Functional Decomposition User Guide

Prepared By: Neville Turbit
Version 1.0
1 Feb 09
Table of Contents

Document Origin ................................................................................................................... 2
Change History ...................................................................................................................... 2
Functionality .................................................................................................................. 3
Functional Decomposition ............................................................................................ 5
Approach to Functional Decomposition ....................................................................... 7
Appendix A ................................................................................................................... 9

Document Origin

<table>
<thead>
<tr>
<th>No.</th>
<th>Author</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Neville Turbit</td>
<td>Project Perfect</td>
</tr>
</tbody>
</table>

Change History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>1 Feb 09</td>
<td>Initial Version</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
Functionality

Overview

This section explains Functional Decomposition for those who have not used the process in the past.

System structure

An IT program has a number of components:

<table>
<thead>
<tr>
<th>Components</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>The information used in the system</td>
</tr>
<tr>
<td>Functionality</td>
<td>How the data is manipulated</td>
</tr>
<tr>
<td>Business Rules</td>
<td>The controls around how the functionality is applied</td>
</tr>
</tbody>
</table>

Data

Data can be defined as

“The people, places and things that we want to keep track of”

There is other data of course such as transaction logs, and information the system needs to operate internally, but for the purpose of these guidelines, the explanation above will suffice.

Some examples may be:
- Clients
- Products
- Phone numbers
- Prices

Note that each is a noun. This is important to remember.

Business Rules

Business rules are the policies that are applied within the system. For example a business rule may be that if a client does not have a transaction for 12 months, the client is made inactive. Another may be that all credit terms are 30 days.

Functionality

Functionality covers the actions that can be performed in the system. Examples may be:
- Adding a client
- Changing client details
-Issuing invoices
- Managing stock levels

Note that each statement starts with a verb. Data are nouns and functionality start with verbs. Functionality is about doing something.

Continued on next page
**Functionality, Continued**

| Relationship to process | Functionality is static and business process is dynamic. Business process is a collection of functionality organised in a sequence that suits the situation.  
To give an example, a business process may be to process a refund. One step may be to create a credit note. Another business process may be to cancel an order. One step may be to create a credit note. Yet another business process may be to fix an incorrect price. Once again we create a credit note.  
Think of functionality as the Lego pieces and a business process is what you build. The same piece of Lego can get used in lots of things. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording functionality</td>
<td>Typically, when we do a functional decomposition, we break apart the business processes to identify the functionality. We might record the same piece of functionality in many places but in order to ensure we have found all the functionality, we need to break apart each process and examine the components.</td>
</tr>
<tr>
<td>Manual or system</td>
<td>In recording functionality we will record systemised processes and manual processes. This is to be expected. One does not make sense without the other. In some cases, we might even be unsure of which camp a function belongs to. For example, ‘Send a fax’ could be accomplished either manually or through a system function depending on the software. Part of the reason for doing a functional decomposition is to identify what can be systemised.</td>
</tr>
</tbody>
</table>
Functional Decomposition

Overview
Functionality can be organised in a tree type structure. The trunk has branches; branches have twigs; twigs have leaves. It may not be immediately obvious, but functionality can be organised in a hierarchical manner.
A sample is provided as Appendix A

How to organise
There is no right way to organise the hierarchy. Two different groups may organise the same area in two different ways. Take the following example of a motor registry that processes car registrations, licenses and other transactions.

Hierarchy 1. In the first case we could organise the functionality by the three areas mentioned above – Registrations, Licenses and Other.

Hierarchy 2. In the second case we could organise by New Business, Renewals, Other Transactions.

There are arguments for both approaches. For example, it could be argued that it is easier to work through all the functionality around registrations before moving onto the next category – Licenses. On the other hand it could be argued that there is a lot of commonality in registering new clients regardless of whether they are getting a license, registration or any other service.
The best structure is the one that works for you on the day.

Level 0
The top level is defined by the scope. By the time this exercise is undertaken, the Intermediate Scope document will have been prepared. Use this as level zero.
On some occasions, the project is so massive that it might make sense to actually start with a number of areas at level zero. For example, if you were trying to do a functional decomposition for an ERP system, it would probably make sense to do one for Financials, one for Distribution, one for Sales etc.
The top level should be driven by the breadth of understanding within the workshop. If you are doing a functional decomposition workshop with Accounts Payable people, it is appropriate to make Accounts Payable level zero.

Level 1
Level 1 is typically a grouping of related functions. It does not necessarily start with a verb. From the example above, it could be Licenses, or Registrations. Other examples may be:
- Client management
- Warehouse
- Human Resources
- Recruitment

Continued on next page
Level 2

Level two is where the action starts. From here you start to break down each area. All functions should start with a verb. For example, if level one was ‘Recruitment’ level two could include:

- Identify vacancies
- Prepare resource requirements
- Advertise for resources
- Review responses
- Interview resources
- Employ resources
- Induct resources

Level 3

Each of the items above may be taken down a further level(s). For example, ‘Interview resources’ may be broken down to:

- Book interview
- Discuss approach to interview with the manager
- Carry out interview
- Record results
- Produce shortlist

At this stage we might decide that we have not actually completed the process. There is a second interview to be carried out before an offer is made to the candidate. We might feel that the level two ‘Interview resources’ should in fact be modified. It should become ‘Interview resources by HR’ and another level two of “Interview resources by Manager’ included.

How many levels

A good way to understand when to stop is to say the minimum level you should ever go is the smallest function that makes sense to the user. If you ask a user about setting up a new client, they will probably tell you they record the client name and address. They will not tell you they record the salutation, first name, middle initial and surname. Nor will they tell you they record address line 1, address line 2, suburb, state, postcode and country.

The bottom level should never go below ‘Record client name’ and ‘Record client addresses’. This means you should never get below level five or six. Mostly you will stop at level three or four. Occasionally you might even stop at level two.
Approach to Functional Decomposition

Overview

Typically it is best undertaken in a workshop environment. A group of people can very quickly put together a functional decomposition down to level two or three.

Recording

The preferred way to record the information is to enter it straight into a document and project the information onto a screen. The spreadsheet we provide is an ideal tool as it has some useful macros to assist the process. It is recommended that one person facilitate the process, and another does the input. The group is likely to jump around in the early stages of the process, and does need to be kept focused on the task. If the person running the workshop is also doing the recording, they will be unable to do both tasks successfully. The person doing the recording does not have to be an expert in the field. They just have to be able to enter information as it arises.

Training

Depending on the experience of the people, you may need to explain the concept. Once this is understood, you can actually start on the work. If you have a mix of experienced and inexperienced people, it is suggested you start the meeting with the inexperienced people 15 minutes earlier to run through the process and some examples.

Getting Started

The initial step is to determine the level ones. This is typically a bit of a brainstorming session and it is suggested you use a white board. Ask people:

“If you had to describe the business area defined at level zero, how would you break it up?”

Some typical approaches are:

- By the organisation chart. People think of the business areas as “I do this, Jane does that.”
- By existing computer systems.
- From a customer perspective. “They contact us about…..”
- From a product view. “We sell widgets and fridges”

When some ideas have emerged and a direction is becoming clearer, ask if there are common functions across the areas. For example, ‘widgets and fridges’ may go to the same customers and use the same processes. Are you going to duplicate the same functions under each area? When you get a workable structure, put it into the spreadsheet and get started. Be prepared to revise the level ones if it becomes evident your starting point is flawed.

Continued on next page
People typically record the level three and beyond as processes. This is quite normal. It allows them to think through the area in a dynamic sense and make sure they have covered it all off. The fact these ‘mini processes’ do not fit together sequentially is not a concern.

The capture of information is likely to result in a chunk of functions from one place being moved to another. Sometimes that is moved to a different spot in the list, and sometimes to a different level. That is quite normal and should be encouraged if it adds clarity to the process. The person entering the data will need to ensure they save often, and are reasonably competent in using Excel cut and paste. The buttons in the spreadsheet for numbering and setting colours will assist a quick cleanup.

If it is not possible to use a projector to carry out the work, another approach is to get the level one and/or level two sorted out then split into groups to produce their own level three and beyond. The danger of this project is that there may be gaps or overlaps that will need to be resolved later. It also means a lot of interpretation of results by someone who may not have participated in the group.

Most of the people will give good input in the workshop, but few will spend the time to examine output line by line in a document. Your best chance for success is to get the majority of the information together in the workshop. By all means circulate the result to attendees, but don’t expect much feedback.

This is the hard part to manage. Some people will want to drill down to the minutest detail. You need to be disciplined to only drill down to the level you require. At different stages of a project, you require a different level of detail.
### Appendix A

#### Overview

The following is a sample Functional Decomposition. The level 0 is ‘Claim Processing’

<table>
<thead>
<tr>
<th>Function No</th>
<th>Name</th>
<th>Business &amp; Function</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 1</td>
<td>L 2 L 3 L 4 L 5 L 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Client Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Receive Enquiry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.1</td>
<td>Enter Client Details</td>
<td></td>
<td>Person contact details, employment category</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Search for Previous Details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.3</td>
<td>Generate ID Number</td>
<td></td>
<td>System Generated (C number) Search name/Address/Trading Name/Suburb. Fuzzy search facility optional</td>
</tr>
<tr>
<td>1.1.4</td>
<td>Search for Employer Details</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.5</td>
<td>Enter Notes</td>
<td></td>
<td>Preliminary details (optional) Telephone/counter/e-mail/fax/letter</td>
</tr>
<tr>
<td>1.1.6</td>
<td>Enter Type of Contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.7</td>
<td>Set follow up date</td>
<td></td>
<td>Default that can be overridden</td>
</tr>
<tr>
<td>1.1.8</td>
<td>Allocate to Advisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.9</td>
<td>Enter type of info requested</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.10</td>
<td>Generate Std Letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.10.1</td>
<td>Modify Std Letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.11</td>
<td>Send Letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.11.1</td>
<td>Send Fax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.11.2</td>
<td>Send Post</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.11.3</td>
<td>Email</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.12</td>
<td>Enquire on enquiry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.13</td>
<td>Change enquiry to claim</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Issue Claim Form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.1</td>
<td>Generate Label</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.2</td>
<td>Enter ID of person Issuing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.3</td>
<td>Generate Correspondence No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.4</td>
<td>Generate Std Letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.4.1</td>
<td>Modify Std Letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.5</td>
<td>Send Claim Form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.5.1</td>
<td>Auto Fax claim form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.5.2</td>
<td>Email claim form</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.2.5.3 Post Claim Form

Report on follow ups due/overdue (User)
Report on follow ups due/overdue (Supervisor)
Report on claim forms issued

1.3 Receive Claim Form
Enter Client Details
Search for Previous Details
Generate ID Number
Enter Employer Details

1.3.4.1 Search for previous employer details
Enter Claim Details
Allocate to Claims Assessor
Change claim to enquiry
Enquire on claim

1.4 Finalise
Generate Std Letter
Modify Std Letter
Send Letter
Send Fax
Send Post
Send Email
Enter Finalization Details
Carry out QA Check
Re-open if necessary
Report on rejects
Report on awaiting checks
Report on time between finalization and QA

1.5 Record Time Spent
Record Time Elapsed since receipt
Record Charge Time
Report by claim
Report by enquiry
Report by user/team/state/office/everyone
Report by activity
Targeted Compliance
Set up targeted group
Enter Employer Details
Generate Std Letter
Modify Std Letter

Delivery mechanism to be determined. Based on time since received
Delivery mechanism to be determined. Based on time since received
See claim form for reqd fields
Search by name. Fuzzy search facility
Search name/Address/Trading Name/Suburb. Fuzzy search facility optional
Checkboxes/Radio Buttons/Checklist etc.
Bulk allocation option (or vice versa)
Date stamp and complete (& finalised by phone call or written reply)

To Team Leader

Both claim form and correspondence

Select industry group
2

**Claims Assessment**

2.1

**Determine Action**

e.g. AIRC, ATO, State Dept, OCPE

2.1.1

Refer elsewhere
Office to Office Referral

Two letters: one to client, one to agency

2.1.1.1

Generate Std Letter
Modify Std Letter

2.1.1.2

Notes

2.1.1.3

Finalize

See above

2.1.2

Classify as invalid claim

2.1.2.1

Generate Std Letter

2.1.2.1.1

Enter

Modify Std Letter

2.1.2.2

Notes

2.1.2.3

Finalize

See above

2.1.3

Classify as Investigation

2.1.3.1

Establish if suitable for mediation

Letters to Employee, Employer

2.1.3.1.1

Generate Std Letter

2.1.3.1.1.1

Modify Std Letter

2.3.1.1.2

Input mediation details

If rejected, then by whom

2.3.1.1.3

Enter Notes

Reclassify as investigation

Finalize

See above

3

**Investigation**

3.1

**Insert Breaches**

Include AWA

Is this an interface or is data held in CATS

3.1.1

Link to awards

3.1.2

Record Notes

3.1.2.1

Add Notes

3.1.2.2

Modify Notes

3.1.2.3

Delete

Notes

3.1.3

Import Calculations

Import from Excel

3.1.4

Generate Std Letters

Courtesy, Breach 1 and 2 Letters

3.1.4.1

Modify Std Letters

3.2.5

Set follow up date

3.1.6

Add Payments

3.1.7

Report on follow ups due/overdue (User)

3.1.8

(Supervisor)

3.1.9

Generate Std Letters

Closing letter to Client

3.1.10

Mark as Office based or Field

3.1.11

Finalize Investigation

See above

3.2

**Litigation**

Record time spent but not by time elapsed

3.2.1

Generate Std Letters

3.2.2

Generate Reports

Produce a small claims kit
3.2.3 Add Payments Insert details of order

4 System Maintenance All have security

4.1 User Maintenance
4.1.1 Add Users
4.1.2 Users Archive where user attached to correspondence
4.1.3 Maintain Users
4.1.4 Inquire on Users
4.1.5 Report on Users
4.1.6 Associate User with Team
        Reallocate work by user

4.2 Team Maintenance
4.2.1 Add Team
4.2.2 Team
4.2.3 Maintain Team
4.2.4 Inquire on Team
4.2.5 Report on Team
4.2.6 Associate Team with Office

4.3 Office Maintenance
4.3.1 Add Office
4.3.2 Office
4.3.3 Maintain Office
4.3.4 Inquire on Office
4.3.5 Report on Office

4.4 Award Maintenance Including agreements as required
4.4.1 Add Award
4.4.2 Delete Award
4.4.3 Maintain Award

4.5 Set default times
4.6 Terminate Investigations Set default times for follow ups
4.7 Reopen Investigation Managers, Team Leaders only
        Edit standard
4.8 Templates

5 Action Items
5.1 Add Action Items
5.2 Modify Action Items
5.3 Delete Action Items
5.4 Report on Action Items due/overdue
5.5 Report on all Action Items

6 Survey Counter and phone
6.1 Capture Survey information No and nature of calls, award, other items to be set up as required.
6.2 Report on Survey Information Numbers against each survey item
7 Reports
7.1 Targeted stats