

A close-up photograph of two women's faces. The woman on the left has blonde hair and brown eyes. The woman on the right has grey hair, is wearing white-rimmed glasses, and has a nose ring. The background is a soft, out-of-focus blue.

whichPLM



PLM PROCESS MAPPING

PLM PROJECT PACK 2021

In order to implement PLM successfully, it's recommended that management & project teams undertake what we call 'process mapping'. Taking a snapshot of the business allows teams to better understand where they are (often referred to as the **As-Is** [current business] state) before going on to improve the business model (often referred to as the **To-Be** state). This To-Be state is linked to new processes, new technologies, and organisational changes. Put simply: unless you know where you're coming from, it's difficult to know where you are going.

When planning a PLM project, it's also going to be very valuable to measure just how long it takes to get a product from concept to the consumer, and then compare and use this to justify your project investment.

If you are aiming to implement a PLM solution to make business improvements across the organisation, then it's imperative to remember you should be improving what you already do. New process introductions, supported by a modern PLM platform, are usually interfaced to other best-of-breed solutions that, operating together, can deliver far greater business improvements than just speeding up the current methods of working. This is why effective business process mapping (looking at your current and future processes) will be such a valuable toolset when it comes to deploying a PLM solution.

So, let's dive deeper into process mapping: what *exactly* it is, who should do it and why would you use it with your PLM implementation?

What Exactly is Business Process Mapping?

Beyond the overview above, let's break down what process mapping is a little more.

Business process mapping refers to a series of activities involved in defining what a business entity does. In the case of a PLM project, this means mapping every stage of the process from the start point. So, for a typical

SME fashion brand or retailer, an example might be: **trend analysis, merchandise & budgetary planning, design creation, 2D pattern engineering, CAD, marker-making CAM, 3D, virtual design & development, fit management, Tech-Pack development, sampling, testing, costing, approvals, sourcing, manufacturing, and logistics**. These high-level processes should be mapped as part of a pre-PLM implementation As-Is project.

From a business mapping perspective, we would class these as your high-level process examples, and from here you would need to go deeper into what we call the sub-processes. These include the types of data used (inputs & outputs) by each user (process owner) responsible for inputting data, completing tasks, and outputting data that can be used to trigger the approval state as part of your **workflow** automation, moving onto the next process that may trigger the commencement of the proceeding process, until you reach the final approval of your product.

Another important area to map, is **what** and **how** the business measures the success of each output (final quality standards). Of equal importance is mapping: what happens if a process is not completed satisfactorily, what happens if a task fails, and how many attempts will be allowed before the system should halt the process and request input from the management team to help resolve the issue.

Another critical measurement is the time involved in delivering each approved process. We often measure this as inside-cycle and outside-cycle times. The inside cycle-time refers to the average time taken to complete a given task. If we take CAD illustrations for example, the estimated inside-cycle time (measured in minutes or hours) refers to the actual task duration for every critical step of the process, which will be used as part of your product **Critical Path** template. The outside-cycle time refers to the time taken to prepare and execute the process, your administration: searching and gathering style data and files, obtaining specifications details and instructions, and general administration duties. It is important that you should estimate both the inside and outside-cycle times to come up with an average inclusive duration for each task.

What Does a Process Map Look Like?

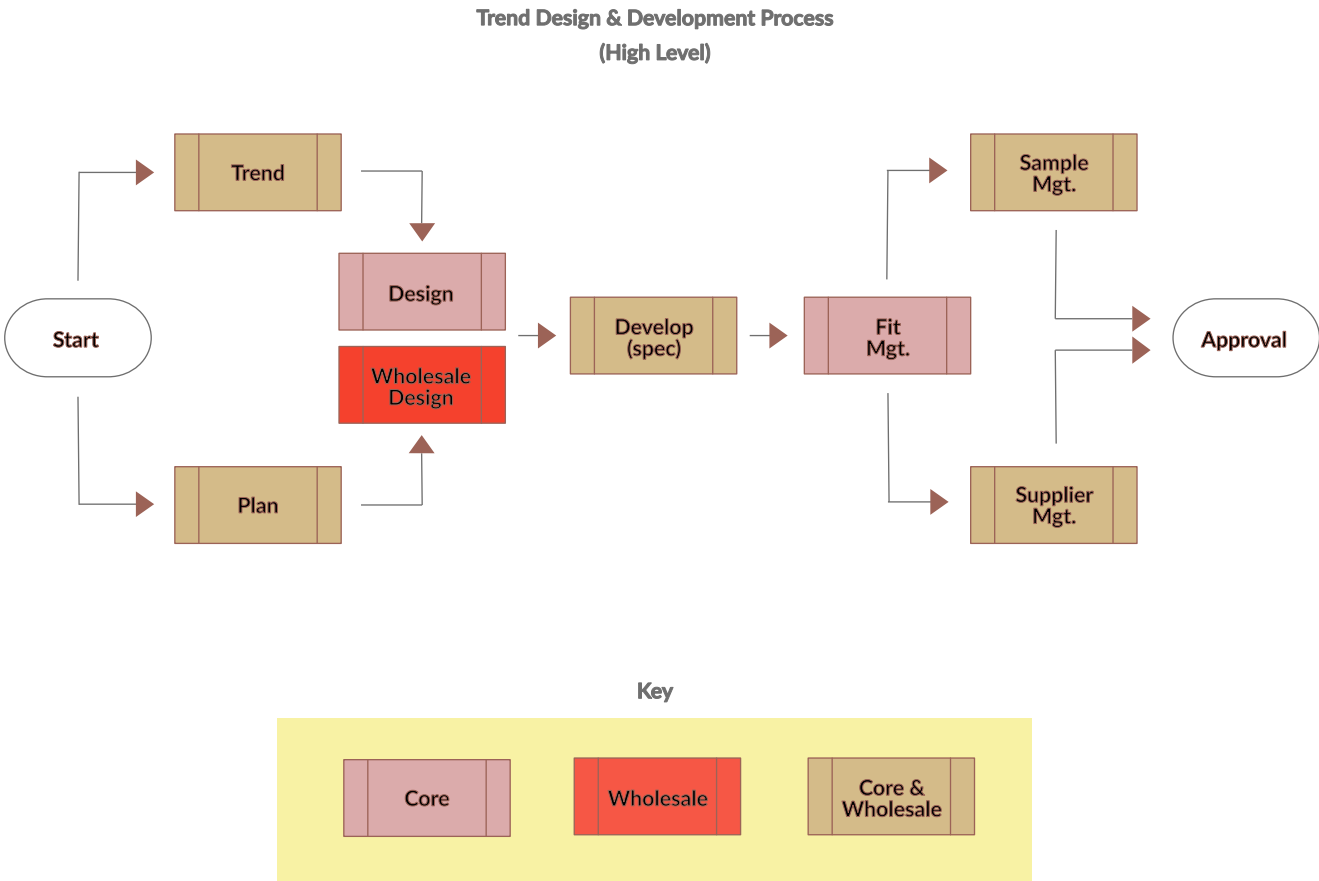
Process mapping is an exercise to identify all the steps, time estimates and decisions involved in any existing process in diagrammatic form. It helps SMEs to identify improvement opportunities that will be enabled by the implementation of a new PLM platform, with the combined aim of improving the end-to-end Concept-to-Consumer efficiency of your organisation.

When mapping your tasks, you will need to support each process with further details, along the lines of: process title, role ownership, data ownership. You should include a description of the process flow of

materials, trims, components, information and specification documents when listing each of the main processes, and their sub-processes, as well as how the data transforms inputs into outputs.

Your process map should specify the approval and disapproval processes that need to be made along a product's lifecycle, as well as the number of cycle times allowed before a product step is rejected due to insufficient time to meet targeted delivery times. And you should determine the important inter-relationships and interdependences between the process steps.

Included here is an example of what we call a 'Swim Lane Diagram', with each lane representing the main business tasks or processes.



Swim Lane Process Methodology

Swim lane diagrams are fairly simple to create, so let's take a look at how you would create your own fashion process workflow diagram.

Vertical or Horizontal Flow

It really doesn't matter what direction you choose for your swim lanes, vertical or horizontal paths. A horizontal flow can be more practical, especially if (as the owner of the process mapping project) you're using a notebook when visiting each department (process owner). Another tip is to meet the process owners at their place of work if possible, as you always obtain more information from each task owner, for example, when in the design or CAD department; they will be able to share a step-by-step process, along with the inputs and outputs. Obviously, this is not always possible due to remote stakeholder involvement.

Create Your Swim Lane Grid

Draw a series of parallel lines so your paper or laptop should resemble a swimming pool with enough lanes to match the number of main business processes. On average, around 10 lanes should work for most SME businesses. Keep in mind that you may also group a single main process with several connected processes – for example, trend analysis & design, development, sampling & testing.

Select Your First Process Lane

To start, list each of the key stakeholders that will be involved in executing each process task. Keep in mind that this may include external stakeholders, customer inputs, departments or other business partners.

It's also wise to avoid using people's names and instead focus on **role types** (i.e. process role owners). This way, when you move onto configuring your PLM **workflow** and **Critical Path** solution - including tasks, durations, notifications etc. - the information will go to a role type rather than a specific person. If, for example, you have



new design requirements, and the department manager can then allocate tasks to those that have sufficient capacity to take on the next task.

List Your Key Process Steps

List the main process descriptions (key tasks) in logical order, but keep in mind that there are also tasks that don't always run consecutively. In these cases you need to draw lines to identify tasks that can be completed in parallel at the same time. An example of this would be when a designer selects a material with a print, and the process could allow a colourist to request a strike-off to check the artwork scale and dye colours.



List Each Task Related to Your Key Processes

Add the tasks to your swim lane diagram. Try to keep the tasks at a fairly high-level, to avoid getting too bogged down in macro detail. Move from left to right and keep in mind that some tasks will cross over into other lanes as the workflow progresses and becomes more complex. Use your connected sub-processes and remember to list your data inputs & outputs. If your business process is fairly complex, we would suggest that you create a separate map for your data flow linked to your technology schema.

Connect Each Task to a Logical Flow Chart

Create directional connection lines between each of the processes, allowing you to track the progress of each task as it flows through the business. As previously stated, where there are multiple options, you can have multiple paths through the process diagram. For example: if the task is rejected, then you

may need to revert back to a previous process, of start point; or another example, once a material print is selected, then move to request strike-off and colour options). Avoid over complicating the process, at least until you become familiar with process mapping techniques.

Key Stakeholders

There are options to what you choose to have as your swim lanes, and you need to plan which is going to be most useful to you for the process. Some examples to get you going are:

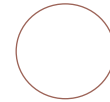
- Resources
- Role Types
- Departments
- Locations
- Brands / Product teams
- Technologies
- Companies
- Partners
- Data Flows

Symbol Examples

You can also use flowchart symbols to add even more information to your process flow:



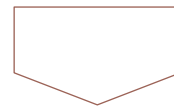
An oval, used to represent the start and end of a flowchart.



A circle, used as a page connector.



A parallelogram, used for arithmetic operations and data manipulations.



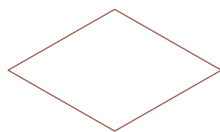
Representing an off-page connector.



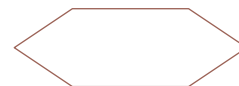
A rectangle, for processing. Used for arithmetic operations and data manipulations.



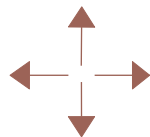
Representing process/function. Used for a group of statements performing one processing task.



A diamond, for decision-making. Used to represent the operation in which there are two/three alternatives, yes/no etc.



Representing a pre-processor.



Flow lines, used to indicate the flow of logic by connecting symbols.



Representing an area for comments.

Once you've mapped your As-Is business, you can now share the high-level map(s) with the main business team and obtain their support and buy-in to the approved As-Is. Another tip is not to rely on a process map that's was created a year or more ago, as it's highly likely that your process and supporting technologies will have evolved over time, and what you have on file iw no longer what really happens. And avoid someone telling you that the task is 'always done that way'; examine each task carefully and look for any challenges and opportunities.

Once you've mapped your end-to-end processes and have obtained agreement from the management & project team, you and the team can start to look at fthe uture To-Be opportunities and how to resolve the current challenges with new processes or supporting technologies that you are considering for the business. It should be possible to eliminate or rearrange the process tasks, streamline the process, and remove unnecessary tasks/steps.

Why Use Process Mapping?

The core reason for mapping out your business processes is to be able to compare the present **As-Is** state with the future **To-Be** transformational state. Businesses that perform this level of business analysis will usually deliver a PLM implementation that meets both vendor and customer objectives and will stand the greatest chance of delivering the project on time and to budget. Those PLM customers that spend time analysing and planning ahead of the implementation have invariably the most successful of PLM projects.

Implementing PLM on top of an evolved poor process, can only accelerate issues. Beginning a PLM project without truly understanding how the current process is working today, and why it is done in a certain way, can only lead to costly mistakes and delays in delivering a successful PLM project.

People don't like change at the best of times. If you get the processes wrong, it will create disappointments that in turn will make it difficult for staff to work effectively, and often creates further problems with people not wanting to use the system.



It all comes down to measuring and managing: if you can't measure the current As-Is process accurately, then how will you be able to manage PLM's true benefits?

It has been estimated that people working in organisations can waste about 15 – 20% of their time looking for files or data, chasing outcomes without results, querying incomplete instructions, doing other people's jobs and so on. If you can estimate this outside cycle-time, then you can use the results as part of the return on investment (ROI) analysis.

Carefully defining each of the processes will enable the project management team to identify problem areas such as: solution challenges (outdated systems), capacity issues, mistakes, time delays, product right-offs, material waste, return issues, and lost opportunities. Once identified, this knowledge will provide a solid basis from which to develop the new PLM process solution and with it the new **To-Be** plan linked to measurable improved processes.

Who Should Map the Processes?

In short, it is safe to say that all SME businesses with reasonably complex processes will indeed benefit from process mapping, because a process map snapshots an existing process and when a process is captured and measured, improvement opportunities can be clarified and quantified ahead of implementation of a PLM solution.

The mapping of the business processes is usually undertaken by the PLM project team. In a small business it may be conducted by one of the senior managers, or IT person; it needs to be conducted by someone that has a good understanding of the entire end-to-end business process and is respected by all key stakeholders. If you have any reservations then, we suggest that you should bring in an expert that can help you thorough what is a very important process before implementing a PLM solution.



The process map owner should work with subject matter experts, role owners, and key stakeholders from around the business. They should listen carefully to each expert, documenting the As-Is using their knowledge of the process and listing any issues, or possible improvements.

A further requirement of effective process mapping is to involve as many employees as possible in workshops to capture their processes. We would also advise that the person mapping should speak to the expert in their working environment, as sometimes if the analysis is gathered during workshops in a classroom environment thing can easily be missed. Sometimes, people will use an outdated process flow that documents a certain flow, when in fact that's not what happens today; processes tend to evolve over time, and people find workarounds, so it doesn't always work that what is already documented is what really happens.

With the support of key stakeholders mapping their processes, employees feel ownership for them in helping to achieve a successful PLM project.

How Do We Get Started?

There are many process mapping software tools available to help streamline this project. The first step is to choose a process mapping solution that is both simple to use and at the same time can deliver process maps that are useful to a widespread, non-specialist workforce.

Remember to keep it simple; too many process maps can become extremely complicated and won't add much (if any) value. It's strongly recommend that you should investigate a simple mapping tool. Key elements of process mapping include triggers that kick start actions, core tasks and related activities, approval gates (Yes/No), date triggers (if *this* equals x/y then proceed to the next task), data inputs/outputs, roles involved, task durations, notifications and alerts.

Map both the As-Is *and* the To-Be process, including desired improvements that can be associated with the target return on investment (ROI).

Enjoy mapping!



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