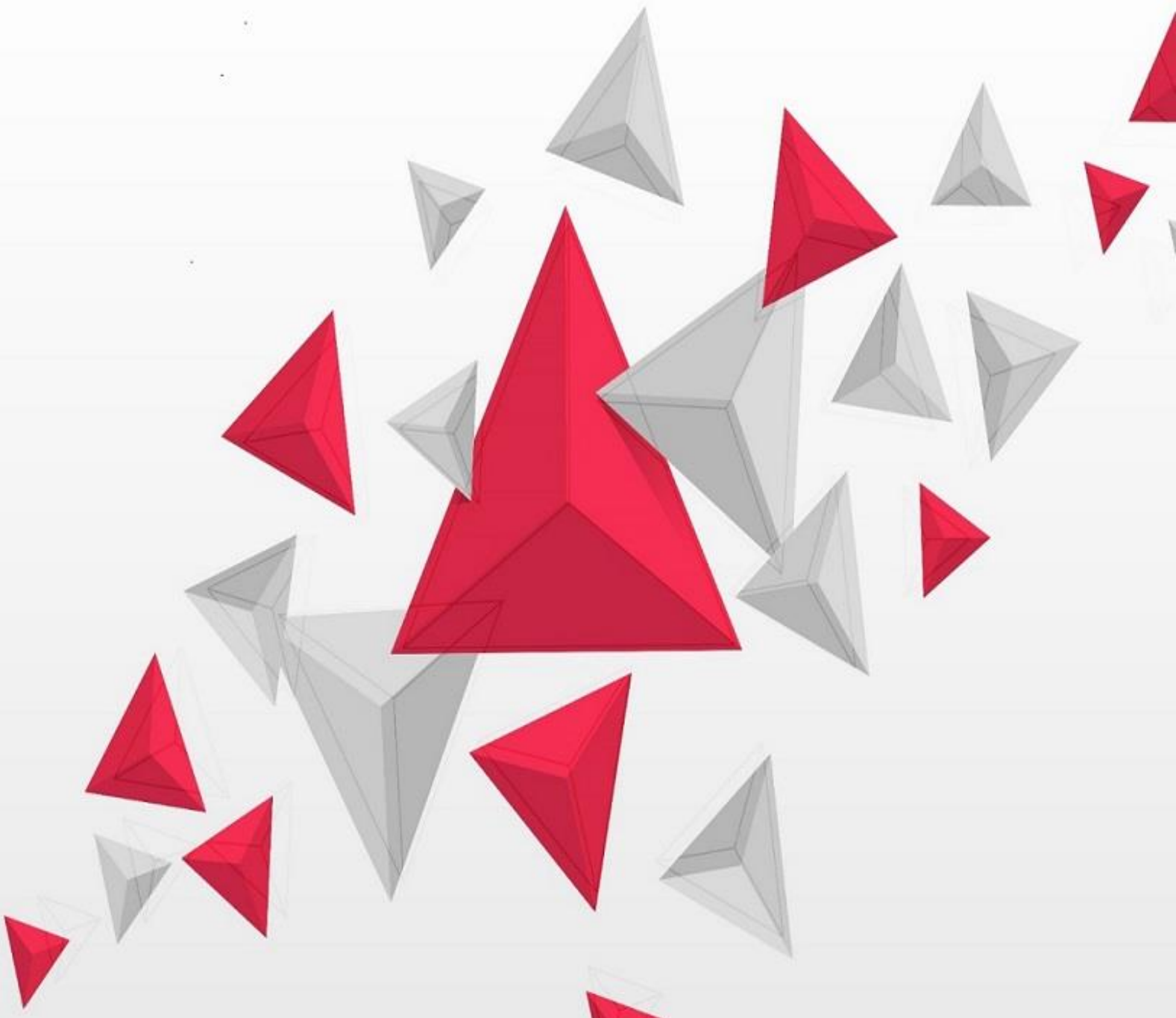


Functionality Matrix

Guide Book





FUNCTIONALITY MATRIX – INTRODUCTION

There are some documents in the business analysis practice that are created by the majority of the BAs, but due to the lack of common terminology, they are called by different names in the organizations.

Functionality Matrix is one such document that is *a comprehensive collection of all the requirements within the project scope, structured in the form of workflows* in a spreadsheet format.

Now, one might wonder the difference between a BRD and an FM as both contain the project scope details. So, to distinguish, a BRD is a detailed and comprehensive document that describe the expectations for every module of the application being developed, whereas an FM is a collection of all the workflows that exist in the application and is created from both user's as well as system's point of view.

Thus, for a workflow called Password Reset, where the user has to click on the Reset password button, enter his email ID, receive an email containing the password reset instructions and reset the password, the workflow steps in an FM should be:

- Email validation
- Send password reset email
- New password validation
- Confirm password validation

Now, we will see the aspects of a Functionality Matrix.



ASPECTS OF THE FUNCTIONALITY MATRIX

1. An FM is created in the project's initiating stages and is called a 'cornerstone of project estimation' as it contains all the requirements in a single document that can be quickly referred to and shows the categories or process flows that these requirements fall into. Because of this, it becomes easy to derive the effort (in staff hours or staff days) required to develop the application.
The functionality matrix is also heavily used while estimating requirements effort using the 'Function Point (FP) estimation' technique.
2. AN FM **neatly and structurally categorizes all the functionalities of a project in the form of business process flows**. These flows cover the complete breadth of the project scope and are very useful while prioritizing requirements as the requirement can be viewed in the form of user flow and not in isolation – thus giving a holistic view.
3. For the same reason described in the previous point, FM also acts as **an effective tool to negotiate the inclusion or exclusion of features from a project**.
4. As the functionalities and flows could be marked in a spreadsheet, an FM also **assists in carving out the future roadmap of a product** defining which features are to be developed in the current release/phase and which ones are reserved for the future.
5. FM is also used by the c-level stakeholders like CFO and CTO, who do not have time to go through the exhaustive BRD documents but still want to validate whether the application covers all the critical features and aligns with the organization's goals.

6. Business Analysts use the FM to **help the business users to establish a common understanding** of what is required for a system and what is possible.



AUDIENCE OF THE FUNCTIONALITY MATRIX

1. The **Business Analysts** are responsible for creating the FM by organizing facilitated workshops or referring to the existing project documents and segregating business process flows from those documents.
Also, a BA will use the FM to estimate the project efforts by using it in conjunction with the different estimation methodologies (e.g., Function Point estimation, WBS estimation).
2. The **Project Manager** will use the FM to validate whether all the requirements are being covered in the project scope. FM document becomes the basis of deriving the project cost as well as schedule
3. Since an FM contains the workflow, the **Change Management Committee or Change Approval Authority** will use this document to learn how a particular change impacts the current flow of events.
4. **Customers** will use the FM to quickly validate whether all the requirements expectations are listed and covered in the FM
5. The **3rd party vendors or suppliers** will use the FM to see how their product will interact with the existing system.



HOW TO CREATE THE FUNCTIONALITY MATRIX

Responsibility of authoring an FM falls in the sole territory of a BA, and he should approach it by following the below steps:

STEP 1

This step is more of a pre-requisite and calls on the availability of approved project vision documents *and* either a Business Requirement Document (BRD) or a Functional Requirement Specification (FRS) document.

Having such documents will ensure that the workflows detailed in the FM are structured depictions of the features already described in the respective requirements documents.

It is worth noting that in the absence of any reference documents, the FM will look like a details-less list of project functionalities and result in more confusion rather than clarity.

STEP 2

As a first step towards preparing an FM, a BA should study the project's existing artifacts and create **business process flow diagrams** for the significant modules of the project in question.

Most of the flows will come logically if a BA is being associated with the project from the very start and has authored the BRD himself. However, a BA introduced in the middle of the project has to carefully study the requirements documents, understand the roles performed by different actors in the application and see how the system behaves while interacting with the actors.

Performing this exercise will result in the BA getting a seamless picture of the flow of events happening for different processes within the project, and the same flows should be segregated and categorized as workflows in the FM.

This step should result in high-level process flows and give the BA the 'row-headings' or 'module names' for the Functionality Matrix.

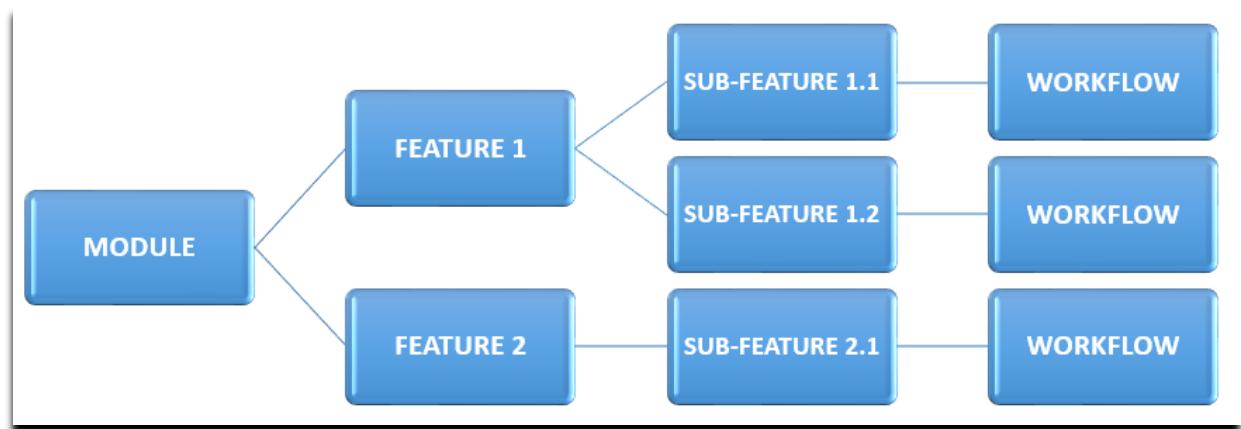
Please refer to the FM file available with this chapter in conjunction with the BRD document we created earlier to understand how a functionality matrix encompasses the complete application flow.

STEP 3

Once we have the module names and high-level idea of the streams of events, it's now time to break those events into an unambiguous and chronologic flow of events and enter the 'feature' and 'sub-feature' details.

Consider a **feature** as a high-level and distinct set of activities under the module.

Consider a **Sub-feature** as a low-level and distinct set of activities under the feature.



For ease of comprehension, one should imagine that each step is a high-level flow and can be descended into (e.g. "double-clicked") to pull the next level of detail behind that step - this exercise should be performed till we reach a level where a stage cannot be further decomposed. When viewed in descending flow, all these steps will collectively be called a 'Workflow'.

The workflows should be reviewed, and to ensure understandability, it should be confirmed that there aren't any flow breaks. This exercise should be repeated for all the high-level processes that were listed down in the previous step (step 2).

The FM now stands complete with a review of the overall FM for exhaustiveness.

STEP 4

As we discussed that an FM could be used for prioritization and defining the future roadmap, the fully completed and reviewed FM you just created can now be used for the same.

To do so, the key stakeholders like client/customer representatives, the BA, PM, and the Technical Lead get together to review which portions of the project can be accomplished in Phase I/Phase II/Phase III. They draw boundaries around the specific cells in the matrix or color the individual cells with different colors to have a visual separation.

The BA should make sure that a legend should be available at the top of the matrix to state the relationship between colors/shadings and respective project phases.



FUNCTIONALITY MATRIX - BEST PRACTICES

Creating an FM is a relatively simple process and does not involve any significant intricacies, so I would like to give you a small checklist here to make sure you have included everything your FM needs:

- a) Cross-check all the flows with the BRD or SRS documents. You should have written evidence about the validity of each of the requirements listed in the FM
- b) The module/feature and sub-feature name should be suggestive and help a user make a mental impression about the steps that could be there in the respective workflow. For example, if I say 'Scheduling Appointment,' you will have an idea about the steps in that workflow before you even read them.
- c) For the cells or levels that are not very straightforward *or* have an implied meaning, one should provide an additional section within the FM to describe them
- d) The duly colored legend should be depicted somewhere the reader can see, preferably on the top
- e) The versioning history should be updated before the document is sent out to any stakeholder
- f) One should get an FM reviewed by a fellow BA or Project Manager for an impartial review and correctness of the information.