

## Introspect Business Suite Six Sigma Problem Solving Module

### Overview

Six Sigma incorporates many of the lean manufacturing practices; the key difference is problem solving and measurement. DMAIC is used to improve an existing business process.

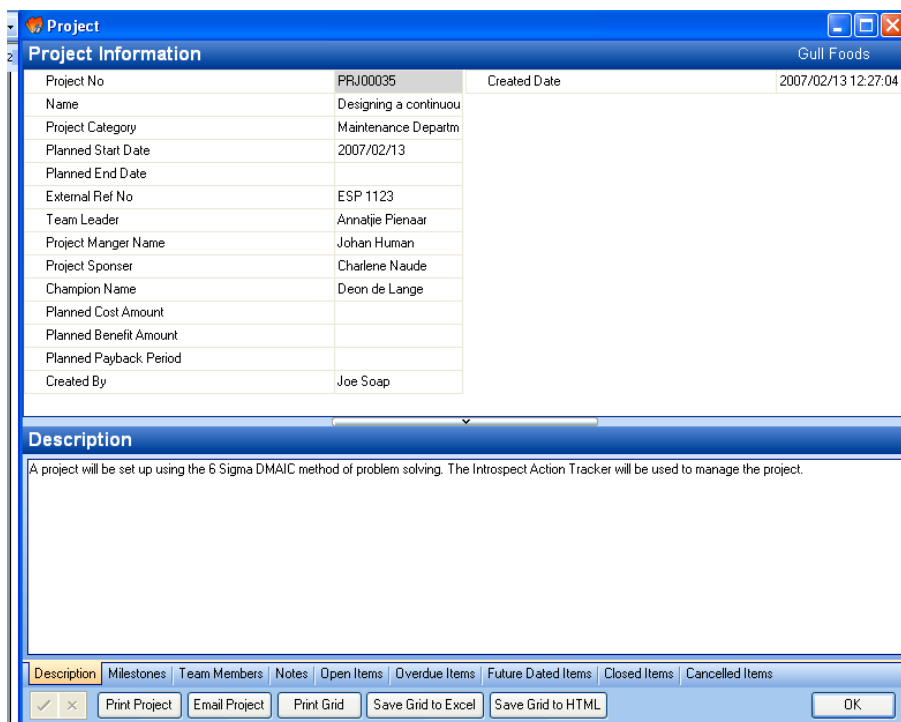
Basic methodology consists of the following five phases:

- **Define** - formally define the process improvement goals that are consistent with customer demands and enterprise strategy.
- **Measure** - to define baseline measurements on current process for future comparison. Map and measure the process in question and collect required process data.
- **Analyze** - to verify relationship and causality of factors. What is the relationship? Are there other factors that have not been considered?
- **Improve** - optimize the process based upon the analysis using techniques like design of experiments.
- **Control** - setup pilot runs to establish process capability transition to production and thereafter continuously measure the process and institute control mechanisms to ensure that variances are corrected before they result in defects.

There are two angles to problem solving namely the tools used such as fishbone diagrams, spider web analysis, 5Ys, etc. and tracking and managing the status of the project. The Action Tracker manages the people who are responsible for the various facets of a DMAIC process.

### Six Sigma and the Action Tracker

A project is registered in the action tracker listing the key people responsible.



Project Information		Gull Foods	
Project No	PRJ00035	Created Date	2007/02/13 12:27:04
Name	Designing a continuou		
Project Category	Maintenance Departm		
Planned Start Date	2007/02/13		
Planned End Date			
External Ref No	ESP 1123		
Team Leader	Annatjie Pienaar		
Project Manger Name	Johan Human		
Project Sponser	Charlene Naude		
Champion Name	Deon de Lange		
Planned Cost Amount			
Planned Benefit Amount			
Planned Payback Period			
Created By	Joe Soap		

**Description**

A project will be set up using the 6 Sigma DMAIC method of problem solving. The Introspect Action Tracker will be used to manage the project.

Description   
 Milestones   
 Team Members   
 Notes   
 Open Items   
 Overdue Items   
 Future Dated Items   
 Closed Items   
 Cancelled Items

Print Project   
 Email Project   
 Print Grid   
 Save Grid to Excel   
 Save Grid to HTML   

Figure 1: Register a Six Sigma Project



List the key project milestones

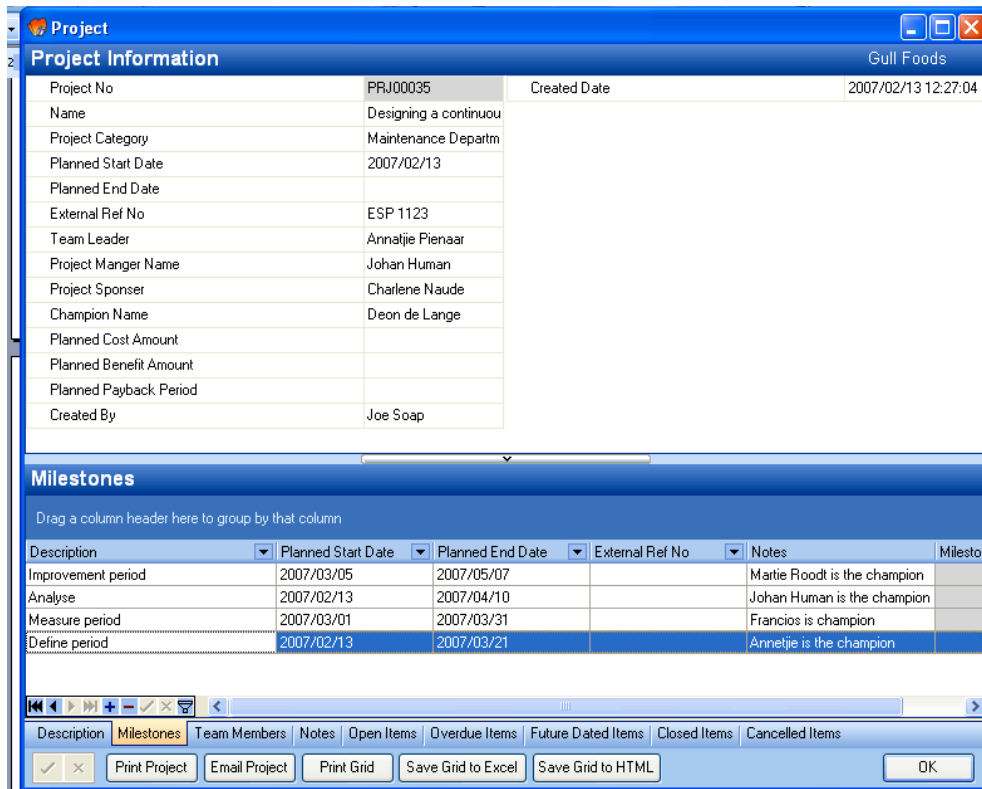


Figure 2 List Milestones and their planned and dates

Capture all the project activities according to the DMAIC methodology listed in table 1. The activities are captured against a responsible person and a planned due date.

Figure 3.

Define	Measure	Analyze	Improve	Control
Review project charter	Value Stream Map for deeper understanding and focus	Identify potential root causes	Develop potential solutions	Implement mistake proofing
Validate problem statement and goals	Identify key input, process and output metrics	Reduce list of potential root causes	Evaluate, select and optimize best solutions	Develop SOPs, training plan and process controls
Validate Voice of the Customer and Voice of the Business	Develop operational definitions	Confirm root cause effect on output	Develop "To-Be" Value Stream Map(s)	Implement solution and ongoing process measurements
Validate financial benefits	Develop data collection plan	Estimate impact of root causes on key outputs	Develop and implement pilot solution	Identify opportunities to apply project lessons
Validate high-level Value Stream Map and scope	Validate measurement system	Prioritize root causes	Confirm attainment of project goals	Complete Control Gate
Create communication	Collect baseline data	Complete Analyze Gate	Develop full-scale	Transition monitoring/control



plan			implementation plan	to process owner
Select and launch team	Determine process capability		Complete Improve Gate	
Develop project schedule	Complete Measure Gate			
Complete Define Gate				

Figure 3 DMAIC Activity List

Figure 4 Capture project activities according to DMAIC

The project tasks are raised against a person responsible. The system will send out an e-mail to the person as notification. There is a time span given for the task to be completed. The system counts down and changes status once a task becomes overdue. The responsible person needs to do the activity and then close out on the system. The status of each activity in all DMAIC areas is monitored. A report can be drawn at any stage.

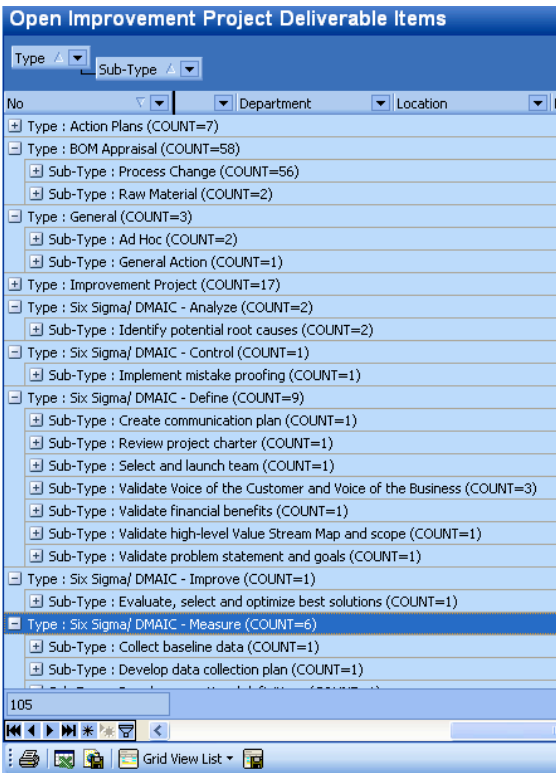


Figure 5 Six Sigma activity listing by type and sub type

There are various views available:

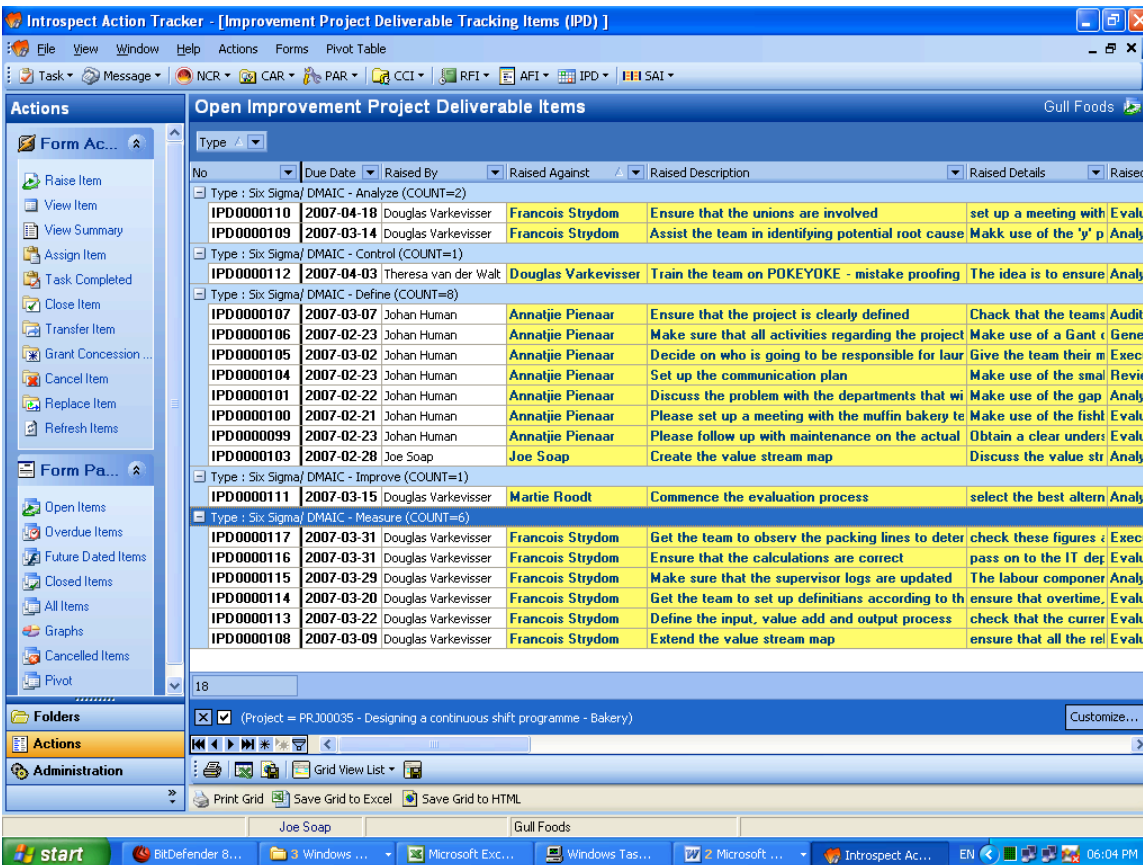


Figure 6 Open activities in the system - by DMAIC phase



The detailed list can be exported to excel figure:

**PRJ00035 - Designing a continuous shift programme - Bakery**

No	Due Date	Days Open	Days Overdue	Raised By	Raised Against	Raised Activity Type	Raised Description	Raised Details
- Type : Six Sigma/ DMAIC- Analyze (COUNT=2)								
- Sub-Type : Identify potential root causes(COUNT=2)								
	IPD000011	2007-04-18 00:00:00	0	0	Douglas Varkevisser	Francois Strydom	Evaluate	Ensure that the unions are set up a meeting with the shop involved
	IPD000010	2007-03-14 00:00:00	0	0	Douglas Varkevisser	Francois Strydom	Analysis	Assist the team in identify Makk use of the 'y' process potential root causes
- Type : Six Sigma/ DMAIC- Control (COUNT=1)								
- Sub-Type : Implement mistake proofing (COUNT=1)								
	IPD000011	2007-04-03 00:00:00	0	0	Theresa van der Walt	Douglas Varkevisser	Analysis	Train the team on POKEYOK The idea is to ensure that the mistake proofing best for the organisation
- Type : Six Sigma/ DMAIC- Define (COUNT=8)								
- Sub-Type : Create communication plan (COUNT=1)								
	IPD000010	2007-02-23 00:00:00	0	0	Johan Human	Annatjie Pienaar	Review	Set up the communication Mplan use of the small group briefs as the SDWT green areas
- Sub-Type : Review project charter (COUNT=1)								
	IPD000009	2007-02-23 00:00:00	0	0	Johan Human	Annatjie Pienaar	Evaluate	Please follow up with main Obtain a clear understanding of t on the actual project bein requirements
- Sub-Type : Select and launch team (COUNT=1)								
	IPD000010	2007-03-02 00:00:00	0	0	Johan Human	Annatjie Pienaar	Execute	Decide on who is going to Give the team their mandate responsible for launching t project
- Sub-Type : Validate Voice of the Customer and Voice of the Business(COUNT=3)								
	IPD000010	2007-03-07 00:00:00	0	0	Johan Human	Annatjie Pienaar	Audit	Ensure that the project is Check that the teams are in place defined
	IPD000010	2007-02-23 00:00:00	0	0	Johan Human	Annatjie Pienaar	General	Make sure that all activities Make use of a Gant chart regarding the project are li the schedule
	IPD000010	2007-02-22 00:00:00	0	0	Johan Human	Annatjie Pienaar	Analysis	Discuss the problem with t Make use of the gap analysis te departments that will be a by the change
- Sub-Type : Validate high-level Value Stream Map and scope (COUNT=1)								
	IPD000010	2007-02-28 00:00:00	0	0	Joe Soap	Joe Soap	Analysis	Create the value stream map Discuss the value stream with the sign off
- Sub-Type : Validate problem statement and goals(COUNT=1)								
	IPD000010	2007-02-21 00:00:00	0	0	Johan Human	Annatjie Pienaar	Evaluate	Please set up a meeting wi Make use of the fishbone techni muffin bakery team to disc actual problem
- Type : Six Sigma/ DMAIC- Improve (COUNT=1)								
- Sub-Type : Evaluate, select and optimize best solutions(COUNT=1)								
	IPD000011	2007-03-15 00:00:00	0	0	Douglas Varkevisser	Martie Roo	Analysis	Commence the evaluation s the best alternative for tri
- Type : Six Sigma/ DMAIC- Measure (COUNT=5)								
- Sub-Type : Develop data collection plan (COUNT=1)								
	IPD000011	2007-03-29 00:00:00	0	0	Douglas Varkevisser	Francois Strydom	Analysis	Make sure that the supervi The labour component on the log are updated definately change
- Sub-Type : Develop operational definitions (COUNT=1)								
	IPD000011	2007-03-20 00:00:00	0	0	Douglas Varkevisser	Francois Strydom	Evaluate	Get the team to set up d ensure that overtime, absenteeism according to the project well defined requirements
- Sub-Type : Identify key input, process and output metrics (COUNT=1)								
	IPD000011	2007-03-22 00:00:00	0	0	Douglas Varkevisser	Francois Strydom	Evaluate	Define the input, value add check that the current DuQuars M output process will measure the value add partic
- Sub-Type : Validate measurement system (COUNT=1)								
	IPD000011	2007-03-31 00:00:00	0	0	Douglas Varkevisser	Francois Strydom	Evaluate	Ensure that the calculations pass on to the IT department for configuration of the system correct
- Sub-Type : Value Stream Map for deeper understanding and focus (COUNT=1)								
	IPD000010	2007-03-09 00:00:00	0	0	Douglas Varkevisser	Francois Strydom	Evaluate	Extend the value stream map ensure that all the relevant people involved

The task/activity summary can be viewed at any stage. The summary can be e-mailed to colleagues for a reference.



**Item Summary** Gull Foods

Item No: IPD0000099  
Item Class: Improvement Project Deliverable (IPD)

This item was raised by Johan Human and was raised for "Evaluate" against Annatjie Pienaar on 2007/02/13 with a given description of "Please follow up with maintenance on the actual project being tackled".  
This item is currently open. It has been open for 1 days and is due by 2007-02-23 00:00:00.

Type: Six Sigma/ DMAIC - Define  
Sub-Type: Review project charter  
Department: Gull Foods: Production - Bakeries  
Location: RU 52 Muffin Bakery IP Chiller  
Supplier:  
Product:  
Customer:  
External Ref No:  
Document Ref No:  
Performance Ref External No:  
Performance Ref:  
Priority: Essential  
Priority Level: 8  
Work Shift: Day Shift  
Project: Designing a continuous shift programme - Bakery  
Audit:  
Review:

Print Summary    Email    OK    Cancel

Figure 7 Item Summary

Completed activities and tasks are closed out on the system.

**Close a Deliverable (IPD)** Gull Foods

Item No: IPD0000099

**Close Information**

Close By	Close Date	Activity Type
Annatjie Pienaar	2007/02/22	Completed

Close Deliverable Description  
The project team has defined the project and set up a number of guidelines

Close Details  
The team has agreed to review on a weekly basis

**Additional Info**

- Cost To Organization
- Cost To Supplier
- Cost To Customer

**References**

- Performance Reference
- External Ref No: cee 987
- Document Ref No: abc 123

Additional Info | Outcome: Resolution/Results

**Comments**

A communicae has been placed on the SDWT boards.

Mandatory     Optional    Item Summary View    OK    Cancel

Figure 8 close a task

The status of any task or activity can be referenced as shown in Figure 9 . This task is closed.



Figure 9 viewing a task

Open Tasks/ activities by month and person responsible listed

Project Monthly Activity			Open tasks by month			
Item Type	Item Sub-Type	Raised Against	February	March	April	May
Six Sigma/ DMAIC - Analyze	Identify potential root causes	Francois Strydom	2	2	1	1
Six Sigma/ DMAIC - Control	Implement mistake proofing	Douglas Varkevisser	1	1	1	1
Six Sigma/ DMAIC - Define	Create communication plan	Annatjie Pienaar	1			
	Review project charter	Annatjie Pienaar	1			
	Select and launch team	Annatjie Pienaar	1	1		
	Validate Voice of the Customer and Voice of the Business	Annatjie Pienaar	3	2	2	1
	Validate financial benefits	Annatjie Pienaar	4	4	2	1
	Validate high-level Value Stream Map and scope	Joe Soap	1	1	1	1
	Validate problem statement and goals	Annatjie Pienaar	1	1	1	1
Six Sigma/ DMAIC - Define Total			12	9	6	4
Six Sigma/ DMAIC - Improve	Evaluate, select and optimize best solutions	Martie Roodt	8	7	6	3
Six Sigma/ DMAIC - Measure	Collect baseline data	Francois Strydom	4	1	1	0
	Develop data collection plan	Francois Strydom	3	2	1	1
	Develop operational definitions	Francois Strydom	8	4	3	1
	Identify key input, process and output metrics	Francois Strydom	9	9	3	0
	Validate measurement system	Francois Strydom	2	1	1	1
	Value Stream Map for deeper understanding and focus	Francois Strydom	6	5	4	3
Six Sigma/ DMAIC - Measure Total			32	22	13	6
Grand Total			55	41	27	15

Figure 10 Pivot table generated by the Action Tracker