QPR ProcessGuide

Process Management Terms

Version 7.6.1

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1 Introduction

Starting in the early 1980s, western industrialised nations have been in the midst of a change in management culture. This thinking is best described by considering organisational activities as processes; we talk of this as process management.

The goals of process management are not far removed from the general goals of management, which include:

- good economic results
- customer satisfaction
- high productivity
- people satisfaction

The means for achieving these goals in process management differ from those previously used. Whereas cost-efficiency used to be the primary goal, speed and flexibility are now just as important. Instead of ambitious goal striven for by individuals, we focus on organisational processes and the development of team work. In the past, customers were seen as a necessary nuisance, and so were suppliers. These days, however, co-operation and partnership with both customers and suppliers are the keywords.

Perhaps the most important change in management thinking is the abandonment of the previously unchallenged division of labour based on organisational units. Instead of this approach, processes which extend over organisational boundaries are designed with the aim of providing customers better service, eliminating non-value-adding tasks and improving the personnel's understanding of the organisation's strategic goals.

Many organisations have begun programmes for developing management thinking and systems. In many cases, however, the results have not been satisfactory. While there are certainly many reasons for poor results, one possible cause is the vagueness of concepts and terminology. Projects are often started with great enthusiasm, but eventually it becomes evident that a significant part of the organisation does not fully understand the nature of the change. At this stage it is crucial to define the concepts and terms used.

This book aims at helping persons responsible for organisational development tasks to define the concepts and terms used in the process and to relate this information to others.

The range of terms and concepts in management is wide and continuously changing. We have concentrated on terms concerning process management and have omitted a large amount of terminology related to general and strategic management as well as leadership and personnel management. Of these areas, only terminology which has a special association with process management has been included. Furthermore, we have attempted to distinguish between different models of management, such as Business Process Re-engineering or Total Quality Management, and core terms such as customer, product and process.

The concepts and terminology of process management used in this book are based on the most commonly used terms, many of which have been developed primarily in the USA. However, we have also supplied alternatives in cases where terminological confusion exists.

This book is not designed to fulfil the function of a general textbook on the subject, since many already exist. Instead, the reader is directed to the list of literature at the back of the book.

The success of business organisations is based on shared goals and a shared will to achieve these goals. Good intentions are not enough, however; companies still go bankrupt in spite of everyone giving their utmost. What is needed is a management system and a means for supporting people as they work for organisational success. Reaching the top is not achieved by imitation; every organisation must find its own way. Process management provides us with the tools to achieve such a goal.

1.1 To the Reader

Business process management is at present one of the most frequently used concepts for developing a business and increasing profits. Management concepts such as Total Quality Management, Activity Based Management, Business Process Re-engineering and Lean Management are based on analysing and improving business processes.

In many organisation theories, however, the meanings of the terms involved are not clearly defined. This leads to many difficulties in implementing the desired changes. The purpose of this presentation is to promote consistency in the terms and definitions used in the fiels of process management. A further purpose is to assemble and define the basic terms in order that people from different organisations can exchange information more easily. This book is designed to be used by all persons interested in business process management, particularly process owners and those responsible for developing business.

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1.2 Copyright

2 Concepts of Process Management

There are a number of core concepts, management models and tools connected with process management:

- Activity Based Management
- Benchmarking
- Business Process Re-engineering
- Concurrent Engineering
- Lean Management
- Time Based Management
- Total Quality Management

2.1 Activity Based Management

Activity Based Management (ABM) is an approach and a tool based on processes and 'horizontal control' instead of traditional functional organisation. While Activity Based Costing (ABC) has focused on minimizing the drawbacks of traditional auditing, ABM has added features from quality management and other management schools to create a method for improved cost control, which is often used by controllers as a development tool. (Ref 2)

2.2 Benchmarking

Benchmarking is the search for best practices. These best practices are used regardless of whether they are internal or external to one's own company or industry. In every case, the goal is to achieve superior performance. Practices consist of comparing the critical dimensions of a process to those of competitors and industry standards or those of industry leaders. 'World class' and 'leading edge' are terms used for those practices which are close to the top and reputedly internationally competitive, while 'best in class' is reserved for the absolute top, the best known practice. (Ref 4)

2.3 Business Process Re-engineering

The fundamental rethinking and radical redesign of business processes seek to achieve dramatic improvements. hese improvements and changes should be measurable with critical and up-to-date measures of performance, such as cost, quality, service and speed. While several other terms are used interchangeably, Business Process Redesign is the most common of them. The abbreviation BPR is frequently used.

2.4 Concurrent Engineering

The practice of turning marketing concepts into specific products in a short space of time is known as concurrent engineering. It is a systematic approach to the integrated, concurrent design of products and their related processes, including manufacture and support. Tight project management is an essential part of this process. Parallel development and simultaneous task assignments are tools intended to cut down the total throughput time. (Ref 9)

2.5 Lean Management

Lean Management focuses on creating added value for the customer with fewer resources. This is achieved by the use of a flexible and less hierarchical organisation. This approach has been pursued particularly during economic recessions, when multi-layered organisational structures have been attacked as a way of transferring the focus from staff operations to the areas which directly add value

for the customer. The concept of mass customization, which is the ability to deliver customized products at the cost of mass-produced goods, has received much attention in the context of lean management. (Ref 35)

2.6 Supply Chain Management

Supply Chain Management focuses on coordination of the value chain from raw material sources to end-users. The need to streamline of operations, remove unnecessary intermediate stages and activities and facilitate uninterrupted material flow demands considerable integration within the value chain.

2.7 Time Based Management

Time Based Management focuses on time as the critical resource and central performance indicator. Removal of slack time from processes creates accelerated lead times in new product development, in product launches and in operative processes such as order management or delivery. Reduced time spans result in improved quality and reduced costs. (Ref 31)

2.8 Total Quality Management

Total Quality Management (TQM) is the oldest management concept based on processes. TQM has its roots in statistical studies of processes made in the early 1920s. Since then it has evolved into a management philosophy emphasising the importance of understanding customer needs and of continuously improving all activities and products on the basis of those customer needs. For many years Japan has been at the forefront of development in quality management. In Japan, quality management is often known as Total Quality Control (TQC) or Company Wide Quality Control (CWQC). Western TQM is perhaps best exemplified in quality award criteria. (Refs 6, 13, 19)

TQM has produced many practical methods for achieving improvements in quality: Statistical Process Control (SPC, Ref 6), Quality Function Deployment (QFD, Ref 15), Design of Experiments (DOE or Taguchi), Hoshin Planning (or Quality Policy Deployment), Problem Solving, Quality Control Circles (QCC or QC), ISO 9000 Standards, Auditing, Benchmarking, Self-Assessment and Kaitzen (Ref 10), or Continuous Improvement (CI).

3 Glossary

3.1 Glossary of Terms

3.1.1 Activity

An activity is a set of tasks required to produce a particular result or output.

Every process or subprocess consists of a number of activities. Activities are a feature of all processes. They are the tasks required to produce a particular result and, upon being completed, contribute toward the accomplishment of the objectives of a business process. Activities make up the major part of flowcharts. Sometimes the term business activity is used instead.

3.1.2 Business Process

A business process is a set of logically related activities and the resources needed to achieve the required business result.

In contrast to functional definitions, the process perspective clearly focuses on the tasks and activities carried out in an organisation. Moreover, it emphasizes how the work is done, rather than what work is done. Attention is also given to meeting customer needs. A company's entire operation can therefore be described as a collection of business processes, such as fulfilling orders, developing

products, solving customer problems, acquiring new customers, developing manufacturing capabilities, etc. In many cases business processes are cross-functional, cutting horizontally through several functions participating in the process. For example, manufacturing, marketing and product development are all involved in the order fulfilment process. (Refs 7, 8)

3.1.3 Core processes

Core processes are those activities that add value for customers.

Core processes are an essential part of any business and are directly related to serving external customers. They include, for example, the following processes: developing new products, delivering products to customers, managing customer relations, gathering market information and developing hardware and software.

3.1.4 Customer

The customer is the recipient of the process output.

Every process has customers, which means that each process has defined business outcomes, or outputs, and recipients for those outcomes. Customers may be either external or internal to the company. The term stakeholder is also used. The generic stakeholders of a company are the owners, customers, suppliers, employees and society. All stakeholders should be treated like customers. Hence, the most widely defined concept of customer is "A person or group of persons affected directly or indirectly by a product or process".

It should also be remembered that all value adding chains end at the consumer, whose needs are therefore the ultimate source of all business activities. (Ref 13)

3.1.5 Functional organisation

A functional organisation is one with an organisational structure based on departmental specialization.

The standard structure of companies consists of different functions or organisational units, such as manufacturing, marketing, logistics, finance, etc. The control and management of operations is vertical, top-down, as opposed to process structure which is horizontal. Process organisation is arranged according to processes, forming teams. A matrix organisation is organised two-dimensionally: on the one hand, by area or function, and on the other, by product.

3.1.6 Input

Input is the information and material fed into the process.

Input is the output of the supplier. Typically, machines and equipment, money, methods and human skills are not considered inputs but resources, and thus form part of the processes.

3.1.7 Interface

An interface is a common boundary where interaction occurs between two organisations, systems, processes, etc. in a coordinated way (Ela).

Processes usually cross the boundaries between different organisational functions, e.g. the delivery process may cross the boundaries between sales, marketing, manufacturing and logistics. Processes may also extend over organisational boundaries reaching to suppliers and customers.

3.1.8 Key process

A key process is a process which is critical to the success of the organisation.

Improvements should be focused on key processes. A key process may be a core process or a support process. Often there are fewer than 20 key processes in an organisation.

3.1.9 Key success factor

The key success factors are the areas of performance most critical to the success of a process.

Key success factors are used as a basis for deploying process requirements and control throughout the organisation. They include customer-driven quality requirements and operational requirements such as productivity, cycle time, new technology, supplier selection and human skills.

When the term key success factor is used at company level, it refers to the areas of performance most critical to the success of the organisation's strategy. In some cases the expressions like 'Business core issue', 'Key business issue', 'Critical business factor' or 'Key business drivers' may also be used.

3.1.10 Lead time

Lead time is the span of time required to perform a process.

Lead time covers the period of time from the beginning of the first activity to the end of the last activity within a particular activity sequence. Delivery time, which is often called lead time in logistics, refers to the time from the confirmed order to the handover of the product. Throughput time (cycle time) is the time for a product to pass through manufacturing, in other words, the length of one process cycle.

The individual components of lead time can include order preparation time, queue time, move or transportation time, manufacturing time and receiving and inspection time. In practice, the term is often qualified by a preceding term, e.g. manufacturing lead time, procurement lead time, etc. (Ref 17).

3.1.11 Logistics centre

A logistics centre is a focal point for engineering, distribution and related tasks.

In ordinary usage a logistics centre (distribution centre, delivery centre) is a warehouse for the receipt, storage and distribution of goods (Ela). However, the coordination of manufacturing, final assembly, testing, engineering, and delivery is often located at the logistics centre as well.

3.1.12 Management system

The management system co-ordinates and manages the company's activities to meet its business goals.

Management systems encompass both the management of the organisation and the leadership of those working for it.

3.1.13 Network

Generally a whole body of interlinked and interrelated activities which display a network structure. (Ela)

Networks can be either local or regional, either spatially limited or global and capable of spanning

several countries and continents. A business network consists of several interrelated companies.

3.1.14 Order fulfilment process

The order fulfilment process is the process ranging from order-receiving to the physical delivery of goods and services.

This process is a common target for first re-engineering efforts because improved performance can be rapidly observed, easy to measure and connects one firm to another since all firms have an order fulfilment process in some variant. The order fulfilment process includes order receiving, tendering, order handling, delivery, etc. Companies may define several different order fulfilment or delivery processes, such as standard (A process) and customer-specific processes (B and C processes).

In logistics terminology, the delivery process is defined as "the process of delivering the consignment to the consignee at the agreed time and place" (Ela). A customer order is defined as "an order from a customer for a particular product or a number of products". It is often referred to as an 'actual demand' to distinguish it from a forecast demand (Apics).

The decoupling point (depth of penetration of customer order) in the supply chain provides a buffer between different input and output rates (Ela). Five different DP positions representing five basic logistic structures cover most product/market situations.

Distinct product types can be recognised according to previous definitions, including;

- Make-to-stock product
- Assemble-to-order product
- Make-to-order product
- Design-to-order product
- Engineer-to-order

The last two product types are not depicted in the previous figure.

A make-to-stock product is a product that is shipped from the finished goods inventory, 'off the shelf'', and therefore is produced and finished prior to the receipt of a customer order. (Apics)

An assemble-to-order (finish-to-order) product is associated with decoupling point 3 (DP-3) in its manufacturing environment. This type of manufacturing converts lower-level components and raw materials to a predetermined level of manufacture and assembles or configures them for a customer order upon receipt of that order. (Ela).

A make-to-order product is a product that is finished after the receipt of a customer's order. The final product is usually a combination of standard items and custom-designed items to meet the special needs of the customer. Frequently, long lead-time components are planned and produced prior to the order arriving, in an effort to reduce the delivery time to the customer. When options or other sub-assemblies are stocked prior to customer orders arriving, the term 'assemble-to-order' is frequently used (Apics).

A design-to-order product is made when customer specifications require a unique design for a product or service.

Engineer-to-order products have customer specifications requiring unique engineering design or some other significant customization. Each customer order results in a unique set of part numbers, bills of material and routings. (Apics

Business process re-engineering efforts have, in many cases, involved the definition and creation of differentiated delivery processes. These are commonly called A, B and C-processes, according to the degree of standardisation and customer service. These should not be confused or directly compared

with ABC classification.

The A process is a standard delivery process, which is a streamlined process based upon standard features and price lists, with pre-engineered products and methods incorporating low costs and one-way communication. No special design or engineering solution is needed to fulfil the order.

The B process is an intermediary process of standard or non-standard combinations of standard components assembled after a customer order is received. This assembly is made in a logistics centre and includes a three-step process with more specialized logistics services, such as tender-price calculation, logistics planning, etc.

The C process is a customized process meeting special customer requirements for a product or product combination (engineer-to-order, design-to- order) involving quality specification, delivery time, order volume, etc. This requires interactive communication, and the process often extends beyond divisional and company borders to involve component producers.

3.1.15 Performance

Performance is the entity's capability of achieving the desired results.

In technical terms, process capability is often defined as requirements vs. process output (process capability index, Cp). The less variation in the process, the better the capability of the process. Note, though, that if the requirement is incorrectly specified, this type of capability has no great benefit. A process capability index is defined as the relationship between customerrequirements (tolerance) and process output deviation (Cp = tolerance/6 x standard deviation).

The capability of a process is related to its enabling factors and approaches, such as materials and information, methods and procedures, resources like time, money, people and human skills, equipment and machines, environment and circumstances. That said, the actual performance is inevitably linked to the determination and creativity of the people involved in deploying the best approaches through-out the process. The organisation's competitiveness is one of the desired external results of performance.

3.1.16 Performance measurement

Performance measurement uses measures and indicators to assess the realisation of the processes.

Measurement of processes is a complex task requiring both direct and indirect measures. All measures and indicators concern measurement related to performance. When performance can be measured directly, such as with cycle time and on-time delivery, the term 'measure' is used. The term 'indicator' is used when the overall performance can not be evaluated in terms of one type of measurement but, instead, two or more measurements are used to provide ('indicate') a more complete picture.

The organisation's overall performance is often measured in terms of four basic performance areas: financial, productivity, customer and personnel.

A complication in the measurement is that the present control system is usually based on functions, making inter-functional measurement by process difficult. It should be pointed out that since business processes are cross-functional (i.e. including several functions and affecting others too), most initial performance indicators are inappropriate.

Process performance can be measured in three dimensions: efficiency, effectiveness and adaptability. Efficiency is generally a measure (as a percentage) of the output to the standard output expected (APICS).

Effectiveness refers to the relation of output to input. Adaptability refers to the capability of the process to react and anticipate changes in the environment. (Ref 18)

3.1.17 Pre-engineering

The function of carrying out the engineering design of products typically before a customer order is received using past design records.

Pre-engineering includes the definition of a product, modules, documentation, characteristics and connected services before manufacturing. The result is often a modular-based product assembled according to a customer order.

3.1.18 Process description

A process description is a detailed description of one process.

This includes all the most critical activities, such as resources used in the process, personnel, methods and tools, output of the process or environment description. A process description also includes flow chart of the main activities of the process. (Ref 8).

3.1.19 Process flow-chart

A process flow chart is a graphical description of one process, its activities and related personnel, information flows, and inputs and outputs.

The term flow chart is sometimes replaced by the term road map.

3.1.20 Process manual

A process manual comprises the process description and all other documentation related to a process.

A process manual consists of the process description, with detailed presentations of information flows, tools, instructions and policies.

3.1.21 Process map

A process map contains at the business or company level a graphical description and presentation of all the processes in the organisation.

3.1.22 Process owner

A process owner is the person or group responsible for the process approach.

The problem with this is that there is often no particular person responsible for a process, as many processes have not specifically been designed, but rather have evolved over time. The process owner is responsible for design and often the execution of the process and the fulfilment of customer needs. The owner is finally accountable for the effectiveness and efficiency of the process. The core team is the group responsible for developing the process and supporting the process owner in its development task.

3.1.23 Product

The product is the outcome of a process delivered to the customer.

The product is a solution to a customer's problem. Fundamentally, the nature of a product represents service given to the customer. This service may include goods. The service also concerns the interaction between the supplier and the customer, which may be called the moment of truth. Each process may have several kinds of outcome, such as internal products (e.g. plans, reports), end products (delivered to an external customer) or by-products (waste, unintended impacts like noise or other disturbances).

Often products form a product family or a product group. The grouping could be based on production or product technology, the use of the product or the market segment.

3.1.24 Product development process

The product development process transforms market needs and technical possibilities into saleable products.

Typically, this may include activities such as market research, market need assessment, product business plans, technical research, application research, concept design, product design, process design, product launch, production run-up and improvements to existing products. Also very important are reviews and testing done during the process. The output of the product development process may be product descriptions and structures and capabilities for marketing and delivering the products. See also concurrent engineering.

3.1.25 Project

A specific and clearly demonstrable set of activities and dedicated resources aimed at achieving a certain non-recurrent goal in set time.

The project must be attained within a certain budget and certain work specifications must be followed, typically agreed upon in advance, regardless of the degree of detail. The project can also be a unique product or system which has been designed, manufactured and/or installed according to the unique specifications of a customer (Ela). A project represents a one-time execution of a process.

3.1.26 Quality

Quality is the totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs.

Quality has two meanings: fitness for use and conformance with requirements. Related to conformance, statistical quality means that the less variation the characteristic has from its nominal value, the better the quality is.

In some cases, quality can be measured as customer satisfaction. In terms of management, quality is equivalent to competitiveness.

Taguchi defines quality as the loss a product causes to society once it has been supplied from the producer. (Ref 6, 13).

3.1.27 Requirement

A requirement is the expression of needs or expectations, or their translation into a set of quantitatively or qualitatively stated characteristics, of the entity to enable its realisation and examination.

It is crucial that the product requirements fully reflect the needs and expectations of the customer. In many cases the requirements are stated in the contract and are called specifications. In addition, the requirements are implied by the common practices of the industry. The requirements of society are obligations resulting from laws and regulations, rules and codes, statutes and other obligations.

Needs are based on human needs, e.g. physiological (food, warmth), security, belonging and love, esteem and self-actualisation needs. Often the need is stated as something that allows one to achieve a given objective: "I want to work in a good profession, therefore I need education".

In terms of product development, it is useful to understand how or for what purpose the customer uses a product. In this context, a need is linked to usefulness and product's benefit. Expectations are related to customer desires and image of the product.

Requirements are typically set out in an order, contract or work description, either as a measure (e.g. weight), indicator (e.g. speed, work time) or characteristic (e.g. colour, function).

3.1.28 Role

The person who performs the activity in the process is identified by a role.

Some roles can be found in the organisational chart, such as manufacturing manager, marketing manager or supervisor. In many cases, the role only indicates the area of responsibility for performing certain activities. In the sales process, for example, there is a responsibility for negotiating agreements; this is done by a person with the role of 'salesman'. Any person with the necessary qualifications can be appointed to the salesman position and begin his duties according to the process description.

3.1.29 Supplier

A supplier provides the input to the process.

The supplier is one of the stakeholders in the process and should be treated like a customer in order to get the best results in the long run.

3.1.30 Support process

The support process enables core processes to operate.

Support processes commonly have only internal customers and they perform supporting activities for the core processes. These are usually administrative activities and therefore not directly related to external customers.

3.1.31 Task

The jobs performed in a process.

Each activity is comprised of a number of tasks which form the very smallest, 'micro' level in the process. Typically, tasks are performed by an individual or by small teams. The job description or job design provides a formal statement of duties, qualifications and responsibilities associated with a particular job (Apics).

3.1.32 Team

A team is a group of people formed to achieve a common objective.

In many cases the purpose in forming and training teams is to improve an organisation's flexibility and responsiveness to customer needs. Typically, the team is a rather small group of people, ranging from 5 to 15 individuals. They have complementary skills and are committed to common goals which they all feel responsible for achieving. A team organised to run a process is a process team (see process owner). A team can be a permanent organisational work unit, e.g. a management team, natural work team or work cell. It also can be organised to perform a special task, such as for specific problem solving or to fulfil a simple project. (Ref 29)

3.1.33 Tool

A tool is an aid to accomplish a task.

Traditionally, tools are connected with physical work undertaken by equipment and machines. Today we use computers and software as tools. In the area of 'quality work' there are well-known problem solving tools, such as 'Seven quality tools' and the newer 'Seven management and planning tools'. (Ref 2)

3.1.34 Value added

Value added is the increase of utility recognised by a customer.

The actual increase of utility produced by a process as seen by the customer. The goal of each process is to create added value for the customer, to provide more useful and effective goods and services.

In current manufacturing terms, it is the contribution made by an operation or a plant to the final usefulness and value of a product as seen by the customer (APICS).

3.2 How to use the glossary?

The aim of this book is to help those responsible for process management to select the appropriate terms and concepts. This glossary can help in defining the vocabulary used within a company, as well as standardising internally the precise meaning of each term, thereby supporting the development of the company's processes. In part, this glossary aims at consistency in the use of terminology, in order to facilitate information exchange between organisations.

The terms, with their definitions, are presented in alphabetical order, each being followed by a description. The primary terms are explained in detail, with cross-references to other terms where appropriate. If the definition comes directly from a glossary such as APICS or ELA, a reference is given to that effect.

At the end of the book a list of further reading is provided. We recommend that the reader becomes

acquainted with these.

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