolio
Service Catalogue

# Service Strategies/Service Design

- Service Strategies
  - service management as a strategic asset
- Service Design
  - design and development of services
  - design principles and methods
- Service transition
  - Development and improvement of capabilities for bringing new and changed services into live operation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Continual Service Improvement

# 4.1 Overview of Service Operation

# Service Operation

- Day to day operation
- Effectiveness and efficiency
- Realize strategic objectives
- Control perspective: Reactive vs Proactive

# Service Operation- Incident Management

Goal

- To restore normal service operation as quickly as possible and minimize the adverse impact on users and the organization.

Definition

- An incident is any event which causes, or may cause an interruption to, or a reduction in, the quality of a service.

# Service Operation – Incident Management

Activities

- Detect, classify, record, and provide initial support of incidents
- Prioritize incidents based upon impact and urgency

Service Desk is responsible for Incident Management

# Service Operation – Problem Management

Goal

- To minimize the adverse impacts of incidents and to prevent recurrence of incidents. Problem Management seeks to get to the root cause and initiate action to remove the error.

Definition

- A problem is the unknown, underlying cause of one or more incidents.
- A known error is when the root cause of a problem is known and a temporary workaround or alternative has been identified.

# Service Desk

Goal

- A single point of contact that provides advice and guidance and rapid restoration of normal service operations to users

Definition

- A Service Request is a request that is not due to disruption.

# Service Desk

Activities

- Manage the Incident and Service Request life-cycle, including closure
- Communicate with customers concerning request status and progress
- Provide initial assessment and attempt to resolve incidents working with appropriate IT staff
- Provide reports and recommendations to management for service improvement

# 4.2 Overview of Service Transition

# Service Transition – Change Management

Activities

- Accept, record, authorize, plan, test, implement and review Requests for Change (RFCs)
- Provides reports of changes to the infrastructure
- Provides updates to the Configuration Management Database (CMDB).

# Service Transition – Configuration Management

Goal

- To provide a logical model of the IT infrastructure (hardware, software and associated documentation) by identifying, maintaining and verifying the version of all configuration items.

Definition

- A Configuration Item (CI) is a component of the infrastructure.
- Configuration Management Database (CMDB) is a database which holds a record of all configuration items associated the IT infrastructure.

# Service Transition – Configuration Management

Activities

- Plan, design and manage a Configuration Management Database (CMDB)
- Identify CIs for entry into CMDB and their relationships to each other
- Verify CMDB accuracy

# Service Transition – Release Management

Goal

- To coordinate service providers and vendors involved with a significant release of hardware, software and associated documentation across a distributed environment.

Definition

- A release is a collection of authorized changes to an IT service and is defined by the RFC that it implements.

# Service Transition – Release Management

Activities

- Plan and oversee successful rollout of new and changed software, hardware and documentation
- Collaborate with Change Management
- Verify that all release items are entered into the CMDB
- Manage customer and user expectation

# 4.3 Overview of Service Design

# Service Design – Service Level Management

Goal

- To maintain and improve IT Service quality through a constant cycle of agreeing, monitoring and reporting to meet the customers' objectives.

Definition

- Service Level Agreement (SLA) is a written agreement with the customer.
- Operational Level Agreement (OLA) is an agreement between two internal areas.

# Service Level Agreements(SLA)

- List of services and expected performance levels
- Roles and responsibilities clearly defined (both client and suppliers )
- Pricing and performance based incentives and penalties
- Security, Service Continuity and Intellectual Property Ownership
- Frequency of performance reporting and review
- Clearly defined processes for changes to SLA
- Terms of voiding and termination of agreement

# Service Design
# - Availability Management

Goal

- To optimize the capability of the IT infrastructure, services, and supporting organization to deliver a cost effective and sustained level of availability enabling IT to meet their objectives.

Definition

- Availability is the ability of an IT service or component to perform its required function at a stated instant or over a stated period of time.

# Service Design - Capacity Management

Goal

- To ensure that all the current and future capacity and performance aspects of the business requirements are provided cost effectively.

# Service Design – IT Service Continuity Management

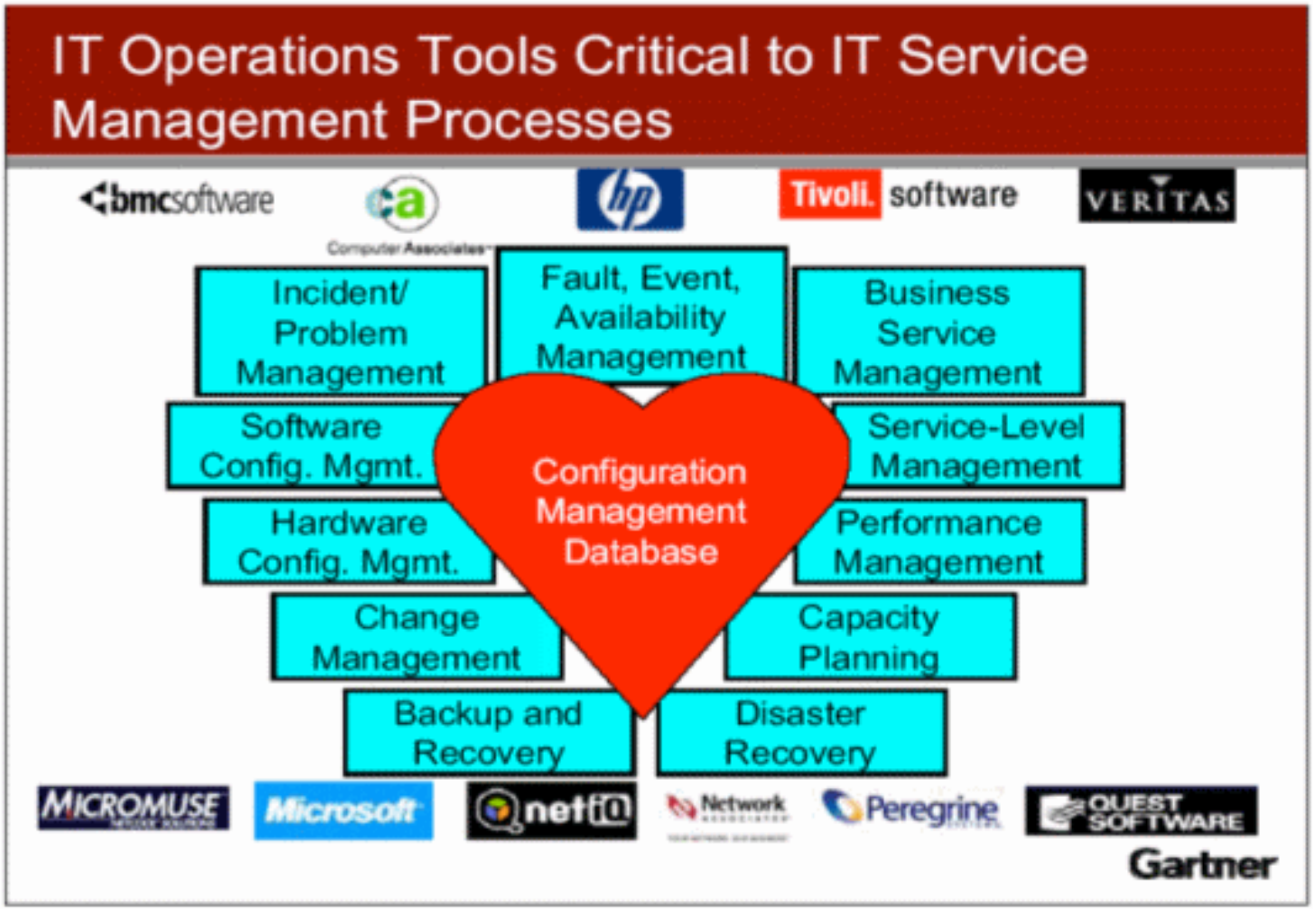
Goal

- To ensure that the require IT technical and service facilities can be recovered within required and agreed timeframes

Definition

- A crisis is an unplanned situation when one or more IT services is unavailable and when the outage exceeds the expectations of the customer

# IT Tools for Service Management



# 4.4 Overview of Service Strategy

# Service Strategy Components

- Strategy Generation
- Financial Management
- Service Portfolio Management (SPM)
- Demand Management

# IT Survey Results ( Top Priorities throughout 2010 ) from BMC

- Reducing Cost
- Regulatory Compliance
- Improving availability and performance of business services
- Incident and problem management
- Change management
- Virtualization
- Capacity planning
- IT Budgeting and Charge-back

# References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