ITSM
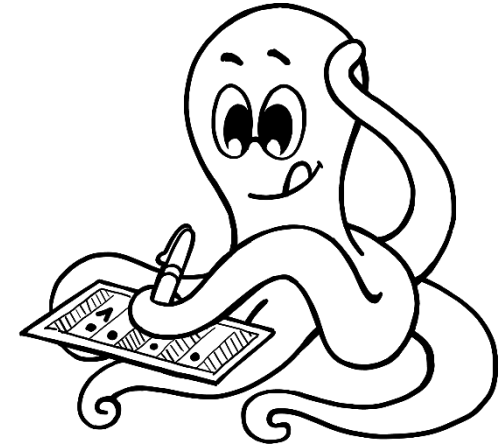
KNOWDigital

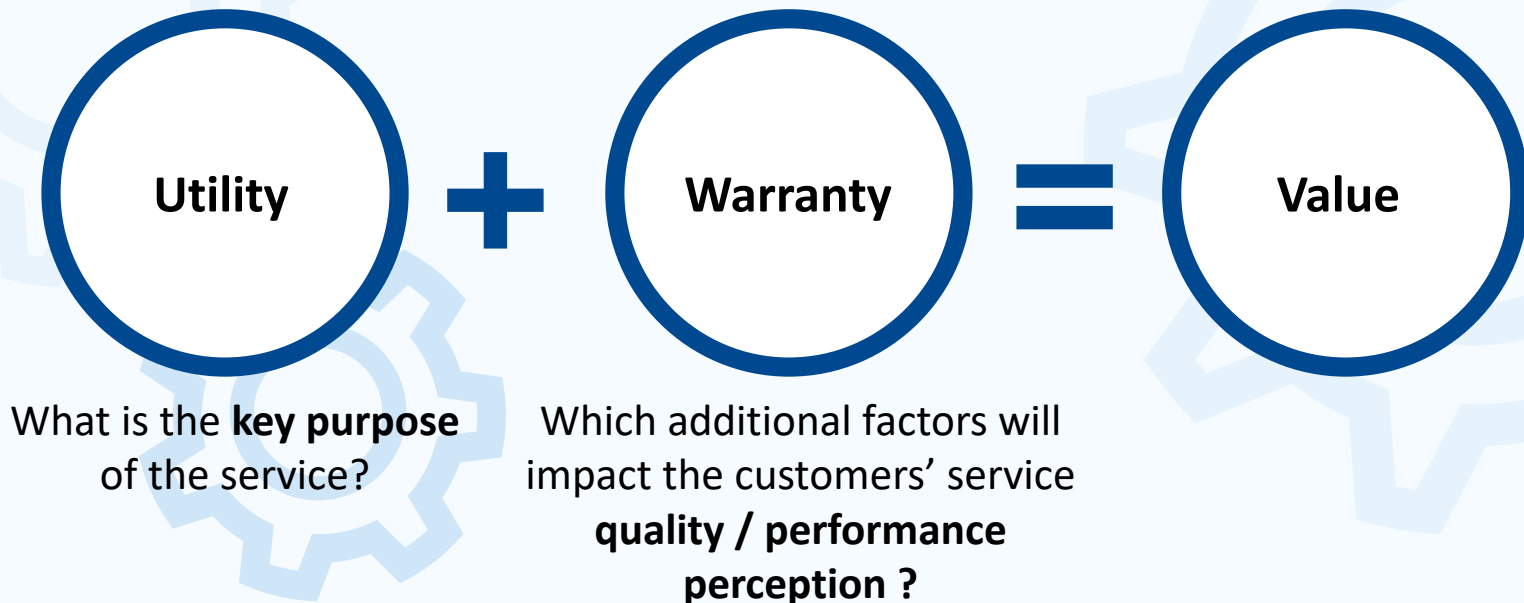October 15, 2022
Lionel Pilorget

- Definition of a Service

- IT Service Landscape

- IT Service Management (ITSM)

- IT Self-services -> Cloud Services

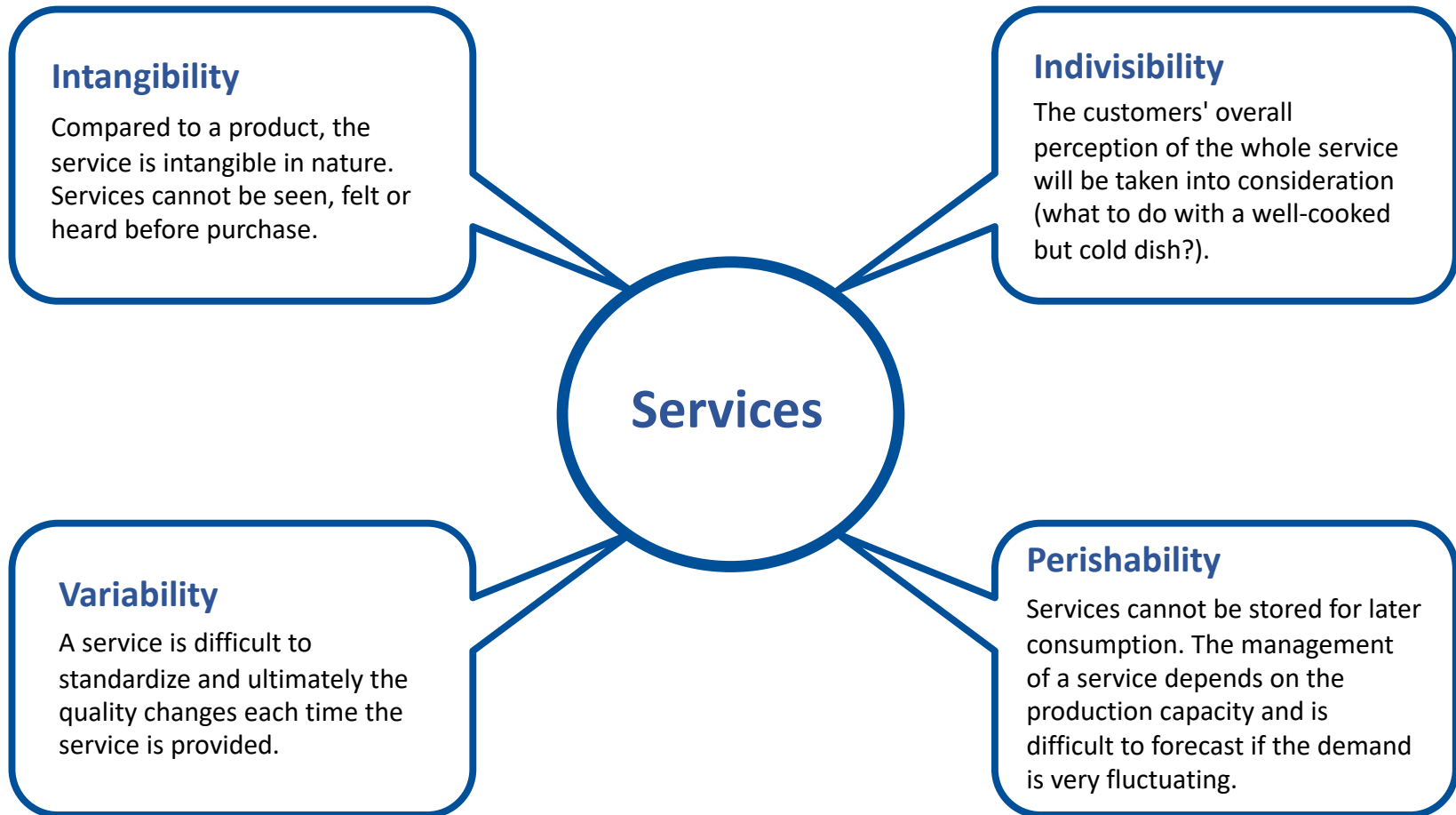- User Self-services -> Digital Services

What is a service?

➡️ A "**service**" is an action that delivers **a benefit** to a recipient

➡️ Services are **intangible** and must be expressed **in terms of the recipient's value expectation**

What is value from a customer perspective?

Utility **+** **Warranty** **=** **Value**

What is the **key purpose** of the service?

Which additional factors will impact the customers' service **quality / performance perception ?**

Intangibility

Compared to a product, the service is intangible in nature. Services cannot be seen, felt or heard before purchase.

Indivisibility

The customers' overall perception of the whole service will be taken into consideration (what to do with a well-cooked but cold dish?).

Services

Variability

A service is difficult to standardize and ultimately the quality changes each time the service is provided.

Perishability

Services cannot be stored for later consumption. The management of a service depends on the production capacity and is difficult to forecast if the demand is very fluctuating.

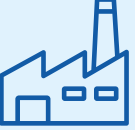Source : Kotler P. (1999), Principles of Marketing, N.J. Prentice-Hall

Which price for a service?

How much are you ready to pay for the following services?

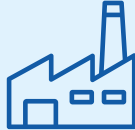| Service	Costs (in CHF)
Yearly fees for Mobile Abo (Phone + Roaming)	
Move from City A to City B in Switzerland (150 km)	
A car driving license	
Daily rate for an IT security expert	
One Online learning session (30 minutes)	
Sending a letter Sending an email	
Hair cut	

From Product to Service

From product to service for cars

Factory	Product	Repair shop	Car Services
Technical features (horsepower, acceleration, top speed,...) Customizable features (color, motorization,…)		Services (3 years warranty, maintenance up to 100'000 km, financing, insurance…)	

		Car Services
Specifications	Technical properties	According to service contracts
Production	Produced in the factory without interaction with customers	interactions with the customers during maintenance activities
Specifications	Automated and optimized production processes	No breakdown, competent technical staff
Quality assessment	Subjective assessment based on technical information, benchmarks, consumer reports	Assessment done after the delivery of the services (Customer survey, assessment of work performed)

From product to service in IT

Factory	Product	Service Desk	IT Services
Technical features (disk capacity, RAM...) Customizable features (computer mouse, screen saver…)		Services (Incident management, service times, waiting times, response times, solution rate, consulting…)	

	PC, Server,…	IT Services
Specifications	Technical properties	Service Level agreement
Production	Produced in the factory without interaction with end-users	Interactions with the end-users on-site or remotely
Quality requirements	Automated and optimized production processes	Service availability, system performance
Quality assessment	Subjective assessment based on technical information and end-user experience	Assessment done after the delivery of the services by measuring the service levels

Corporate Strategy

Business Demands

Account management

IT (Supply)

Project A
Project B
…
Project n

Change the company

Service 1
Service 2
…
Service p

Run the business

Deliveries

Business (Operations)

Business / IT Value Chain
- Automated Processes
- Elimination of failures
- New digital channels
- Better customer services

IT Sourcing

Make-or-Buy Decision

Pizza as a Service

On-Premises	Infrastructure as a Service (IaaS)	Platform as a Service (PaaS)	Software as a Service (SaaS)
Self-made	*Out-of-the box*	*Home delivery*	*Dined out*

- …

- …

- …

- …

Between Business and Technical Services

SLAs

OLAs

Business Process 1

Business Process 2

Business Process 3

Business Service Catalogue

Service A

Service B

Service C

Service D

Service E

Technical Service Catalogue

Support Services

Hardware

Software

Applications

Data

SLA: Service Level Agreement

OLA: Operational Level Agreement

Business logic drives the infrastructure

Departments / Subsidaries

Framework Agreements (FA)

Service Level Agreements (SLA)

Service Groups
Electronic Workplace, Applications, Core Banking, Trading, Market Data, Collaboration, Service Support etc.

Contract Layer

Service Layer

Services
Core system, Document Management, Output & Dispatching, Mobile, Standard Desktop, Intranet, Printing, IT Service Desk etc.

Technical Services
Client/Server Platform Services, Middleware, Database, Storage, Network, Monitoring, Support, Maintenance etc.

System Layer

Systems / Product
Computers, IP Phones, Servers, Network Switches, Printers, Client/Server Software, Etc.

Example of Business Services

IT Services in a Bank (Business view)

IT Services in a Bank (Technical view)

Middleware & Automation

| Tool 1 | Tool 2 | Tool 3 |
| Tool 4 | UC4 | MQ |

Database

| Oracle | MySQL |
| MS SQL | |

Platform

ESX Cluster
- Windows Server virtual
- Linux Server virtual

ESX Branches
- Windows Server virtual

IBM Power
- AIX Server Virtual cluster
- AIX Server virtual

Single Server
- Linux Single Server
- Linux Cluster
- Windows Single Server

Storage & Backup

| Enterprise Storage | Storage Virtualization | Storage Area Network | File Services | Email Archiving | Enterprise Backup |

Network

| LAN | WAN | Internet Access | Monitoring | VOIP | DNS/DHCP |

Security

- Directory Services
- Endpoint Protection
- Single Sign-on (SSO)
- Remote Access
- WEB Gateway
- Mail Gateway
- RSA SecurID Access
- Certificate Authority
- Network Access Control
- Firewall
- Security Event Mgmt.

Example in the Industry

IT Services for Business Process

Management Processes	BI Cockpit	Strategy & Risk Management	Financial Accounting
	Procurement	Production Planning & Control	Sales
Value Chain	Stock	Control Desk	Retail
	Supplier Management	Capture of Production Data	E-Commerce
Support Processes	HR	Time & Alternance	Paytroll

IT Services for Information Sharing

eMail & Collaboration	Intranet & Knowledge Mgmt	File Sharing	Printing

IT Services for User Workplace

Workplace Infrastucture	Workplace Applications	Telephone	Access

IT Infrastructure Services

Datacenter	Server Infrastructure	Telephone Infrastructure	Network
Virtualisation	Backup	Storage	Internet & RAS

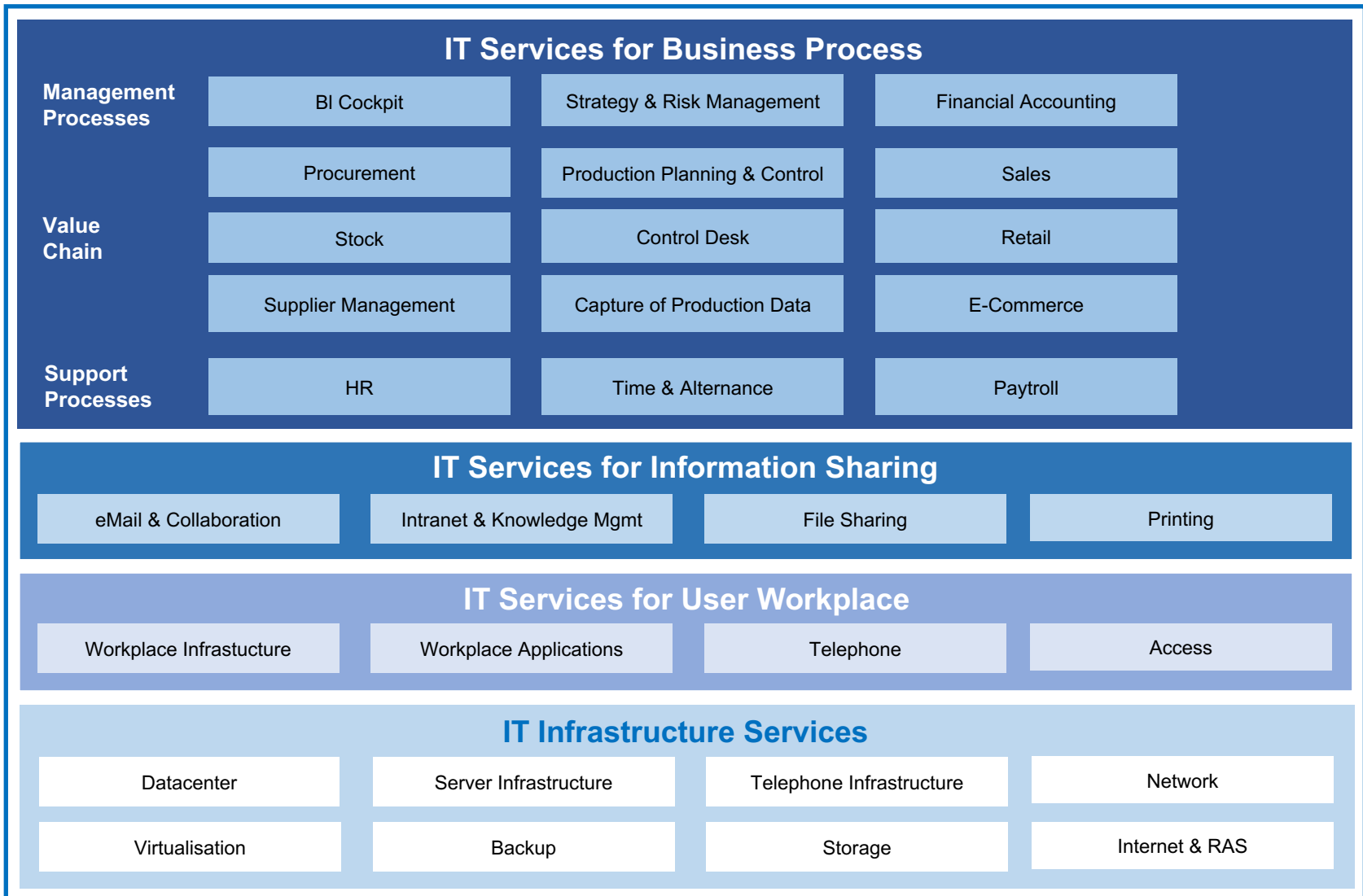Source: Cloud Computing und Service Management: Was verändert sich? (slideshare.net)

14

Value of an IT Service

Providers

Added value of an IT Service

Consumers
- Sponsors
- Customers
- Users

Business Outcomes

Processes

Technology & Methods

Value

Preferences

Perceptions

Skills & Experience

Inspired by *pinkelephant*.co.uk/it-service-management/

ITSM according to Gartner

Key Stakeholders

Service Consumer
"The Business"

Contract Negotiators

Business leaders who authorize and ultimately pay for services

Service Portfolio

Transaction Initiators

End users who request things on a day-to-day basis

Service Catalogue

The Front Office

Service Provider
"IT"

Service Executors

IT personnel who execute processes to fulfill a request or transaction

Process-to-Service Map

Technology Caretakers

IT personnel who provision or administer the technological components associated with a service

Configuration Management Database

The Back Office

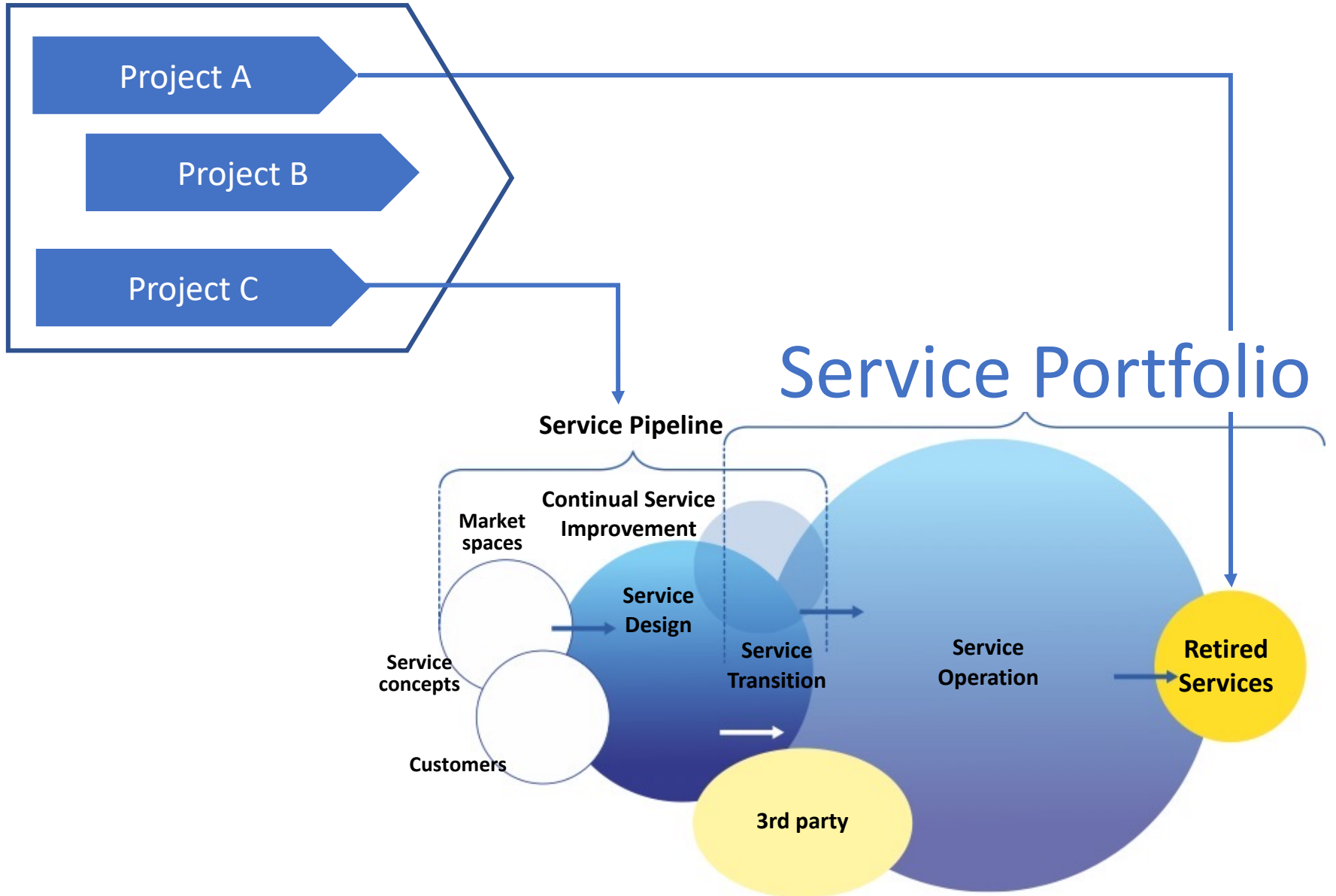Source: www.gartner.com/en/documents/1599635/*four-key-it-service-management-frameworks*

1. Service portfolio
2. Service catalogue
3. Process-to-service map
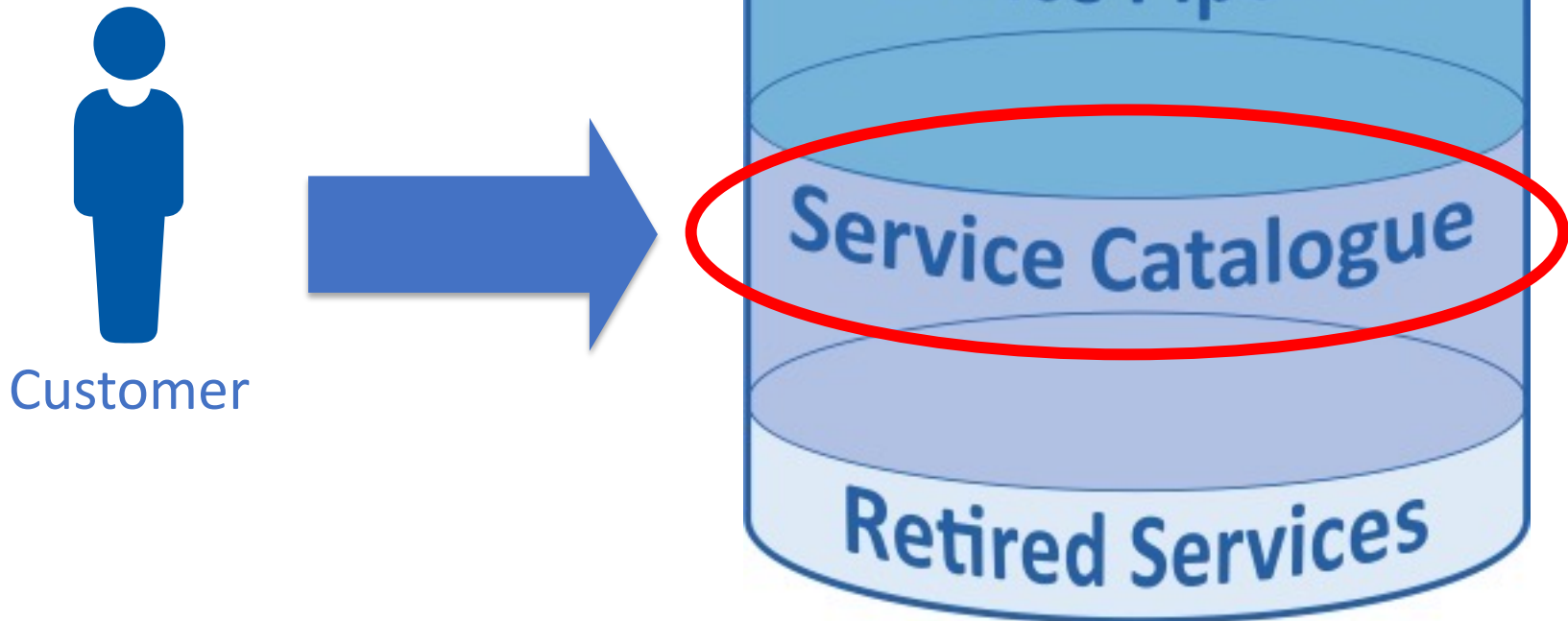4. Configuration management database (CMDB)

ITSM

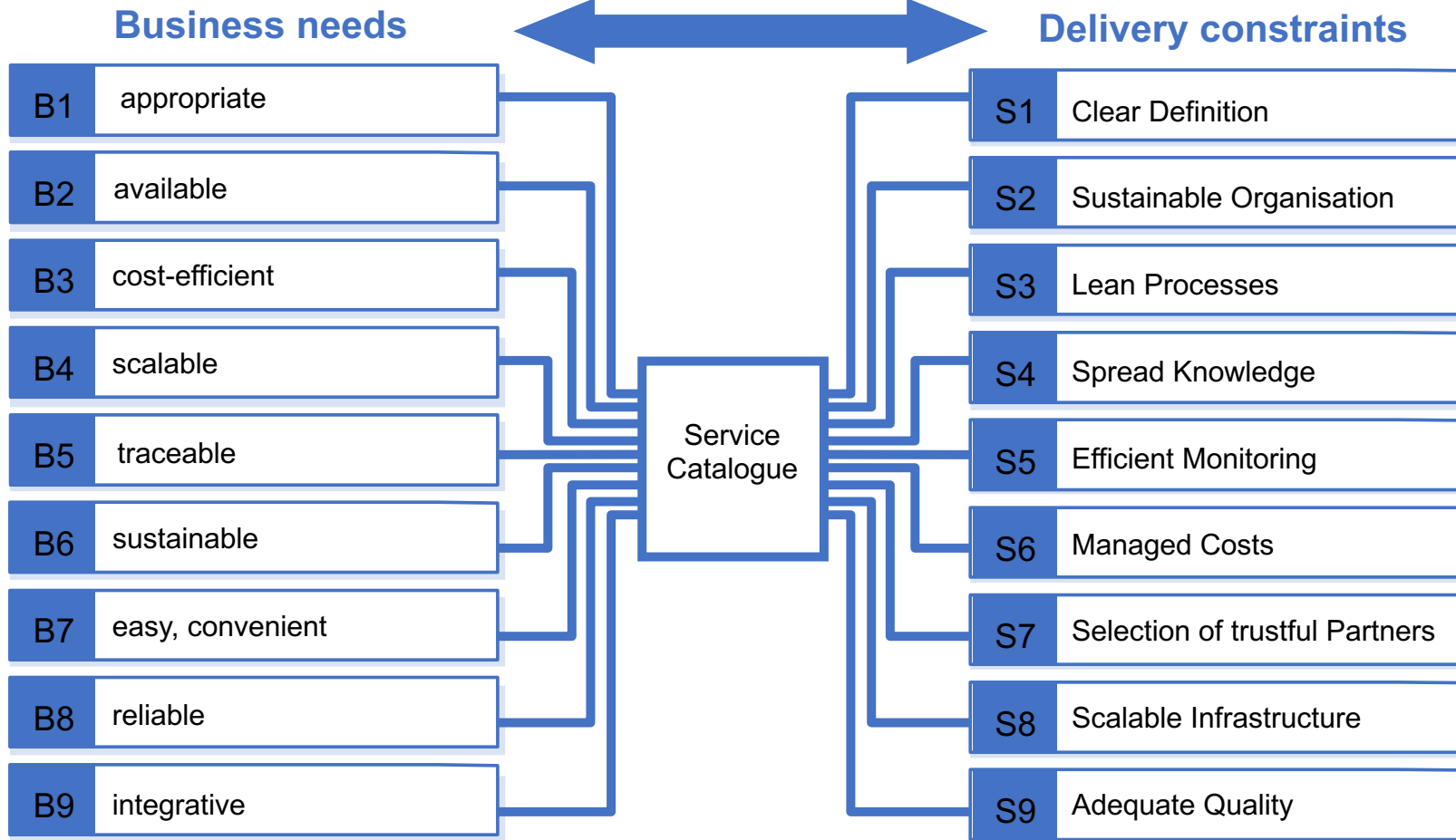① ② ③ ④

Service Portfolio

Customer

Service Catalogue: document that gives an understanding of all the services offered, their components, features, charges, etc.
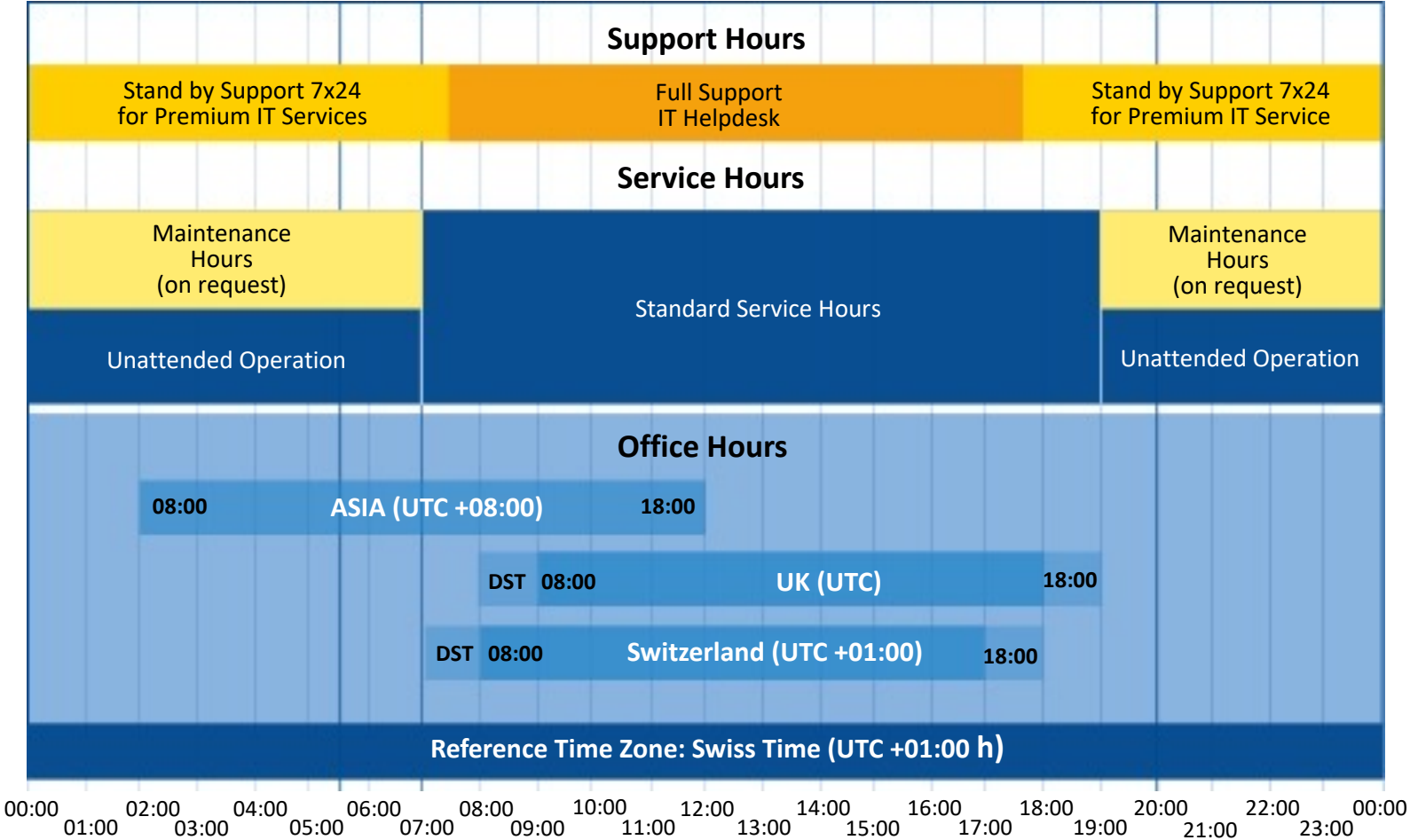
Following information belongs to a service catalogue:

- Contact Organisations

- Service Hours and Support Levels

- Description of services

- Service Level Agreements (Availability, Performance,…)

- Charging and KPIs Reporting

- Business Continuity Management (RPO, RTO)

- Restrictions

- Glossary
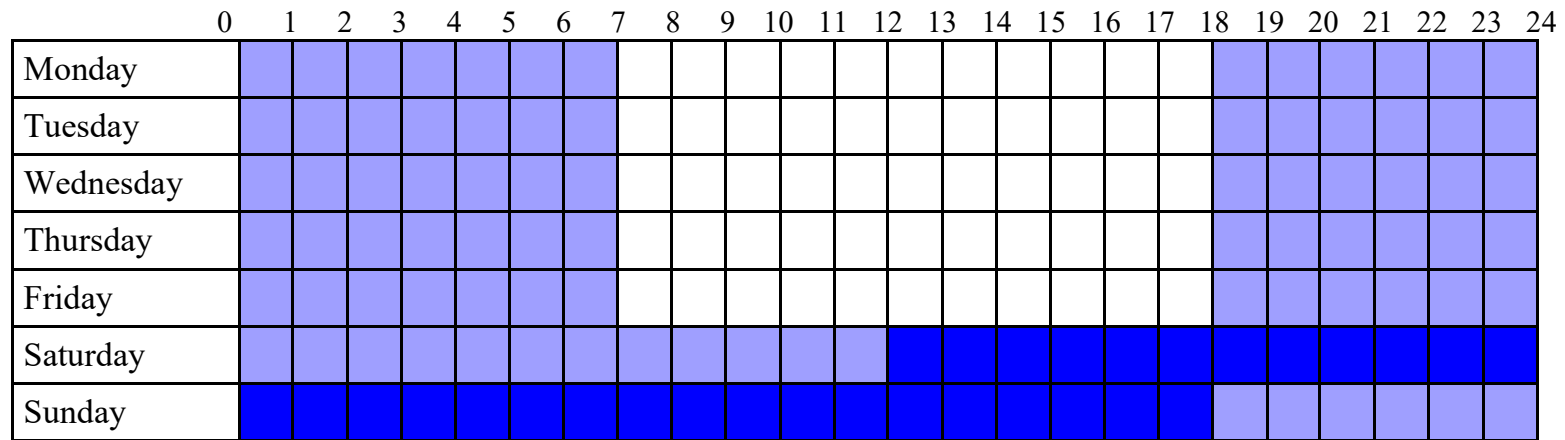
RPO Recovery Point Objective
RTO Recovery Time Objective

Service Catalogue: keeping the balance

Business needs ⟷ **Delivery constraints**

Business needs	Delivery constraints
B1 appropriate	S1 Clear Definition
B2 available	S2 Sustainable Organisation
B3 cost-efficient	S3 Lean Processes
B4 scalable	S4 Spread Knowledge
B5 traceable	S5 Efficient Monitoring
B6 sustainable	S6 Managed Costs
B7 easy, convenient	S7 Selection of trustful Partners
B8 reliable	S8 Scalable Infrastructure
B9 integrative	S9 Adequate Quality

Service Catalogue

IT Support-/ Service Hours on weekdays (Mo - Fr)

Support Hours

Stand by Support 7x24 for Premium IT Services	Full Support IT Helpdesk	Stand by Support 7x24 for Premium IT Service

Service Hours

Maintenance Hours (on request)	Standard Service Hours	Maintenance Hours (on request)
Unattended Operation		Unattended Operation

Office Hours

08:00   **ASIA (UTC +08:00)**   18:00

DST   08:00   **UK (UTC)**   18:00

DST   08:00   **Switzerland (UTC +01:00)**   18:00

Reference Time Zone: Swiss Time (UTC +01:00 h)

00:00   01:00   02:00   03:00   04:00   05:00   06:00   07:00   08:00   09:00   10:00   11:00   12:00   13:00   14:00   15:00   16:00   17:00   18:00   19:00   20:00   21:00   22:00   23:00   00:00

Service Hours

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Monday																									
Tuesday																									
Wednesday																									
Thursday																									
Friday																									
Saturday																									
Sunday																									

Average number of hours per quarter (13 weeks)

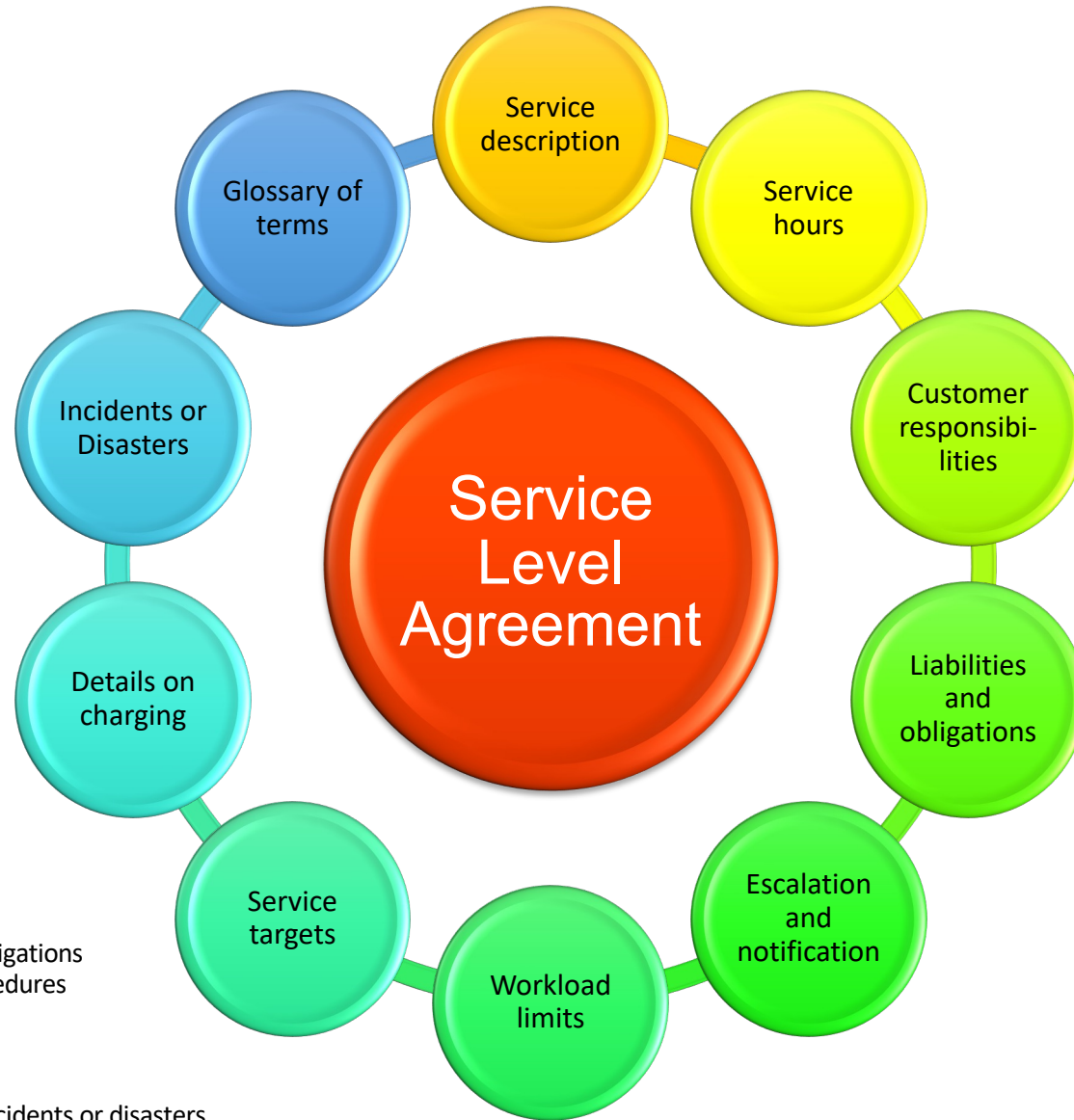|	Average number of hours per quarter (13 weeks)
Office Hours	715 hours
Non-Office Hours	1,079 hours
Maintenance Hours	390 hours

Office Hours	During Office Hours, the main focus is on user productivity, with the highest service levels and the shortest response time to problems
Non-Office Hours	During Non-Office Hours, routine tasks such as backups or batch jobs are performed. This normally means that service levels for users are reduced
Maintenance Hours	This time period is used to carry out various maintenance tasks on the systems, such as software upgrades, or hardware changes. Although many systems are running during this time, it is impossible to guarantee a defined service level in most cases

Legend:
- Office Hours (white)
- Non-Office Hours (light blue)
- Maintenance Hours (dark blue)

Further Definitions

Item	Description
Time period	A service level is specified for a time period given (for instance three months or one year)
Planned interrupts	"Planned interrupts" are long term changes. They are announced to customers in advance by means of a Change Memo
Unplanned interrupts	All other interrupts are known as "unplanned interrupts"
Availability	$$\text{Availabilty} = 100\% - \frac{\text{Planned + Unplanned interrupts per quarter}}{\text{Number of Service Hours per quarter}} *100\%$$
Reporting	Definition and frequency of service level reporting (Service Report), for instance on the web
Service level violations	Service level violations are reported in the Service Report

PRIORITY		Severity (Customer view)			
		Critical	**High**	**Medium**	**Low**
Gravity (Supplier view)		All users are affected / Incident prevents vital business transactions	A group of users is affected / Incident limits or prevents important functionality	A few users are affected / Incident complicates a business transaction	Very few users affected / Incident has little or no effect on the Client's business processes
Severe	Immediate solution needed	P1 Critical	P1 Critical	P2 High	P3 Medium
High	Solution needed within 1 Open Business Day	P2 High	P2 High	P3 Medium	P4 Low
Medium	Solution needed within several Business Days	P3 Medium	P3 Medium	P3 Medium	P4 Low
Low	No time constraint	P4 Low	P4 Low	P4 Low	P4 Low

Typical contents in an SLA:
- Service description
- Service hours and exceptions
- Scheduled service interruptions
- Customer responsibilities
- Service provider liability and obligations
- Escalation and notification procedures
- Service targets
- Workload limits
- Details on charging
- Actions to be taken in case of incidents or disasters
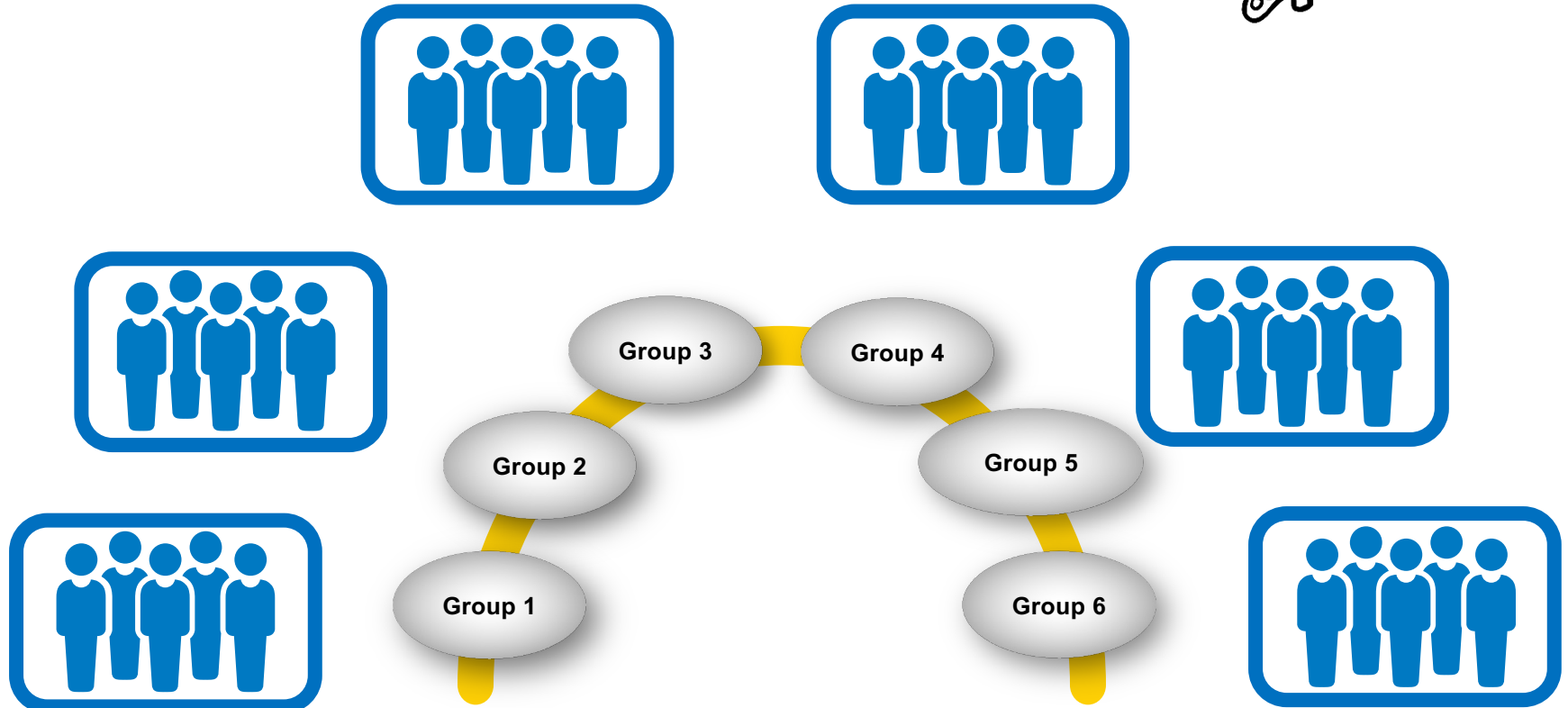- Glossary of terms

Example of SLAs

Bronze, Silver, Gold

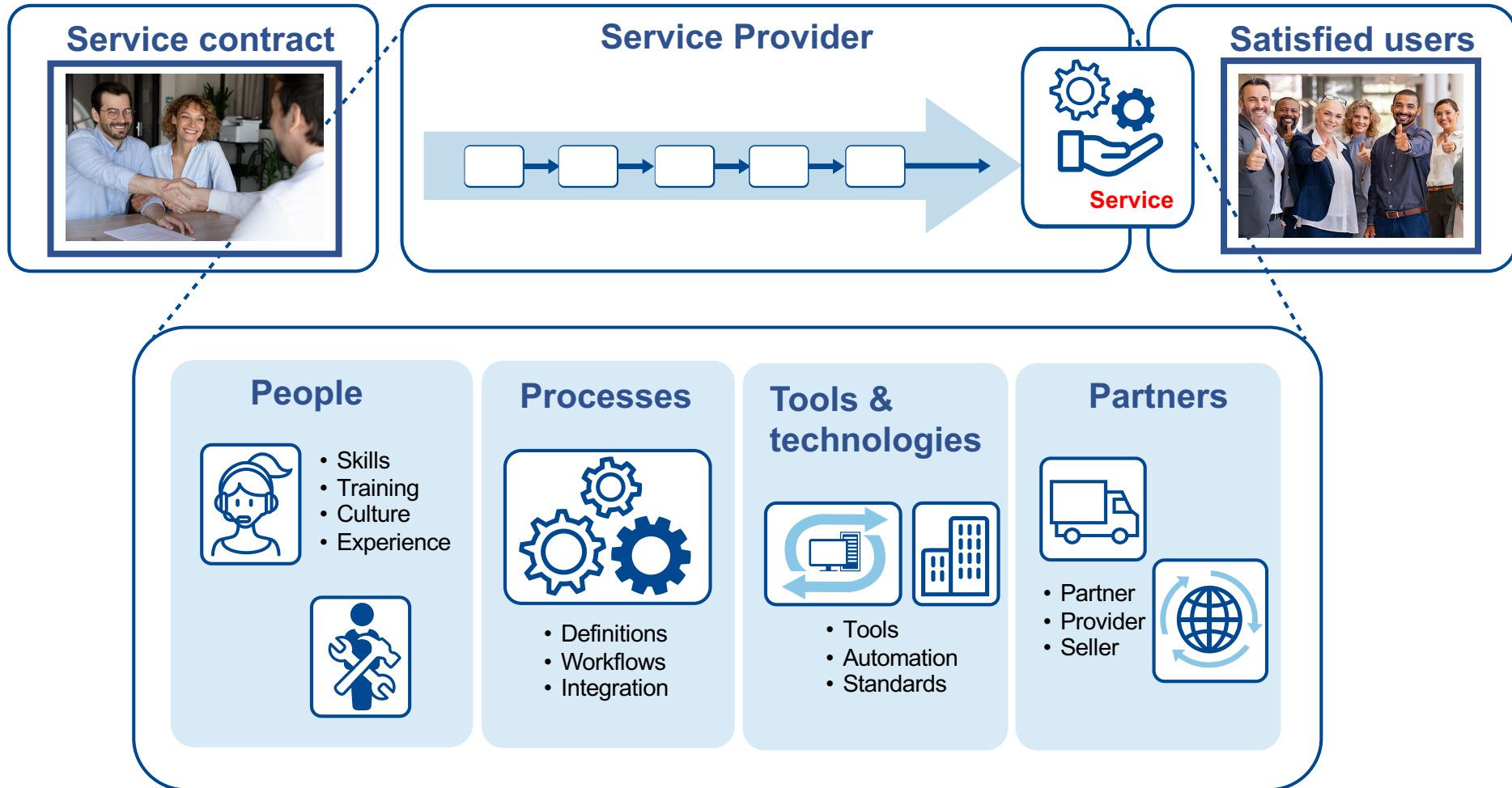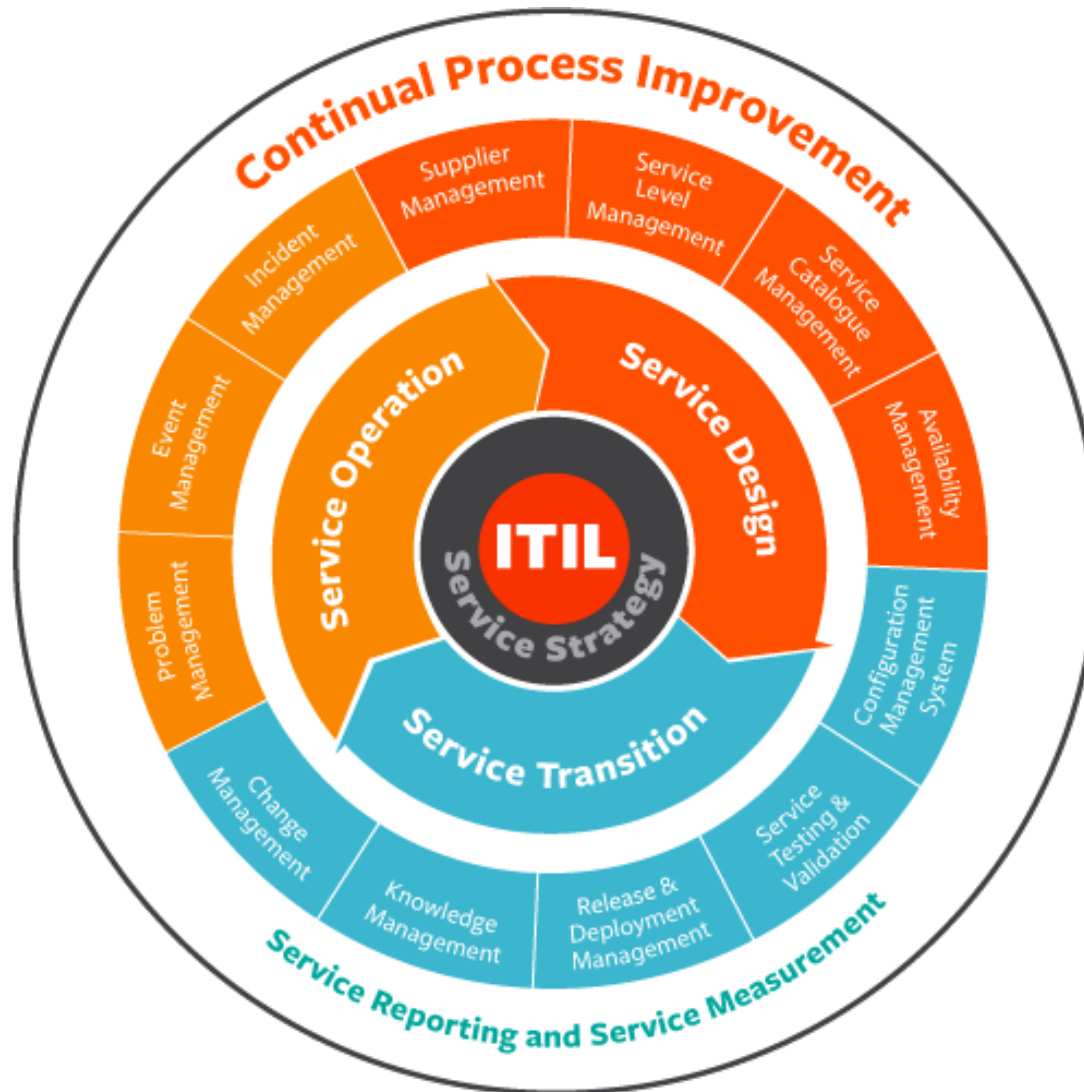|	Bronze	Silver (Critical Services)			Gold (Business Critical Services)	
Business Process Services	AI Service except silver and gold	Sales	Stock	Payroll	Retail	E-Commerce
		Control Desk	Supplier Management			Procurement
Information Sharing		Intranet		Public Websites	eMail & Collaboration	
User Workplace		Remote Access, Print Services			File Sharing	
IT Service Access Hours	**365 Days x 24 hours**	Accessibility of the IT infrastructure for IT users Except in times of IT Service Maintenance, inline with Business Process Calendar				
IT Service Support Hours	**Mon – Fri, Mon – Sun**	**06:15 – 17:15** (Local al Service Desk/UTC) **365 Days x 24** hours (Global Service Desk)			**Outside service desk hours** Infrastacture support	
					On request Application support	
IT User Incident Solution Time	**90% within max.3 worlding days**	**90% of all user incidents Solved within max. 1 working day**			**95% of all user incidents Solved within max. 4h**	
IT Service Availability	**96,6% 4 dis/year, max, 3 days**	**98.9% 4 service disruptions/year, each max. 24 hours**			**99.6% 4 service disruptions/year, each max. 8 hours**	
IT Service Continuity	**Emercgency Oper. Max. 20 working days**	**Emergency operation established within max. 72 hours**			**Emergency operation established Within max. 48 hours**	
Business Continuity RTO : *Recovery Time Objective*	**RTO < 36 hours**	**RTO < 8 hours**			**RTO < 4 hours**	

Define SLAs for the following IT Services

1. A Corporate SAP System
2. A mailing solution
3. An HR application

4. An online platform
5. A Firewall server
6. Access management service

EXERCICE

Group 1

Group 2

Group 3

Group 4

Group 5

Group 6

Process-to-service

Service contract

Service Provider

Service

Satisfied users

People
- Skills
- Training
- Culture
- Experience

Processes
- Definitions
- Workflows
- Integration

Tools & technologies
- Tools
- Automation
- Standards

Partners
- Partner
- Provider
- Seller

FitSM as an Alternative

FitSM 14 Processes

- Service Portfolio Management (SPM) → **Service Strategy**

- Service Level Management (SLM)
- Service Reporting Management (SRM)
- Service Availability & Continuity Management (SACM)
- Capacity Management (CAPM)
- Information Security Management (ISM)
- Customer Relationship Management (CRM)
- Supplier Relationship Management (SUPPM)

→ **Service Design**

- Incident & Service Request Management (ISRM)
- Problem Management (PM)
- Configuration Management (CONFM)
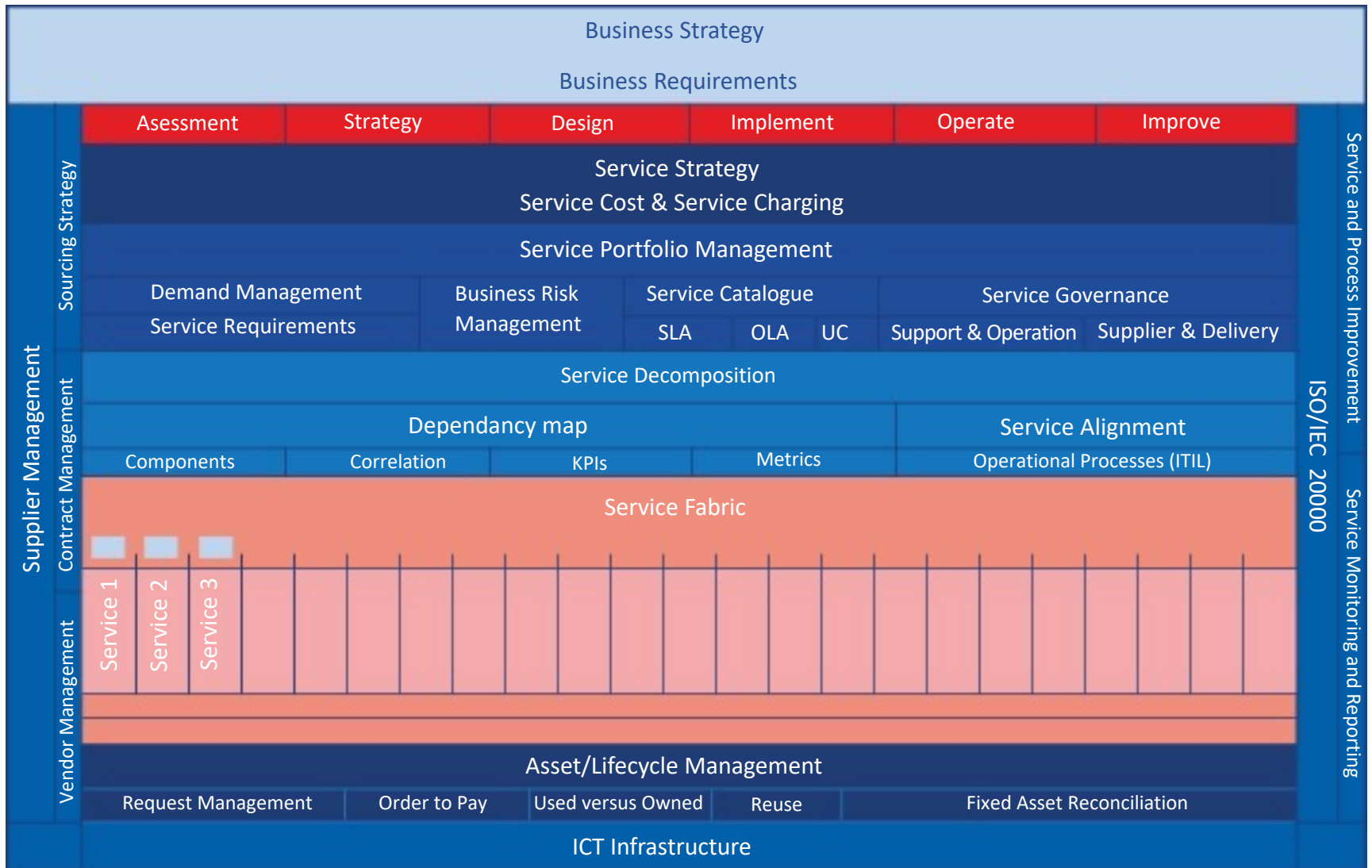- Change Management (CHM)
- Release & Deployment Management (RDM)

→ **Service Operation**

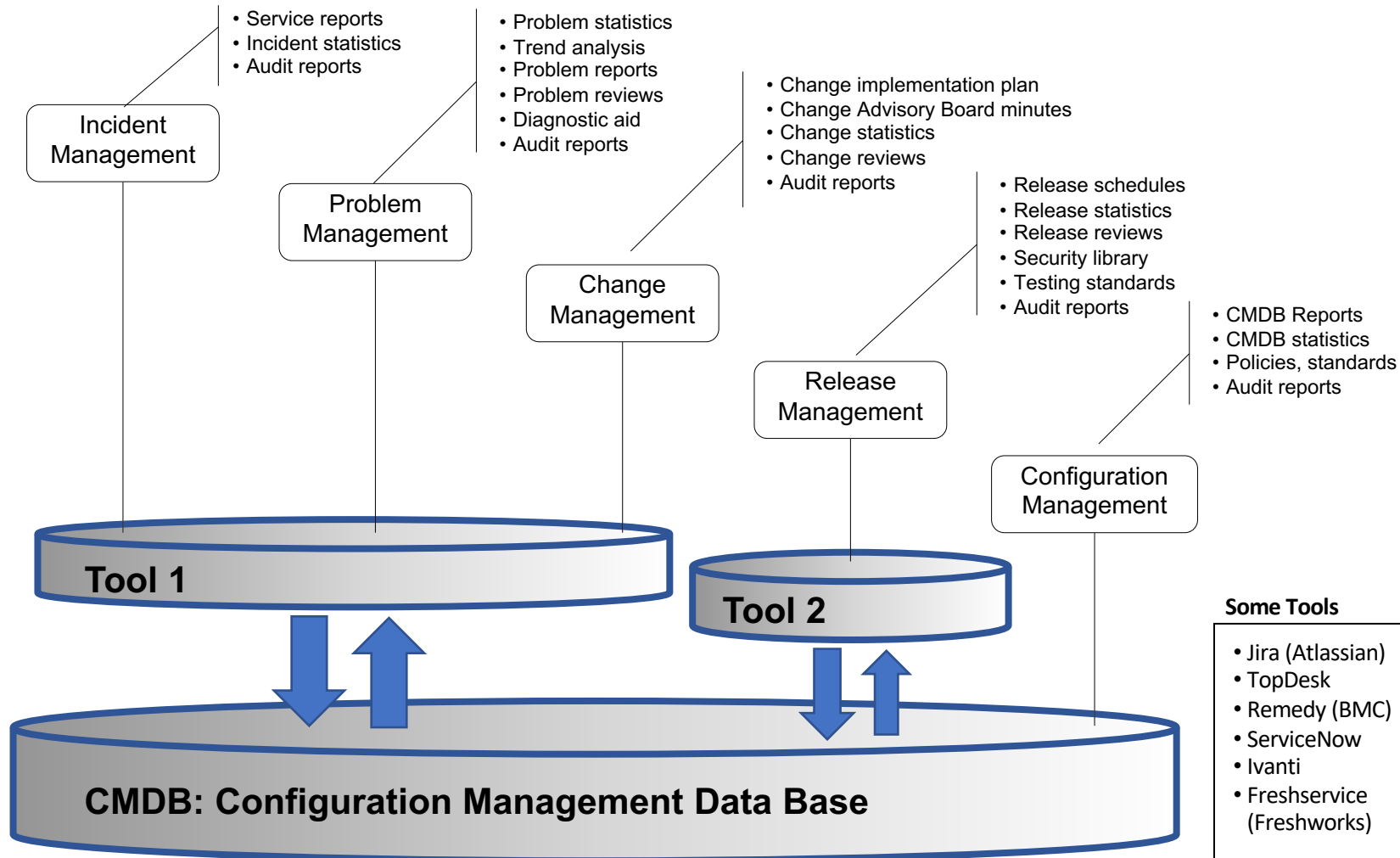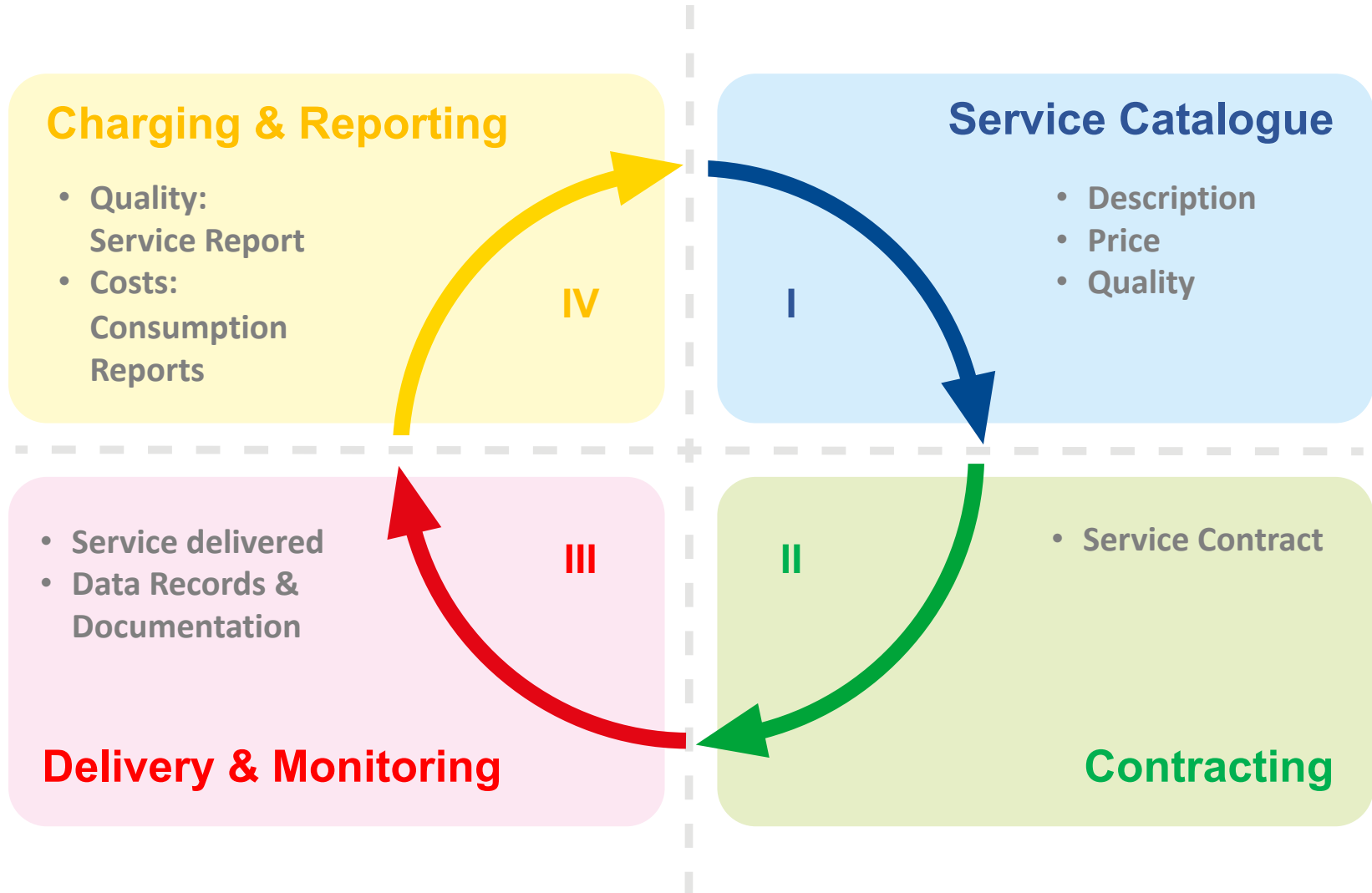- Continual Service Improvement Management (CSI) → **Service Improvement**

		Asessment	Strategy	Design	Implement	Operate	Improve	

Business Strategy

Business Requirements

Asessment	Strategy	Design	Implement	Operate	Improve

Service Strategy
Service Cost & Service Charging

Service Portfolio Management

Demand Management	Business Risk Management	Service Catalogue			Service Governance	
Service Requirements		SLA	OLA	UC	Support & Operation	Supplier & Delivery

Service Decomposition

Dependancy map				Service Alignment
Components	Correlation	KPIs	Metrics	Operational Processes (ITIL)

Service Fabric

Service 1 · Service 2 · Service 3

Asset/Lifecycle Management

Request Management	Order to Pay	Used versus Owned	Reuse	Fixed Asset Reconciliation

ICT Infrastructure

Supplier Management — Contract Management — Vendor Management — Sourcing Strategy

Service and Process Improvement — ISO/IEC 20000 — Service Monitoring and Reporting

CMDB as IT Data warehouse

See also ITOM (IT Operation Management)

Incident Management
- Service reports
- Incident statistics
- Audit reports

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

Change Management
- Change implementation plan
- Change Advisory Board minutes
- Change statistics
- Change reviews
- Audit reports

Release Management
- Release schedules
- Release statistics
- Release reviews
- Security library
- Testing standards
- Audit reports

Configuration Management
- CMDB Reports
- CMDB statistics
- Policies, standards
- Audit reports

Tool 1

Tool 2

CMDB: Configuration Management Data Base

Some Tools
- Jira (Atlassian)
- TopDesk
- Remedy (BMC)
- ServiceNow
- Ivanti
- Freshservice (Freshworks)

Mainly on a yearly basis

Charging & Reporting

- **Quality: Service Report**
- **Costs: Consumption Reports**

IV

Service Catalogue

- **Description**
- **Price**
- **Quality**

I

Delivery & Monitoring

- **Service delivered**
- **Data Records & Documentation**

III

II

- **Service Contract**

Contracting

Examples

Service Calculation

Overhead Costs	Technical Services (Technical service catalogue, OLA)		IT Services (Service Catalogue)	
Overhead Costs				
Sales / Account Management			Service Group Basis	Service Group Application
IT-Management	Windows Server Gold	Network RAS	Standard Package	Core Module 01
Security & Architecture	Windows Server Silber	Network LAN	CAD Package	Core Module 02
Service Management & Tools	Windows Server Bronze	Network WAN	Multimedia Package	Core Module 03
Room costs & data center	Unix Server Gold	Database Oracle	Travel Package	Application A
Personnel expenses	Unix Server Silber	Database SQL-Server	Mobile Package	Application B
Internal personnel costs	Unix Server Bronze	Database xxx	VIP Package	Application C
External personnel costs	Storage Gold	Webserver Intranet	Print b/w	Application D
Material costs	Storage Silber	Webserver Internet	Print color	Application E
Consumables	Storage Bronze	…	…	Application …
Outsourcing				
SW maintenance				
SW licenses				
HW maintenance				
HW depreciation/leasing				

Example: Price List and Charging

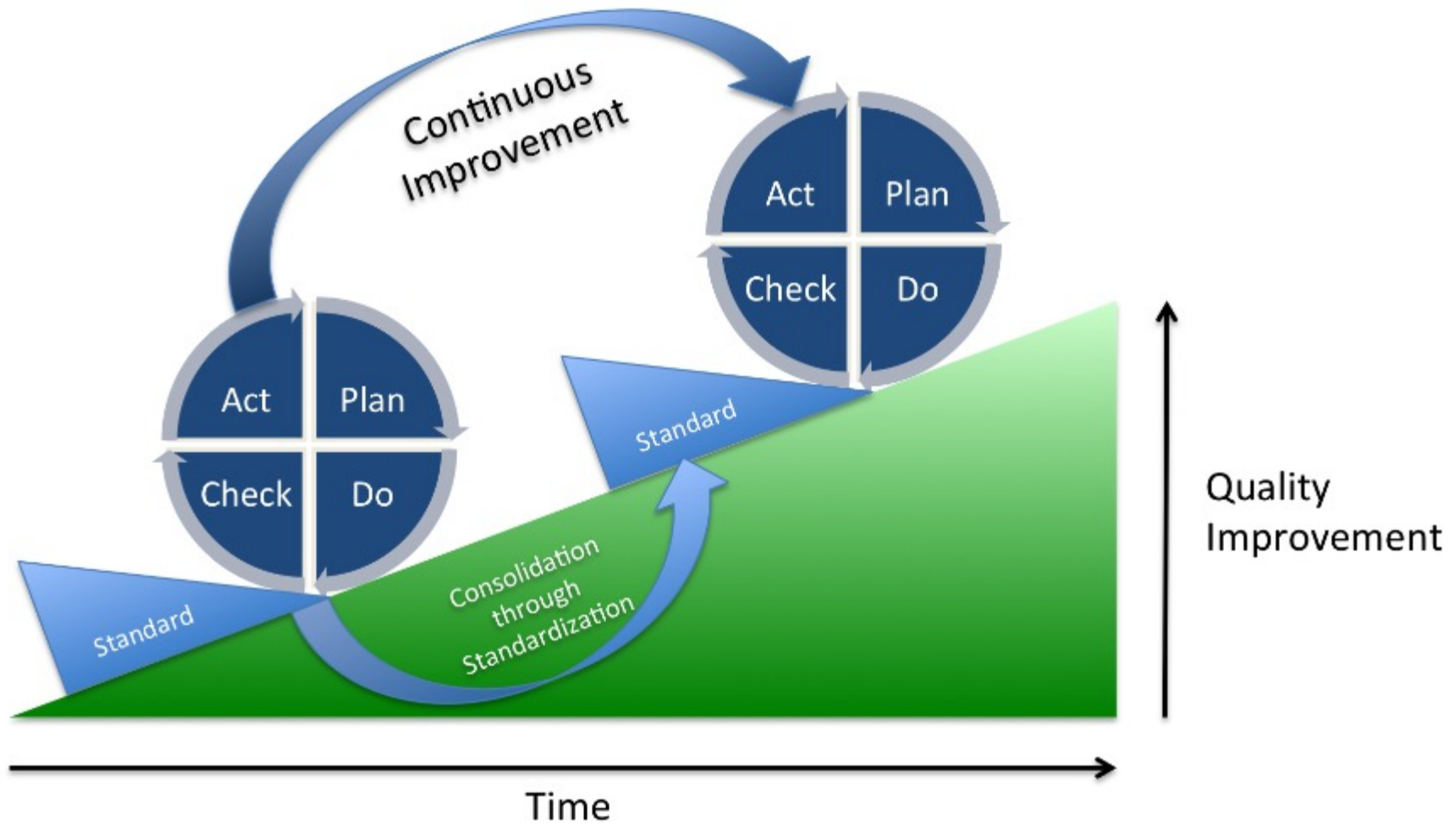| Service ID	Service Type	Short Description	Support Model	Availability Level	Planned Quantity	Unit Price CHF p.a.	Clairing Unit
Service Group							
Private Banking							
Consulting Services							
ITS 179	Standard Service	IT Business Consulting	Basic	Business Relevant	0	165 .-	Hours
ITS 188	Standard Service	IT Application Development	Basic	Business Relevant	0	165 .-	Hours
Core Banking							
ITS 062	Individual Service	Signature Management System	Basic	Business Relevant	180	240 .-	Users
ITS 131	Standard Service	Avaloq Banking System	Premium	Business Critical	235	18'980 .-	Users
ITS 132	Standard Service	Old Archive Systems	Basic	Business Relevant	8	600 .-	Users
ITS 201	Standard Service	JIRA Tool	Basic	Business Relevant	0	.-	incl. ITS009
Electronic Workplace							
ITS 009-A	Standard Service	Standard Electronic Workplace (EWP)	Basic	Business important	246	5'100.-	Systems
ITS 009-B	Standard Service	Additional Screen (EWP)	Basic	Business Important	85	300 .-	Systems
ITS 009-C	Standard Service	Mobile Workplace (EWP)	Basic	Business Important	15	6'780 .-	Systems
ITS 021	Standard Service	Email BSC	Top	Business Critical	256	1'200 .-	Users
ITS 022	Standard Service	IT Service	Basic	Business Relevant	256	.-	incl. ITS009
ITS 028	Standard Service	Mobile Computing	Basic	Business Required	6	6'780 .-	Systems
ITS 036	Standard Service	Distributed Print Services	Basic	Business Relevant	1	.-	incl. ITS009
ITS 055	Standard Service	WWW Access Special	Basic	Business Relevant	1	.-	incl. ITS009
ITS 056	Standard Service	WWW Access Standard from Workplace	Basic	Business Important	1	.-	incl. ITS009

ServiceCode	Description	Cost per month	Januar 2011 amount	Januar 2011 costs	Februar 2011 amount	Februar 2011 costs	März 2011 amount	März 2011 costs	total costs
Electronic Workplace									
Standard Client Services									
ITS 009 – A	Stadard Electronic Worplace (EWP)	578,00	176	101' 728	175	101'150	171	98'838	3 01'716
ITS 009-B	Additonal Screen (EWP)	27,00	154	4' 158	153	4'131	130	3'510	11'799
ITS 009-C	Mobile Workplace (EWP)	673,00	32	21' 536	33	22'209	34	22'882	66'627
ITS 022	IT Service Desk (incl. ITS009)		170	0	170	0	168	0	0
ITS 036	Distributed Services (incl. ITS009)		32	0	33	0	33	0	0
ITS 169	eMail (Exchange)	44,17	170	7'508	170	7'508	168	7'420	22'437
ITS 181	Exchange Webaccess	58,33	34	1'983	34	1'983	33	1'925	5'892
ITS 056	WWW Access Standard from Workplace		170	0	170	0	168	0	0
ITS 204	Stansdalone Systems zweiplus						5	400	400
Extended Client Services	**Total Standrd Client Services**			**136'914**		**136'982**		**134'975**	**408'870**
ITS 058-A	Extended Client Services (ECS)	5,00	244	1'220	232	1'160	225	1'125	3'505
ITS 058-B	Extended Client Services (ECS)	10,00	47	470	43	430	42	420	1'320
ITS 058-C	Extended Client Services (ECS)	19,17	66	1'265	69	1'323	70	1'342	3'929
	Total Extended Client Services			**2'955**		**2'913**		**2'887**	**8'754**
	Total Electronic Workplace			**139'869**		**139'894**		**137'862**	**417'624**

Costs

Project costs

Operating costs

Implementation

Project costs
(one-time)

Overhead costs

Personnel expenses
(intern & extern)

SW Licenses
(Investments)

HW Investments

Extensions/further developments
Project costs/one-time orders

| Overhead costs |
| Personnel expenses (intern & extern) |
| SW Licenses (Investments) |
| HW Investments |

Operations
Recurring service costs

| Overhead costs (Sales, management, tools, etc.) |
| Infrastructure costs (data center, electricity, air conditioning, UPS, access system,…) |
| Personnel expenses (intern & extern) |
| SW maintenance |
| HW maintenance |
| HW depreciation/leasing | SW depreciation/leasing |

Decommissioning

Project costs
(one-time)

Overhead costs

Personnel costs

SW Licenses
(Investments)

HW Investments

Time

Productive operation

HW Lifecycle

Decommi-ssioning

P-D-C-A: Plan Do Check Act

- *Managed changes*
- *Proactive*
- *Benchmark*

5 optimized

- *Capacity*
- *Planning*

4 managed

- *Institutionalisation*
- *Standardisation*

3 defined

- *Responsibilities*
- *Structure*

2 repeatable

1 initial

Process/Service unpredictable, poorly controlled, and reactive

performance

risks

Maturity level according to ISO 20000 quick assessment

- Let Customers Get to Know You

- Be Available

- Excellent support

- Proactive information provision during interruptions

- Special Services / VIP

- Knowledge provision

- Community platforms

TRANSPARENCY
PRESENCE
CUSTOMER FIRST
APPRECIATION
SIGNIFICANCE
VALUE CO-CREATION

Source: Forbes Entrepreneurs

1) Understand your requirements
Separate the "wants from the needs." Define what will truly generate value for your company.

2) Think of tools as strategic partners: Thinking of tools within the context of "applications that execute functionality" is a mistake

3) View ITSM as a relationship not a line item: Most ITSM tool acquisitions are one of the higher IT-related expenditures for an organization. The tool, however, is only the beginning. Enterprises are also entering into a long-term relationship with the vendor. Be certain the vendor is a good fit for the organization.

4) Evaluate ease of migration and integration: Organizations that have locked themselves into customized solutions often underestimate what it will take to migrate information and integrate tools.

5) Validate through certification: Review ITSM certifications and ratings to determine if a product is meeting compliance standards or adhering to ITSM best practices.

6) Ensure workflow integration: The synergy of integrated process automation within ITSM tools should be strong criteria for tool selection.

7) Adhere to legislation requirements: Legislative mandates on information and the tools that manage such data need to be considered when evaluating an ITSM solution.

8) Assess delivery models: Companies are able to choose from a SaaS-based or on-premise ITSM deployment. Each has special considerations for your business. Take the time to determine what makes the most sense.

9) Beware of common traps: Do not fall victim to false statements such as: "Greater product sophistication means a better ROI" or "There is no such thing as out-of-the box."

10) Find the right solution - generate a strong ROI: ITSM tools can provide an increase in ROI and positively affect cost of ownership. Not only can the right ITSM tool pay for itself in less than a year or two, it can drive down costs in other areas of your organization through cost and risk avoidance in administration, operational overhead, training and just about every other cost center of the IT budget.

Source: www.zdnet.com

IT as a Self-service

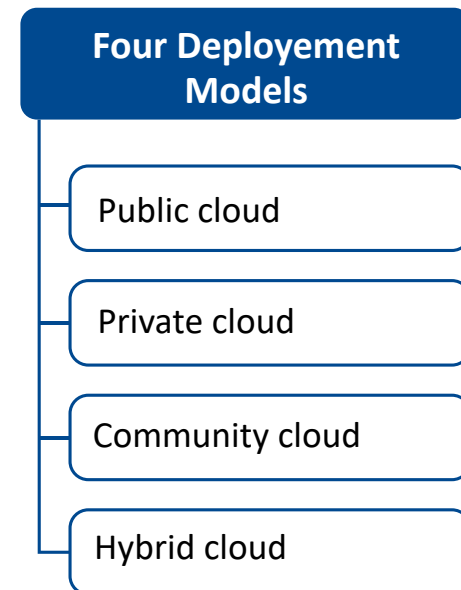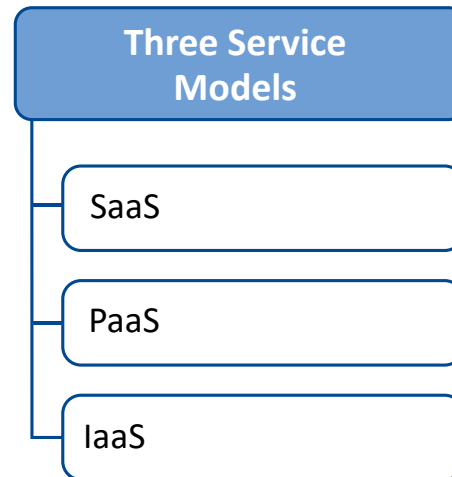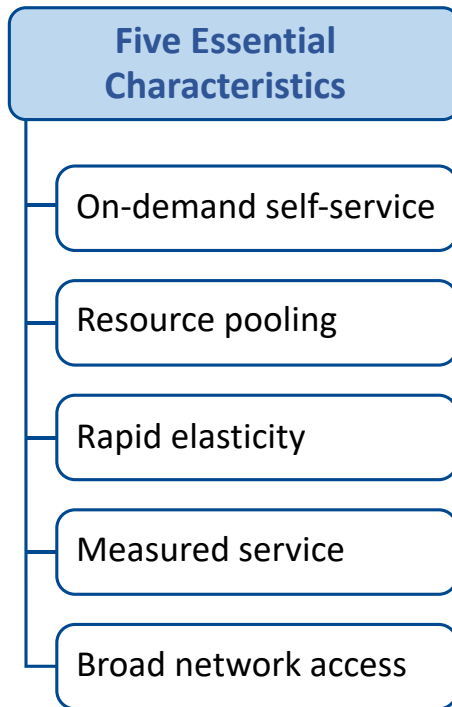# Cloud Computing History
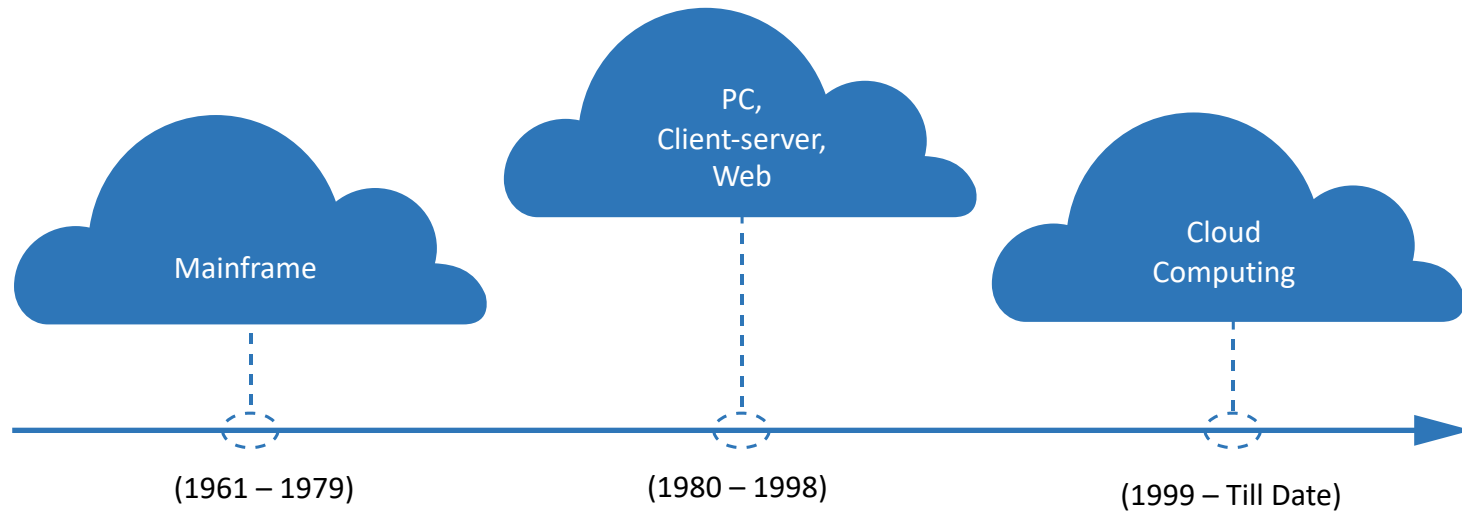
PC, Client-Server, Web :

- 1980 – Popularity onf the PC, client-server model
- 1961 – The World Wide Web (WWW) popularizes the internet
- 1997 – First use of the term "Cloud Computing"

Mainframe :

- 1961 – Professor John McCarthy proposes computing as „ public utility"
- 1964 – IBM CP-40 opreating systems uses virtualization
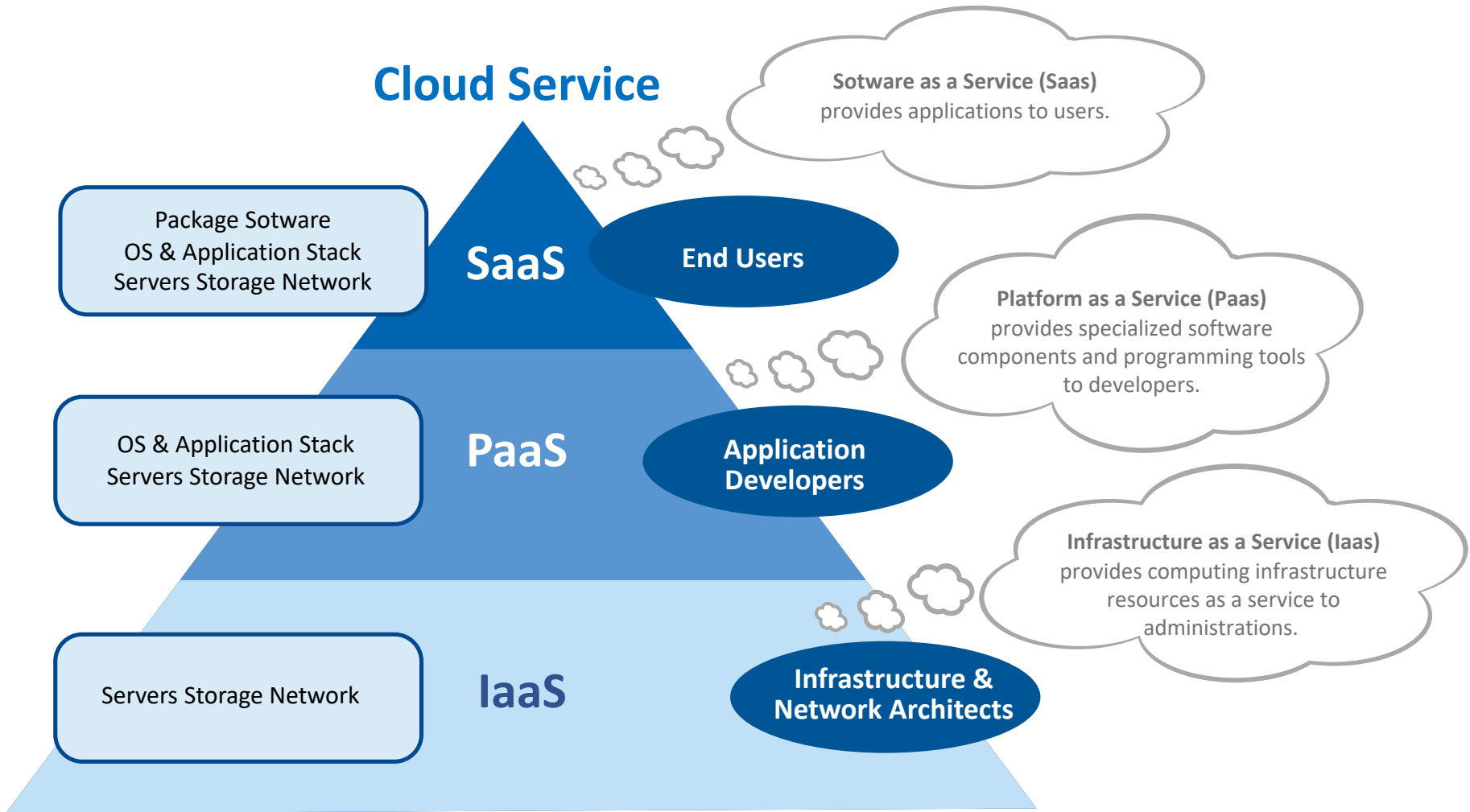- 1972 – IBM VM/370 is a virtual machine operating system

Cloud Computing :

- 1999 – Salesforce.com and VMWare launch
- 2002 – Amazon Web Services (AWS) launches and SOA emerges
- 2006 – Hadoop launched, shortly followed by amazon S3 and Amazon EC2
- 2007 – Salesforce introduces Force.com
- 2008 – Google App Engine launches
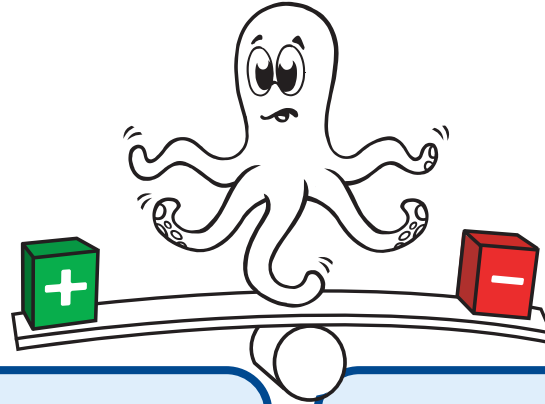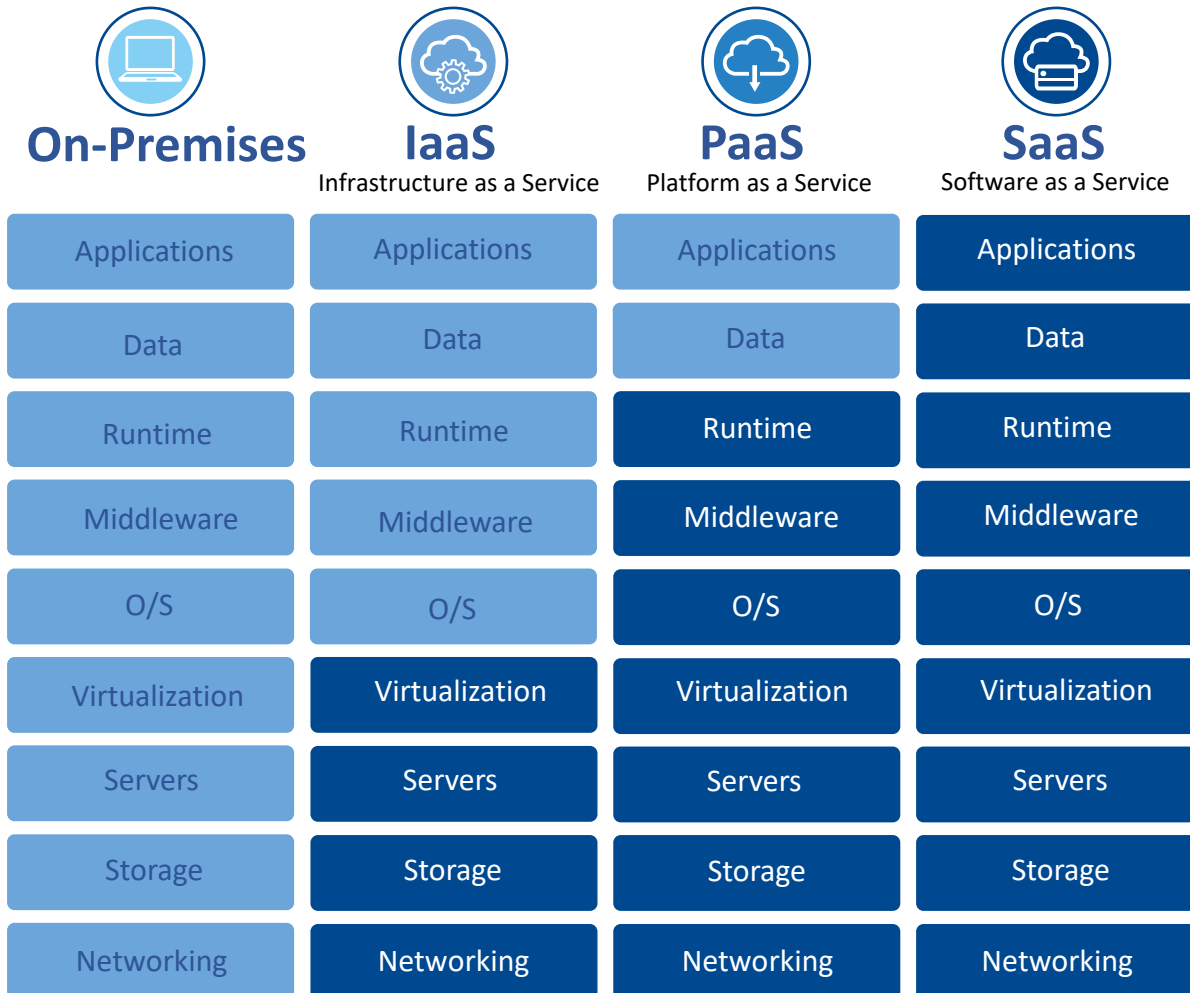- 2009 – Microsoft Azure launches

Five Essential Characteristics

- On-demand self-service
- Resource pooling
- Rapid elasticity
- Measured service
- Broad network access

Three Service Models

- SaaS
- PaaS
- IaaS

Four Deployement Models

- Public cloud
- Private cloud
- Community cloud
- Hybrid cloud

Cloud Service

Sotware as a Service (Saas) provides applications to users.

Package Sotware
OS & Application Stack
Servers Storage Network

SaaS

End Users

Platform as a Service (Paas) provides specialized software components and programming tools to developers.

OS & Application Stack
Servers Storage Network

PaaS

Application Developers

Infrastructure as a Service (Iaas) provides computing infrastructure resources as a service to administrations.

Servers Storage Network

IaaS

Infrastructure & Network Architects

Advantages and Disadvantages of both solutions

- On-demand self-service
- Broad network access
- Resource pooling
- Rapid elasticity
- Measured service
- Privacy (Personal Data Issues)

On-Premise
(Up-Front On-Premise Costs)

- Storage
- Physical space
- Cabling
- Power
- Cooling
- Networking
- Racks
- Servers
- Certification

Cloud Computing
(Variable Cloud Computing Costs)

- Zero capital expenditure
- No long-term contracts
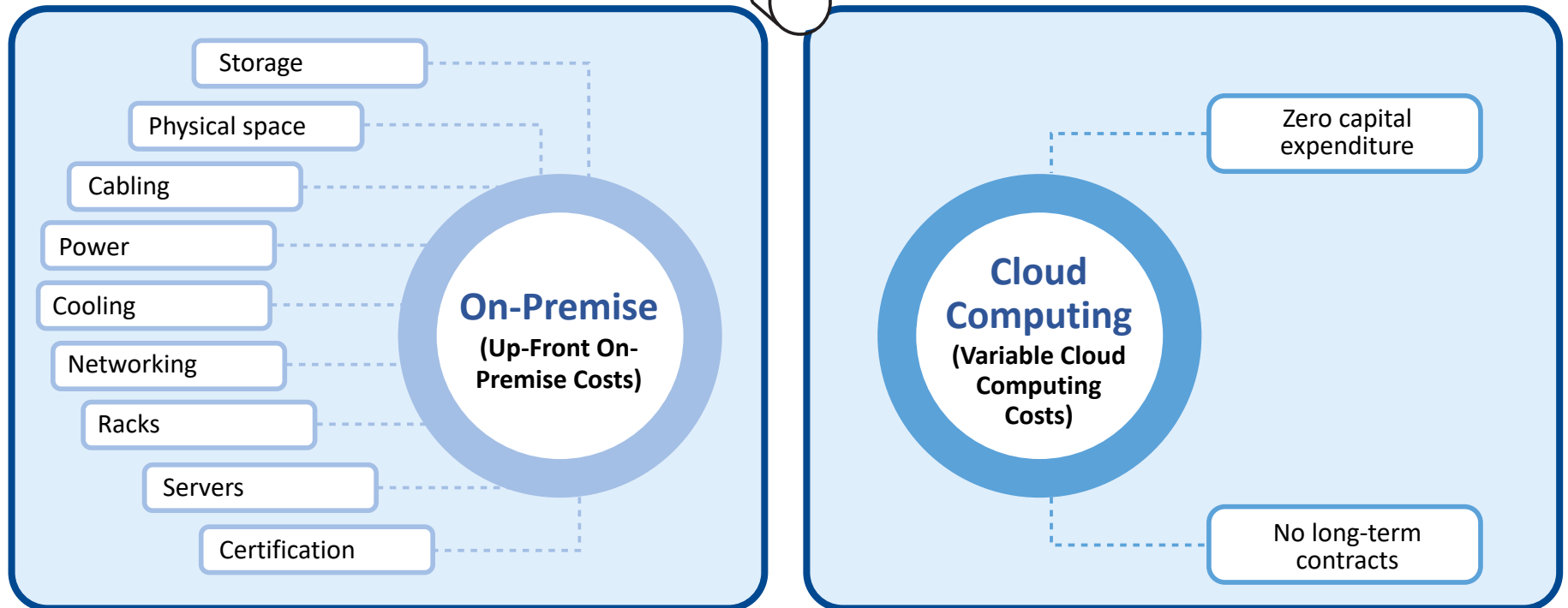
Separation of Responsibilities

On-Premises	IaaS Infrastructure as a Service	PaaS Platform as a Service	SaaS Software as a Service
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

You Manage   Other Manages

Source: kinsta.com/de/blog/arten-von-cloud-computing/

Cloud Services

Highly scalable

High automation

Integrated

Standardization

IaaS : Infrastructure as a Service / PaaS: Platform as a Service / SaaS: Software as a Service
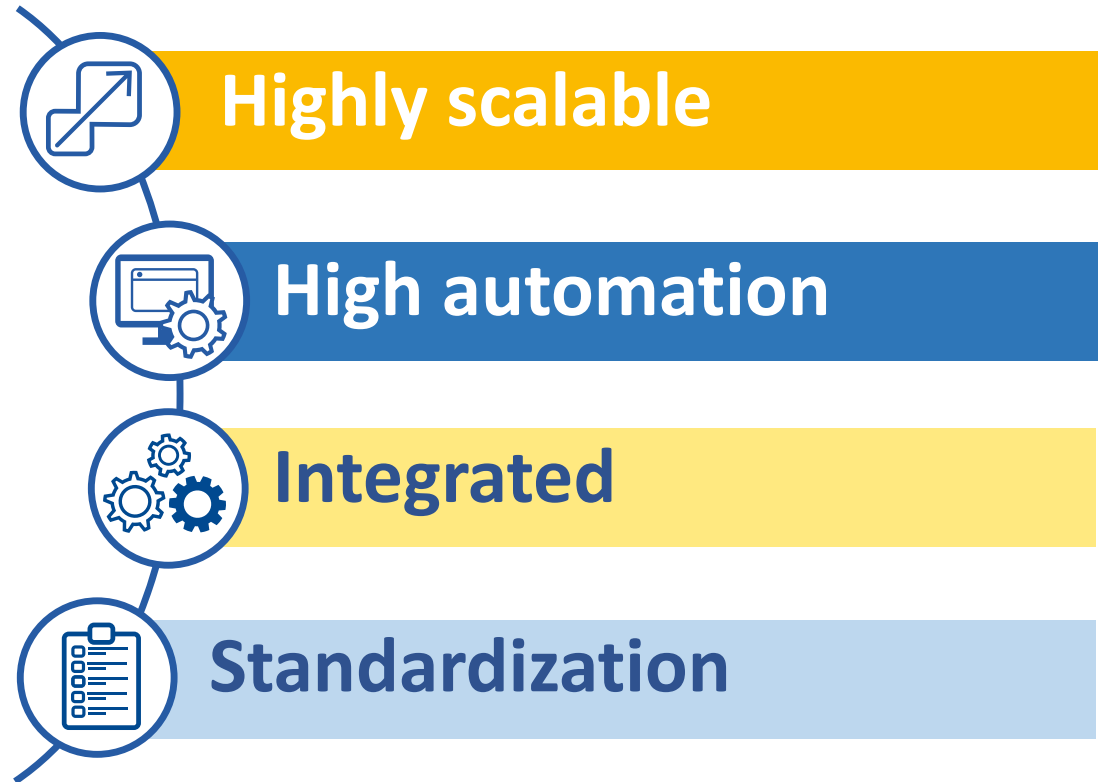
"The World in my pocket…"
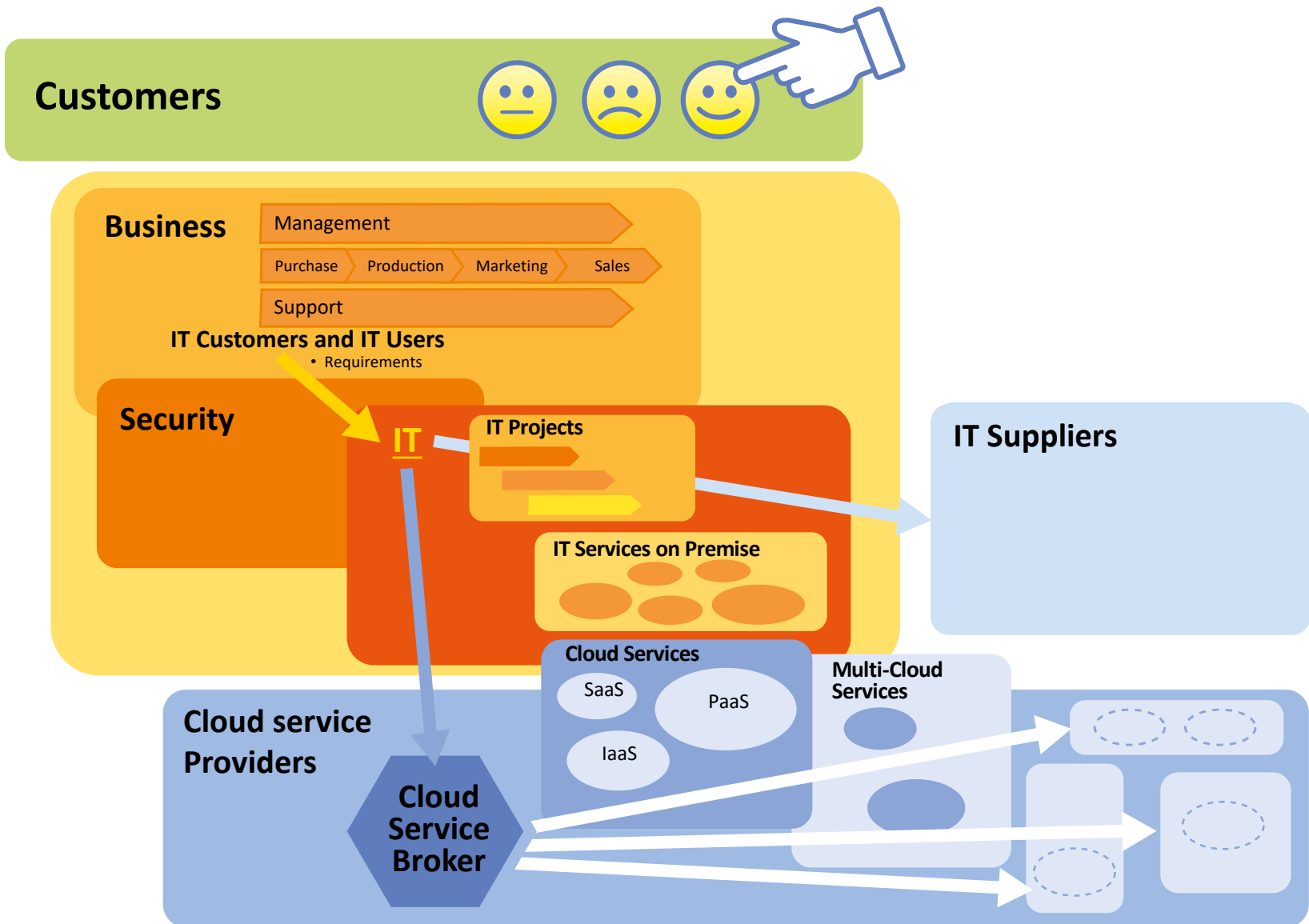
A digital service is the sum of processes and procedures that need to **be lived** by the different stakeholders so that the user can conduct operations **on a self-service basis**.

A digital service ensures that **customers** are **highly satisfied** with the solution, which is represents a **complex system** where **many different partners** are involved.

Natural Person (NP) - Individual

B-to-C
(Business to Customer)

Legal Person (LP)

B-to-B
(Business to Business)

1st Level

Hotline

Support Channel

2nd Level

Operations

Change Management

IT   Security

Business Development

Business departments

3rd Level

aws

Microsoft Azure

IBM

Canon

local Service Provider

HITACHI DATA SYSTEMS
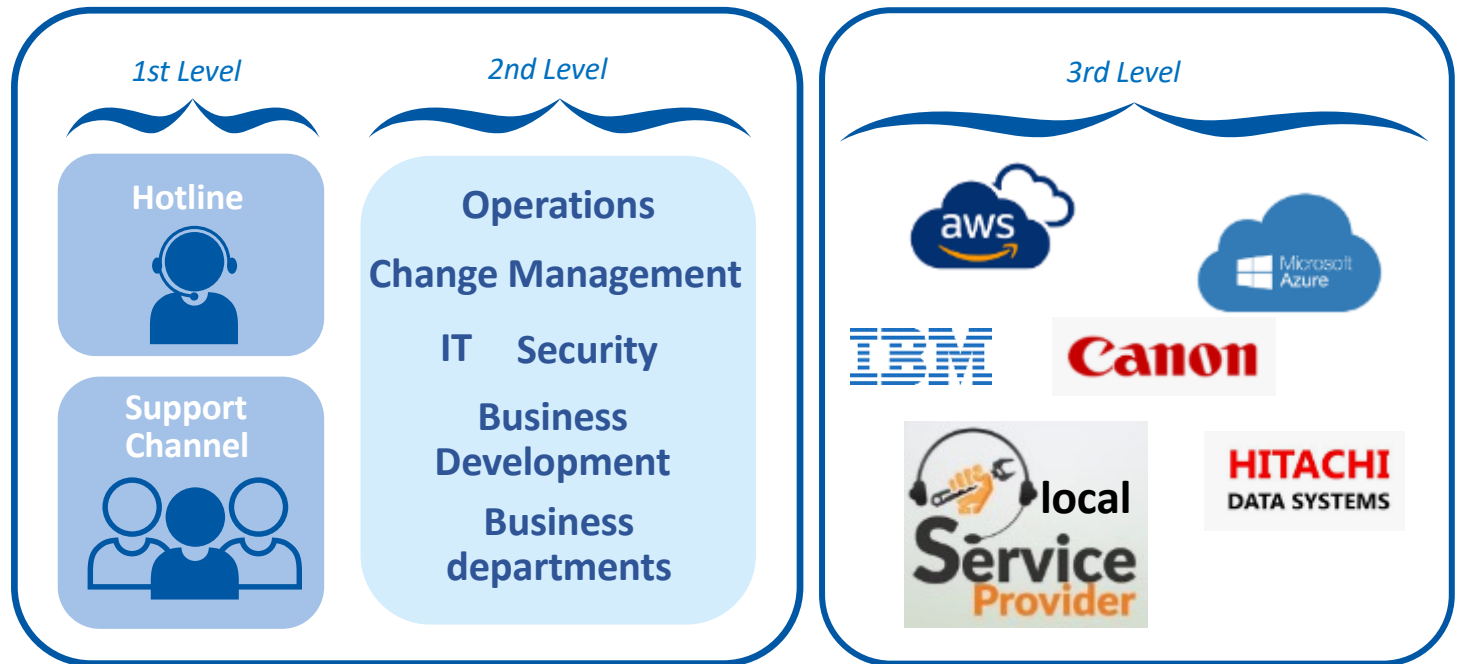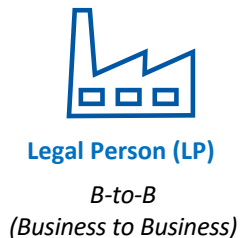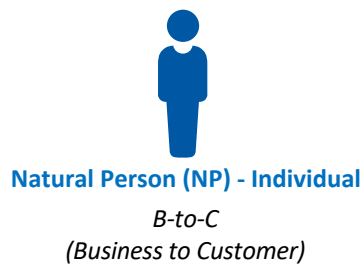
Ensure customer loyalty and trust

Functionalities are **easy** and **intuitive** to use. The user can do a lot **on his/her own** thanks to self-administration.
Customers are **regularly informed** about new features.

Usability
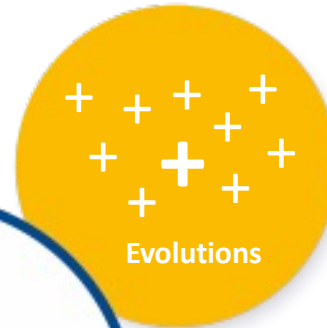
Evolutions

New significant functionalities and enhancements are identified and developed, tested and implemented in a **high quality**.

Calls and emails are answered **competently** and **expeditiously** by the hotline or the Relationship Managers. Complaints are taken up by the hotline and analyzed and addressed thanks to **the "complaint management" process**.

Client support
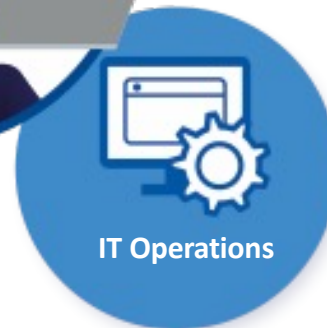
IT Operations

The platform is **highly available** and the necessary IT maintenance activities are **planned and communicated** at an early stage.

Digital Services: the Challenges

Usability
- Language
- Personalization
- Notifications
- Error messages
- Gamification
- Self-services
- Performance

Evolutions
- Release Plan
- Marketing campaigns
- Effort Estimate
- Delivery from suppliers
- App Delivery
- Testing
- Priorization
- Regression

Client support
- Hotline Service Hours
- Business Workbench
- Co-browsing
- Secured communication channel
- Training, Knowledge
- Known error database
- Hotline, Relationship Management
- Complaint management

IT Operations
- IT Service Definition
- Contracts, SLAs
- Maintenance Window
- Failover, BCM, Disaster
- Standby policy
- IT Incident Management
- User Information
- System Monitoring
- Defect Management

- Digitization needs a much quicker time2market (business is most often more agile than IT)
- **BizDevOps** moves the IT service management pratices into the responsibility of the mixed teams of IT and business representatives

Define digital services or use cases for the following areas

1. Consumer Products
2. Energy & Commodities
3. Health

4. Financial Services
5. Public Sector
6. Retail
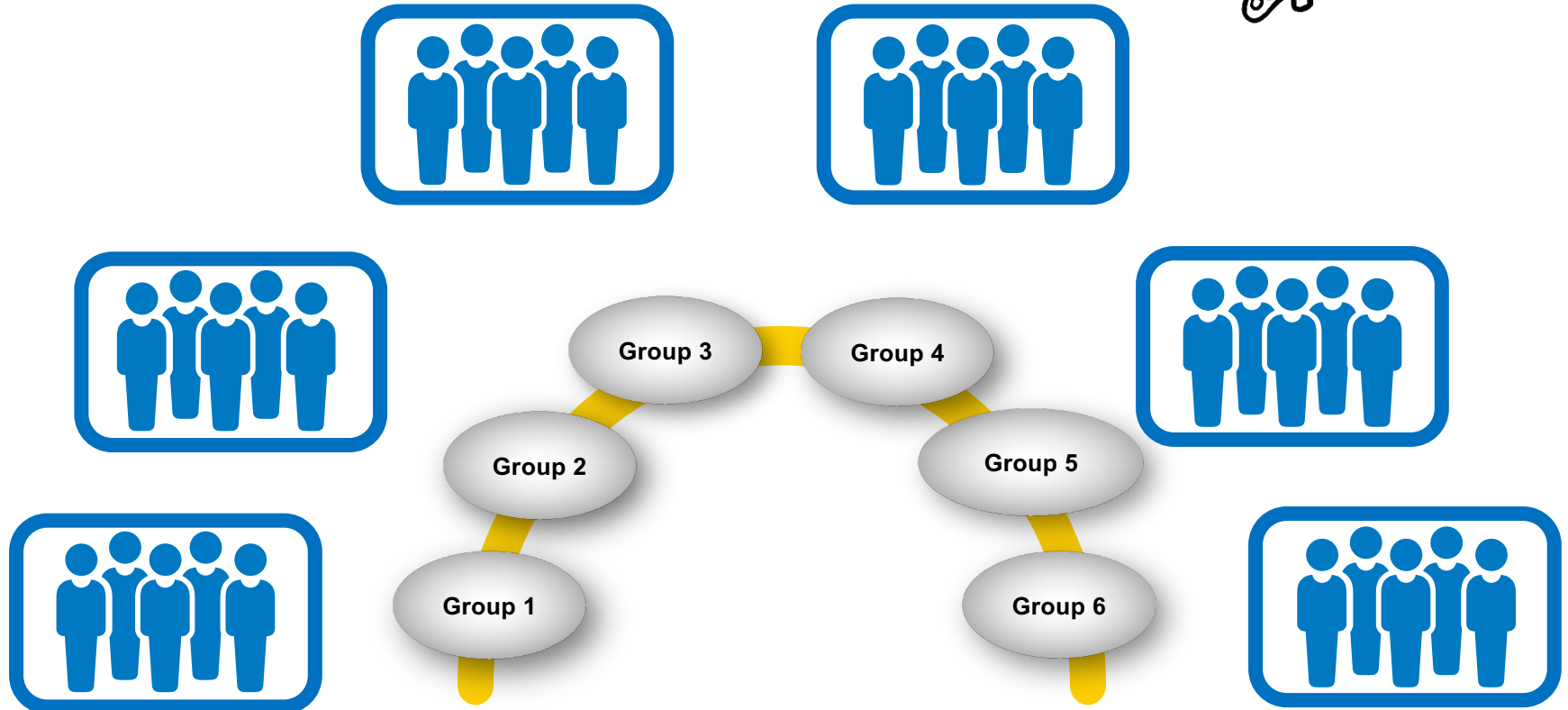
- Features of a service

- Design of an IT service and SLA definition

- ITIL acronym and its relevance

- The meaning of CMDB

- The different categories of cloud services (SaaS, PaaS, IaaS)

- The complexity of a digital service
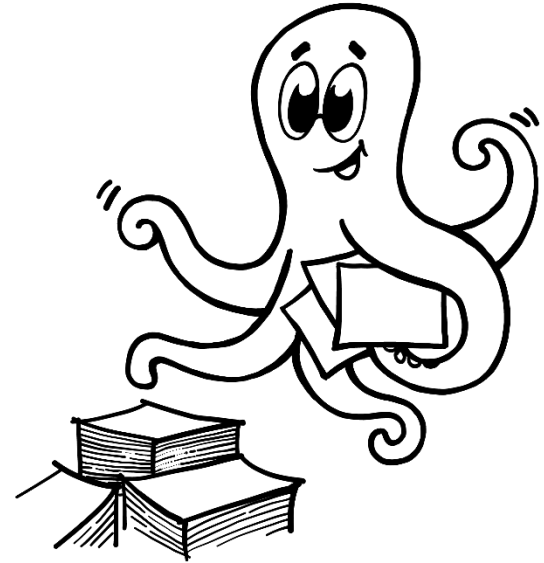
- Andenmatten M. (2014) Services managen mit ITIL®. Symposium Publishing GmbH - Düsseldorf

- Drogseth D. (2015) EMA Research Report: What Is the Future of IT Service Management?

- Kotler P., Armstrong G. (1999) Principles of marketing. Prentice Hall - Upper Saddle River, NJ

- Olbrich A. (2008) ITIL kompakt und verständlich. Vieweg+Teubner Verlag - GWV Fachverlage GmbH, Wiesbaden

ITIL

Maggie Thatcher, 1925-2013

Central Computer and Telecommunications Agency (CCTA) +
Office of Government Commerce (OGC)

ITIL V1.0
1989

ITIL V2.0
2001
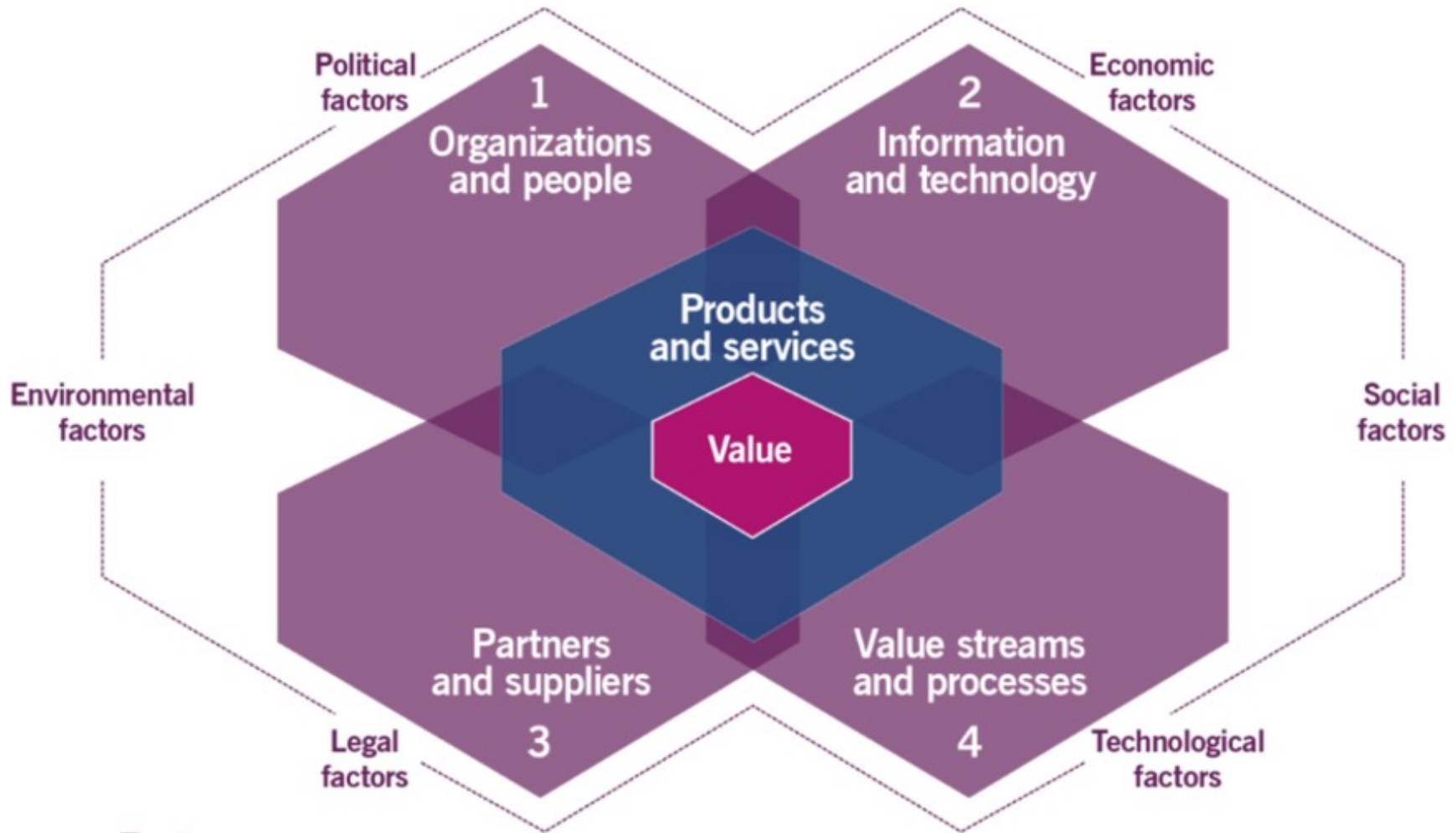
ITIL V3.0
= ITIL 2007
2007

ITIL 2011
2011

ITIL 4
2019-

- ➤ The Service Value System
- ➤ The four dimensions of service management
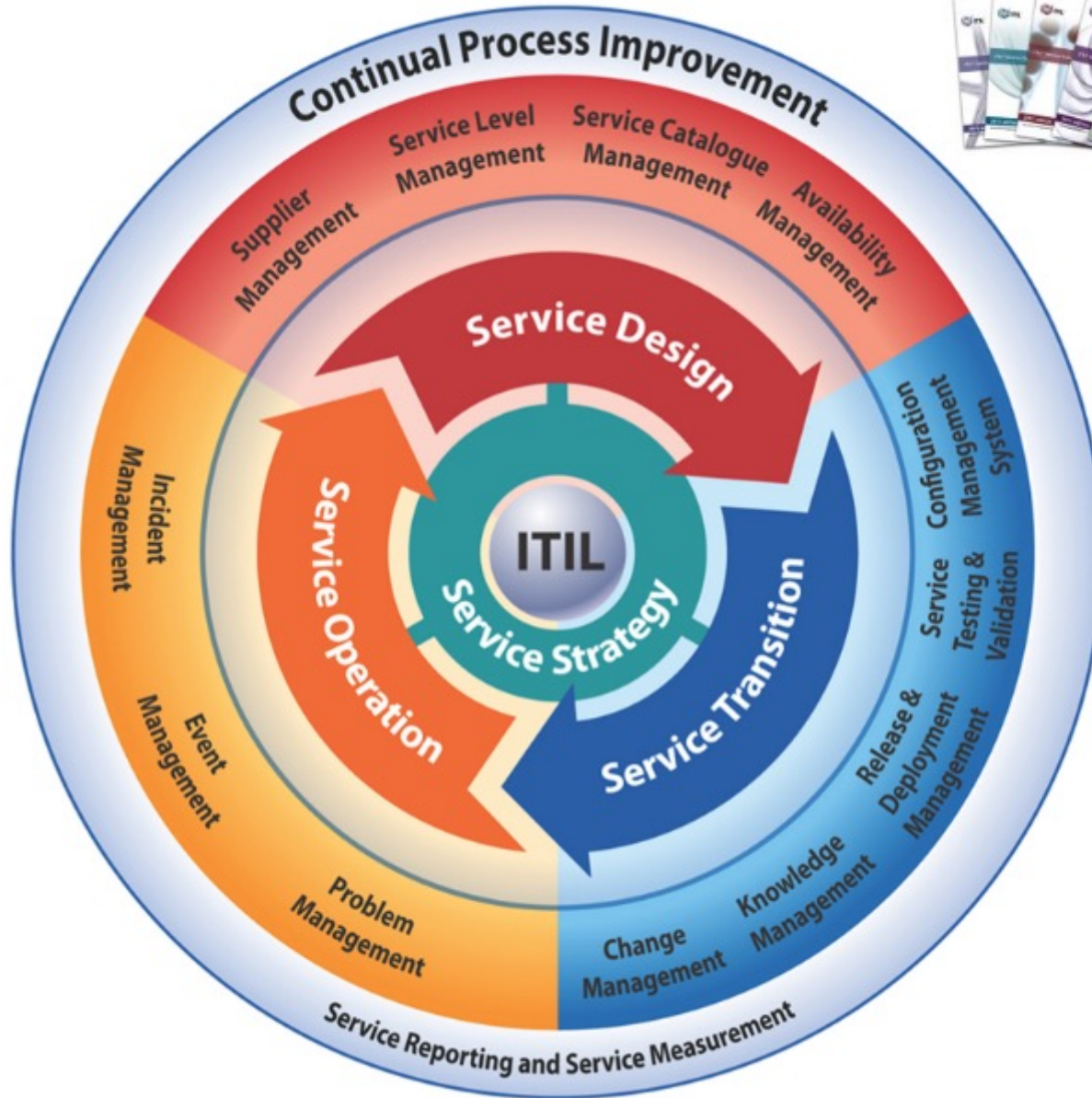- ➤ The focus is on the value that the service delivers to the customer

Source: blog.itil.org/2019/04/itil4-der-ganzheitliche-ansatz-mit-vier-dimensionen/