Process Management Governance and Methodology Guidelines
BPM concepts and facilitating techniques

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EXECUTIVE SUMMARY

This governance document materializes the discipline, methods and tools agreed to carry on with the mission objectives.

The core of the activities is centered around the listing, assessment, design and publication of business processes.

In a fist instance, knowing that modelling requires strict definitions to collaborate with Process Owners, we agree on the exploited levels for diagramming, modelled objects and obvious process characteristics.

Process characteristics are extremely important for

• A reliable exchange of information
• A clear framing of process and, levels of descriptions, goal clarity and therefore meaningful KPIs.
• The avoidance of mixing process concepts with functions and use cases
• The wise usage of one of the essential process features: the cross-functionality

Secondly, regarding the selected notation, it has been agreed that BPMN.2.0 is the notation standard.

The tool used to model the processes is ARIS 9.0.

Then, the process assessment work is highly depending on the quality of information provided by Process Owners and people executing these processes. It is therefore mandatory to have access to the appropriate people during process analysis phases.

Finally, in case a possible improvement can be implemented rapidly, it is recommended to have a clear change management process. This latest part is not currently covered in this document. Hopefully, this document can evolve further with the detected needs of the organization.
1. INTRODUCTION

1.1 Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>BPD</td>
<td>Business Process Discovery</td>
</tr>
<tr>
<td>BPM</td>
<td>Business Process <strong>Management</strong></td>
</tr>
<tr>
<td>BPM</td>
<td>Business Process <strong>Modelling</strong></td>
</tr>
<tr>
<td>BPM</td>
<td>Business Process <strong>Mapping</strong></td>
</tr>
<tr>
<td>Business Process Mapping</td>
<td>Business Process Mapping is an alternative expression for process modelling, usually indicating a high level view on the business architecture. It could simply mean the process of creation high level process 'maps', such as a value-added chain diagrams.</td>
</tr>
<tr>
<td>Business Process Management</td>
<td>Business Process Management is a set of processes that help organizations to optimize their business performance. It is a systematic approach to improve an organization's business processes. BPM activities seek to make business processes more effective, more efficient, and more capable of adapting to an ever-changing environment.</td>
</tr>
<tr>
<td>BPMS</td>
<td>Business Process Management System or Suite</td>
</tr>
<tr>
<td>BSC</td>
<td>Balanced Scorecard</td>
</tr>
<tr>
<td>IS</td>
<td>Information System</td>
</tr>
<tr>
<td>Kaizen</td>
<td>Kaizen is the practice of continuous improvement. Kaizen was originally introduced to the West by Masaaki Imai in his book Kaizen: The Key to Japan’s Competitive Success in 1986. Today Kaizen is recognized worldwide as an important pillar of an organization’s long-term competitive strategy. Kaizen means everyone involved in making improvements. While the majority of changes may be small, the greatest impact may be kaizens that are led by senior management as transformational projects, or by cross-functional teams</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
</tr>
<tr>
<td>OMG</td>
<td>Object Management Group</td>
</tr>
<tr>
<td>PDCA</td>
<td>Plan Do Check Act (Deming’s continuous improvement cycle)</td>
</tr>
</tbody>
</table>

“The first step in gaining control over an organization is to know and understand the basic processes.”

*(Taylor, 1911; Deming, 1982; Juran, 1988)*

1.2 Document Overview

PART I: Business Process Modelling Key Concepts

introduction to the key concepts of BPM.

We explain what is a business process

PART II: BPM Framework and Models Repository

This part gives the notation guidelines and rules to be applied when designing process diagrams. Guidelines are flexible but require discipline for each level of description (Process House & Process Room, Process Hierarchy [Optional] and Process Flow).

The notation refers to BPMN 2.0 for the Process Flow. Higher level diagrams are shaped with a limited number of artifacts to obtain a helicopter view of Value Chains in the organization.

The last level (Procedure) describes the process with common language including specific dimensions for the execution of a human-centric process or an automated process (IT). We talk about user activity or IT service.

PART III: Business Process Management Method

This part covers the systematic approach to gather all necessary information to document the Processes, like roles, responsibilities and resources, workshop organization, environment and objectives.

PART IV: Business Process Capability Execution

This part provides a basic communication plan and a process selection method to prioritize processes to be improved.

It is essential to communicate findings from the BPMM to implement quick wins and start improving your processes. Therefore, after having validated the models with the Process Owners, the goal is to apply agreed improvements as quick as possible. As some processes rely on technology, the complete set of improvement initiatives might be postponed to a later stage.

We introduce the BPCE with simple methods to focus on processes which are critical in terms of product and service provided to the customer. The objective is to feed a backlog of initiatives which induce an action plan bringing value added for an organization.

1.3 DOCUMENT OBJECTIVE
This document is designed to support the initiative of directors, senior management, operations, support and IT staff in implementing, executing and controlling business capabilities that fit with the Business Vision and drivers of Operations, as well as possible other supporting processes.

“Capture, document and optimize business and IT processes.”

This document aims at giving all necessary governance principles from the identification of a process through workshops, its documentation in a model repository and possible improvement until its execution and control to reach the objective of the responsible teams.

To do so, we operate a BPM Capability Framework (Figure 1), which is reflected in the structure of the document itself.

This document intends to be exhaustive; nevertheless, we consider that the approach can be adapted as, additional information needs might emerge during the analysis phase. Therefore, we intend to cover the applicable method for the majority of cases.
1.4 Governance Fundamentals

Some of the most fundamental principles for BPM Governance state that:

- The organization in general and the management team in special needs to acquire a common view and a shared understanding of the highest level process model for the enterprise, viewed from the business user’s perspective.
- The high level process model must explicitly address the need for cross-functional collaboration for the organization’s end-to-end business processes.
- Process performance must be measured from both the customer’s and the organization’s point of view.
- The organization needs to have a plan in place that outlines the top priorities for process improvement based on the organization’s strategy.
- The leadership team must put the right enablers in place to ensure that Information Technology can fulfil its role as powerful catalyst for organizational agility.
- Agreeing on common corporate process governance rules it is paramount to achieve coherence of cross-department processes and to facilitate the convergence of supporting information systems.
2. **BUSINESS PROCESS MODELLING KEY CONCEPTS**

2.1 **Business Process Characteristics**

2.1.1 **Process Definition**
A business process is a set of coordinated activities, initiated in response to an event, conducted by both people and equipment, in order to achieve a specific result for the customer of the process.

2.1.2 **A process is not a function**
Perhaps the most common error in defining business processes is to mistake a function for a business process. We define a function as an occupation or department that concentrates skills. A function is a kind of work, or a field, which typically involves similar skills and tools, and has its own language. Customer service, research, engineering, manufacturing, logistics, marketing, sales, human resources, finance, IT, shipping, billing, and accounting are all functions, not business processes. A process can easily involve multiple functions.

*Don’t mix Business Process with function because differentiating processes from functions is a paramount.*

2.1.3 **Core and supporting process**
Every process has a customer expecting the primary result that the process delivers. Obviously, customers must be identified so we can obtain their assessment, and ensure that the process design meets their expectations. Another reason to focus on the customer is that in many processes, there is no overall responsibility – no one in the organization makes sure the process is completed. So we must focus on the customer because the customer is the glue that holds the process together, and must retrigger the process to move it along (example: customer claim introduced after having received defect product).

As mentioned earlier, processes that serve external customers are typically why the business exists, so they are often referred to as core processes.

**Core process:** We can distinguish processes depending on whether the customer of the process is internal or external to the organization. Processes that serve external customers are typically why the business exists, so they are often referred to as core processes.

**Support process:** These processes serve internal customers and can often be subdivided into technical supporting and social supporting processes. Among the social supporting processes, we can find processes that provide or enhance people, like Recruitment, Training, and Provide Employee Benefits.

*Don’t mix Core process mapping with supporting process activities, otherwise you run a risk of confusion.*

2.1.4 **Predictable output**

**Unstructured processes** - every instance of the process can be different from another based on the environment, the content and the skills of the people involved. These are always human processes. These processes may have a framework or guideline driving the process, but only as a recommendation.
Unstructured processes are often referred to as knowledge processes (analyze, explore, search,...).

**Structured processes** - a rigorously defined process with an end-to-end model, that takes into account all the process instance permutations. No process instance can stray from process model, just like structured data - there is a specific data model associated with the data - and the data cannot stray from that model - and if it does, the data is invalid.

**Semi-structured processes** - these are processes in which a portion of the process is structured, and sometimes unstructured processes are invoked (during exceptions, or when the model doesn’t hold).

Modelling business processes can be applied for the second and third group but quite rarely in the traditional way for the first group.

The difference between the 3 types is based on the 2 following concepts:

**Repeatable**: Depending on how easily repeatable business processes are, they will generate a predictable output. The more knowledge and skills are determinant and the less structured constraints like IT systems and data are invoked, the less predictable will be the output.

**Automation**: A task could be totally manual, however nowadays almost all processes are at least partially automated and, within some extend be completely automated like the ones going STP (straight-through-processing).

In the latest case, the detection of a particular event (signal) might trigger a fully automated process, entirely supported by a system/application.

### 2.1.5 Measurable

We must be able to measure business processes in whatever way is important to the stakeholders.

- Customers may care about the effort they have to invest and the total time until they receive the result.
- Organization’s performers may care more about training time or the impact on their own productivity statistics.
- The owner or manager will want to track cost, overall customer satisfaction, and other variables. A well-defined and well-designed business process must satisfy the demands of all stakeholders.

Here is a summary of metrics that we might want to use to control a process execution.
Table 1 Summary of process execution metrics

<table>
<thead>
<tr>
<th>Execution Time</th>
<th>Waiting Time</th>
<th>Involvement</th>
<th>Efficiency</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle Time</td>
<td>Idle</td>
<td>People</td>
<td>Scrap</td>
<td>Goldratt's true cost</td>
</tr>
<tr>
<td>Work Time</td>
<td>Transit</td>
<td>Department</td>
<td>Rework</td>
<td>Cost per execution</td>
</tr>
<tr>
<td>Time Worked</td>
<td>Queue</td>
<td>Handoff (relay or transmission)</td>
<td>Defect per type</td>
<td>Cost of defects</td>
</tr>
<tr>
<td>Setup</td>
<td>Job classification/family</td>
<td>Errors</td>
<td>Fixed vs. Variable Costs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Languages</td>
<td>Iterations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Countries/Culture</td>
<td>Customer contacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Whatever else</td>
<td>Complaints</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compliments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Cycle Time is the most important time notion and can be illustrated as follows:

- **Cycle Time**: The total elapsed time, end to end, from the time the cycle starts or is triggered until the cycle completes with all results accomplished. It is the time measure most obvious and relevant to the customer. Cycle time is used in differentiating total duration of a process from its run time.

- **Work Time**: The time the process is actually being worked on; if all other non-productive time could be eliminated, cycle time and work time would be equal.

- **Time Worked**: It counts the actual work hours of work expended on the process; sometimes more than one person is working on the process at a time. This measure would be the total hours paid for if workers are the resource being measured. You might also want to measure peaks and valleys through the calendar cycle (days, week, month, year) to assess seasonal variations and detect interesting patterns.

- **Transit Time**: The time spent on transit between steps.

- **Queue Time**: The time an item is lined up before a critical or bottleneck resource. The work item is ready to go on, but is waiting for the resource for the next step to get in.

- **Setup Time**: The time required for a resource to switch from one type of task to another.

- **Goldratt’s true cost**: If a little non-expansive issue is preventing a critical process from running, the cost of that idleness could be millions of euros, not cents. To have an idea, we grab at least a rough measure of the cost per execution, and the cost of defect via scrap and rework.
Cycle Time Definition

\[ CycleTime = \frac{WorkInProgress}{Output \ per \ Day} = \frac{8}{2} = 4 \ days \]

Figure 2 Cycle Time Definition
2.2 Business Process Modelling (BPM)

BPM concerns the documentation of a business process using a combination of text and graphical notation. Business process design is the method by which an organization understands and defines the business activities that enable the functions. Don’t mix business processes and functions.

Process design is concerned with designing a business’ processes to ensure that they are optimized, effective, meet customer requirements, and support and sustain organizational development and growth. A well-designed process will improve efficiency and deliver greater productivity.

The most common initiatives behind business process design projects are:

- Customer and supply chain management
- Operational performance improvement
- Business process integration and automation
- Cost reduction
- New business opportunities.

From any Business Process Modelling exercise, some immediate benefits can always be derived in the areas of ability to capture key "How To" process knowledge, preservation of work experience / protection against employee knowledge loss, standardization / optimization of work activities and cost savings on training. Different actors in the organization will perceive specific benefits such as:

The Senior Management
- Better Overview of What’s Happening - Better Way to Plan for Change
- Better Way to Assign Responsibilities
- Better Way to check alignment of Organization to Strategy

The Middle Management (Including IT Managers)
- Better Overview of What’s Happening
- Better Way to Plan for Change
- Clearer Priorities
- Better Way to Assign Responsibilities
- Easy way to spot duplications and non-value added activities

The Supervisors and Change Specialists
- Clearer Priorities
- Better Understanding of Task
- Better Way of Measuring Results
3. BPM FRAMEWORK AND MODELS REPOSITORY

3.1 Information Collection and Design Proposal

3.1.1 Framing the process

Defining a true business process and articulating it in a way that virtually eliminates misunderstanding are “framing the process”. It’s really just another way of saying “document the scope of the process”. The components of this scope statement or process frame are:

- Process name in verb-noun function
- Event that triggers the business process
- Result achieved by the process
- Customer that receives the result
- Other stakeholders and the result(s) they expect
- About five to seven major activities or milestones within the process
- Actors with a role in the process
- Mechanisms (systems, forms, equipment, etc.) that support the process
- Process timing and frequency
- Related (but out-of-scope) process depicted on an overall process map.

3.1.2 Business Process Assessment

Although a process is defined by a set of activities/tasks, there is more than that, specifically the important concept of enablers.

An **Enabler** is a factor that helps a process to achieve its intended results and meet performance targets within the applicable constraints. The two that we are more concerned with are workflow design and IT support, but the framework employed here includes a total of six, as illustrated in the next Figure:

![Figure 3 Process Enablers](image-url)
**Workflow Design**

The process workflow design is the work plan for responding to an event. It shows the sequence of steps, decisions, and handoffs carried out by the process's actors between the initial event and the final result.

**Information Technology**

IT includes systems, information, computers and other devices, telecommunications equipment, and the network they comprise. Our focus is on information systems – applications and databases that perform specific functions, and that are managed and referred to as a whole, such as the personnel system or the purchasing system. Information systems enable a process by automating or supporting steps, capturing or presenting information or managing and expediting the workflow. We can also break down systems into manageable components, pursuing specific objectives.

**Motivation and Measurement**

Motivation and measurement encompass the explicit and implicit reward systems of the organization. Their concern is how people, organizations and processes are measured and assessed, and the associated consequences – reward and penalty. Experience shows that people do what they are measured on, and if the measures do not align with the goals of a redesigned process, failure is virtually certain.

**Human Resources**

The HR enabler covers the knowledge, skills, and experience of the workforce, training, organizational structure, job definitions, and so on. A process requires the right people in the right job with the right skills.

**Policies and Rules**

It includes the rules and policies established by the company to guide or constraint business processes, as well as applicable laws and regulations. When a policy, such as “any purchase over 500€ requires approval from a vice-president”, it has a substantial impact. In practice, many processes include work to enforce rules or regulation that are obsolete, contradictory, or overly complex.

**Facilities or Other**

Facilities are the workplace design and physical infrastructure such as equipment, furniture, lighting, air quality, and ambient noise. There is a growing trend to recognize the importance of facilities as enablers to effectiveness, productivity, and well-being. This may not be of concern in your process, and might be replaced by other, more relevant, enablers.

All too commonly, we see new processes with a well-designed workflow and supporting IS fail because other enablers, especially motivation and measurement and HR, were not adequately considered.

The **Process Definition Scoring** provides useful information for the selection of a process improvement initiative. The idea behind is to give priority to quick-wins over with high customer-value impact over overly-complex initiative with limited visible impact on the customer or provided service quality.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Scoring influence</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>↘</td>
<td>For Business processes, like for many other things, Complexity is generally used to characterize something with many parts where those parts interact with each other in multiple ways. Business processes have an inherent complexity which if not controlled can keep on increasing with time, thus making the processes error-prone, difficult to understand and maintain. If a process scores a high complexity level, we have a doubt that it is well defined and, therefore understood. Therefore, a high complexity influences negatively the overall Definition score.</td>
</tr>
<tr>
<td>Criticality</td>
<td>↗</td>
<td>A Business process is critical to an organization when, its inability to work properly has a dramatic impact on the life of the organization. When such a process breaks down, it can eventually provoke dramatic revenue losses or closing operations.</td>
</tr>
<tr>
<td>Frequency</td>
<td>↗</td>
<td>A Business process deserves higher attention when its usage frequency increases. Low frequency processes can be critical but, usually produce more predictable output, due to a lower volatility of environment and better preparation.</td>
</tr>
<tr>
<td>Automation</td>
<td>↘</td>
<td>A process with a high automation level gives normally little room for improvement. We normally expect this process to be well structured, close to 100% repeatable by the machine and well under control. The higher is the automation, the less interesting it is to give a high priority in an improvement project.</td>
</tr>
<tr>
<td>(External) Customer impact</td>
<td>↗</td>
<td>A process has great chance of presenting a visible impact on a customer, when its performance might change the life of the customer. We can refer to the Kano model, described later to gauge the features of a customer service that really influences the satisfaction of a customer and brings value. And we are really interested in solving the problems first when they relate to the satisfaction of the customer (Voice Of the Customer).</td>
</tr>
<tr>
<td>Service Quality Impact</td>
<td>↗</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Providing quality of service is essential and a service can be addressed to internal and external customer. “Quality of service” is isolated from “Customer Impact”, simply because the Voice Of the (external) Customer will consider only visible marketable services with more than the qualitative dimension; e.g. speed and frequency can be more important to the external customer satisfaction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Service Quality Impact” concerns all services provided by the organization to external and internal customer.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Repeatability</th>
<th>↘</th>
</tr>
</thead>
<tbody>
<tr>
<td>A process with low deviation from its benchmark is a deniable candidate for an improvement project, even if it presents a low level of automation. It can nevertheless be interesting to understand why it can be so well repeated, despite the limited use of information systems.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Defect Definition</th>
<th>↘</th>
</tr>
</thead>
<tbody>
<tr>
<td>The identification of defect dimensions is essential to convey the appropriate risks of failures. Not knowing the possible defects means having a blurred idea of root-causes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process metrics availability</th>
<th>↘</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can we measure the process and do we have documented metrics? If not, then the process might either be difficult to measure (poorly defined) or not in control.</td>
<td></td>
</tr>
</tbody>
</table>
3.2 As-Is Analysis

3.2.1 The SIPOC Model

A SIPOC approach, as described in the following figure, helps understanding the importance in identifying different dimensions, from the provider of inputs to the recipient of the output of the described process.

![SIPOC Diagram](image)

**Figure 4 SIPOC - Understanding a process**

3.2.2 Voice of the customer

It is important to have a customer centric approach to give priority to the process improvement projects that are the most business critical.

In a first step, we class the activities as being either:

**Value Added (VA)** - Activities that transform or shape a product or service towards that which is sold to a customer

OR

**Non-Value Added (NVA)** - Activities that take time, resources or space, but do not add to the value of the product or service itself.

NVA must be minimized as it adds cost without adding value.

Then using various techniques, like the Kano model, we can determine what we really need as an improvement to raise the satisfaction of the customer and improve these elements or feature of service in priority.
3.3 **Root cause Analysis**

This is the first step that is done in the continuous cycle of process improvement. It is concerned with the analysis of a process, i.e. the definition of the process boundaries and a (visual) representation of the process (mostly done in a process flow diagram that shows all activities and their interrelationships).

Finding the root causes of problems that and analyzing the potential improvement areas of the process are also included in Process analysis.

For root-cause analysis, we often use two tools:

3.3.1 **The Fishbone diagram**

To perform root-cause analysis, the fishbone will help to visually display the many potential causes for a specific problem or effect. It is particularly useful in a group setting and for situations in which little quantitative data is available for analysis.

![Fishbone Diagram](image)

**Figure 5 Fishbone Diagram**

3.3.2 **The DOE (design of experiments)**

The design of experiments (or experimental design) is the design of any task that aims to describe or explain the variation of information under conditions that are hypothesized to reflect the variation.

In its simplest form, an experiment aims at predicting the outcome by introducing a change of the preconditions, which is reflected in a variable called the predictor. The change in the predictor is generally hypothesized to result in a change in the second variable, hence called the outcome variable. Experimental design involves not only the selection of suitable predictors and outcomes, but planning the delivery of the experiment under statistically optimal conditions given the constraints of available resources.

Main concerns in experimental design include the establishment of validity, reliability, and replicability. For example, these concerns can be partially
addressed by carefully choosing the predictor, reducing the risk of measurement error, and ensuring that the documentation of the method is sufficiently detailed. Related concerns include achieving appropriate levels of statistical power and sensitivity.

Correctly designed experiments advance knowledge in the natural and social sciences and engineering. Other applications include marketing and policy making.

As our aim is not to get significant statistically proven experiment, we limit the tool to the use of a simple P-diagram being naturally available through designed workflow information.

![P-Diagram](image)

**Figure 6 Design of Experiment (DOE) in a P-Diagram**

### 3.4 Workshop Organization

Streamlining operational processes is one of the goals, which aim to achieve simplification of working methods via harmonization of business processes and sound knowledge management.

A gradual effort to identify similar processes in different departments that could be optimized and shared by all concerned teams, followed by the convergence of the supporting Information Systems, can dramatically reduce the complexity of processes and the corresponding IT application landscape, therefore producing economies of scale and improved organizational agility.

#### 3.4.1 Discovery Interviews & Brainstorming sessions

Discovery typically requires the business analyst to interview subject matter experts to acquire process knowledge. Interviews are done more efficiently when performed in parallel: comparing interview results will allow
identification of problems issued from a different understanding of the same business process.

Each complex process can be broken into sub-process. The number of representative hierarchical levels depends on the level of detail of the analysis required in the project. During the discovery interviews it is important to identify the appropriate level of granularity of the business processes under analysis: is this a sub-process, or a process or a macro-process? Does it cross organizational boundaries?

![Diagram of process granularity](image)

**Figure 7 Discovering Process Granularity**

### 3.4.2 General process information interview

This technique is essential during the preliminary phase of a business process modelling exercise. It determines the actual scope of the modelling exercise and helps scheduling the subsequent activities.

- **Participants:** this type of interview is to be conducted with the participation of management representatives.

- **Focus:** the focus of this type of interview is to identify the high-level activities performed by an organization.

- **Outputs:** The output of such interviews is the list of different business processes performed by the organization together with their business objectives as well as any relevant process metrics.
3.4.3 Detailed process information interview

- **Participants:** this type of interview is conducted with the process owners, the process actors and the subject matter experts (if necessary).

- **Focus:** the objective of this type of interview is to gather detailed information about process workflows (inputs, outputs, business events, process participants (actors), business rules, detailed KPIs and supporting Information Systems) and process issues and/or improvement opportunities.

- **Output:** the information gathered during such interviews can be complex and therefore a tabular format is advisable; an Issues List should also be an output of this type of interview.

The questions for the interviews must be carefully selected to facilitate the discussion and the gathering of only the relevant information about business processes.

3.4.4 Brainstorming sessions

Other techniques can be used to gather business process information. One of the most popular techniques to identify opportunities for improvement or simply to gather process information in a more informal way, for example, is the brainstorming session. Brainstorming sessions should be used to generate new ideas and solutions to known problems. It should not be used for analysis and decision making. The analysis of the selected ideas should be done after the brainstorming session, using other techniques such as analysis workshops.

At any point of a BPM endeavor, a brainstorming session can offer a simple and efficient way to discover information and to identify improvement methods which are not obvious to spot using classical techniques.

To select the most relevant ideas, a number of criteria (about 5) should be set, for example: 'it should be legal', 'it should be cost-effective', etc. Each idea should be scored (1 to 5 points) on how much it meets each criteria then the scores should be added-up to obtain the final score for each idea. The best scored ideas should be retained for further analysis outside the brainstorming session.

3.4.5 BPM Modelling Workshop

A business process modelling workshop is one of the most efficient techniques to gather detailed information about processes, directly from the people involved in the design and operation of those processes.

The points of interest in the organization of modelling workshops should be:
• The objectives and scope
• The participants
• The logistics

Business process modelling exercises can vary depending on the scope/objectives of the project they belong to. A modelling exercise that only aims to model a business sub-process to implement a simple supporting information system might not include an end-to-end process analysis of the organization.

However, if the exercise belongs to a project which is governed by corporate methodologies and tools, the exercise must use an approach consistent with the corporate modelling guidelines, by making use of the corporate tools and methodologies.

The main steps in organizing a modelling workshop are:

• Workshop scope definition (to identify the limits of the mandate – what is out of scope)
• High-level planning, including modelling team identification
• Basic process information gathering: list of business processes and corresponding process owners
• Scheduling of workshop sessions
• Modelling workshop sessions, which include process analysis activities
• Model verification
• Model validation
• Model publication
• Status reporting and Lessons learned

The high-level planning implies identifying the resource requirements and making sure they are available when needed. The resources are usually:

• The modelling team (workshop participants, see roles description below)
• The logistics (meeting room, computer with access to a modelling tool, beamer to project during the workshop the modelled processes)

After the validation of the process models, a confrontation against the existing process information, including documentation and practices, would ensure the

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2 For example, to streamline the processes belonging to a process category such as Schedule Management, to implement a supporting IS or simply to document the working methods (baseline - As Is) for further process optimization (To Be).
alignment of all related elements to the validated process information and will stir further process improvement preoccupations.

The advantage of a workshop is to allow process stakeholders to exchange views and information thus increasing the collaboration towards achieving the business objectives. Another practical advantage is that at the end of the workshop the draft process diagram can be immediately sent to the participants for verification, thus making the process of ...modelling processes more efficient.

3.4.5.1 Workshop Roles

- **Business Representatives:** to supply input regarding the business process under analysis.
- **IT Specialist(s):** to provide the technical details needed especially if the process will be automated.
- **BPM Consultant(s):** to provide consultancy on BPM methodology, best practices and support during the modelling process.
- **BPM Model expert:** to operate the modelling tool in order to capture process information during the workshop and to realize the process diagrams. The diagrams will be further verified by the modelling team and validated by the process owner and the organization management representatives if necessary.
- **Workshop Facilitator:** ideally a neutral party, to ensure that all mapping session objectives are fulfilled and to facilitate communication during and outside the workshop. It might take over the BPM Model expert as well as the BPM consultant roles, especially in moderate to small modelling exercises.

The next step - an essential one in any business process modelling endeavor - is to **validate the models** produced during the workshop. A specially appointed **validation team** will get together in validation sessions where the process owner and the workshop facilitator will present the process diagrams and will provide to the validation team (usually management staff) any information necessary to support the validation process.

The KPI information should also be reviewed and validated by management representatives.

The validation should be a traceable and formal process. To facilitate the process, a **Validation Questionnaire** should be used to record the results of the validation. To enforce the formal character of the validation, the validation team should sign the questionnaire at the end of the validation process.

3.4.5.2 Workshop Inputs & Outputs

Any business process modelling workshop uses a number of inputs and produces a number of outputs, the most important ones being the following:

- **INPUTS:**
- Project Objectives and Planning in line with organizational strategy
- Workshop Schedule
- Workshop resources (HR + logistics, including a BP Modelling Tool)
- List of Business Processes
- Business Process information (documentation of existing processes, including diagrams if available and KPIs or simply knowledge provided by the business representatives) identified via desk-research activities and/or discovery interviews and brainstorming sessions prior to the process modelling workshop.
- List and knowledge about process supporting Information Systems
- Existing process reports or documents (used as an input to the process) Screen copies of user interfaces

**OUTPUTS:**
- Business Process diagrams, including KPI information (KPI Matrix) and, if absolutely necessary, textual description of specific procedures that are not easily described in a diagrammatic form.
- Process Reports (produced by the process under analysis)
- Issues List to support the continuous improvement cycle
- Validation Questionnaires
- Workshop Status Reports

**4. BUSINESS PROCESS MANAGEMENT METHOD**

The BPM Framework provides all the rules for designing diagrams at the different levels of granularity. Modelling guidelines include:

- List of objects available for modelling
- Definition of objects
- Naming conventions
- Type of documented information
- Associations between objects
- Authorized objects per diagram

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3 Those are reports that are created by a business process to provide meaningful information that is further used by other (management) processes. For example, a report showing the outstanding orders will be used by a management process to follow-up the delivery of goods in a logistic organization.
4.1 Business processes vs. functions (functional departments):

Most large organizations are structured into divisions and departments (e.g., sales or finance departments) that are dedicated to performing specific functions and staffed with personnel who are expert at those functions. Business processes cut across these organizational divisions.

Where different activities in a process require different skills, the process is likely to involve a number of people and departments. For example, consider the business process “Sell to customer”. Within a typical implementation of this process:

- Sales department finds the customer
- Distribution department takes the customer’s order
- Finance department invoices the customer.

![Figure 8 Crossing Functions](image)

In this case, the work flows through several internal departments. However, from the customer’s point of view, a single process has taken place.

**Process composition**

A business process is made up of a hierarchy of activity levels. These levels are typically given labels such as “subprocess,” “activity” and “task.” (Unfortunately, these terms are used inconsistently at different organisations, although the underlying concepts are the same.) For example, the “Sell to customer” process might contain three sub-processes: “Find the customer”, “Take the order” and “Invoice the customer”. Each of these, in turn, is composed of lower-level activities and tasks that further define the work that needs to be performed in order to “Sell to customer”.

4.1.1 What’s wrong with the functional view?

A traditional organizational chart generally organizes activities according to functional units. However, dividing tasks vertically according to functional divisions is not the best way to optimize the process itself.
A process is a continuous flow in which value is added to successive stages of the production cycle until a product is generated to meet a customer’s need. The process flow is horizontal because it is uninhibited by function; it crosses and re-crosses organizational departments and divisions.

It changes the emphasis from who does what, to what needs to be done. The functional approach can sometimes straitjacket a process; as control for the process moves and changes along the production chain, there is the risk of task duplication, delay, and loss of quality control.

The risk is amplified in a functionally defined and rigidly hierarchical organizational environment, because the structure maintains the risk. In such organizations a change of focus is required, from the functional view to the process view.

4.2 Diagram Levels and Meta-data

We define tree levels of process diagrams in our BPM framework:

- **Level 1 – Process House and Process Room**, which is the one we will spend the most time reviewing along the progress made on the other levels. Indeed, process mapping is an iterative activity, where top-down and bottom-up design influence each other. The purpose of this level is to highlight the high-level **Macro Processes**, but there is no detail about the steps, decisions and involved actors. Therefore, there is no indication how large the contribution of an actor can be to the execution of the Macro process. On this level, we mainly identify **Value-Chains** grouping Macro Processes.

- **Level 2 – Process Milestones**, which highlights **Collapsed Sub-processes**. These Sub-processes provide indication about the key-milestones that determine the high-level flow or impact overall performance. This is also the level mostly used for the detailed presentation of what is happening in each Macro processes from Level 1. At Level 2, we show a basic flow, where achievements of a **Milestone** can be easily detected and major decisions that affect the flow in a significant way. Milestones are often significant events in the life of the sub-process work item. It might take many steps to achieve a milestone, but we do not show that at this time.

- **Level 3 – Process Flow**, which is where we diagram the tasks (or “logic”) level model. Developers like the term “logic” and business folks prefer “task”, but there are elements of both in this diagram. Previous levels describe “What happens” but Level 3 diagrams emphasize “How it happens”, making the transition in describing how the process is implemented, such as “photocopy form”, “fax estimate” or “set up appointment”.

The level, on which a process should be described, depends strongly on the objectives of the project undertaking the modelling exercise and on the type of process. We can break a process down until we describe individual interactions between people and systems, which means we have gone too far – that is what **use cases** are for.

A typical high-level (macro) business process, such as “Develop market” or “Sell to customer”, describes the means by which the organization provides value to
its customers, without regard to the individual functional departments (e.g. the accounting department) that might be involved.

As a result, business processes represent an alternative – and in many ways more powerful – way of looking at an organization and what it does than the traditional departmental or functional view. Business processes can be seen individually, as discrete steps in a business cycle, or collectively as the set of activities that create the value chain of an organization and associate that value chain with the requirements of the customer.

It is important to recognize that the “customer” of a business process can be several different things, according to the process’s position in the business cycle. For example, the customer of one process could be the next process in the cycle (in which case the output from one process is input to the next, “customer” process). Equally, the customer can be the end purchaser of a product.

Each Diagram header comprises the following information:

- Process name
- Process id
- Diagram Level
- Process Owner (name)
- Last Update Date
- Validity Date
- Process Modeler (name)

### 4.3 Objects Overview

To describe an organization's business processes we need to identify the following information:

- The summary of ACTIVITIES recorded as the LIST OF BUSINESS PROCESSES
- For each BUSINESS PROCESS:
  - The logical and chronological sequence of ACTIVITIES, o Having a clear OBJECTIVE,
  - A START and an END,
  - ACTORS,
  - INPUTS and OUTPUTS,
  - PERFORMANCE Indicators (KPI) and
  - A clearly defined CONTROL mechanism.

<table>
<thead>
<tr>
<th>Object Name</th>
<th>Symbol</th>
<th>Authorized Diagram</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process – Category: Business Service</td>
<td>Value Chain</td>
<td>Description</td>
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<tr>
<td>--------------------------------------</td>
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<tr>
<td><strong>Organization (department/Team):</strong></td>
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<tr>
<td>Pool/Lane</td>
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<tr>
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<th>Value Chain</th>
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<th>Process Flow</th>
<th>Description</th>
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<td><strong>Organization (department/Team):</strong></td>
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<td>Pool/Lane</td>
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<table>
<thead>
<tr>
<th>Process – Category: Activity/Task</th>
<th>Process Flow</th>
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<tr>
<td><strong>Organization (department/Team):</strong></td>
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<td>Pool/Lane</td>
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<tr>
<th>Process – Category: Decision gateway</th>
<th>Process Flow</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Organization (department/Team):</strong></td>
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<tr>
<td>Pool/Lane</td>
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</table>

<table>
<thead>
<tr>
<th>Event/Result Category: Internal event</th>
<th>Process Flow</th>
<th>Description</th>
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<tr>
<td><strong>Organization (department/Team):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pool/Lane</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Event/Result Category: Start events</th>
<th>Process Flow</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization (department/Team):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pool/Lane</td>
<td></td>
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</tbody>
</table>
4.4 Object Definition

Process – Category: Value Chain

A Value Chain is used to group Macro processes into a set of activities that the organization performs in order to deliver a valuable product or service to its customers external or internal.

Process – Category: Macro process

A Macro process is used to collect process components. Taken together, the process components define one of the business lines of the organization.

Process – Category: Sub-process

The sub-process object is used to document a group of activities (fine grained processes) which, performed according to a workflow, deliver a specific result/goal.

A sub-process component is an essential mechanism of the economic life of an organization. Each time there is a single objective per sub-process component and, therefore one diagram per activity/process workflow.

Process – Category: Activity/Task

The Object Activity/Task is used to document an action performed to execute a sub-process component according to a particular workflow.

A sub-process composed of a series of activities becomes necessary, each time that the activities lead to a certain type of result. The same sub-process component can
be reused, each time that we need to call exactly the same set of activities, applications and organization.

Usually, a task is used to document an elementary and individual activity using only one resource to deliver one output, at a defined moment, without interruption and without changing workstation. Only one application or organization is then necessary to realize this action.

The methodology implies that a task cannot even be further detailed.

**Organization (department/Team)**

Used to document an active team or role in the organization. An organization is defined either as an internal team or an external actor necessary to the realization of the process.

By definition, a pool (object) is an organization. Then a role inside the organization is identified by a swimlane.

### 4.5 High-Level Model for Quick understanding

#### 4.5.1 Business Processes Value Chain

![Business Processes Value Chain Diagram](image-url)
**Note**: A value chain might contain core and supporting processes. Details are not visible in this example.

### 4.5.2 Macro Process

1. **Initiate Consignment Trading**

   - **Type**: BPMN process diagram (BPMN2.0)
   - **Creator/Version**: [Details not provided]
   - **Last change**: [Details not provided]

   - **Diagram Description**:
     - **Yes** branch:
       - **Initiate Trade Certificate from EU Origin**
     - **No** branch:
       - **Trade Plants?**
         - **Yes** branch:
           - **Initiate Trade Certificate for Plants**
         - **No** branch:
           - **Trade Orga...**
     - **Trade Orga...**
     - **Issue Documentary Evidence for Organic Product**
     - **Validate Certificate**
     - **Trade Consignment from EU Origin?**
       - **Yes** branch:
         - **Initiate Trade Certificate for Animals and Plants**
       - **No** branch:
         - **Trade Orga...**

   - **Flow Diagram Details**:
     - **Decision Points**:
       - Trade Plants?
       - Trade Consignment from EU Origin?
     - **Activities**:
       - Initiate Trade Certificate from EU Origin
       - Issue Documentary Evidence for Organic Product
       - Validate Certificate
     - **Connections**:
       - Yes/No branches
       - Flow paths for different conditions
4.5.3 Business Process Flow

In order to be efficient and authorize the publishing of a detailed process mapping leading to its sound execution, process information should be made accessible throughout the entire organization.

Therefore, for any authorized staff member, process consultants will make available the entire set of diagrams on a shared repository or in the cloud with limited access.

An html version of the diagrams and its related textual information will also be made available through a publication.

4.5.4 Model Repository and Publication
This approach provides a way to avoid the 'Big Bang' approach where everything is done at once without clearly identifying the problem to solve and without regularly assessing if the proposed solution really helps the project instead of resulting in even more problems.

This approach is also useful since you can never optimize a process perfectly in just one run. Furthermore, one should keep in mind that everything (the organizational needs, the strategy, the business users) is in constant change, and therefore also the processes.

Usually, by applying this approach, we simply perform a Kaizen, which is the concept of continuous improvement.

The Table 2 Lifecycle Core Phases (below) shows the core phases of the life cycle [(column 2), also relating them to the phases of the Six Sigma life cycle phases (column 1)] and describes the objectives (via a list of core targeted tasks) associated with each phase (column 3). As specified in Table 2 Lifecycle Core Phases (DMAIC) (column 4), various tools and techniques can be applied in support of these tasks. From this perspective it is asserted that these tasks and associated enabling methods can benefit from a collaborative approach with the potential for introducing feedback and knowledge from outside of the modeling team. In addition, each lifecycle step has inherent risk associated with the tasks (see column 5 of Table 2) such as; process stakeholder expertise, organizational knowledge and stakeholder expectations.
<table>
<thead>
<tr>
<th>Six Sigma Process Lifecycle</th>
<th>Objectives</th>
<th>Methods</th>
<th>Issues &amp; Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEFINE</strong></td>
<td>Process Identification</td>
<td>Identify process priority/ Stakeholders Define process goals/metrics</td>
<td>Stakeholder objectives matrix SWOT analysis Interviews/workshops</td>
</tr>
<tr>
<td><strong>MEASURE</strong></td>
<td>Process Modelling (asis)</td>
<td>Document the process Establish shared understanding - Identify shortcomings</td>
<td>Modelling notation AS-IF &amp; AS-IS models Interviews/workshops</td>
</tr>
<tr>
<td><strong>ANALYSE</strong></td>
<td>Process Analysis</td>
<td>Discover - Process Objectives Accountability Constraints Risk Cost Value</td>
<td>SWOT analysis Six Sigma Analysis Scenario &amp; Stakeholder analysis Activity Based Costing Root Cause Analysis Interviews/workshops Issues Register</td>
</tr>
<tr>
<td><strong>IMPROVE</strong></td>
<td>Process Improvement (to-be)</td>
<td>Define improved process Within Constraints Too Expectations Minimize Risk Process Innovation</td>
<td>Interviews/workshops Derived from analysis TO-BE models Brainstorming Reference models</td>
</tr>
<tr>
<td><strong>CONTROL</strong></td>
<td>Process Implementation</td>
<td>Embed improved process Change Management</td>
<td>Force Field Analysis Project plan</td>
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<tr>
<td></td>
<td>Process Execution (to-do)</td>
<td>Capture process enhancements</td>
<td>Automation</td>
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<tr>
<td></td>
<td>Process Monitoring and Control</td>
<td>Supervise &amp; review process Map process capability</td>
<td>Process flow audit data &amp; log files Service level agreements</td>
</tr>
</tbody>
</table>

Table 2 Lifecycle Core Phases (DMAIC)

6. Finish Line
Good luck and remember: start with the end-result in mind!