Pocket Guide

Business Process Management

“Using BPM as a method for controlling, improving and innovating processes, is of crucial importance to our organization. This pocket guide gives a good overview of terms and developments within this field of expertise. Everyone who is involved with working with processes should have a copy within reach!”

Hans Somers, Program manager Dutch Tax Authority

“In these times when organizations focus their operation on processes, response to a dynamic market increasingly demanding of solutions, BPM has become the default tool to address these challenges. However, the dynamics of everyday life require us to integrate tools as BPMN (simple representation of a complex reality) and The Decision Model (analyzing and improving business logic). In this way, an integrated approach potentiates the benefits of BPM practice.”

Dario Vargas, Chief Enterprise Architecture & BPM, Unycorp.

About the authors

BPM Forum – Body of knowledge

The Dutch BPM Forum (www.bpm-forum.org) has initiated a programme to stimulate open sharing of knowledge. For this reason, a special committee was formed to coordinate special BPM knowledge workshops and the creation of a BPM pocket guide. The BPM Forum wishes to acknowledge the contribution of many individuals within the international BPM space and the editors and BiZZdesign as mentioned below.

About the editors

Henk Jonkers, BiZZdesign

Henk Jonkers is a Senior Research Consultant at BiZZdesign. In this capacity, he is involved in the company's new developments in the areas of business process engineering, requirements management and enterprise architecture, he participates in multi-party research projects, as well as in consultancy for customers. Previously, as a Member of Scientific Staff at Telematica Instituut (now Novay), Henk was involved in several research projects in the areas of business process

management and enterprise architecture, and he was one of the main developers of ArchiMate. He actively participates in activities of The Open Group and is an author of The Open Group's ArchiMate Specification.

Gerrit-Jan Obers, Ordina Consulting

Gerrit-Jan Obers has been a Management Consultant since 1989 and has experience in several markets (industry, trade, services and public). His focus lies on process management and the structuring, controlling and changing of organisations. At Ordina Consulting he is practice leader of the Process Architecture practice. Besides this, Gerrit-Jan is a teacher on enterprise architecture, process architecture and process design. He is author of 'Grip on processes in organisations' (Dutch version 2008, English version 2010) and other publications.

Maria-Eugenia Iacob, University of Twente

Maria-Eugenia Iacob is Assistant Professor at the Department of Information Systems and Change Management at the University of Twente. She teaches courses and has done research in several projects in the areas of service-oriented architectures, model driven development, model transformations, e-services

architectures, design methods, business and e-business process (re)engineering, (enterprise) information systems architectures and e-government. Previously, as a Member of Scientific Staff at Telematica Instituut (now Novay), Maria was actively involved in the AchiMate project, and she is an author of The Open Group's ArchiMate 1.0 Specification.

Jorrit Buurman, BiZZdesign

Jorrit Buurman is a trainer and consultant at Bizzdesign in the field op Business Process Management and Enterprise Architecture. He therefore advises organizations in both profit and non-profit industry in implementing BPM as a function of the organization. Methods like Lean management, but also Decision modelling become more commonly integrated with BPM. That's why Jorrit was involved in the update of this pocket guide.

Acknowledgements

We gratefully acknowledge the contribution of several people to this pocket guide. Jan Campschroer, Michiel Overeem en Frans van Koppen (Ordina), and Peter Matthijssen, Henry Franken and Joost Niehof (BiZZdesign), have actively contributed to the contents of this version.

We would also like to thank members of the BPM Forum and other international BPM fora, as well as BPM professionals from several organisations (including Novay, Belastingdienst and the ING Group), for their reviews of earlier versions of this guide. Finally, for many of the definitions in this document, we have made use of the state-of-the-art BPM literature.

BiZZdesign – Building strong organisations

BiZZdesign published the original version of this pocket guide, which served as a starting point for the current version. Together with many professionals in this international field, the current version was completed and released to the market to encourage open sharing of knowledge in the BPM field.

BiZZdesign offers complete and integrated solutions for the design and improvement of organisations: effective, proven and to-the-point. These integrated solutions consist of proven and easy-to-use tools, best-practice models and methods, training and business consultancy.

The BiZZdesign service lines are:
- Business Model Management
- Enterprise Architecture Management
- Business Process Management
- Decision Model Management
- Lean Management

BiZZdesign continuously strives to deliver high added value, and actively collaborates internationally in research and open innovation. BiZZdesign embraces open

standards and actively participates in The Open Group (TOGAF™, ArchiMate®) and the BPM Forum.

Introduction

Business Process Management (BPM) concerns the goal-driven design, management and execution of business processes. Many organisations currently manage or plan to start managing their business processes: 82% of the European CEOs consider BPM to be *"very important to their organisation … motivated by the need to work smarter, better and faster in a rapidly changing marketplace"* (EFQM survey).

The reasons for this are quite obvious. A better grip on business processes also means better results for clients, decrease in costs and enhancement of the process performance. Nevertheless, only few organisations are outstanding in applying the BPM principles and techniques. This can be often explained by insufficient domain specific knowledge, competencies and expertise, which are required in order to be able to translate general business goals into a clear vision with respect to business processes. For implementing successfully such a vision in practice it is critical that the process stakeholders share the same understanding of the most important BPM-related concepts. Nevertheless, literature sources and practitioners use attribute different semantics/definitions to

a term or they use different terms (sometimes interchangeably) to designate the same concept. This has become a constant source of confusion and ambiguities. This situation is further worsened by the variety of abbreviations that can be found in abundance in many scientific and professional publications and which are often familiar only to experts. Therefore we felt compelled to set the records straight and collect and explain in this document the most important concepts related to business process methods, techniques and tools.
Next to that, Lean management has become more commonly used in organizations as a means of realizing continuous (process) improvements. Lean closely relates to the field of BPM and therefore it made its entrance into this pocket guide.

The adoption grade of BPMN increases. Its success lies in the fact that it is a standard language for modelling processes in a uniform way. Key concepts of BPMN can be found in this pocket guide as well.
A more recent development, also included in this pocket guide, is that of Decision Modeling. This is about modeling and controlling the business logics of business decisions made in an organization.

This booklet is a useful BPM “dictionary” for managers, process owners, process developers, consultants and enterprise architects.

List of Concepts A – Z

A

Abstraction

Leaving out details and exceptions from a model related to the aspects which are not of importance for a certain (modelling) goal.

Abstraction level

The amount of detail included in the description of a system (organisation, application, process) and its environment, in particular when determining which properties and which subsystems will be included in the description.

Action

See: *Activity*.

Activity

1. Amount of work performed as part of a work process that is performed in a single stretch of time, at a single place, by a single actor.
2. (Within a *process model:*) A step in a *business process*.

Activity-Based Costing (ABC)

1. A method for estimating the resources required to operate an organisation's business processes, produce its products and serve its customers [Wikipedia].

   Comments:

   In a business organisation, the ABC methodology assigns an organisation's resource costs through activities to the products and services provided to its customers. It is generally used as a tool for understanding product and customer cost and profitability. As such, ABC has predominantly been used to support strategic decisions such as pricing, outsourcing and identification and measurement of process improvement initiatives [Wikipedia].

   Thus, the principle behind ABC is that activities, and not the products, are generating costs.

   See also: *Quantitative analysis*

2. A process-oriented approach to accounting starts by determining how much it costs to perform each activity and then adds up activity costs to determine process costs, and so forth. The idea is that you add together all the costs in a complete value chain, subtract the costs from the income for the product or

service produced by the value chain, and determine the profit on the process [BPTrends].

Activity-Based Management (ABM)

Method of identifying and evaluating activities that a business performs using activity-based costing. Activity-based management focuses on managing activities to reduce costs and improve customer value [Wikipedia].

Activity diagram

1. A diagram that describes the (flow of) operations in an activity.
2. *UML* diagram type that shows the flow of activities through a *system*.

Actor diagram

Representation in the form of a diagram of the departments, units, divisions, groups, functions, roles, people and/or systems involved in a process, together with the relationships between them and the information, products and services they exchange.

Actor

An organisational entity capable of (actively) performing behaviour [ArchiMate].

Actor table

A table specifying the mapping between actors and activities.

Administrative information management

The systematic collection, storage and processing of data which serves the information needs of management, control and accountability processes in an organisation.

Administrative structure

All the organisational measures taken within an organisation with respect to the data processing processes that concern the provisioning of information for

- the management and functioning of that organisation
- the identification of responsibilities to be performed, grouping of responsibilities into departments or divisions, and specifying organisational relationships.

Aggregation

Relationship that relates an aggregate object with an object that is part of the aggregation. In contrast to the composition relationship, an object can be part of more than one aggregation.

Analysis reasoning-tool

A tool that helps an analyst with the identification of appropriate means of analysis (e.g., techniques, tools), based on the analysis goals, using a structured collection of aspects in a step-wise manner.

AND-join (conjunction)

1. A symbol that is used in behaviour modelling to express the fact that an activity following an and-join may begin only when all activities preceding that and-join have been completed.
2. A point in the workflow where two or more parallel executing activities converge into a single common thread of control [WfMC].

AND-split (parallelism)

1. A symbol that is used in behaviour modelling to express the fact that all activities following an and-

split may begin independently from each other (i.e., in parallel) after the activity preceding that and-split have been completed.

2. A point within the workflow where a single thread of control splits into two or more threads which are executed in parallel within the workflow, allowing multiple activities to be executed simultaneously [WfMC].

Application

A software system that supports specific *business processes* and the people involved by processing the data flow that corresponds to those processes.

Application architecture

The fundamental organisation of an *application, embodied in its components*, their relationships to each other and the environment, and the principles governing its design and evolution.

Comments:

See also: *Applications architecture*

Application function

A logical component coordinating, supporting and/or realising the automation of one or more business functions.

Application interface

A functional component of an application through which (a part of) the functionality and data is made available to other applications ('client applications'), or through which (a part of) the functionality and data of other applications is accessed.

Application design

Blueprint of an application, in which the functional requirements are distributed over the *functional components*.

Comments:

Each of these functional components is further worked out in technical design, which specifies how that component must be realised. Furthermore, some choices must be made with respect to supporting technologies to be used and with respect to which existing (software) components will be reused and which have to be built from scratch. Thus, an

application design establishes the relation between the 'what and the 'how'.

Application Programming Interface (API)

A component of an information system allowing other software applications to exchange data with the system.

Application system

See: *Application*.

Applications architecture

The components of the application portfolio, their corresponding relationships, and the principles guiding their development.

ArchiMate2.0®

Modelling language defining a set of concepts and relationships, together with their graphical representation, for the creation of coherent enterprise architecture models. ArchiMate is an open standard maintained by The Open Group.

ArchiMate project

Dutch research project from 2002-2004 that was an initiative of a consortium of companies and knowledge institutes. The Telematica Instituut (now Novay), Ordina, Radboud University Nijmegen, the Leiden Institute for Advanced Computer Science (LIACS) and the Centre for Mathematics and Computer Science (CWI) carried out the research.

The results of the ArchiMate project were validated and applied in practice by the companies involved in the project: ABN AMRO, Belastingdienst and Stichting Pensioenfonds ABP. One of the main results of the project was the *ArchiMate®* language.

Architect

A person, team or organisation responsible for the (development of an) architecture.

Architecture

The fundamental organisation of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution [ISO/IEC 42010].

Architecture description

1. A set of one or more *model*s of the current or future (desired) *architecture* of a *system*.
2. A collection of products to document an architecture [ISO/IEC 42010].

Architecture design

A set of one or more models of the architecture of a to-be situation.

Asynchronous process

A process in which one activity sends a message to another, but does not wait until it gets a response. For example, having a dialog with another person is a synchronous process. Sending e-mail is an asynchronous process.

Attribute

Representation of an observed property of an entity in reality

Audit

See: *Process audit*

Audit data

A historical record of the progress of a process instance from start to completion or termination. Such data normally incorporates information on the state transitions of the process instance [WfMC].

Auditee

See: *Process auditee*

Auditor

See: *Process auditor*

Authorisation matrix

Matrix which specifies people's responsibilities (and competencies) with respect to the transactions they may carry out, e.g. on information systems.

Autonomous task group

See: *Self managing task group*

B

Back office (BO)

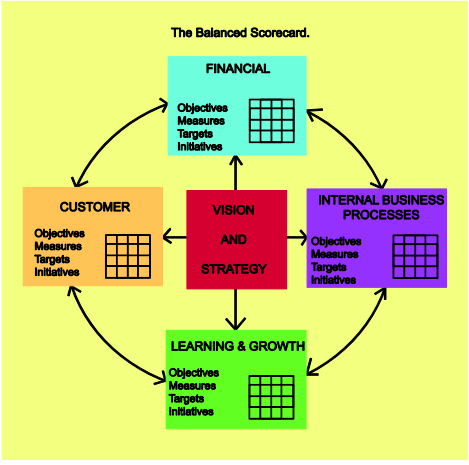
A part of an organisation that supports the delivery and sales of services and products to the clients but has no direct contact with the client.

Balanced Scorecard (BSC)

A performance planning and measurement framework, with similar principles as Management by Objectives, which was publicised by Robert S. Kaplan and David P. Norton in the early 1990s. Having realised the shortcomings of traditional management control systems, Kaplan and Norton designed the Balanced Scorecard as a result of a one-year research project involving 12 companies. Since its introduction, the Balanced Scorecard has been placed alongside approaches such as Activity Based Costing and Total Quality Management.

Balanced scorecard is a tool to execute and monitor the organisational strategy by using a combination of financial and non financial measures. It is designed to translate vision and strategy into objectives and measures across four balanced perspectives: *financial,*

customers, internal business process and learning and growth. It gives a framework ensuring that the strategy is translated into a coherent set of performance measures. A graphical representation of the Balanced Scorecard is given below:



Basel III

An agreement between the European banks aiming to create an international standard by setting up rigorous risk and capital management requirements designed to ensure that a bank holds capital reserves appropriate to the risk the bank exposes itself to through its lending and investment practices. In addition, the Basel II Framework is intended to promote a more forward-looking approach to capital supervision, one that encourages banks to identify the risks they may face, today and in the future, and to develop or improve their ability to manage those risks. As a result, it is intended to be more flexible and better able to evolve with advances in markets and risk management practices.

Basic business model (BBM)

A stable description of the business functions, business objects and their relationships of (part of) an organisation.

Batch processing

The functioning of (information processing) systems or processes where a large amount of data/jobs is collected over a period of time before it is processed,

without user interaction. Jobs are ‘queued’ or collected until the system is ready to process them all at once. (Opposed to: *Transaction processing*).

Benchmarking

Systematic comparison of the business performance of (a part of) an organisation with the performance of other similar (parts of) organisations.

Best practices

Methods and ways of working for which there is empirical evidence that they best work in practice (deliver the best result, are the most efficient, etc.).

Black Belt

Black belts are project leaders in improvement projects. The title was originally derived from Six Sigma. Black belts have followed a comprehensive education, with which they are equipped to deal with complex problems in a structured way. Often statistics are applied as well. For this purpose Black belts cooperate with Green belts.

BOB vs. WOW

BOB stands for 'Best of the Best'. WOW stands for 'Worst of the worst'. The BOB vs. WOW analysis is a paired comparison with which product or services are compared to each other.

Bottleneck

A fact that prevents an organisation/process to meet business goals, critical success factors or norms.

Bottleneck analysis

Bottlenecks are tight spots in the process. Every process has a bottleneck. Goldratt, the founder of the 'Theory of Constraint' states: "The energy and means in organizations should primarily be focused on bottlenecks." The bottleneck analysis focuses on identifying and visualizing bottlenecks in the process.

Bottom-up approach

Process improvement approach in which the central idea (also promoted by the TQM paradigm) is that workers must be directly involved in the improvement of processes in which they are involved. Thus, they must not only execute their work but also think and

understand why they are doing it the way they are doing it and how they can do it differently/better.

Bottom-up modelling

A modelling style according to which one first models the 'how' (the operational model) and then the 'what' (the logical model). In bottom-up modelling the current structure of the organisation, and the relevant processes are modelled first. Then from these models, a functional organisation of all processes is derived into a so-called logical model.

BPM context

The products and services an organisation delivers are derived from its business strategy. These are often specified in terms of business goals. Their realisation is carried out during and through business processes. The execution of processes is made possible by a process- and COPAFIJTH- driven organisation. For an effective and efficient management of the organisation both the (internal) performance and the results must be monitored. To this purpose performance, risk and quality indicators must be defined, measured and compared with previously defined norms. A clear model

of the management of the organisation must be further analysed based on measured indicators, in order to adjust and steer the improvement and re-design of processes. A graphical representation of the BPM context described above is given below:

BPM layered model

Model that distinguishes three layers with respect to process management, namely:

- the strategic aspects
- the tactical aspects
- the operational aspects.

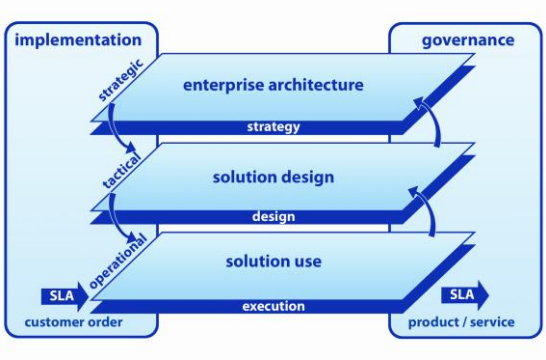
These horizontal layers covering the change process must be complemented with control mechanisms facilitating its management and monitoring. Obviously, management and monitoring are necessary at all levels: strategic (strategy), tactical (design) and operational (execution).

The enforcement of control must occur both in a top-down and bottom-up fashion. Inflicting control from the strategic level to the execution level (i.e., top-down) will result in the **implementation** of processes.

Inflicting control from the operational level towards the strategic level (i.e., bottom-up) can be translated into the **governance** processes. These will facilitate the continuous improvement of the business processes, while closing the loop initiated in the implementation.

More specifically, governance begins at the operational level with tasks such as measuring and monitoring of performance, risks and quality indicators. At the tactical level, information coming from the operational level can be processed by means of complex analyses. For example, “impact-of-change’, costs-benefits and performance analyses performed on the developed process models may generate relevant management information. The results produced can serve and

motivate the decision making process occurring at the strategic level, whose main goals are the continuous improvement. As such, an important activity taking place at this level is the review process that checks the compliance of the existing processes with the organisation's goals and strategy.
A graphical representation of the BPM layered model is given below.



BPMN

BPMN, written out as Business Process Model and Notation, provides a standard graphical notation for understanding their internal business procedures and will give organizations the ability to communicate these procedures in a standard manner. Furthermore, the graphical notation will facilitate the understanding of the performance collaborations and business transactions between organizations.

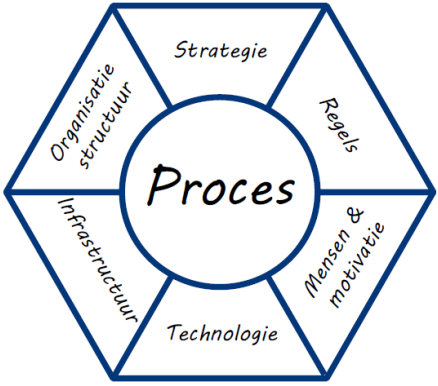
BPM software tools

Software tools supporting the structured creation, analysis, storage and reporting of business process models. Advanced BPM software is used in at least the following application areas:

1. Modelling and decision support.
2. Visualisation and communication.
3. Calculations and simulation of alternatives.

Burlton Hexagon

The Burlton Hexagon (by Roger Burlton) focuses on the 'environment' of the process, therefore taking several perspectives into account. Whereas often the focus lies on process and IT-performance, the causes of a problem often appear to lie in other aspects.



Business administration (management)

The steering and management of (primary and supporting) business processes leading to the achievement of the business goals.

Business action rule

A business rule that establishes when certain activities should take place. Two variants of action rules can be distinguished: condition-action rules (production rules) and event-condition-action (ECA) rules.

See also: *Business rule*

Business architect

The person responsible for the definition, development and implementation of the business architecture.

Business architecture

The business strategy, governance, organisation, key business processes, and information, as well as the interaction between these concepts [TOGAF].

Business calculation rule

A business rule that prescribes how a certain calculation must be done. Examples: calculation of the salary or of an insurance premium.

See also: *Business rule*

Business decision

A conclusion at which the business arrives through the use of certain business logic. There is an interest of the business in managing and maintaining this business logic.

Business derivation rule

A *business rule* used to establish information that is used in a process.

Business chain

See: V*alue chain*; *Chain proces*s

Business function

The desired contribution of (a part of) an organisation to the environment, while abstracting from the manner in which this contribution is realised.

Comments:

A Business Function is usually expressed with a verb. In common language, the term business function is also used to address the part of an organisation that realises a specific business function, in which case the name of the business function is often a noun.

Business function model

A (hierarchical) model that specifies which set of business functions exist in the organisation both in the as-is as in the to-be situation.

Comments:

It may also contain the relationships between business functions.

It specifies the context in which processes operate and it can be useful during modelling and for making explicit the most important goals of an organisation.

Business goal

A specific short- or long-term target towards which an organisation is striving. Goal setting usually also assumes the identification of deadlines and quantifiable measures for evaluating the success/failure in reaching the goal.

Business logic

The means by which the business derives conclusions from facts.

Business logic statement

An expression of conditions that evaluate facts leading to a conclusion of a new fact.

Business Modelling & Integration Domain Task Force (BMIDTF)

Group within the OMG responsible for the development of specifications of integrated models supporting the management of an organisation. The OMG specification Business Process Modelling Notation (BPMN) is developed by this group. The BMIDTF is the result of the merger between the OMG BEIDTF and the Business Process Management Initiative.

Business Motivation Model (BMM)

Model developed by the Business Rules Group for the structured development, communication and management of business plans. The BMM is an OMG standard.

Business object

An entity that is relevant for the business.

Comments:

An entity is something that has a distinct, separate existence, though it need not be a material existence. In particular, abstractions and legal fictions are usually regards as entities [Wikipedia].

An entity can be represented as an information object.

e.g. Customer J. Johnson, Invoice 12345

Business Object Model

A structured model defining the business objects about which data will be recorded

Business process

1. A set of logically related activities, people and means to produce products or services.

   Comments:

   Business processes can be viewed with a differing scope for which specific terms are used: Process chain, End-to-end process, work process (see for explanation *Process Architecture Model*).
2. See: *End-to-end-process*

Business Process Automation (BPA)

The usage of computer systems and software for the (semi-) automated execution of a process. Representative technologies for BPA are, among others, SOA, workflow management systems, ERP and EAI.

Business Process Engine

An application concerned with the automated execution (orchestration) of processes.

Business Process Engineering (BPE)

A discipline that covers the innovation, analysis, (re)design, documentation, and management of business processes, organisation and of the supporting systems from the perspective of critical market indicators and en success factors.

Business Process Execution Language (BPEL)

See: *WS-BPEL*

Business Process Execution Language for Web Services (BPEL4WS)

See: *WS-BPEL*

Business Process Goal

Results that an organisation wants to achieve through a business process. Besides it explains why the business process should take place.

Business Process Improvement (BPI)

A systematic approach to help an organisation optimise its underlying processes to achieve more efficient results. There are many approaches, including the currently popular Six Sigma approach. BPI usually has a narrow scope and is repeated over and over again during the life of each process.

Business Process Management (BPM)

The set of activities assuming the usage of specific methods, techniques and software in order to plan, control, analyse, describe, model, implement, execute, maintain and change/ improve the independent process steps and the business processes as a whole.

Business Process Management Initiative (BPMI)

Association of software suppliers and user organisations of process modelling tools; it has evolved into OMG ‘s Business Modelling & Integration Domain Task Force (BMIDTF).

Business Process Management System (BPMS)

Comprehensive software platform that supports

- the specification/modelling of end-to-end business processes;
- their deployment as applications accessible via the Web that are integrated with existing applications;
- the monitoring, analysis, control and improvement of business processes;
- the execution of processes in real time.

Examples of BPMSs are Oracle BPA/SOA suites, IBM Websphere, Tibco, Microsoft BiZtalk, Mendix, etc.

Business process manager

See: *Process manager*

Business process mapping

The activities involved in modelling what a business entity does, who is responsible, to what standard a process should be completed and how the success of a business process can be determined.

Comments:

Once this is done, there can be no uncertainty as to the requirements of every business process in an organisation.

The first step in gaining control over an organisation is to know and understand the basic processes [Deming, 1982; Juran, 1988].

Business process model

Model in which the process steps of a business process are described.

Comments:

A business process may be at any level of PAM.

Business Process Modelling Language (BPML)

XML-based modelling language for the description of business processes. It was originally developed by the Business Process Management Initiative (BPMI). The development of BPML has stopped. Nevertheless, it has been incorporated in WS-BPEL.

Business Process Modelling Notation (BPMN2.0)

OMG standard defining a graphical notation for the specification of business processes. It was developed by the BPMI (currently OMG's Business Modelling & Integration Domain Task Force).

Business Process Modelling Tool

A software tool that allows users (e.g., managers, process designers or analysts) to design process models/ diagrams, analyse and report them. Simple tools only support diagramming. Professional Business Process Modelling Tools store each model element in a database so that they can be reused in other diagrams, analysed, or updated. Some professional tools support simulation or code generation. Examples of such tools are BiZZdesigner, ARIS, Casewise, Metastorm, iGrafx, Mega, etc.

Business Process owner

See: *Process owner*

Business Process Redesign (re-engineering)

A radical re-design of the primary and secondary processes in order to realise a significant performance improvement in terms of efficiency and effectiveness.

Business rule

1. Operational guidelines that are the translation of the business strategy, legislation and policies.
2. “A statement that defines or constrains some aspects of the business. It is intended to assert business structure, or to control or influence the behaviour of the business.” (Business Rules Group)
3. Any guideline regarding behaviour, actions, execution and procedures that must be followed during an activity.
4. A statement describing a business policy or decision procedure. Some programming languages run business rules together into very complex algorithms. In business process analysis, each rule is usually stated independently, in the general format: If A and B, Then C. Workflow tools and detailed process diagrams both depend on business rules to specify how decisions are made.

We generally associate business rules with activities. A decision diamond is adequate to show what happens if a loan is accepted or rejected, but dozens or even hundreds of business rules may need to be defined to clarify what loan should be accepted or rejected. Training programs, job aids, software systems and knowledge management systems aim to document business rules either to automate the decision process or make the rules available to other decision makers [BPMTrends].

Business rule management system

Software system that supports the specification, execution, management and storage of business rules. Examples hereof are ILOG JRule, Corticon, MicrosoftBizTalk, Rule Burst, InRule, PegaRule, etc.,

Call-activity

A call-activity is a defined sub-process or task, which is re-used in the current process.

Capability Maturity Model (CMM)

A model that gives insight into the development level and maturity of a software manufacturer. The model describes how such an organisation deals with (software) development processes and distinguishes between five levels.

A graphical depiction of CMM is given below:

Capability Maturity Model Integrated (CMMI)

A model that integrates the CMM models for software development, electronics and integrated product development in a unified model. Together with evaluation methodology and training material, the CMMI offers support for process improvement in the above-mentioned areas, both in the industry and within governmental organisations.

Capacity calculation

The calculation of the necessary capacity of resources (e.g., actors, roles, functions, applications en networks) required for the execution of a certain process.

Chain level

Level at which the motivation, the architecture and the results/goals for the chain processes are defined.

Chain-orientation

Organising and managing an organisation having as starting point the participation and functioning of the organisation in its chain processes.

Chain orchestrator

System or organisation responsible, over a whole chain process or a group of chain processes, for the collaboration of the different components (sub-systems or organisations) participating in a chain process.

The chain orchestrator also specifies together with process managers the service level agreements (SLAs).

Change management

The continuous seeking and realisation of improvements.

Change management means to plan, initiate, realise, control, and finally stabilise change processes on both corporate and personal level.

Comments:

Change management means the making of changes in a planned and systematic fashion. For an organisation, change management means defining and implementing procedures and/or technologies to deal with changes in the business environment and to profit from changing opportunities.

Champion

An improvement project's Champion is the project's sponsor. This sponsor role is crucial to the progress and the potential impact of improvement projects. Often the champion role lies within the management.

Checklist

A checklist is a list of possible observation results. A result is checked for each occurrence of a certain observation.

Week	Verkeerd bezorgd	Ontevreden	Kapot
11	II	III	I
12	𝍸 I	II||	
13	II	I	II
14	III	II	I
15	I	𝍸	𝍸 II

Choreography Task

Represents the interaction (Message flow) between Participants

Class

Set of information objects for which the common attributes and the behaviour are described.

Class diagram

A UML diagram used for the design of object-oriented software systems, and, more generally, to describe any set of logical classes and their relations [BPTrends].

Client

Department or external organisation/person, which is the beneficiary of the output of a process.

Client differentiation

The extent to which during a process (or in offered services) a distinction is made between different categories of clients.

Client orientation

The extent to which an organisation adjusts itself to individual customers.

Client process

The process that a client executes, related to the organisation's viewpoint.

Client satisfaction

An organisational measure defined as the extent to which the needs and expectations of clients are met,

and which is usually measured by means of a survey. Performance indicators (such as, response time, processing time, waiting time and fault rate), client friendliness (defined as the general attitude of an organisation towards its clients) and client orientation (defined as the extent to which the organisation adapts itself to its individual customers) may have an important impact on client satisfaction.

Client-supplier relation

Relationship between two organisation in which a product or service is bought by the 'client' organisation from a 'supplying' organisation to use it as input in its own processes.

Client value profile

Model that distinguishes between three basic ways for an organisation to create added value for its clients:

1. Operational excellence (best total cost).
2. Product leadership (best product).
3. Customer intimacy (best total solution).

Cluster

A collection of related processes that concern a common aspect, focus area, goal etc.

Collaboration Diagram

A diagram in which the interaction between different pools can be represented using Message flow.

Communication process

A process in which information is exchanged and understood, mostly in order to motivate and influence a certain behaviour.

The exchange of information is essential both during the interaction between individuals and the information gathering activities. *Communication activities* can be defined as the formal or informal information exchange between all stakeholders in a BPE project. The main type of behaviour participating parties may expose during a communication activity are:

Knowledge acquisition – this refers to the acquisition of knowledge that allows all parties to have a shared understanding and a common vision of the future processes. This knowledge must focus both on the internal organisation of the new processes and on its

context from the social, work practice, business and technical points of view. However, the selection of a particular viewpoint very much depends on the participating stakeholders and on the goal of the communication activity.

Knowledge negotiating (sharing) – Requirements for the new processes need to be negotiated as part of an iterative process that allows the understanding of each other's position.

Acceptance – Acceptance of the new processes as a consequence of both parties feeling confident that the new processes fulfil their expectations.

Competence

The ability of an individual (part of an organisation) to properly perform a specific (type of) activity.

Competitive position

The position of a company with respect to other similar organisations, delivering the same type of product and/or services. It is determined based on the market position, market share and the client acquisition dynamics. Aspects, such as, the future perspective of the organisation with respect to competitors is also

considered. These elements are also addressed in the COPAFIJTH framework under the sub-aspects 'positioning' and relationship with the client.

See also: *COPAFIJTH*

Competitive advantage

Situation that occurs when one company can make more profits selling its products or services than its competitors. It occurs because the products or services of that company are more valuable, of better quality, unique, having more desirable features or design, or they are sold for less than their competitors because they are a more efficient producer. Many people associate competitive advantage with the model provided in Michael Porter's Competitive Advantage (1985).

Completion time

The amount of time a process requires from the moment the trigger fires to the moment the process is completed. It is a time-measure which is usually used to evaluate the performance of the process execution and derive measures that quantify the client satisfaction the (response time).

Completion time analysis

Analysis technique to determine the completion time of a business process, either by direct calculation or by simulation.

Component

Independent, replaceable and reusable part of a system or a model.

Concern

An interest, which pertains to the system's development, its operation or any other aspects that are critical or otherwise important to one or more stakeholders.

Comments:

Concerns include system considerations such as performance, reliability, security, distribution, and evolvability.

Conditional Flow

Has an assigned condition, which defines whether or not this flow can be used.

Context model

A model that describes a system (organisation, application, process) in relation to its environment, by specifying the interactions between the system and the environment and how information between them is exchanged.

Continuous process improvement

An ongoing effort to incrementally improve how products and services are provided and internal operations are conducted.
The *Deming cycle* is a well-known example of a method that supports continuous process improvement.

Control

Having knowledge of and grip on processes.

Control flow

The steering of the course of a process by means of (logical) conditions.

Convention

Generally accepted rule.

Conversion measurement

See: *Throughput-measurement*

COPAFIJTH

The COPAFIJTH method (Commerce, Organisation, Personnel, Administration, Finance, Information, Juridical aspects, Technology and Housing) identifies organisational aspects relevant for business process engineering projects: It consists of:

- *Commerce:* Analyses the extent to which a company is successful in achieving an agreement between the relations the organisation has with its environment (clients, competitors, interest groups, etc.) and the mission and business goals the organisation pursues. Sub-aspects: *Competitive position, Positioning, Relation with clients*.
- *Organisation*: Analyses the extent to which the business processes are optimally supported by the chosen organisation form. Sub-aspects: *Structure, Culture, Flexibility*.
- *Personnel*: Analyses the extent to which the available knowledge, experience and skills of the employees are optimally used. Sub-aspects: *Job profile, Personal skills, Job assignment.*

- *Administration*: Analyses the business processes within an organisation. We distinguish between processes realizing the delivery of goods and services (primary processes), supporting administrative processes (secondary processes) and management, supervision and control processes (tertiary processes). Sub-aspects: *Process structure, Process description, Process management, Task structure.*
- *Finance*: Analyses the financial position /situation of a company and the financial aspects that are relevant for its management. Sub- aspects: *Financial position, Operational costs***.**
- *Information*: Analyses the extent to which the information needs of an organisation are met effectively by internal information flows. Sub-aspects: *Information needs, Information provisioning, Information alignment.*
- *Juridical aspects*: Analyses the extent to which business processes and products comply with the existing laws and regulations and the extent to which the organisation is able to deal with changing legal requirements. Sub-aspects: *Legal dependencies*.

- *Technology*: Analyses the extent to which the execution of business processes is effectively and efficiently supported by the usage of available technological means. Sub-aspects: *Quality, Suitability, Flexibility.*
- *Housing*: Analyses the extent to which the execution of business processes is effectively and efficiently supported by the buildings and office premises. Sub-aspects: *Geography, Ergonomics.*

Core competency

A specific factor that a business sees as being central to the way it, or its employees work.

Comments:

A core competency is a combination of specific, integrated, coordinated and applied knowledge. It is unique, provides competitive advantage and is essential for realising the organisation's strategic goals.

Core model

A common vision on a certain subject/domain shared by several organisations. Well-known examples are the core models regarding the human resource

management and financial information systems within the government.

Core process

Process that delivers a product or service to the external clients. It is usually a process of magnitude and critical for the organisation or for a department.

Cost-benefit analysis

The cost-benefit analysis is used to manage improvement projects. It supports making a professional decision to start and/or continue a project or task. For this, the costs are considered against the benefits.

Critical path analysis

Analysis technique that determines which *activities* in a *business process model* dominate the completion time of the process.

Critical success factor

Factor that is an indication of a business aspect in which the organisation wants to excel and a way in

which the organisation differentiates itself from its competitors.

Examples of critical success factors are *good communication with the client*' and *low execution costs*.

Critical process

Process, which determines the success or failure of an organisation. Critical processes are processes that may bring health, environment, client satisfaction, client loyalty in difficult times or may cause large financial losses.

Cross-functional processes

Processes that cross the borders of the functional departments. Different parts of such a process are executed by the different departments, thus contributing to the realisation of the end-results of the process.

Cross-impact analysis

Analysis that establishes whether different effects influence/depend on each other. These dependencies are expressed by means of a matrix.

Cross-organisational business process

See: *Process chain*

CRUD-matrix

Matrix that specifies which types of operations can be applied to which information objects, namely: create, read, update and delete.

CTQ Flow Down

CTQ stands for ‘Critical To Quality’. It’s a method with which processes and situations can be made measurable. For this, a CTQ flow-down is set up.

Customer Relationship Management (CRM)

1. The management of all the client-related business processes in an organisation.
2. The continuous development and evolution of relationships with individual clients in order to identify the mutual benefits following from these relationships.

Customer value

Customer value (or value) is important in Lean. Lean helps organizations to focus on activities that add value to customers.

D

Data architecture

Architecture that defines the structure of an organisation's logical and physical data assets and associated data management resources.

Data flow

Stream of data generated by a process or a system.

Data infrastructure

An infrastructure consisting of all the data and data storages, which are shared and used by all/several information systems in an organisation.

Data model

A model that describes how data is organised in information objects to represent (part of) the information modelled in an information model.

Comments:

Data models formally define data elements, groups of data elements and relationships among them for a domain of interest. Well-known notations for data

modelling are UML class diagrams, Entity Relationship Diagrams and XML schemas. Information objects are groups of data elements.

Data modelling

The development of a data model for the purpose of analysis, design or management.

Data-oriented modelling

Modelling style in which the data perspective is leading.

Data store

A location where data in the process can be stored to and read from, for example a database. It remains existent after termination of the process.

Day start-ups

Day starts are part of Kaizen. At a fixed time in the day, employees get together to talk about work. Management is also involved.

7 Deadly wastes

Lean Management is sometimes also referred to as Waste Management. It often turns out that a lot of

waste exists in organization's processes. By identifying waste it is possible to deal with it. Lean offers numerous standard solutions for this, of which a selection is listed in this book.

The original 'Seven deadly wastes' are expanded upon. The nine types of waste we find a lot in (service) organizations are:

1. Movement: Movement of people
2. Transport: Movement of goods or paper
3. Defects/ Repetition: Repeating and repairing activities
4. Inventory: Products, applications or cases that have stagnated in the process
5. Waiting times: People who have to wait
6. Redundant work: Work that is no longer necessary
7. Over-processing: Doing more than the customer asks for
8. Complexity: Unnecessary complexity in processes, regulations, monitoring, etc
9. Unused talent: People's talent and creativity that isn't utilized

Decomposition

Division of a system in sub-systems based on a well-defined criterion.

Default Flow

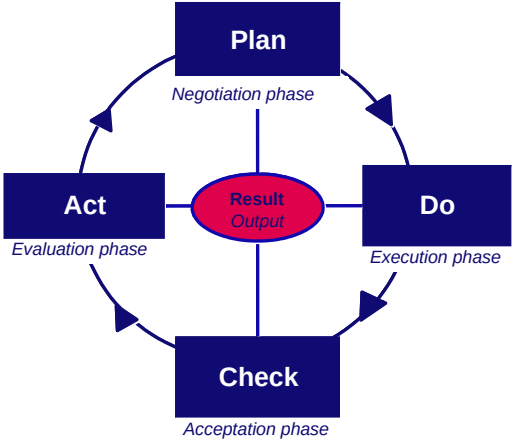
Is the default flow, which is being activated when all other conditions are negative

Deming cycle (also: Deming circle or Plan-Do-Check-Act cycle/circle)

A model to monitor the activities within an organisation. The four related central concepts of the Deming cycle are:

- *plan* - making a plan that includes the results to be achieved
- *do* – execute the plan
- *check* – compare the results with what should have been accomplished.
- *act* – in case of significant differences, taking of measures that would eventually facilitate the achievement of the expected results.

The Deming cycle contains the most important steps of a management cycle in general and for the management of processes in particular. A graphical representation of the Deming cycle is given below.



Departmental Process Expert (DPE)

Person that monitors (within a particular department) the correct execution of business processes. The DPE supports the process owner, but the process owner keeps the responsibility for the correctness of the business processes.

Design (the~)

Representation of a desired system that consists of one or more models, together with the explicit design decisions that are expressed in these models.

Design (to~)

The process of originating and developing a model of a new or changed system (organisation, process, application) based on design criteria and architectural principles.

Design and Engineering Methodology for Organisations (DEMO)

Method for business process modelling based on the language action perspective, developed at Delft University of Technology. In DEMO, a business process is a chain of transactions, and the result of a transaction can be described as a fact. DEMO used the Object Role Modelling technique for describing facts.

Design decision

Decision about a desired situation.

Comments:

Alternatives can be evaluated to get better understanding of the design decisions.

Often a selection of one alternative out of several possible designs, based on some design criterion, principle or constraint.

Design essence

The facts and conditions that must hold in any case for the business process which is re-designed.

Comments:

These facts/conditions constitute the starting point of the process design, which will be further detailed.

A design essence may also be stated for any other type of system.

Design pattern

A general repeatable solution (based on experience) to a commonly-occurring (process) design problem.

Diagram

Graphical representation of a model, or part of a model, using a formal graphical notation (e.g. for the representation of a specific view).

Distribution channel

Part of the organisation that is positioned between the client and the actor that executes the actual work, i.e., the primary processes. Examples of distribution channels are CRM department, independent advisors, or the front office.

DMAIC

DMAIC describes the phases of an improvement cycle: Define, Measure, Analyze, Improve and Control. In short, the phases aim to:

- Define: Defining the problem and starting up the project
- Measure: Collecting facts
- Analyze: Analyzing the facts; what are the causes of the problems we face?
- Improve: Generating and implementing improvements
- Control: Securing improvements and closing the project

Documentation field

Data field that may contain supplementary information/instructions regarding a certain process element.

Domain

1. A focus area or an aspect area, e.g., primary processes domain, application domain.
2. The set of possible value a parameter or attribute may take, e.g., the domain of the ‘age’ attribute is a number between 0 and 120

Dutch BPM forum

Independent platform for the exchange of knowledge, experience, best practices and solutions in the area of BPM.

E-business

Doing business electronically, for example by using the Internet or other electronic networks. The term e-business is used first by IBM and covers more than just e-commerce. E-business covers the whole value chain and aims at the automation of the procurement and sales and collaboration with partners. The term e-business also designates information technology platforms used for e-business.

E-commerce

The use of Internet as market and as a new distribution channel for products and services. E-commerce is mostly seen as part of the e-business strategy of an organisation.

Effectiveness

The extent to which products and services (the output of a process) meet the requirements and expectations of clients. If this is indeed the case, then the process is regarded as being effective. At the organisation level, effectiveness is seen as the ability of a company,

business unit or task group the do the right things in order to achieve certain goals with available means and human resources. Thus, any effectiveness analysis focuses on the combination of people, means and market.

Examples of effectiveness process indicators are ‘supplier reliability’, ‘delivery time’, etc.

Efficiency

Making optimal use of the available resources (people and means). The core question in a global efficiency analysis is: ‘do we use the right combination of available resources in order to achieve the goals that have been set with costs as low as possible?’

Examples of efficiency process indicators are ‘completion time’, ‘operational costs’, etc.

End-to-end process

A coherent set of work processes within an organisation meant to produce a category of products or services.

Enterprise Application Integration (EAI)

Methods and means that can be used to modernise, consolidate, integrate and coordinate the software application in an organisation.

Enterprise architect

The person responsible for the definition, development and implementation of the enterprise architecture. The enterprise architect is also the guardian of architecture's consistent application in all projects throughout the organisation.

Enterprise Architecture (EA)

1. The complete, consistent and coherent set of methods, rules, models and tools which will guide the (re)design, migration, implementation and governance of products and services, business processes, organisational structures, information systems and the technical infrastructure of an organisation according to a vision.
2. An organisation-wide architecture that integrates business architecture (strategy, control, organisation, process), information architecture, application architecture and technology architecture. An enterprise architecture can be presented using text, pictures and concrete guidelines, which offer leads to all stakeholders for purposefully designing their activities in alignment with both the strategy of the

organisation (vertical alignment), as well as other organisational units (horizontal alignment).

Enterprise Resource Planning (ERP)

The internal planning of the business, logistics and human resources. All the software systems supporting the ERP-processes are called ERP-systems.

Enterprise Service Bus

Architectural pattern that provides a solution for the communication between service providers and service consumers and it is typically used as application integration solution in SOAs.

Environmental actors

Actors in the environment of an organisation playing a role in a business process (e.g., clients, suppliers or intermediaries).

ERP-systems

Applications supporting the business processes in the back-office.

Essence model

A model in which only the essential process activities are modelled together with (only) the essential precedence relationships between them.

European Foundation for Quality Management (EFQM)

A non-profit collaboration between European companies. Founded in 1988, it stimulates and promotes Total Quality Management as fundamental method to strengthen the position of the European company on the global market.

Event

1. A perceivable phenomenon that takes place at a certain moment in time.
2. An occurrence of a particular condition (which may be internal or external to the workflow management system), which causes the workflow management software to take one or more actions. For example the arrival of a particular type of email message may cause the workflow system

to start an instance of a specific process definition [WfMC].

3. An occurrence such as a starting point or a change of status. BPMN discerns several variants of events, such as a message event, a conditional event, an intermediate event and a timer event.

Exclusive gateway

An exclusive gateway can be compared to an XOR (exclusive or). In the execution of a process, the exclusive gateway routes the flow to only one of the possible exit flows. In a join of two flows, the exclusive gateway awaits the arrival of one of the two input flows before routing on to the exit flow.

Execution costs

See: *Operational costs*

Extensible Markup Language (XML)

Language for structuring data according to a schema (also described in XML). XML is an open standard of the World Wide Web Consortium. Other open standards, such as, BPEL and SOAP make use of XML as underlying language.

Extreme design

Modelling style according to which the process design is fully subordinated to one or a few design criteria; the idea is to stimulate the creativity, when creating a design that optimises a single criterion.

F

Fact type

A general classification of a fact

Fact type domain

the range or set of valid values that make business sense for a given fact type

Fall back scenario

Alternative scenario that is executed if the primary scenario fails to be implemented or turns out to be infeasible.

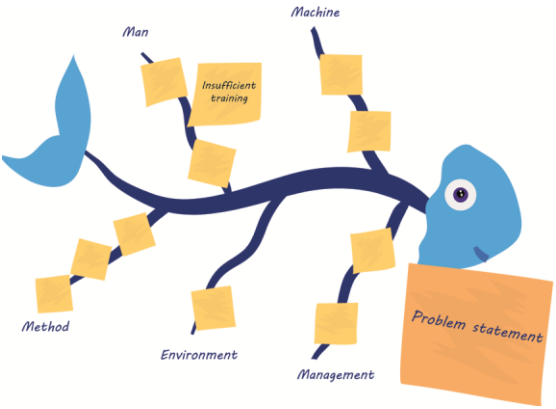
Fault percentage

The number of services/products delivered to clients, which do not meet the quality requirements.

Fishbone diagram

The Fishbone diagram is a method to collect and map possible causes of a problem. The name Fishbone is derived from its shape.

The technique is also referred to as cause-effect diagram.



Five times why

This technique focuses on ‘why’ questions. Repeatedly asking why questions (five times) will help you to discover underlying causes of problems and effects (the core).

Flexibility

The extent to which a process can easily and rapidly be changed in order to meet changing client requirements or new products or services.

Flow

Flow is an important concept within Lean Management. Flow means 'continuous movement of products or services'. In case of stagnation, the Flow is halted and therefore the creation of value. Lean helps to keep the process in continuous movement by techniques such as *Single piece flow* and *Kanban.*

Flowchart (flow diagram, flow schema)

A diagrammatic technique that uses a standardised notation to describe the course (flow) of a certain business process.

Flow diagram

See: *Flowchart*

FMEA

FMEA stands for Failure Mode and Effect Analysis. The technique was originally created for aviation and space technology and aims at analyzing possible failures and their effects.

Front Office (FO)

Part of an organisation through which clients get in contact with the product and services delivered by that organisation.

Full Time Equivalent (FTE)

Time equivalent of a full-time position (in general 40 hours per week).

Function allocation

The mapping between available persons and function profiles.

Function description

See: *Function profile*.

Function orientation

Paradigm promoting the organisation of a company based on its business functions. In this case the departments are organised around critical functions, such as: procurement, human resources, CRM, manufacturing, etc.

See also: *Process orientation*

Function-process matrix

Matrix that shows the relationship between business functions and business processes, thus providing insight into which business functions are realised by which business processes.

Function profile

A formal description of the tasks, responsibilities and the competencies required for a certain position or functionary.

Comments:

Function profiles are often formulated based on the general structure of the organisation and based on the tasks, responsibilities, competencies derived from the functions that are necessary for the execution of business processes.

Functional design

Documentation of the functional and non-functional requirements and design of a system, that can serve as basis for (a tender for) the realisation of that system.

Functional analysis

Techniques for the validation of a model. By using functional analysis it is possible to identify which steps must occur in a process, in what order and if there are any exceptions.

Functional component

A distinct component of a software application that has a well defined function for the organisation.

Functional specification

See *Functional design.*

Functionary

Person to whom a set of tasks and responsibilities are assigned.

G

GEMBA

GEMBA is the Japanese word for ‘there where the real work takes place’. It’s the place where value is added for customers. Lean focuses on the GEMBA. There is respect for the people who do the ‘real work’.

Generic process

Process applicable in more situations or organisations, independently from the concrete product concerned in that process.

Generic process component

A part of a process applicable in more situations or organisations, independently from the concrete product concerned in that process. Example hereof are the process components for scanning or registering of mail, or for a risk estimation.

Goal

See: *Process goal.*

Governance process

See *Tertiary process*.

Green belt

Green belts are project leaders for improvement projects. The title was originally derived from Six Sigma. Black belts have followed an education in solving problems in a structured way. For this purpose Black belts sometimes cooperate with Black belts.

Growth model

A multi-level organisational development model. The idea is that each level indicates a certain maturity phase of the organisation. Furthermore, reaching a following level is only possible if the organisation fulfils to a large extent all the requirements corresponding to the current level.

H

Hazard Analysis Critical Control Points (HACCP)

A management and norm system for monitoring the food safety.

Hidden factory

The hidden factory originates from the Six Sigma method. Hidden factory activities in an organization are those activities that wouldn't be necessary if everything were to go smoothly 'in one go'. For example repair work, drop out and customer service. All efforts and costs necessary to repair bad quality create a virtual hidden factory next to the regular process. Loss of goodwill is also part of the hidden factory.

Hierarchic process diagram

A diagramming technique that shows the hierarchical structure of the existing processes in an organisation.

Hierarchy diagram

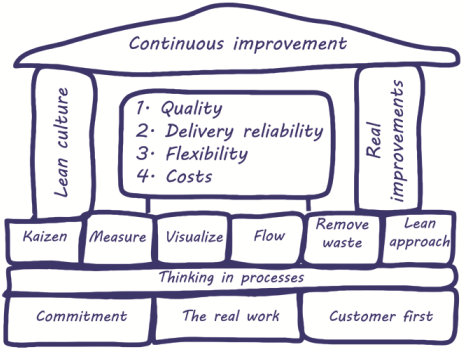
Diagram showing the hierarchical structure of components in a system (an organisation, a business process, etc.).

Comments:

The hierarchy diagram of an organisation i.e. indicates who must report, is responsible for the behaviour of or can delegate work to whom. See *Organisational Chart.*

House of Lean

A house of Lean graphically explains how an organization uses Lean. It is important that the focus is not only on techniques, but also a thorough foundation should be created.



I

IT architecture

Architecture focusing on the design and implementation of applications and information systems in an organisation. See also: *Applications architecture; Infrastructure architecture*

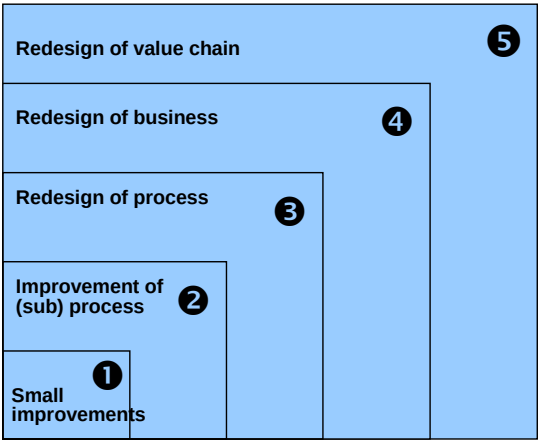
IDEF (Integrated Definition / ICAM Definition languages)

Family of modelling techniques ("definition languages"), originally developed by the US Department of Defence. The most widely recognised of these languages are IDEF0 for function modelling and IDEF1/IDEF1X for information modelling. IDEF was broadly adopted by various organisations because of its compactness and it has been widely used by CASE vendors in the late Eighties.

Impact-of-change (analysis)

Type of analysis that identifies which parts of an organisation will be affected by a change and what are the effects of that change. Based on bottlenecks, priorities and constraints and using specific analysis techniques the consequences and scope of a certain change can be estimated.

A graphical representation with an example of the different change levels is given below.



Inclusive gateway

At a split, one or more flows are activated. At a join, all input flows must have arrived before the output flow starts.

Information alignment

An indication of the extent to which the information provisioning meets the information need. The information alignment has to be analysed from two perspectives (for both information provisioning and information need): the information content and the information streams.

Information architecture

The fundamental organisation of the information and applications necessary in an organisation, and the principles governing its design and evolution, in order to achieve its business goals according to prescribed policies and of their role, relationships and dependencies between them.

Information flow

The exchange of information within and between organisations, systems and processes.

Information model

A model of entity types, properties, relationships, constraints and rules to specify data semantics for a chosen domain of discourse.

Comments:

An information model can provide sharable, stable, and organised structure of information requirements for the domain context. It provides formality to the description of a problem domain without constraining how that description is mapped to an actual implementation in software. There may be many mappings of the information model. Such mappings are called data models, irrespective of whether they are object-oriented models (e.g. using UML), entity relationship models or XML schemas.

Information need

All the information that is needed for the optimal execution of business processes.

Comments:

The information need can be derived from the process course (what information is needed for the execution of a certain process), the process structure (what information is needed for coupling/coordinating

processes to/with each other; management information is of relevance here) and from the organisation structure (what information is needed in order to let the organisation function as a whole). Furthermore, legal stipulations may also determine the need for information.

Information object

A unit of information that has relevance from a business perspective.

Comments:

Mostly it is a unit of information about one business object. E.g., the file about J. Johnson, the record on Invoice 1234, the table PERSON in the HRM-system.

Information provisioning

All of the automated and non-automated tools and other aids used to support an organisation's business processes (primary and otherwise).

Information support

A medium or object on which information is stored/preserved, such as forms, CDs, tapes, etc.

Information system

A structured whole of people, means (e.g., application code) and activities, supporting business processes with the provisioning, processing and administration of needed information/data.

Information technology (IT)

Generic name for department or function that analyses, creates, maintains and supports applications and databases used by an organisation.

Infrastructure

A collection of more or less similar and collectively used (basic) facilities together with their services, standards, rules and guidelines for usage.

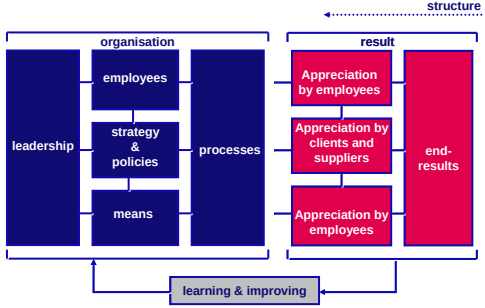
Infrastructure architecture

Architecture of the technical infrastructure of an enterprise (basic systems for the collective use of everybody in the organisation). Typical examples hereof are operating systems, hardware, middleware, data communication (such as internet connection), networks.

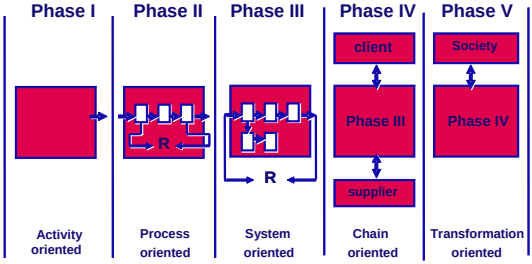
INK management model

Coherent management model of the *Instituut Nederlandse Kwaliteit* in which all the important characteristics of an organisation are addressed. It is an overview of the nine focal areas of organisations (sub-divided into organisational areas and results areas) that are critical for the business excellence and success of an organisation.

A graphical representation of this model is given below.



The development phases in the INK-model are:



Input

Necessary information for the execution of (a part of a) process.

Input measurements

Measurements that indicate the quality of the input data fed into a process. These measurements can be used to evaluate if a process receives the right input in order to start and produce a good result.

Instituut Nederlandse Kwaliteit (INK)

Foundation that aims at enhancing the quality of business management, based on the INK management

model. It was founded in 1991 as result of an initiative of the Dutch Ministry of Economic Affairs.

Instructions

Prescriptions, protocols, etc.

Integrated definition

See ‘IDEF’.

Interaction

A common activity, carried out by two or more parties, and in which each party is responsible for its part in the interaction: passing over information, coordinating with other participants in the interaction in order to achieve together the expected result.

Interaction model

A model that describes the way *business functions* interact with *business objects*. The interaction is limited to the use and change of properties of the *business objects* by the *business functions*.

Interaction point

A component of a system (actor, organisation, application, role) where interactions can take place, such as, the counter of an office or the interface of an application.

Interdependency

Underlying relationship between two activities in a process that imposes a certain execution order.

Interface

1. Component of a system (actor, organisation, application, role) that provides access to the services offered by that system or through which that system can access services offered by other systems or applications.
2. Connection point between independent (sub-) processes, where the output if one process is passed as input to the other process.

Interface model

Model used to describe the services/products offered to clients by an organisation. A physical interface model also describes the realisation of these

services/products while focusing on the physical properties such as location, communication medium, time, etc.

Internal client-supplier relation

Relationship between two departments in an organisation in which one department (supplier) delivers a product or service to the other department (internal client), which is subsequently used as input in the client's processes.

International Organisation for Standardisation (ISO)

Network of national standardisation institutes which develops international standards.

IPO-schema

Technique for the description of *business processes* in which a page is divided in three columns. In each column, by means of text or symbols a structured description of the input, process steps and output of a process is given.

ISO 9000

An international standard that prescribes how organisations should document their processes. It encourages organisations to create a well-defined process architecture.

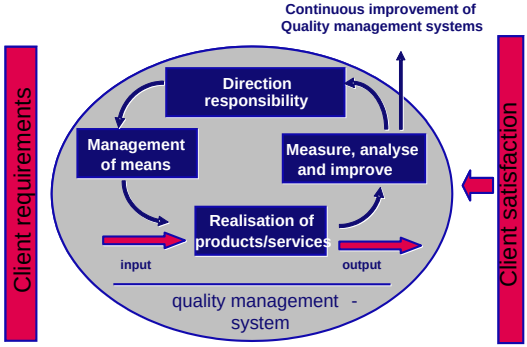
ISO 9000:2000

The principles of quality management systems and the definitions of corresponding fundamental terms.

ISO 9001:2000

Requirements for quality management systems which must be used by organisations in order to demonstrate that they are capable of delivering products and services that comply with existing laws and meet the needs of the clients.

A graphical representation of the ISO 9001:2000 model is given below:



ISO 9004:2000

Standard for the definition of a quality management system, also covering the continuous quality improvement process (e.g., contains guidelines for performance improvement).

ISO 19011:2002

Standard specification and guidelines for carrying out quality and milieu management system audits.

IT Interaction model

A model that provides a holistic view of Management Information Systems in the context of the organisation.

Comments:

According to Mark S. Silver, the model addresses the interaction of an information system's features with five elements of the organisation:

- its external environment,
- its strategy,
- its structure and culture,
- its business processes, and
- its IT infrastructure.

The model considers the consequences of this interaction for system use, for organisational performance, for the organisation's personnel, and for the firm's future flexibility. Moreover, the model relates various aspects of the interaction process to the phases of the development and implementation lifecycles [Wikipedia].

Iteration

A process/workflow activity cycle involving the repetitive execution of one (or more) process/workflow activity(s) until a condition is met [WfMC].

ITIL

The Information Technology Infrastructure Library (ITIL) is a set of concepts and techniques for managing information technology (IT) infrastructure, development, and operations.

ITIL is published in a series of books, each of which cover an IT management topic. The names ITIL and IT Infrastructure Library are registered trademarks of the United Kingdom's Office of Government Commerce (OGC). ITIL gives a detailed description of a number of important IT practices with comprehensive checklists, tasks and procedures that can be tailored to any IT organisation [Wikipedia].

J

Juridical dependency

Dependency of processes on laws and regulations. Here we refer stipulations concerning certification, privacy, security, and labour law. The juridical dependency decreases with the increase in process flexibility.

Just-in-Time (JIT)

The procurement of materials in the right quantities, at the right moment and in the right place. JIT, which originated in the Japanese approach for manufacturing organisations, focuses on serving clients optimally while maintaining the stocks at a minimum level. The idea is that JIT leads to short completion times and low stocks and increases the transparency of the manufacturing process.

K

Kaizen

Japanese term that literally means ‘improvement’ (also known as the Japanese version of TQM). The concept is used to designate the continuous effort to improve processes to which everything and everybody in the organisation is committed.

Kanban

This technique is focused on controlling the flow in the process. Kanban literally means ‘signal with cards’. See also: Single Piece Flow

Key Performance Indicator

Essential performance indicator usually derived from critical success factors.

Key Risk Indicator

Measure indicating in an early stage if there is a chance that something will go wrong in a process. A KRI is always coupled to a specific risk, which may occur in that process.

Key user

User that has extensive experience with a certain method, application or tool and is the contact person for the daily problems with that method, application or tool.

L

Laws and regulations

Laws and regulations (internal and external) to which (the execution of) a process must comply.

Lean-culture

Lean is not only about applying techniques but also about a culture. In a Lean culture, improving processes is part of everyday work. Everybody from managers to employees, tries to do the work a little bit better every day.

Lean Management

Lean originated in Japan against a backdrop of difficult economic times. A collection of best practices was developed supporting organizations to work on continuous improvement. Lean focuses on the customer (value), flow in the process and removing waste.

Library of models

A central storage facility for models and/or components, generally accessible for many users. Most libraries provide services such as version and configuration management, check-in/check-out and locking mechanisms, etc.

Line balancing

Line balancing helps to support the realization of flow in the process. By training people for multiple tasks, employees can rotate jobs and come to the aid when disturbances occur

Logical process model

Model that describes the functional and/or logical structure of *business processes*. A logical model does not address aspects such as, time, place, people or machines.

Comments:

The opposite of a logical process model is an *operational process model*.

Logistics

All the preparation, processes and (management) operations in an organisation needed for administering and procuring supplies that are necessary for the production and delivery of products and services.

Logistics management

The management discipline concerned with the goods flow, information flow or work flow in business (processes) in order to achieve timely delivery of products or services against minimum cost and maximum quality.

Decision making concerning supplies, completion times, etc. are typical for logistics management.

Management by Objectives (MBO)

Management style introduced in 1954 by F. Drucker, in which the central idea is management of employees or departments on the basis of identified goals (derived from the expected results), rather than giving direct orders for executing activities. The argumentation for this is that employees should not be continuously told what they have to do and how they have to do it. Instead, they should be told what are the specific goals and the corresponding means, competencies and quality requirements. Subsequently, it would be the task of the employees to decide how they can achieve those goals as efficient and effective as possible.

Management Control System (MCS)

A system which gathers and uses information to evaluate the performance of different organisational resources like human, physical, financial and also the organisation as a whole considering the organisational strategies. Finally, MCS influences the behaviour of organisational resources to implement organisational strategies. MCS might be formal or informal. The term

‘management control’ was given its current connotations by Robert N. Anthony.

Anthony defined management control as the process by which managers influence other members of the organisation to implement the organisation’s strategies. Management control systems are tools to aid management for steering an organisation toward its strategic objectives [Wikipedia].

Management process

See: *Tertiary process*

Management reporting

Providing insight (expressed in terms of indicators’ values) in the performance of certain business units/departments.

In management reports are often mentioned elements regarding the vision and strategy for longer or shorter term.

McKinsey model

See ‘Seven-S-model’.

Measure

Unit used to measure a performance indicator (PI) and to compare it with a norm.

(Taking) Measures

Describing the way to be followed in order to achieve a desired situation.

Message flow

A message flow represents the flow of information between organizations. A Message flow can be connected to Pools, Activities or Message Events.

Metamodel

A formal model that defines the concepts of a (modelling) language and of the relationships that are allowed between instances of these concepts.

Mission

The primary function of an organisation; the reason of its existence.

Model (the~)

Simplified representation of certain aspects of a real system (part of reality, such as an organisation or a business process).

Comments:

A model always serves one or more goals. A model will reproduce as accurate as possible only those aspects of the real system that are relevant for the defined modelling goals.

Model (to~)

To create and maintain a *model*

Model-Driven Architecture (MDA)

MDA has emerged as a new approach for the design and realisation of software and has eventually evolved in a collection of standards that raise the level of abstraction at which software solutions are specified. Thus, MDA fosters a design process and tools that support the specification of software in languages such as UML rather than in programming languages like Java.

The central idea is that design models at different levels of abstraction are derived from each other through

model transformations. More specifically, different platform-specific models (PSMs) can be derived (semi-) automatically from the same platform-independent model (PIM), making use of information contained by a platform model. More recently, MDA has extended its focus to more business-oriented concepts and languages, reflecting the growing awareness that it is important to take into account business considerations in software development decisions. For this purpose, MDA has been extended with a computation-independent model (CIM) layer.

Modelling conventions

Rules concerning modelling that are agreed upon within a certain group.

Modelling decision

Decision about the form or the scope of a *model* to serve the *modelling goal* and the expected user or target group.

Comments:

E.g. what symbols to use and what do they represent. Which things are to be shown in the model or a specific visualisation or view.

Modelling goal

The purpose that a *model* eventually must serve.

Comments:

Such a purpose may be, for example, carrying out a cost analysis, describing the course of a process or communicating a change in an existing process. It is important to clearly identify the modelling goal before starting modelling, since the modelling goal may be critical for the selection of a certain model type. If the wrong *model type* was selected, then there is a great risk that the questions the model was supposed to answer will remain unanswered or the resulted model will not be suitable for communication purposes.

Modelling template

An instruction on how to make a *model* of a specific *model type.*

Model type

A class of *models* with prescribed contents or structure that is known to be suitable for certain analysis or (types of) *modelling goals*.

Mutual Collaboration Agreement (MCA)

Informal contract between a supplier and a client that is established in case the supplier's performance is not measurable. Such a contract specifies how the parties will work together in the given situation.

Nolan's stages-of-growth model

The stages-of-growth model is a theoretical model for the growth of information technology (IT) in a business or similar organisation. It was developed by Richard L. Nolan during the 1970s. The model proposes that evolution of IT in organisations begins slowly in Stage I, the "initiation" stage. This stage is marked by "hands off" user awareness and an emphasis on functional applications to reduce costs. Stage I is followed by further growth of IT in the "contagion" stage. In this stage there is a proliferation of applications as well as the potential for more problems to arise. During Stage III a need for "control" arises. Centralised controls are put in place and a shift occurs from management of computers to management of data resources. Next, in Stage IV, "integration" of diverse technological solutions evolves. Management of data allows development without increasing IT expenditures in Stage V. Finally, in Stage VI, "maturity", high control is exercised by using all the information from the previous stages [Wikipedia].

Norm system

A quantitative definition of a set of related indicators. Examples of norm systems are ISO and Hazard Analysis and Critical Control Points (HACCP).

Norm

A minimal or maximal value for the measured values of a certain performance indicator, or a range in which they must fall.

If related to a certain time frame, norms can be used to formulate (quantitatively) business goals.

Non-Value Adding Activity

Process or activity that neither adds value to a final product or service, nor enables activities that add value. In most cases these activities are left over from older processes and somehow continue even though they are no longer necessary and they add noting to a specific process [BPTrends].

Object Management Group (OMG)

A non-profit organisation and international consortium of companies that work together to create standards for advanced software engineering technologies. The OMG developed and maintains standards, such as CORBA, the Unified Modelling Language (UML) for diagramming software and business systems, and the Model Driven Architecture (MDA) a systematic way of maintaining reusable software components and using them to generate code for specific applications.

Object Role Modelling (ORM)

A method for designing and querying conceptual *information models*, in which the relevant information is described in terms that are also easy to understand for non-technical users

Operation

An amount of work that is a part of an *activity* within a *business process.*

Operational costs (execution costs)

The costs of the execution of a *business process*.

Comments:

The usage of resources (people and means) determines the operational costs of a process. Resources have certain costs per time unit. Furthermore resources are assigned to activities, which have duration. The determination of the costs of a resource per time unit may depend on variable costs and fixed costs. The precise calculation of costs can be done using different methodologies, such as activity-based costing (ABC).

Operational goal

Goal focused on and related to the execution or management of processes or of the organisation on the operational level.

Operational process model

Model that describes the structure of a *business process* including aspects such as time, place, people and machines.

Comment

The opposite of an operational process model is a *logical process model*.

Operational process

See *Primary process*.

Operational risk

The risk of having loses as a consequence of failing internal processes, people or systems or as a consequence of external events.

Operational Risk Management (ORM)

Managing operational risks, having as goal the maintenance of an acceptable (controllable) risk level and the avoidance (as much as possible) unidentified/unpredictable risks.

Organisational chart

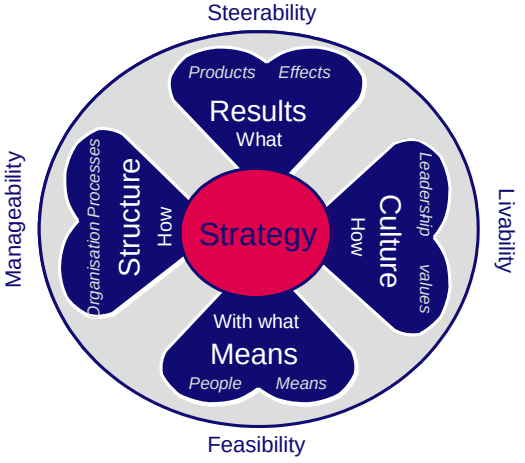
Hierarchy diagram representing the division of an organisation in units, departments and sub-departments. Traditional way of showing the relationships between departmental and functional units or the reporting relationships between managers within an organisation.

Organisational foundations

The focus areas that a manager must particularly consider when administering an organisation are::

- *Strategy* (Value & Development)
- *Structure* (processes & organisation)
- *Culture* (leadership & values)
- *People* (competence development)
- *Means* (ICT, money, facilities)
- *Results* (products & effects)

A graphical representation of the foundations is given below:



Organisational model

Model that describes the *Organisational structure.*
Often this is expressed with an *Organisational chart.*

Organisational part

Clearly distinguishable organisational unit (e.g., unit, department, group etc.), which is responsible for the execution of a work process.

Organisational procedure

Prescription such as a business rule, *function profile* or administrative organisation documentation.

Organisational role

See: *Role*.

Organisational structure

The division of an organisation in departments and sub-departments and the authority lines (reporting and responsibilities).
Comments:
There are two dominant perspectives from which the organisational structure can be regarded: the *process* perspective and the *function* perspective. In the first

case we relate the organisational structure with the process structure, while in the second case the combination of people/units and functions they have (i.e., the 'function allocation') is of relevance.

Organisation for the Advancement of Structured Information Standards (OASIS)

International organisation that facilitates the development and usage of e-business standards.

OR-join

1. A symbol that is used in behaviour modelling to express the fact that an activity following an OR-join may have several causes. For example, 'accept claim' or 'reject claim' may both be the reason to 'inform client'.
2. A point within the workflow where two or more alternative workflow branches re-converge to a single common activity as the next step within the workflow [WfMC].

OR-split (choice)

1. A symbol that is used in behaviour modelling to express the fact that at the place of an OR-spilt a

choice must be made in the process between a number of alternative activities following that or-split.

2. A point within the workflow where a single thread of control makes a decision upon which branch to take when encountered with multiple alternative workflow branches [WfMC].

Overhead Value Analysis (OVA)

Methodology (developed by McKinsey) for the analysis of overhead costs and the effectiveness of indirect activities. In this type of analysis the costs of indirect activities are weighted against the contribution these activities have to the primary processes and to business output of the organisation. The outcome of such an analysis usually consists of the identification of the sources of unnecessary spending and of cost cuts.

Output

The result (i.e., end-product) of a (part of a) process.

Output measurement

Measurement of the end results of a process. These are mostly used to establish if the actual results of a process conform to the expectations. These are especially relevant in process sequences where the output of a process may also be the input for the next one.

Outsourcing

The hiring of an external company to manage, maintain and run some portion of its business. For example, many companies outsource standard software applications.

P

Pattern

Model or component of a model representing a solution proved to be efficient to a commonly recurring problem. Patterns can be used both for design and analysis purposes.

Parallel gateway

When the input flow is split, the output flows are simultaneously activated. When two flows join, the output flow is only activated when both input flows have arrived.

Parallel process

A process in which two or more sequences of activities are going on simultaneously.

Pareto

Pareto focuses on the principle: 'most (quality) problems are produced by only a few key causes'. Pareto indicates that 80% of the problems are caused by 20% of the possible causes.

Pool (Participants)

A pool represents responsibilities for the activities in a lane and can represent an organization, role or system. A pool can be divided by lanes.

PDCA-circle

See ‘Deming-circle’.

Performance measure

See ‘performance indicator’.

Performance indicator (PI)

1. A measure related to a certain critical success factor, based on which the performance of the business process in which the measure has been measured can be evaluated. In order to define measures quantitatively, norms are used.
   Comments:
   A PI can fall in one of the following categories: *efficiency indicators* (costs/ number of FTEs/ completion time), *effectiveness indicators* (quality/ internal client satisfaction).
   See also: *Indicators*

2. A measurement system that consists of a measure expressing/representing a certain process performance aspect and a measurement method, which is a procedure describing the necessary steps to be followed in order to collect the data that eventually indicates the level the above-mentioned measure takes.

Performance management model

Model in which critical success factors are identified and defined.

Performance monitoring

See: *Process monitoring*

Performance norm

Norm concerning a performance indicator.

Petri net

Mathematical modelling language for the description of discrete distributed systems. Many extensions have been proposed to Petri nets. The term high-level Petri net is used for many Petri net formalisms that extend the basic formalism, including coloured Petri nets and hierarchical Petri nets. There are several examples of

the use of (in particular high-level) Petri nets for modelling business processes or workflows, or for formalising other process modelling languages.

Physical process model

See: *Operational process model*

Pilot

The execution, often using a smaller scale and temporary model of a system, of an experiment, test or simulation with the goal of validating certain assumptions about the functioning of that system.

Plan-Do-Check-Act circle (or cycle)

See: *Deming cycle*

Plateau

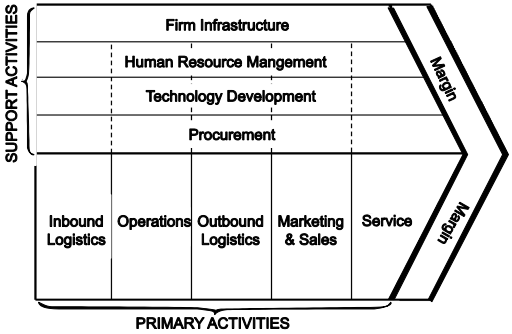
Intermediary phase in the realisation of a large scale change process (e.g., the realisation of a new enterprise architecture, the replacement of a critical information system, etc.).

Poka Yoke

It's a given: many mistakes are caused by human failure. Poka Yoke is a technique that is focused on designing the production process and/or the product or service in such a way that it is almost impossible to make mistakes. Poka Yoke is sometimes also referred to as 'mistake proofing' or 'fool proofing'.

Porter's value chain model

A technique for the identification and classification of business processes, in which processes that have added value as primary processes are emphasised. Porter's model constitutes a solid basis for the optimisation of the critical processes and the analysis of the contribution of the secondary processes to the primary processes. A graphical representation of Porter's model is given below.



The product and service portfolio helps organisations have an overview of their offering and market and facilitate the design and management of business processes such the realisation of the portfolio is achieved. It is therefore an important starting point for the process architecture.

Portfolio management

The management of all existing and planned projects aiming to achieve the business goals with the available capacity.

Precedence

Sequencing/order (of activities) imposed by a certain priority.

Precedence-analysis

A technique for the detection of critical dependencies between (inter)actions.

Prescription

A rule that indicates how and under which circumstances a strategy, method, techniques or means can or must be used.

Primary process

Business process resulting in a product or service for an external client.

Comments:

This type of processes contributes directly to the goal and mission of the organisation. Examples of such processes in an insurance company are: processing of a damage claim or closing a new insurance policy.

Problem owner

Person responsible for finding a solution for a bottleneck or issue.

Procedure

Structured set of instructions, prescriptions and protocols at the level of a work place. Procedures determine and give structure to activities in a process. They specify which operations must be executed, in which order and who is responsible for their execution. A good procedure describes a routing for achieving certain business goals in the most efficient way.

Process

General:

A series of events to produce a result.

BPM Specific:

A set of logically related activities, people and means to produce products or services

See also: *Work process*; *Business process*

Process acceptance test

The execution beforehand and based on process specification of validation checks.

See also: *Process validation*

Process alignment

The ongoing process of keeping the organisation's business processes aligned with the organisation's strategy and goals.

Comments:

Vertical alignment is used to assure that process and activity measures and the measures used to evaluate managerial performance are all aligned with corporate goals. Horizontal alignment, or process improvement, focuses in assuring that all of the activities that take place in a process are aligned with the goals of the process. In most organisations, change is constant and thus, the organisation is always working to realign, vertically and horizontally, to keep everything in sync with the changing strategy and aims of the organisation.

Process analysis

Study of the behaviour of a process in order to find deficiencies and their causes

Process analyst

Person responsible for the modelling and analysis of business processes.

Process architect

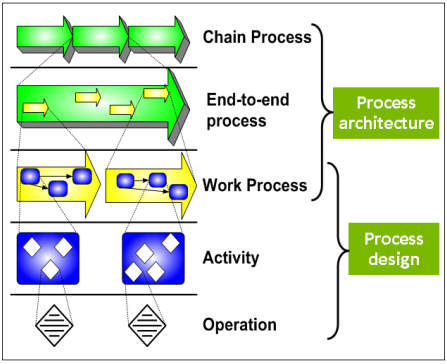
Person (or team or organisation) that is responsible for (the development of) a process architecture.

Process architecture

The fundamental organisation of an enterprise (or other organisation), embodied in its work processes, how these establish end-to-end processes and deliver products and services to each other and the environment, and the principles guiding its design and development.

Comments:

Process architecture usually addresses the *chain processes, end-to-end processes* and *work processes* in the PAM hierarchy. The structuring of *activities* and operations are generally considered to be part of a process design, not of the process architecture.



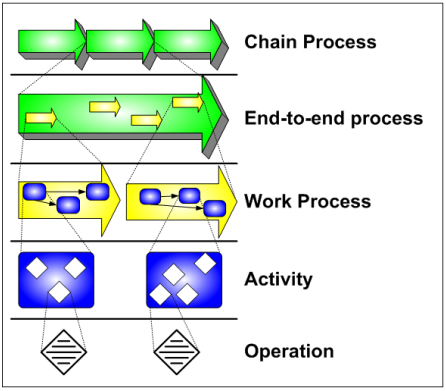
Process architecture description

A set of one or more models that represent the current or future process architecture of (a part of) an organisation.

Process Architecture Model (PAM)

Reference model that defines and instantiates the core concepts such as value chain, process chain, process, activity and task, such that they can be referred to. Furthermore, it makes the role of the supporting technology explicit. It is therefore a way to align business processes with IT support.

A graphical representation of the Process Architecture Model (PAM) is given below.



Process audit

Independent analysis that compares the execution of a business process with the formal process design and documentation.

Comments:

The goal is to establish whether the actual business process is executed in compliance with the process design and whether it meets the formalised quality requirements.

A process audit is often used by the process owner to verify if the process manager controls the process, as prescribed.

Process auditee

Employee interviewed during a process audit.

Process auditor

Person responsible for carrying out an audit and is neutral with respect to the audited process. The auditor first examines the process design and documentation. Subsequently, he interviews the people involved, while checking if the actual process complies with the process design.

Process borders

Set of constraints, under which the process must be executed. These are usually documented in documents such as SLAs, indicators, procedures, work instructions, competencies, process descriptions and codes of conduct.

Process chain

Collaboration of end-to-end processes of several organisations combined to produce a product or deliver a service.

Process costs

The consequence of the consumption of the necessary resources (e.g., people, materials, systems, etc.) during process execution. Processes and process activities have no costs themselves. Their execution however assumes the use or consumption of certain resources which generate costs. Therefore in process models costs are mostly assigned to resources as *resource costs* (or tariff), the cost per time unit for using the resource. However costs that are not modelled separately are assigned to activities and are called operational costs. The calculation of the operational costs is often done outside the process.

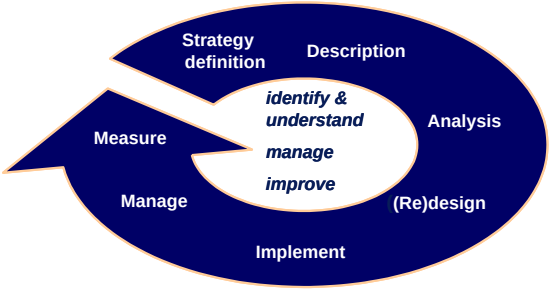
Process cycle

The continuous renewal and improvement of business processes.

Comments:

Within organisations the continuous renewal and change of processes is carried out on a cyclic manner. In general, during a process cycle one may distinguish between three phases: identify and understand, manage and improve.

A graphical representation of a process cycle is given below.



Process design

A set of one or more models, which describe the desired situation of a business process.

Process designer

Person that specifies business processes that are new or need redesign. The process designer models and

describes the business processes up to the level of work instructions.

Comments:

Nevertheless, the process designer is not responsible for the content of the modelled processes. This responsibility belongs to the process owner.

Process diagram

Formal graphical representation of (a part of) a *process model*.

Comments:

A process diagram can be used at any level in PAM. At each level the diagram may receive a more specific name (e.g. '*process chain* diagram'. '*work process* diagram')

Process documentation

A *business process model* supplemented with the additional information that is associated with a certain *business process*

Comments:

Additional information may be linked to a process model, e.g., documents, html pages, presentations, etc.

Process-driven management

A management method that aims at continuous process improvement, based on the monitoring of *business processes.* Especially core processes are rigorously screened.

Process engine

An *application* that coordinates and monitors the (distributed) execution of automated process flows.

Process essence model

Model of the essential activities, actors, items and their relations. This type of model (and modelling style) is mostly used during process redesign.

Process evaluation

Assessment of the performance of a process. It assumes the application of a performance analysis method and the comparison of the result with previously defined norms

See also: *Process monitoring*

Process execution

The time period during which the process is operational, with process instances being created and managed [WfMC].

Process fit

The extent to which the different process elements are integrated/fit together in a whole. Organisations with a good ‘process fit’ have achieved that through a good integration of processes around a specific strategic focus. It's easy for competitors to copy standard processes, but it's very hard for competitors to duplicate business process with a high degree of fit. Process fit is a concept associated with Michael Porter.

Process flow

See: *Process logic.*

Process goal

See: *Business Process Goal*

Process hierarchy

The hierarchical structure of processes and sub-processes in an organisation.

Process improvement

See: *Continuous process improvement*

Process information

Information necessary for the assessment of process performance indicators.

Process instance

1. An actual performing process.

   Comments:

   An instance describes an actual process, which includes data, real actions, and specific decisions. Workflow systems and simulation systems both keep track of the data from the execution of specific process instances in order to determine things like how long the process actually takes, who handled a specific instance or how much it cost. In the case of simulation systems, someone has to supply information about a set of actual instances [BPTrends].

2. A single enactment of a process.
   Comments:
   Each instance represents a separate thread of execution of the process, which may be controlled independently and will have its own internal state and externally visible identity, which may be used as a handle, for example, to record or retrieve audit data relating to the individual enactment [WfMC].

Process-IT matrix

A matrix created by listing processes on the horizontal axis and IT applications or other (IT) architectural elements on the vertical axis. This matrix shows what IT applications, databases and other resources are required to support each process [BPTrends].

Process lane

A division of a *business process* in horizontal lanes meant to show which *activities* in the process are carried out by a particular *actor* involved in the process. Each lane represents a different *actor*.

Process logic

The coherent succession of *process steps* in a *business process*.

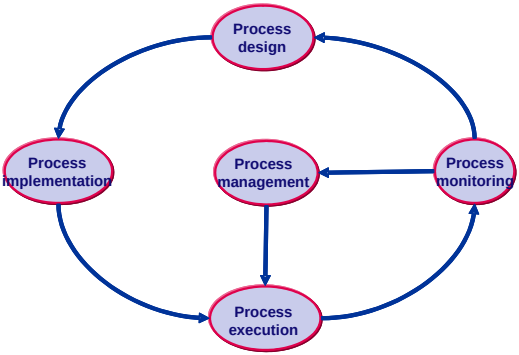
Process management

See: *Business Process Management (BPM)*

Process management control

1. Knowing, monitoring and controlling/steering the parameters that influence the outcome of a process.
2. The design and implementation of a process such that it is predictable, to the extent that it inevitably produces the expected result.

A graphical representation of the process management control cycle is given below.



Process manager

Person responsible for the execution and results of a business process.

Comments:

The process manager is competent to intervene, if necessary, in the process to steer its course.

Process mapping

See: *Business process mapping*

Process measurement

The activity of measuring particular indicators for a business process (such as, completion time, costs, risk indicators, etc.) during process execution.

Process mining

Method for the analysis of *business processes* based on event logs.

Comments:

Process mining is often used when no formal description of the process can be obtained by other means, or when the quality of an existing documentation is questionable.

Examples of event logs are the audit trails of a workflow management system, the transaction logs of an enterprise resource planning system, and the electronic patient records in a hospital. These can be used to discover models describing processes, organisations, and products.

.

Process model

See: *Business process model*

Process modelling tool

See: *Business process modelling tool*

Process monitoring

The collection of *measurements* concerning the evolution of the execution of *business processes*.

Comments:

This data can be processed and fed as input for various analysis techniques. A synthesis of analysis results may serve as decision support for process improvements by the managers and responsible workers.

Process orchestration

1. The automated arrangement, coordination, and management of complex computer systems, middleware, and services
2. The process of coordinating an exchange of information through web service interactions.

Process orientation

Paradigm promoting the organisation of a company based on *(end-to-end) business processes*, in which the delivery of internal and external products and services form the main structuring principle.

See also: *Function orientation*

Process oriented modelling

To model (part of) an organisation from the leading perspective of *business processes*.

Process owner

Person responsible for the establishment and quality improvement of a *business process.*

Comments:

The process owner is responsible for the design and work instructions, as well as the development of all means necessary to execute the business process.

The owner will not intervene in the course of the process during execution.

Process performance indicator

See: *Performance indicator*

Process report

User-friendly description of a process and of the corresponding documentation.

Process reviewer

Person having a coordinating and controlling role. Takes care of technical aspects of process modelling and consults the process manager with respect to the process content.

Process quality

The extent to which a process complies to previously defined norms.

Process simulation

The imitation of the execution of a business process. The act of simulating something generally entails representing certain key characteristics or behaviour of a process.

Comments:

Simulation is used to test the designed process, to discover the key characteristics or is used for educational purposes.

Process steering

See: *Process management*

Process step

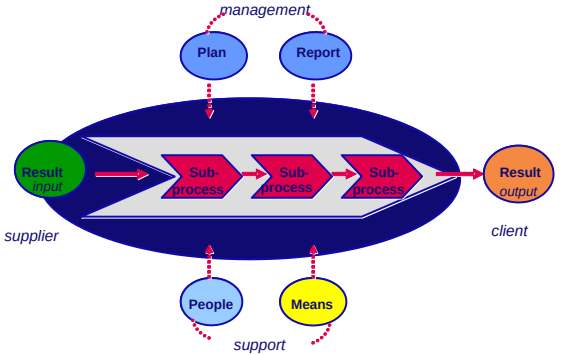
A part of a business process that is modelled as a step in a process model.

This may be used on any level of the PAM. Process steps may be used in a model to define the next level parts (of PAM) or to increase the readability of a model.

Process structure

Coherent description of the relationships and dependencies between primary, secondary and tertiary processes.

A graphical representation of a process structure is given below:



Process task

Coherent collection of activities from a business process, which can be assigned to an actor (human or machine) in order to realise one or more business functions.

Process test

The simulation of the execution of a *business process* in order to verify if the process design and the means developed for the business process are capable of producing the required results.

Comments:

A process test is used to make sure that a business process has the required quality before it is made operational.

Process validation

Verification if a process design results into a product or service that complies to predefined specifications and quality norms.

Comments:

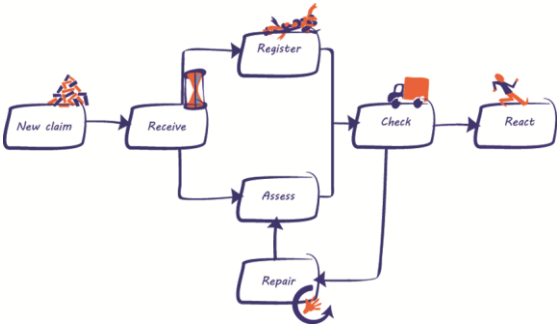
The process validation can be realised by the use of analysis techniques, process simulation or a process test.

Process thinking

1. A person's ability to put his/her activities in relation with processes.
2. A subset of systems thinking. Conceptualizing groups of activities as processes and seeking to understand how all of the processes in the organisation work together to take inputs and produce products, services and profits [BPTrends].

Process Waste Scan

In the Process Waste Scan, standard types of waste are identified and visualized in a process map.



Product

The (physical or non-physical) end result of a (business) process, which is delivered to a client.

Production cell

See: *Self-managing task group*

Productivity model

A model that shows how the productivity of an organisation depends on its efficiency and effectiveness. The principle behind this model is doing the right things right. The core question addressed is how to design processes such that the output (for the

client) is maximised, while the costs (consumed resources) are minimised.

Product/market combinations (PMC's)

Describes which of the currently offered products are aimed at/offered to which current client-groups.

Products and services portfolio

Describes (a part of) the products and services an organisation offers to its environment. It also specifies

- the channels through which products are offered/delivered
- the target groups for which products are meant
- the (evolution of the) expected number of products/service that is expected to be delivered in a specified time period.

Project portfolio

Collection of projects and/or programs (possibly sharing the same resources) that together will realise one or more (strategic) organisational goals.

Program

A collection of interdependent projects that is set up in order to achieve some specified goal of strategic importance.

Project

A collection of interdependent activities that together must lead (under specified conditions) to the achievement of well-defined results.

Pull

Lean focuses on ‘customer pull’. The customer more or less ‘pulls’ the products through the process. This prevents you to create products (or services) a customer didn’t ask for. Only the right products at the right moment at the right place are delivered.

Qualitative analysis (of processes)

Analysis of qualitative aspects of business processes. Examples: Cause and Effect analysis, Complexity analysis, Failure Mode and Effect Analysis (FMEA).

Quality

The extent to which the delivered products/services meet the requirements and expectations of customers.

Quality assurance

1. The continuous change and improvement of an organisation based on a well formulated policy, containing concrete and feasible goals, that are translated to all levels, all stages and all processes. The term 'integral quality assurance' indicates that quality assurance occurs in all areas/parts of the organisation.
2. The whole of techniques and management systems that focus on the continuous improvement of the effectiveness, efficiency and adaptability of organisational processes, while enhancing the client satisfaction, productivity and flexibility.

3. The organisational structure, responsibilities, procedures, processes and facilities for implementing the quality policies.

Quality management

Taking measures to ensure that the expectations and needs of customers are met. Quality management has as main goal to ensure that organisations are able to realise their strategic goals.

Quantitative analysis (of processes)

Analysis of measurable and quantifiable aspects of business processes.

Examples of such aspects are costs, time, risk probabilities, client satisfaction.

See also: *Indicator*; *Norm*

Queue

The transactions or requests waiting to be processed by a system.

Comments:

For example, the items of a certain type (e.g., damage claims) that have to be processed by an organisation or department (e.g., insurance company).

Quick wins

Improvements that, although, can be quickly and easily implemented lead to visible benefits.

R

RACI-method (RACI tables)

A method used to identify the roles and authority of players in a process/project. It can also help determine the process/project's sphere of influence/control across all lines of business:

Responsible: Refers to the person(s) responsible for the deliverables produced that is, the "executor(s)."

Accountable: Characterises the person with the ultimate decision-making authority that is, the "overseer."

Consulted: Refers to the person(s) who must be consulted before action is taken - that is, the "advisor(s)." This is a two-way communication that occurs before an activity is completed.

Informed: Characterises those who should be informed that a decision is being made or an action is being taken, even though they have no control over the decision or action. This is a one-way communication that may occur after an activity has been completed. Typically, this is how senior management-level players are involved.

RADAR (Results, Approach, Deployment, Assessment and Review)

Approach/methodology through which an organisation can systematically determines its goals (*results*), the approach to achieve those goals (*approach*), and follow that approach (*deploy*). Subsequently, results are monitored (*assess*) and the approach is systematically improved (*review*).

Reasoning tree

A graphical representation of a line of reasoning, describing how an analysed goal relates to other goals and aspects of a business process.

Redirection

Contacts with the client during which the client is referred to another worker (during a first contact, a client receives the phone number of another employee he/she must call). In general are considered to be useless because such contacts do not add value to the process, from the client point of view.

Reference architecture

Architecture description that is used by multiple (parts of) organisations in order to standardise their architectures.

Reference model

1. Model describing a high-level solution for a class of problems. For example, a reference model is a standardised description of a type of organisations regarding a certain aspect. A reference model can have both a prescriptive and descriptive character.
2. A generally accepted abstract representation of a type of system, which allows users to build a common understanding of that type of systems.

Reporting model

A prescriptive manner of reporting, which determines both the content and the form of a report.

Requirement

A collection of desired properties, which a new system (process, product, application) must have after its realisation.

Resource

Entity that plays a role in a business process, characterised by physical limitations with respect to its capacity and location.

Response time

The time between issuing a request and receiving the result; the response time is the sum of the processing time and waiting times (synchronisation losses). Examples are the time between the moment that a customer arrives at a counter and the moment of completion of the service, or the time between sending a letter and receiving an answer.

Also in the supporting IT-applications the response time plays an important role; a well-known example is the (mean) time between a database query and the presentation of its results.

Responsibility

Obligation to make sure that something works, or is carried out properly and to be accountable for it.

Risk

A present or future threat that has (potential) negative influences for the organisation.

Comments:

Factors that have an influence on the severity of the risk are the process complexity, the number of transactions, the quality of the employees assigned to execute the process and the quality of the technical means supporting the process.

Risk analysis

Technique that aims to identify and evaluate the risks in a business process or business process change.

Comments:

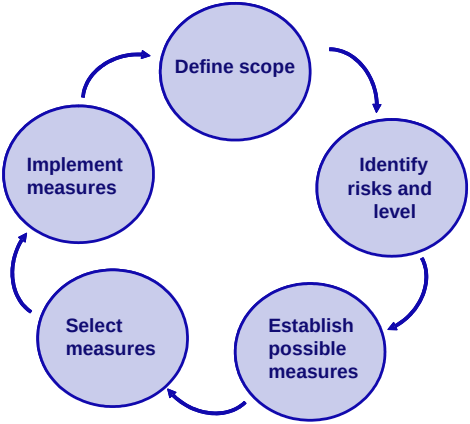
The most important result of such an analysis is an inventory of the most important risks in a process improvement/change project

Risk estimation

Measurement that indicates the probability for a risk to occur. The estimated value expresses how high the probability for a particular risk area and a particular process element.

Risk management (process)

Process that makes risks recognisable and sets priorities in the selection of risks that will be diminished by the application of suitable measures. A continuous flow of information supporting this decision making process is generated in order to prevent/limit unnecessary process and project interruptions and losses.. A graphical representation of a risk management process is given below:



Risk manager

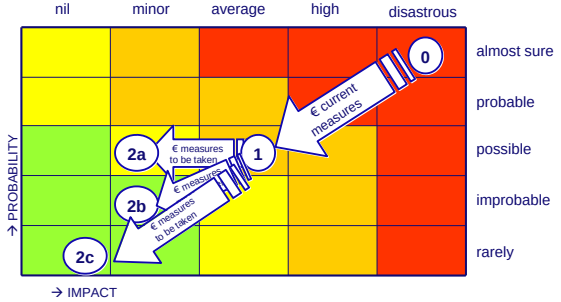
Person responsible for risk management.

Risk matrix

Technique for *risk management* in which risks are arranged by two dimensions: the impact of a risk and the probability for that risk to occur.

Comments:

The matrix is a simple instrument to make risks explicit and manageable. Thus appropriate measures can be taken for high impact/probability risks. A graphical representation of a risk matrix is given below:



Risk measure

Measure that aims to prevent an identified risk.

Role

1. Package of tasks and responsibilities that can be assigned to an individual or department.
   Activities are allocated to persons based on the roles these persons can play. Roles are used to describe an organisation generically from the process perspective. Typical examples of roles are process manager, team leader, evaluator, process reviewer, risk manager, process owner, process designer, process architect, etc. One person may fulfil/play several different roles. Compared with actors, roles have as supplementary properties a description of the responsibilities for that role and an indication of the role (person) the role must report to.
2. A group of participants exhibiting a specific set of attributes, qualifications and/or skills [WfMC].

Rule family

a grouping of business logic statements by their conclusion fact type.

S

5S

5S focuses on ‘orderliness’. The method is used to create a standardized, organized and neat work environment. The 5 ‘S’ stand for:

1. Sorting: what you don’t really need can be discarded
2. Setting in order: what you do need gets a fixed place
3. Shine: create a clean work environment
4. Standardize: come to an agreement about a standard way of working
5. Sustaining the practice: discuss and correct

Sarbanes-Oxley Act (SOX)

A law in the US which was introduced as a reaction to several book-keeping scandals. The law requires that all CEOs and CFOs of listed companies, having revenues higher than 75 million dollar, must submit their financial reports to a certification process that will assess their accuracy. Furthermore, external inspectors must check the statements of the management team and the effectiveness of the internal control systems for financial processes and reporting mechanisms.

Scan

See: *Process management scan*

Secondary process

A business process that delivers services to internal clients (and thus contributes only indirectly to the services and products delivered to external clients). Such a process supports the primary processes.

Self-managing task group

A stable group of employees that bear together the responsibility for a whole process or for a segment of a process that can be clearly defined. They deliver well defined service or product to an internal or external client. Self-managing team plan and monitor the progress, solve the daily problems, determine specific goals, improve the processes they execute and are responsible for the quality of the delivered products and services.

Self-managing team

See: *Self-managing task group*

Semantics of Business Vocabulary and Business Rules (SBVR)

Adopted OMG standard that defines the vocabulary and rules for documenting the semantics of business vocabularies, business facts, and business rules; as well as an XMI schema for the interchange of business vocabularies and business rules among organisations and between software tools.

Sequence Flow

Defines the order in which activities are executed.

Service

An externally visible unit of functionality of a system, which is meaningful to its environment.

Service level

The expected performance/quality of the services provided by a system (e.g. organisation, process, application).

Service level agreement (SLA)

A formal contract between a service provider and a service consumer, in which formal agreements are

made with respect to the provisioning of that service, such as availability, reliability, completion time, responsibility, etc. An SLA only refers to measurable indicators.

Service Oriented Architecture (SOA)

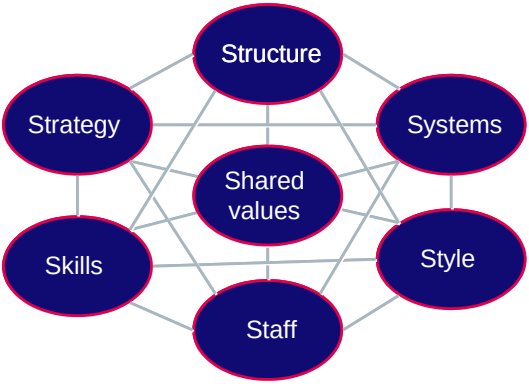
IT architecture based on loosely coupled services. In a SOA an important role is played by so-called orchestrations, which are formally defined processes which can be executed by specialised software for controlling the flow of independent (web-)services invocations. BPEL is a specification language used for the definition of such processes. Messages between the different services are exchanged according to open standards, such as SOAP.

Seven-S-model (McKinsey-model)

Model that describes important dimensions of an organisation:

1. *Shared values*: values shared by people in the organisation and which are representative for that organisation.
2. *Strategy*: the goals an organisation aims at and the steps the organisation will pursue in order to reach those goals.
3. *Structure*: the organisation of an organisation, defining, among others, the distribution of tasks, the hierarchy and the coordination of tasks.
4. *Staff*: the personnel aspects, such as, rewarding system, training, motivation and behaviour.
5. *Systems*: the formal and informal rules.
6. *Skills*: the most important, differentiating skills and competencies of the organisation.
7. *Style*: how people behave and work together.

A graphical representation of the model is given below.



Shadow execution

A trial method through which new processes and/or systems are first tested for a while and run in parallel with the old processes and/or systems.

Shared Service Centre (SSC)

A central facility shared by multiple (internal) clients and providing a specialised type of service and know-how to all of them. Thus, it serves the whole organisation by bulk-processing the same type of data and executing highly standardised processes. Since an SSC has mostly internal clients, the relationship with them is

regulated by (SLAs) and by a calculation of the costs made.

Simulation

A technique that uses a model to make predictions about the behaviour of a system (e.g. business process, application).

Comments:

There are different types of simulation, some more informal and some more formal.

Process simulation tools normally assign values to activities and then simulate a number of cases to see how the system will respond. The simulation of complex processes can often reveal outcomes that the developers don't anticipate [BPTrends].

Simulator

A device or computer system on which (process) simulations can be run.

Single Piece Flow

Single Piece Flow is, similar to Kanban, a technique for optimizing the flow in the process. Single Piece Flow focuses on producing products one-by-one without waiting time in between the process steps.

SIPOC

SIPOC is an acronym for Supplier, Input, Process, Output and Customer. The SIPOC technique helps to outline the process and the surrounding playing field.

Six Sigma

Movement, methodology and technique in which the core concept is the process improvement. It relies heavily on statistical techniques to measure success. More precisely, Six Sigma promotes the idea that organisations should strive for processes in which variability is minimised, such that they are at, at least, six times the standard deviations (sigma) distance from the specification boundaries. The argument is that through a real understanding of the variability sources one can effectively improve processes. Consequently, process improvements can be expressed in terms of quality and time-cycle, which will also lead a higher client satisfaction.

See also: *Quantitative process analysis*

Six Sigma roadmap

Methodology for quality improvement that prescribes the following steps:

1. Identify the most important processes and most important clients.
2. Define the client needs and requirements.
3. Measure the current performance.
4. Prioritise, analyse and implement the improvements to be carried out.
5. Facilitate the broad diffusion of the Six Sigma-system in the organisation.

SMART

Abbreviation summarising a number of requirements that must be satisfied by an organisation's business or process goals:

- *Specific*: goals must be specified in concrete and specific terms.
- *Measurable*: it must be clear how to establish if a goal has been achieved.
- *Acceptable*: the organisation must willingly work towards that goal.
- *Realistic*: it must be feasible to reach that goal with the existing resources.
- *Time-based*: a deadline must be set for reaching the goal.

SOAP

An XML-based open standard for the exchange of messages between web-services. Originally, the abbreviation stood for Simple Object Access Protocol, and more recently for Service Oriented Access Protocol; nevertheless now, officially, the name of the standard is SOAP.

SqEME®

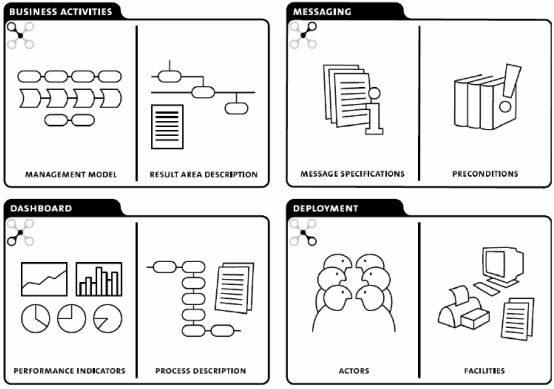
An open standard for developing a process-centred architecture of an enterprise. It may be reproduced freely by any organisation wishing to use it to develop a governance structure on the quality of their business processes.

SqEME® Process Management is a method that enables discussing the design of the organisation in an unambiguous way. Processes have to hold a prominent place in observing organisations: how are the different parts of the organisation tuned to each other and how does the messaging in between take place?

SqEME uses two sets of windows: One set to be able to use SqEME as a methodology for analysis. SqEME® calls this ‘windows’, by means of which one seeks for

the Constitution, Chemistry, Correspondence and Construction of the enterprise (see figure below).

The second set of windows facilitates the use of SqEME as a method for process management. The windows for SqEME® Process Management (shown in the figure below) are named: Business Activities, Messaging, Dashboard and Deployment.



SqEME® as a methodology views processes from four different perspectives.

Stakeholder

An individual, team or organisation (or classes thereof) with interests in, or *concerns* relative to, a *system* [ISO/IEC 42010].

Stakeholder analysis

The stakeholder analysis is a technique to identify and analyze the force field of stakeholders for a certain problem or project.

Strategy

The goals an organisation aims at and the steps the organisation will pursue in order to reach those goals.

Steering information

Rules and regulations for the control and management of processes.

Steering model

Model that describes the principles, the steering instruments, the decision making process and the steering information that is needed for governing a process.

Sub-optimal

The phenomenon occurring when local optimisation leads to a result that is far from the global optimum. This type of situation is a real danger for architects, that normally design only small pieces of architecture (that might be optimal) and can easily loose the global perspective.

Sub-process

A process, which is a composite part of another process.

Comments:

For example, an end-to-end process usually consists of work processes as its sub-processes.

Supplier

The department or the external organisation, which delivers the input for a process.

Supply Chain Management (SCM)

The planning, optimisation and management of the supply, information en material streams throughout the whole supply chain.

Supporting process

See: *Secondary process*

Swim lane

See: *Process lane*

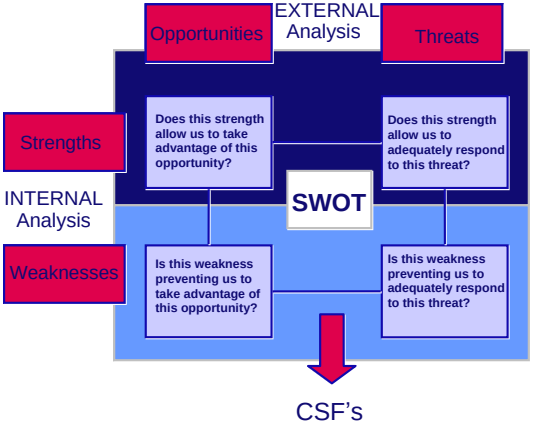
SWOT-analysis

Analysis technique that examines the internal strong and weak points of an organisation and compares them with the external opportunities and threats.

SWOT-matrix

A means to represent the *strengths* and *weaknesses*, the *opportunities* and *threats* of an organisation and relate them to each other. This results in four strategic alternatives.

A graphical representation of the SWOT-matrix is given below:



Synchronous Process

A process in which one activity sends a message to another and then waits for a response before proceeding.

See also: *Asynchronous process*

System

1. A set of interacting or interdependent entities, real or abstract, forming an integrated whole.
2. A part of reality expressed as a collection of entities and their relationships fitting the purpose of the observer.

Comments:

An entity is something that has a distinct, separate existence, though it need not be a material existence. In particular, abstractions and legal fictions are usually regards as entities [Wikipedia].

Examples of systems are: Business process, organisation, application.

System environment

The entities outside a system that are in some way related to the system.

T

Tabaksblatt Code

Dutch code of conduct regulating the area of corporate governance (i.e., the effective management of organisations). The Tabaksblatt code ensures that the rewarding decisions in an organisation listed at the stock exchange are balanced and transparent, and the value of the rewards is dependent on the long tern performance criteria. Furthermore, the shareholders have more control on the rewarding policy.

Task

Piece of behaviour that can be attributed to one or more actors. A task is, for example, a bundle of work that is given to a person for execution. A task is generally characterized by execution in one place, at one point in time and by one person

Task allocation

The allocation of tasks to actors.

Task differentiation

The variety of functions in someone's task (e.g., job) profile.

Task group (autonomous)

See: *Self-managing task group*

Target actors

Components of an organisation, which are relevant from the perspective of the modelling goal.

Target group

Group of people who are (expected to be) the beneficiary of a certain service or product.

Technical infrastructure

See: *Infrastructure*

Tertiary process

A business process consisting of activities of management, supporting and steering the primary and secondary processes.

Testing frame

Set of norms and criteria specific to a certain testing situation/context.

The Decision Model (TDM)

TDM is a platform and technology independent intellectual template for perceiving, organizing, and managing the business logic behind a business decision. It matches a graphical notation to model the decision structure with a tabular specification of the business logic and a rigorous set of integrity principles.

Third Party

Independent certification authority that is able to assess whether processes within an organisation comply to certain predefined criteria.

Throughput measurements

Indicator that is used to establish whether the right processing takes place. In particular we refer to process indicators regarding the correct transformation of the process input into output.

Time-to-market

The time an organisation needs to develop and realise the delivery of new products and services to the market.

Top-down approach

Approach that advocated the use of external know-how for carrying out the process specification. Persons involved in processes are interviewed. Based on data collected during these interviews, external experts will write the process specifications. Subsequently, these descriptions are disseminated within the organisation and presented to employees. Finally, the management will adjust, if necessary the existing processes.

Top-down modelling

Modelling style according to which first the logical functioning of business processes is modelled. Subsequently, physical resources (such as people and machines) are added to the models.

Total Quality Management (TQM)

A movement, an industrial discipline and a set of techniques for the improvement of the process quality. TQM puts emphasis on continuous measurements and statistical techniques for supporting the improvement

process. TQM is often associated with the Deming-circle and with Edwards Deming.

Transaction

1. An agreement, communication, or movement carried out between separate entities or objects, often involving the exchange of items of value, such as information, goods, services and money.
2. (BPMN) A set of activities which form a logical order; it can be executed according to a specific transaction protocol. All activities in the protocol must be successfully executed to successfully complete the transaction.

Transaction processing

Way of organising an information processing system or process such that every 'job' is processed as soon as it arrives. (Opposed to: *Batch processing*).

Transformation

The transformation and processing by adding value of the input into output.

Tree diagram

Structures (processes in) an organisation hierarchically. This method is also used to describe the administrative structure of an organisation.

Trigger

Event that fires a business process or an activity**.**

Unified Modelling Language (UML)

Modelling language standardised by the OMG, primarily aimed at system development using object-oriented analysis and design. UML discerns a number of types of diagrams that can be used to describe the structure and behaviour of applications. Version 2.0 of UML, adopted in 2004, has a number of additional diagrams compared to earlier versions. Frequently used diagram types are class diagrams, use case diagrams, activity diagrams and sequence diagrams.

Use Case Diagram

Type of UML diagram used to define the software requirements for a system. Use Case Diagrams focus on scenarios that describe how users use the application.

Utilisation

A resource-oriented time-measure that gives an indication about the processing capacity of an organisation, the resource allocation effectiveness, and the efficiency with which the different resources (actors) are used. Utilisation is the percentage of the operational time that a resource is busy. A high utilisation can be an indication of the fact that the resource is a potential bottleneck, and that increasing that resource's capacity (or adding an extra resource) can lead to a relatively high performance improvement. In case of humans, the utilisation can be used as a more or less objective measure for the work stress. In information systems architectures, a typical example of the utilisation is the network load.

Value chain

1. See: *Chain process*
2. A concept that enables the analysis and design of how one or more organisations add value for customers

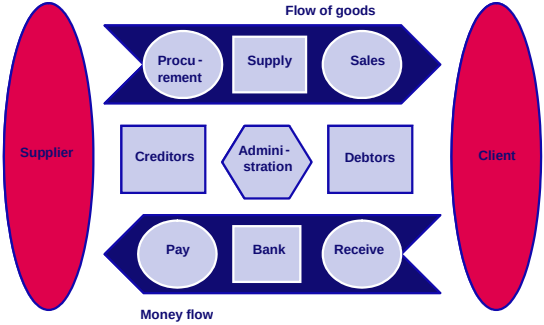
Comments:

A value chain includes everything that contributes to the output. By adding up all of the costs of each activity in a value chain, and subtracting the total from the sale price, an organisation can determine the profit margin on the value chain. Most organisations support from 3 to 15 value chains. Many managers associate value chains with the description provided in Michael Porter's Competitive Advantage (1985).

Value cycle analysis

Technique to schematically represent and analyse the relationship and dependencies between the flow of money and the flow of goods in an organisation.

A graphical example of a simple value cycle is given below:



Value engineering

Examination, using value analysis, of a product or service that has as goal to determine if that product or service can be simplified by removing those components that do not contribute directly to the functionality of that product or service.

Value network

A network of independent entities (organisations) that work together in order to create some economic value, for example, in the form of a service or a product. A value network resembles a value chain, except for the fact that the relationships between the collaborating partners are more complex.

Value Stream Mapping

A Value Stream Map (VSM) is essentially a process model, a schematic mapping of the process. In the VSM, the process is examined from a value perspective. Which activities in the process add value to the customer? Which activities add value to the organization? And which activities do not add any value at all?

Vendor rating

Evaluation of the quality of the delivered goods/services by a supplier based on periodical evaluations given by customers.

Verification

The activity during which is established whether a process, product or measurement complies to requirements that have been previously set.

View

1. A selection of elements from a *model* from a certain *viewpoint*, that addresses a set of related *concerns* of one or more *stakeholders*.

2. A representation of a whole system from the perspective of a related set of concerns [ISO/IEC 42010].

Comments:

A view is often represented with a specific *visualisation*. The composition makes it possible to fulfil the stakeholders' communication needs and nevertheless be precise in meaning.

Examples of views are the overview of the applications and their relationships or of the maintenance costs for each application.

Viewpoint

1. A way of modelling a *system* applicable to a type of *stakeholder* and types of *concern*.

2. See: *Viewpoint specification*

Comments:

A specification of a *viewpoint* describes how a *view* should be made in terms of content (e.g., concepts and relation types), models, analysis and visualisations techniques, relations with *stakeholders*, etc. Different stakeholders have different interests, operate with different concepts, have different views and require different viewpoints. A metaphor explains well the

distinction between viewpoint and view is that of a torch and what one sees using the torch. Simply put, a view is what you see of the *system*, and a *viewpoint* is where you are looking from.

Viewpoint specification

A specification of the conventions for constructing and using a view. A pattern or template from which to develop individual views by establishing the purposes and audience for a view and the techniques for its creation and analysis [ISO/IEC 42010].

Vision

The strategic course the organisation should follow, expressed in terms of long term goals and general principles. It will also explain in which way and to what extent the interest and goals of the important stakeholders are served by the organisation.

Visualisation

Visual representation of a model or part of a model.

Comments:

A visualisation can be a formal graphical notation (a diagram) or a more informal sketch or picture.

Waiting time

The amount of time an activity has to wait until other activities are completed (also called synchronisation losses). In the case of business processes these are places in the process where for a certain reason work must be stopped (and time is wasted) until some resources become available. For example, work must be passed on to another person and there are no workers available to take over that work.

Waste Management

Lean Management is often referred to as Waste Management.

See also: Seven deadly wastes

Web Service

A generally fully automated service, which is delivered to internal or external clients and in which information is automatically exchanged making use of web-related standards, protocols and technologies, such as SOAP, WSDL, BPEL, etc.

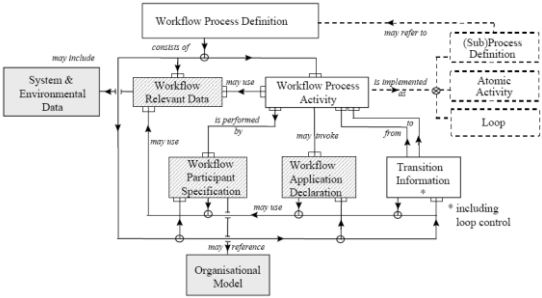
Web Services Business Process Execution Language (WS-BPEL)

Open standard of OASIS for the description of business processes, based on XML. Processes specified in a WS-BPEL-document are specific to SOA and are automated. WS-BPEL specifications can be generated from high level process specifications/models, using appropriate tools.

WfMC Process Definition Meta-Model

Metamodel proposed by the WfMC that identifies the top level entities within the Process Definition (see figure below). A Process Definition is, according to the WfMC, a representation of a business process in a form, which supports automated manipulation, such as modelling, or enactment by a workflow management system.

The process definition consists of a network of activities and their relationships, criteria to indicate the start and termination of the process, and information about the individual activities, such as participants, associated IT applications and data, etc. The WfMC Reference Model includes an interface for the import and export of Process Definitions [WfMC].



'What-if'-analysis

Analysis technique in which the focus lies on the influence a certain model change has on a selected indicator. The analysis is applied twice: once on the original model and once on the changed model.

Work Breakdown Structure (WBS)

The schematic representation of the hierarchical decomposition of a set of activities that have to be executed according to a plan.

Work division rules

Rules that determine for each task profile which competencies an employee must (at least) have in order to be allowed to carry out that task.

Workflow engine

See: *Process engine*

Workflow management (WFM)

The partial or total automation of business processes, which has as result the fact that documents, information and tasks are passed from one resource to another according to certain rules and procedures that are specified in the so-called workflow model.

Workflow Management Coalition (WFMC)

A non-profit, international organisation that consists of workflow management systems suppliers, user organisations, analysts and academic research groups. Workflow Management Coalition (WfMC). For more information check [WfMC].

Workflow management system

System that communicates/passes on electronically to employees work-related tasks. Documents and data that are relevant for the execution of that task are also offered to the respective employee and applications that are necessary to process those documents and data are started automatically. Furthermore, the system controls the succession of operations and the division

of work to people. A workflow management system is used to steer and control processes.

Workflow model

Model of a business process used by a business process engine to control and monitor the execution of a sequence of activities

Workflow reference model

An architectural representation of a workflow management system, which identifies the most important system interfaces. It has been developed by the Workflow Management Coalition.

Work instructions

Description of the operations that have to be carried out in order to complete an activity.

Workload

The number of transactions or requests that a system completes per time unit (for example, the average number of customers that is served per hour). Related to this is the maximum attainable throughput (also called the processing capacity, or in a more technically oriented context such as communication networks, the

bandwidth), which depends on the number of available resources and their capacity.

In the case of processes, the workload can be measured by examining the process flow and the allocation of activities to resources (e.g., actors). This gives insight in the combination of tasks and resources and in the amount of time resources spend to complete these tasks.

Work process

A set of logically related activities, people and means to produce (parts of) products or services.

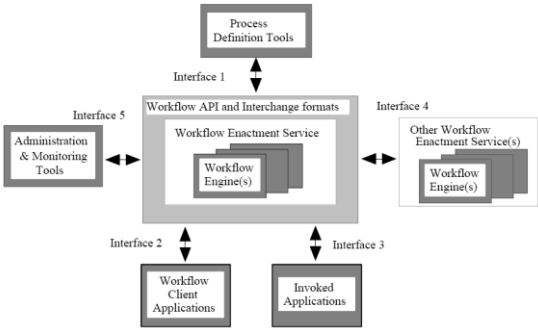
Workflow

The automation of a business process, in whole or part, during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules [WfMC].

Workflow Management Coalition

The Workflow Management Coalition, founded in August 1993, is a non-profit, international organisation of workflow vendors, users and analysts. The Coalition's mission is to promote the use of workflow

through the establishment of standards for software terminology, interoperability and connectivity between workflow products. Consisting of over 100 members, the Coalition has quickly become established as the primary standards body for this rapidly expanding software market. The Coalition has proposed a framework for the establishment of workflow standards. This framework includes five categories of interoperability and communication standards that will allow multiple workflow products to coexist and interoperate within a user's environment. Technical details are included in the white paper titled “The Work of the Coalition” [WfMC].



Workflow Management System

A system that defines, creates and manages the execution of workflows through the use of software, running on one or more workflow engines, which is able to interpret the process definition, interact with workflow participants and, where required, invoke the use of IT tools and applications [WfMC].

Workflow monitoring

The ability to track and report on workflow events during workflow execution [WfMC].

Workflow pattern

A specialised form of a design pattern as defined in the area of software engineering, referring specifically to recurrent problems and proven solutions related to the development of workflow applications in particular, and more broadly, process-oriented applications.

World Wide Web Consortium (W3C)

Standardisation organisation for web-related standards such as SOAP and XML.

XML (Extensible Markup Language)

See: *Extensible Markup Language*

XML Metadata Interchange (XM)

An OMG standard for exchanging metadata information via XML. The most common use of XMI is as an interchange format for UML models, although it can also be used for serialisation of models of other languages (metamodels).

Y

Yellow belt

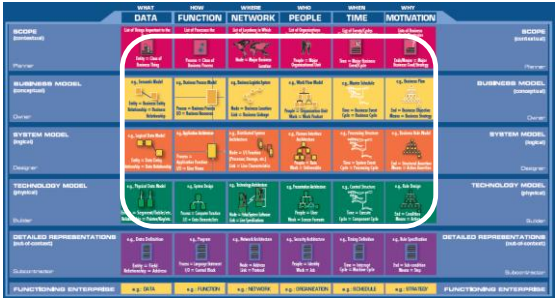
Yellow belts, next to green belts and possibly black belts, fulfill an important role in improvement projects. The yellow belts are employees who are close to the shop floor. They contain crucial, practical knowledge about the job and the process.

Zero-measurement

A measurement done in a start situation, meant to facilitate the ulterior comparison with a new situation.

Zachman framework

The "Framework for Enterprise Architecture", first introduced in 1987 by John Zachman as the "Framework for Information Systems Architecture". The framework as it applies to enterprises is simply a logical structure for classifying and organising the descriptive representations of an enterprise that are significant to the management of the enterprise as well as to the development of the enterprise's systems. It was derived from analogous structures that are found in the older disciplines of architecture, construction and engineering that classify and organise the design deliverables created during the process of designing or producing complex physical products.



The figure above shows the "Framework for Enterprise Architecture", usually known as the Zachman Framework. The Framework essentially depicts the design artefacts that constitute the intersection between the roles in the design process, (i.e., planner, owner, designer, builder and subcontractor) and the product abstractions, that is, *what* (material) it is made of, *how* (process) it works and *where* (geometry) the components are, with respect to each other. The three additional interrogations *who*, *when* and *why* have been translated into additional columns of models that have, respectively, the following semantics: *who* does what work, *when* do things happen and *why* are various choices made.

Some of the Zachman's Framework advantages are:

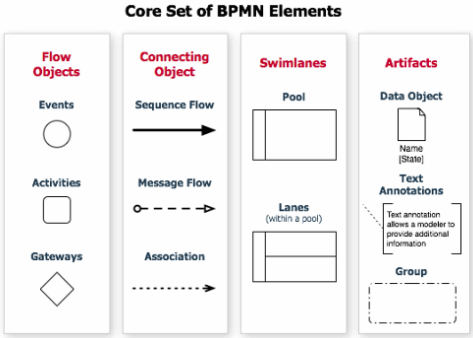
- Simplicity - it is easy to understand: not technical, purely logical.
- Comprehensiveness - it addresses the Enterprise in its entirety.
- Neutrality - it is defined totally independently of tools or methodologies and therefore any it can be used in combination with any tool or any methodology.

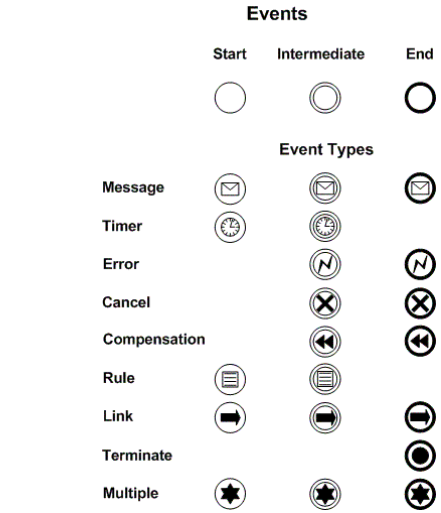
More about the Zachman Framework can be found at the home page of the Zachman Institute for Framework Advancement (ZIFA), http://www.zifa.com.

Business Process Modelling Languages

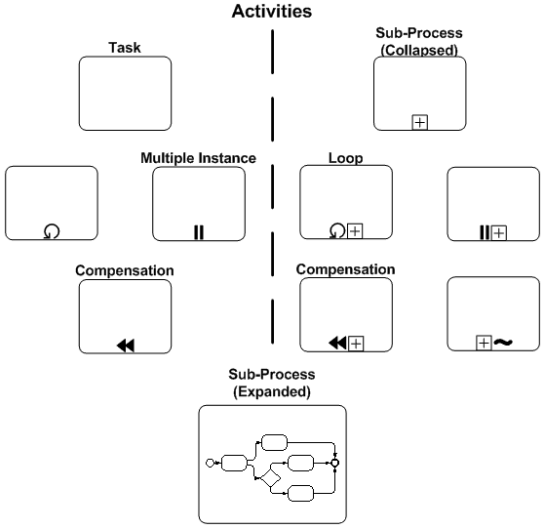
BPMN

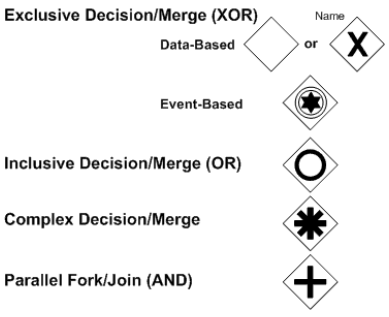
A summary of the BPMN notation is given in the figures below (http://www.bpmn.org/).



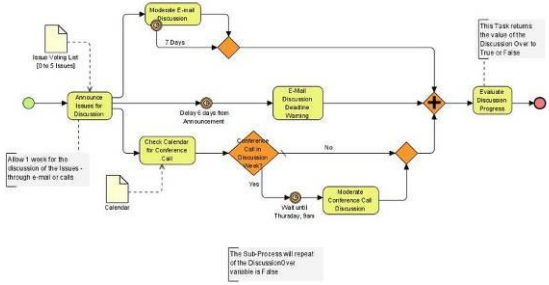

Events
Start
Intermediate
End
Event Types
Message
Timer
Error
Cancel
Compensation
Rule
Link
Terminate
Multiple

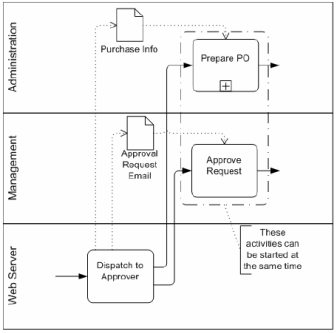

Connections
Sequence Flow
Message Flow
Association
Name, Condition, Code, or Message
Name or Message
Name, Condition, or Code
Name or Default


Activities
Task
Sub-Process
(Collapsed)
Multiple Instance
Loop
Compensation
Compensation
Sub-Process
(Expanded)


Gateways
Exclusive Decision/Merge (XOR)
Name
Data-Based
or
Event-Based
Inclusive Decision/Merge (OR)
Complex Decision/Merge
Parallel Fork/Join (AND)

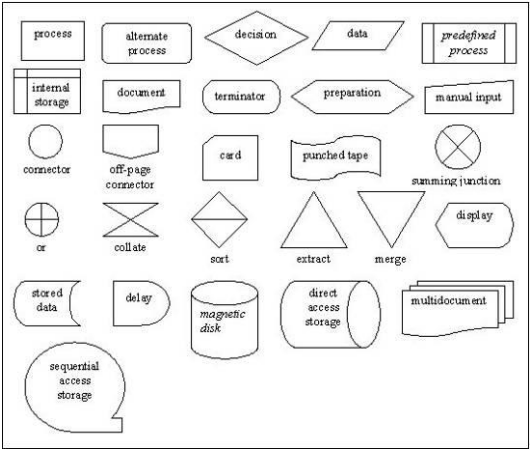
Examples of BPMN models are given below (http://www.squidoo.com/business-process-modeling).



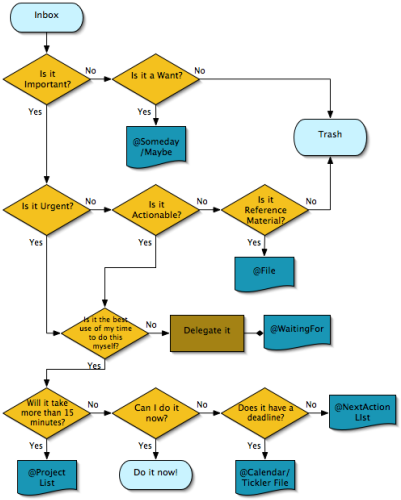


Flowcharts

A summary of the flowcharting notation is given in the figure below.

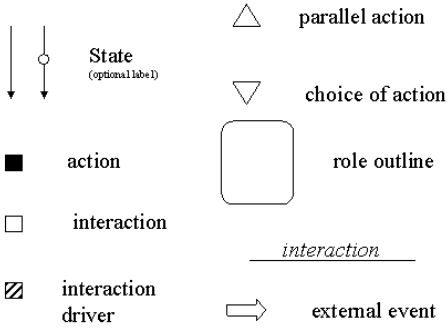


An example of a flowchart is given below.

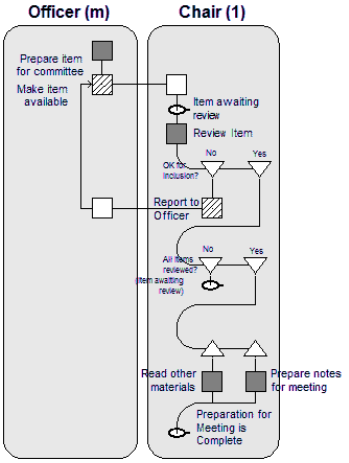

Inbox
Is it Important?
No
Is it a Want?
No
Yes
Yes
@Someday /Maybe
Trash
Is it Urgent?
No
Is it Actionable?
No
Is it Reference Material?
No
Yes
Yes
Yes
@File
Is it the best use of my time to do this myself?
No
Delegate it
@WaitingFor
Yes
Will it take more than 15 minutes?
No
Can I do it now?
No
Does it have a deadline?
No
@NextAction List
Yes
Yes
Yes
@Project List
Do it now!
@Calendar / Tickler File

Role Activity Diagrams (RAD)

A summary of the RAD notation is given in the figure below.

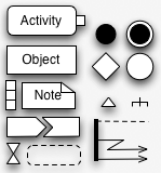


An example of an RAD is given below.

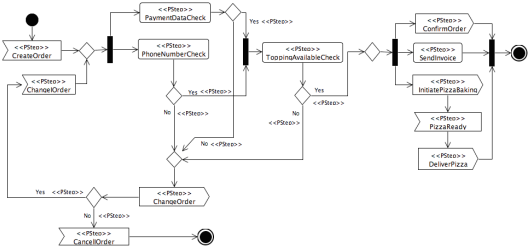

Officer (m)
Chair (1)
Prepare item for committee
Make item available
Item awaiting review
Review Item
No
Yes
OK for inclusion?
Report to Officer
No
Yes
All items reviewed?
Item awaiting review)
Read other materials
Prepare notes for meeting
Preparation for Meeting is Complete

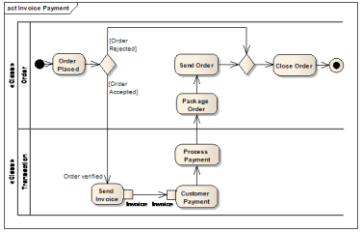
UML Activity Diagrams

A summary of the UML activity diagram notation is given in the figure below.



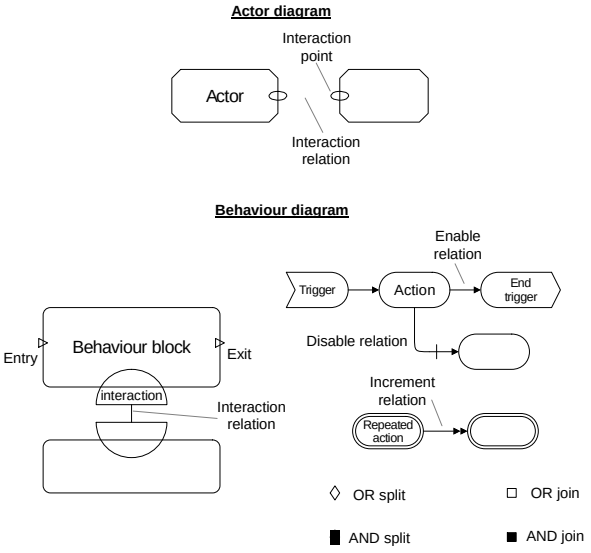
Examples of activity diagrams are given below.



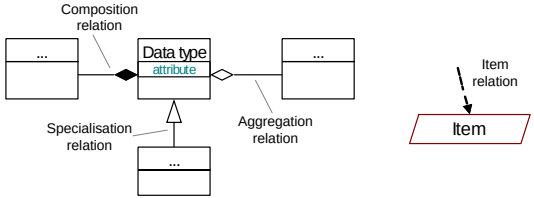


BiZZdesigner modelling language

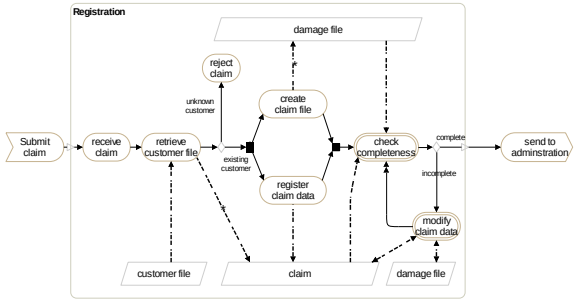
A summary of the BiZZdesigner modelling language is given in the figure below.

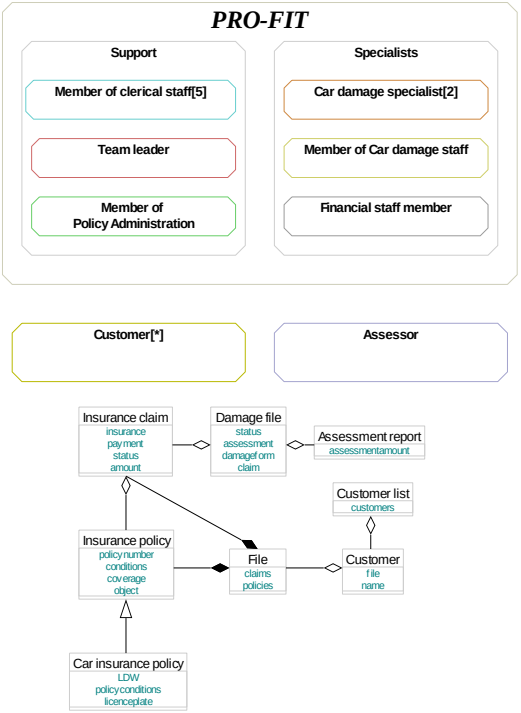


Data type diagram



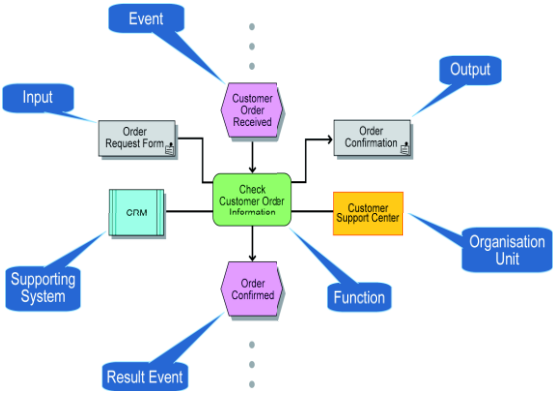
An example of a BiZZdesign model is given below.



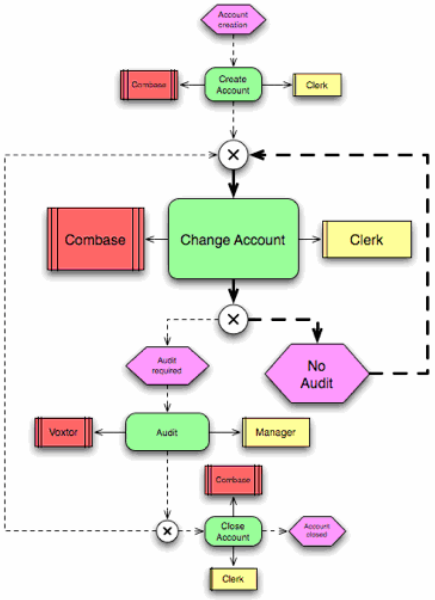

PRO-FIT
Support
Member of clerical staff[5]
Team leader
Member of
Policy Administration
Specialists
Car damage specialist[2]
Member of Car damage staff
Financial staff member
Customer[*]
Assessor
Insurance claim
insurance
payment
status
amount
Damage file
status
assessment
damageform
claim
Assessment report
assessmentamount
Customer list
customers
Insurance policy
policy number
conditions
coverage
object
File
claims
policies
Customer
file
name
Car insurance policy
LDW
policyconditions
licenceplate

ARIS Event Process Chain (EPC) modelling language

A summary of the EPC notation is given in the figure below (wikipedia).



An example of an ARIS EPC is given below.


Account creation
Combase
Create Account
Clerk
Combase
Change Account
Clerk
Audit required
No Audit
Voxtor
Audit
Manager
Combase
Close Account
Account closed
Clerk

Abbreviations

ABC

Activity-based Costing

ABM

Activity-based Management

AO

Administrative Organisation

APM

Application Portfolio Management

BFA

Business function architecture

BO

Back Office

BOB

Best of the best

BP

Business process

BPA

Business Process Automation

BPDM

Business Process Definition Metamodel

BPE

Business Process Engineering

BPEL

Business Process Execution Language

BPEL4WS

Business Process Execution Language for Web Services

BPM

Business Process Management

BPMI

Business Process Management Initiative

BPML

Business Process Modelling Language

BPMN

Business Process Modelling Notation

BPR

Business Process Redesign (Re-engineering)

BSC

Balanced Scorecard

CMM

Capability Maturity Model

CMMI

Capability Maturity Model Integrated

COPAFIJTH

Commerce, Organisation, Personnel, Administration Organisation, Finance, Information, Juridical aspects, Technology, Housing

CRM

Customer Relationship Management

CRUD

Create, Read, Update, Delete

CSF

Critical success factor

DEMO

Design & Engineering Methodology for Organisations

DMAIC

Define, Measure, Analyze, Improve en Control.

DPE

Departmental Process Expert

DPS

Detail process schema

DPU

Defects per Unit

EA

Enterprise architecture

EAI

Enterprise Application Integration

EFQM

European Foundation for Quality Management

EPC

Event Process Chains

ERP

Enterprise Resource Planning

FMEA

Failure Mode and Effect Analysis

FO

Front Office

FS

Functional Specification

FTE

Full Time Equivalent

HACCP

Hazard Analysis Critical Control Points

HPS

Hierarchical Process Schema

IA

Information architecture

IC

Internal Control

IDEF

Integrated Definition

IPO

Input, Process, Output

ISO

International Organisation for Standardisation

ITIL

Information Technology Infrastructure Library

JIT

Just-in-Time

KPI

Key Performance Indicator

KRI

Key Risk Indicator

MBO

Management by Objectives

MCA

Mutual Collaboration Agreement

MCS

Management Control System

MDA

Model Driven Architecture

OASIS

Organisation for the Advancement of Structured Information Standards

OMG

Object Management Group

ORM

1. Operational Risk Management
2. Object Role Modelling

OVA

Overhead Value Analysis

PAM

Process Architecture Model

PDCA

Plan, Do, Check, Act

PI

Performance indicator

PMC

Product-market combination

PRINCE®

PRojects IN Controlled Environments

RADAR

Results, Approach, Deployment, Assessment, Review

RASCI

Responsible, Accountable, Supportive, Consulted, Informed

SCM

Supply Chain Management

SIPOC

Supplier, Input, Process, Output en Customer.

SLA

Service Level Agreement

SMART

Specific, Measurable, Achievable, Relevant and Time-bound

SOA

Service Oriented Architecture

SOX

Sarbanes-Oxley Act

SSC

Shared Service Centre

SWOT

Strengths, Weaknesses, Opportunities, Threats

TP

Third Party

TQM

Total Quality Management

UML

Unified Modelling Language

WBS

Work Breakdown Structure

WFM

Workflow Management

WfMC

Workflow Management Coalition

WOW

Worst of the worst

WS-BPEL

Web Services Business Process Execution Language

XMI

XML Metadata Interchange

XML

Extensible Markup Language

XPDL

XML Process Definition Language

YAWL

Yet Another Workflow Language

Sources

[ArchiMate] www.archimate.org; archimate.telin.nl

[BPTrends] www.bptrends.com

[ISO/IEC 42010] ISO/IEC 42010:2007: Systems and Software Engineering – Recommended practice for architectural description of software-intensive systems

[TOGAF] The Open Group Architecture Framework (TOGAF), Version 9, www.togaf.org

[WfMC] Workflow Management Coalition, www.wfmc.org

[Wikipedia] www.wikipedia.org

Other relevant websites

BPM Forum Netherlands

- www.bpm-forum.org

Business Modelling & Integration Domain Task Force

- http://bmi.omg.org

Novay

- www.novay.nl

Quality Management

- www.efqm.org
- www.ink.nl
- www.kwaliteit.pagina.nl

Process Community

- www.processcommunity.org

SqEME®

- http://www.sqeme.nl/english/default.php

BiZZdesign on Lean Management

- www.BiZZdesign.nl/Lean

Wikipedia

- www.wikipedia.org

Nederlands Lean instituut (Dutch Lean Institute)

- www.leaninstituut.nl

Lean Woordenboek (Lean Dictionary)

- www.leanwoordenboek.nl

Partnernetwerk over Lean innovatie (Partner Network for Lean Innovation)

- www.leaninnovationnetwork.com

Literature

- Berg, H. van den, H. Franken & H. Jonkers (eds.) (2008). *Handboek Business Process Engineering,* Academic Edition version 7, BiZZdesign Academy B.V. Publishers.
- Deming, W.E. (1982). *Out of the Crisis – Quality, Productivity and Competitive Position*, Cambridge University Press.
- Joosten, S.M.M. *et al*. (2002). *Praktijkboek voor Procesarchitecten,* Koninklijke Van Gorcum B.V.
- Juran, J.M. (1988). *Juran's Quality Control Handbook*, 4th Ed., McGraw-Hill.
- Obers, G.J. & K. Achterberg (2008). *Grip op Processen in Organisaties. Analyseren, Ontwerpen en Inrichten van Bedrijfsprocessen (English version 2010)*, Van Haren Publishing B.V
- Zachman, J.A. (1987), "A Framework for Information Systems Architecture", *IBM Systems Journal*, vol. 26, no. 3.
- Peter Matthijssen (2008) - Kwaliteitsverbetering van processen, BiZZdesign; ISBN 9789079240012
- Peter Matthijssen (2011) – Denken in processen, BiZZdesign; ISBN 9789079240098

- A.D. Oosterhoorn (2004) - 111 Instrumenten voor kwaliteitsverbetering, Kluwer; ISBN 9013013317
- Roger T. Burlton (2001) – Business Process Management, BPTrends; ISBN 9780672320637
- John Seddon (2005) – Freedom from Command and Control, Productivity Press, ISBN 9781563273278
- Masaaki Imai (1997) - Gemba KAIZEN, Kluwer; ISBN 9789026725852
- Taiichi Ohno (1988) – Toyota Production System, CRC Press; ISBN 9780915299140