Customization and Implementation of a Transport Management System for Fast 'n Fresh (Pty) Ltd

by

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Executive Summary

The aim of this report is to supply an overview of the BPJ 420 final year project to the reader. The idea of the project is for students to solve a real world problem faced by a company with the knowledge that he/she acquired throughout their Industrial Engineering course.

Fast 'n Fresh's services include refrigerated transport, primary and secondary distribution services and value added services like providing their clients with detailed management reports including performance levels.

It is this value added service that prompted the development of a detailed Transport Management System (TMS) that has benefits for themselves and their customers. The intention was to standardise their systems, reduce the amount of data being duplicated and to increase the visibility of information across the organisation. The TMS has seven modules of which the final module will be rolled out during this year.

Thus the requirement for detailed documentation arose. Robust processes, roles and responsibilities needed to be identified and documented to ensure the successful implementation of the entire TMS system.

A detailed User Manual was required for the successful implementation of the system and also a method to maintain the User Manual.

A literature review was done on available techniques and methodologies; relevant tools were selected to create a solution that could be used to solve the identified problems at Fast 'n Fresh. Business Process Modelling Notation (BPMN) was used to document and graphically display the identified processes. Role and responsibility matrixes were used to document the identified roles and responsibilities. A User Manual was compiled according to the 1063™ IEEE Standard for Software User Documentation.

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List of Abbreviations

ARIS –Architecture of Integrated Information Systems

BPMN – Business Process Modelling Notation

EPC – Event-Driven Process Chain

ETS – Educational Testing Service

FnF – Fast 'n Fresh (Pty) Ltd

HR – Human Resources

IDEF – Integration Definition

IEEE – Institute of Electrical and Electronics Engineers

ILRS – Industrial Logistics Refrigerated Services

IT – Information Technology

OMG – Object Management Group

PM – Preventative Maintenance

SIPOC – Suppliers Input Process Output Customers

TMS – Transport Management System

UML – Unified Modelling Language

VSM – Value Stream Map

1. Introduction and Background

Fast 'n Fresh Transport (Pty) Ltd (FnF) is a wholly owned subsidiary of Imperial Holdings and forms part of Imperial Logistics Consumer Products Division.

Figure 1 : Imperial Logistics Divisional Structure

With a fleet of more than 200 specialised truck and refrigerated trailer combinations, FnF delivers to destinations throughout southern Africa on a 24/7 basis. They operate out of three sites, one in Gauteng, one in Kwa-Zulu Natal and one in the Western Cape, where the Head Office is also situated.

Figure 2 : South African map Indicating locations of Operations

Their clients include all the companies indicated in table 1. Woolworths is their largest client with whom their contract has been renewed for another 5 years. The contract covers transporting perishables, clothing and home ware between Woolworths three distribution centres in Cape Town, Centurion and Durban with local deliveries to more than 200 retail outlets throughout South Africa.

Table 1 : Clients Serviced by Fast 'n Fresh

	Woolworths		Rainbow
	Nestlé		Real Beverage
	Diary Belle		Tiger Brands
	Famous Brands		BidBake
	Felda Bridge		Nature's Choice

Their services include refrigerated transport, primary and secondary distribution services and value added services like providing their clients with detailed management reports including performance levels.

It is this value added service that prompted the development of a detailed Transport Management System (TMS) that has benefits for themselves and all of their customers. The intention was to standardise their systems, reduce the amount of data being duplicated and to increase the visibility of information across the organisation.

The specification of their TMS was user driven and development of the software was outsourced to a third party contractor in November 2008.

A state-of-the-art, environmentally friendly R40m operations, maintenance and administration facility is operational in Centurion, Gauteng. Located close to Gauteng's major freeways, major suppliers, markets and warehouses the facility incorporates the latest equipment, operating techniques and international trends. This is where most field visits, activities and research will be carried out.

2. Project Aim

1. Robust processes/procedures, roles and responsibilities need to be identified and documented to ensure the successful implementation of the entire TMS system. In order to meet this requirement the aim is:

   - To create a more efficient operation by identifying the different processes/procedures that have to be followed and completed and to identify the responsible persons involved in completing the tasks and activities required within the processes/procedures, hereby eliminating duplication and confusion. This will give a clearer definition of job requirements to the workforce.

   - To improve the security of the system by only allowing access to the individuals who require it to carry out the specific tasks and activities allocated to them. Improving the security in such a manner should also give a clearer indication to employees of the job that is required of them.

2. Another aim is to develop a TMS user manual and a method to maintain the user manual so that it is kept up to date with changes to the system. As a user manual is not available, new and part-time employees struggle to understand the system and therefore won't be able to carry out the tasks and activities required from them.

3. Project Scope

The TMS can be categorized into the following seven modules:

- Fleet Module
- HR Module
- Customer Module
- Operations Module
- Workshop Module
- Reports/General Module
- Security Module

The general layout of the software can be viewed in Appendix A.

The Fleet, HR (Human Resources) and Customer modules are central registers for the entire company eliminating duplication and standardising the manner in which data are created and maintained. These three modules have already been rolled out to the various sites and have been operational now for a few months.

The security module can only be accessed by the Systems Administrator and is used to govern access to the users of the system.

The Workshop module deals with fleet maintenance, workshop purchasing and inventory. Different types of vehicles have different maintenance parameters and this module assists the technical personnel in this regard. This module has also been rolled out and has also been operational for a few months.

The Operations module deals with the planning and execution of loads booked by their customers. It allows the operations personnel to effectively allocate resources to these loads in order to fulfil their customer's requirements. This module has been rolled out and is currently in operation at all of the sites.

The Reports module is also under development and will be rolled out during this year.

3.1 Deliverables

- Document containing the robust processes/procedures, roles and responsibilities identified
- Completed User Manual for the TMS for Fast 'n Fresh
- A method to maintain the User Manual

Deliverables required by the University of Pretoria:

- Final Document
- Presentation of Final Document
- Poster

4. Literature Review

4.1 Abstract

Process and software documentation are an important part of implementing a system. They eliminate confusion and errors within an organization. Different ways or techniques in which a process can be documented were reviewed. Process identification and role and responsibility identification methods were also considered. Finally User Manual formats and standards were stated.

4.2 Introduction

All large software development projects, irrespective of application, generate a large amount of associated documentation. A high proportion of costs are incurred to produce this documentation, therefore it is extremely important that it be done professionally and correctly the first time. As documentation errors and omissions could lead to errors by users.

"Document preparation is the process of creating a document and formatting it for publication" (Sommerville, 2001). Shown in figure 3, the document preparation process which is split into 3 stages namely document creation, polishing and production.

Figure 3 : Stages of Document Preparation (Sommerville, 2001)
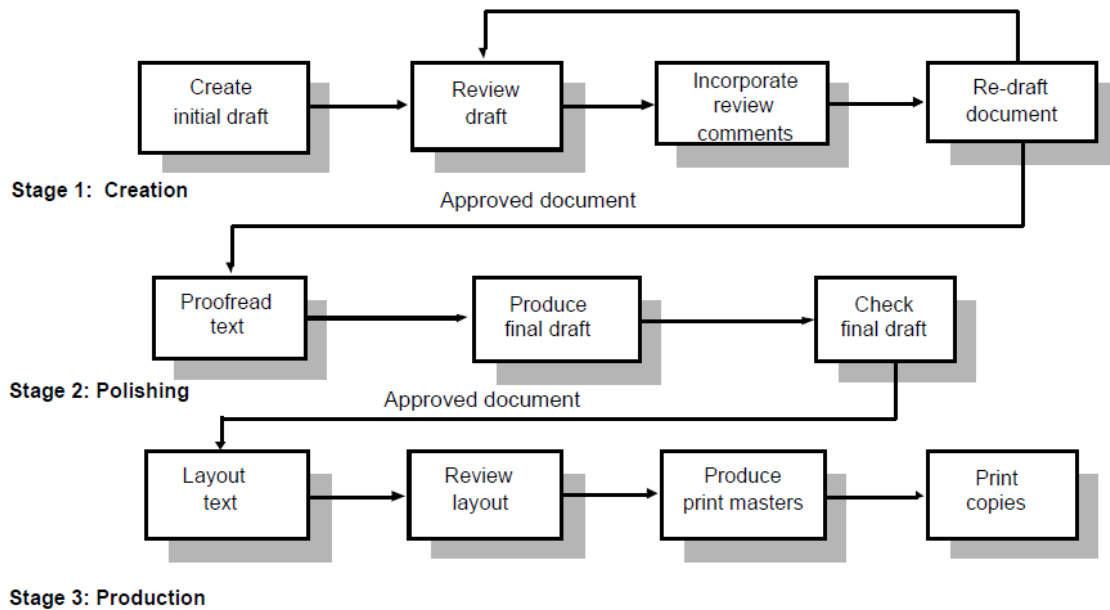
My goals in this review were to describe what a process is, and how it forms part of a system within an environment. I start by discussing some of the appropriate tools and techniques that could be used to document and display the robust processes, roles and responsibilities involved in a software/information system. I then proceed to name and discuss some of the process mapping software programs available for creating the different diagrams/charts. I also covered the format, standards and technical writing required for creating a User Manual. Finally, I considered the techniques involved in identifying the Roles and Responsibilities within a system.

My focus was to give a brief explanation of the several appropriate tools and techniques that could be used to map a process, to identify the basic symbols used and the advantages and disadvantages of some of them. The focus was not to look at the in-depth steps involved in carrying out certain techniques, and the advanced symbols used by each .Highly detailed reviews of each are not supplied.

4.3 What is a Process?

After reviewing many academics definitions of a process, the definition that best explains exactly what a process is, was found on (Business Dictionary.com). They define a process as "A sequence of interdependent and linked procedures which, at every stage, consume one or more resources to convert inputs into outputs."

The environment in which a process is usually found can be viewed as a system. Each process requires inputs (materials, information, etc.) and delivers outputs. Figure 4 is a visual overview of such a system.

Figure 4 : Basic System Model with Dynamic Information Flows
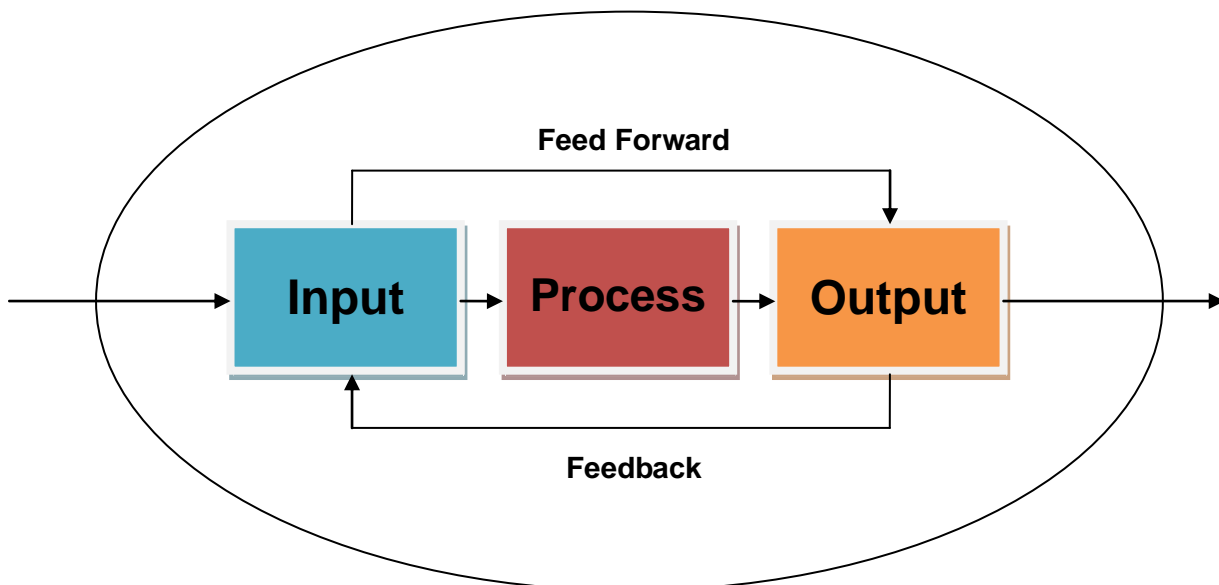
"Processes are dynamic; they occur over time and are linked by information. Most of this information is usually created by specific activities in the flow of work" (Kmetz, 2006).There are two types of information flows: (1) "Feedback", where some information or outputs are consumed by the system for self regulation and (2) "Feed Forward", which establishes criteria used to guide future actions and decisions.

4.4 Process Identification

The general idea amongst all journals and academics is that the simplest way to identify the key existing processes to be mapped is to start by viewing the outputs of these processes, and then to work backward from there to determine what process yields the specific output. A modelling tool called a SIPOC diagram is a tool often used to identify "As-Is" processes, as it too starts by looking at the output or what the customer receives if done in reverse. Another method used to identify a process and its sub-processes is to list the general processes obtained by interviewing employees, as in the case of ETS (Educational Testing Service) (Nickols, 2003), and to create a map. Then from the basic process the sub-processes can be identified. A simple example is found below.

Figure 5 : Example of process with sub-processes
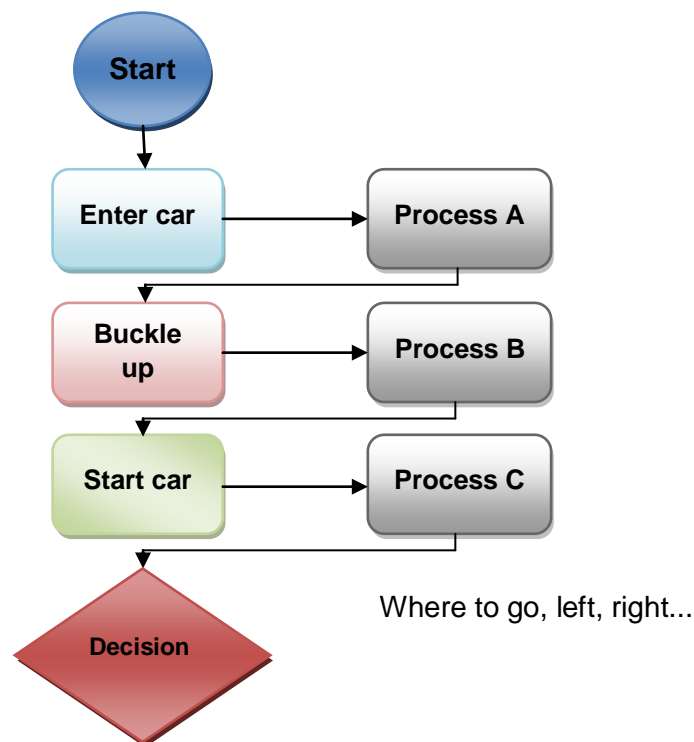
4.5 Process Mapping

Process mapping is a graphical method of completely describing the flow of information required to accomplish one or more specific objectives of work, in their correct sequence. Be it a process, organizational unit or software system. After all, "A picture is worth a thousand words".

According to (Kmetz, 2006) Process/Workflow mapping techniques have 5 important properties. That they are:

1. **Graphic** – show workflow processes visually, diagramming them as a flow of activities and information
2. **Standardized** - meaning that a specific symbol set is used for all workflows or processes being mapped, and that these are used with a specific set of rules
3. **Scalable** – in that they encompass all parts of a process at whatever level of detail is selected by the user
4. **Robust** – can be applied to any flow of work in virtually any kind of organization
5. **Verifiable** – they can describe existing processes as they are, and any map can be audited or checked against the actual flow of work and the behaviour of job holders to determine their accuracy

Process maps take on many different forms, as several notations, layouts and styles exist. Some appropriate notations and techniques are discussed below.

4.5.1 Process Flow Chart

Basic flow charting symbols obtained from Microsoft Visio:

Figure 6 : Basic flow charting symbols
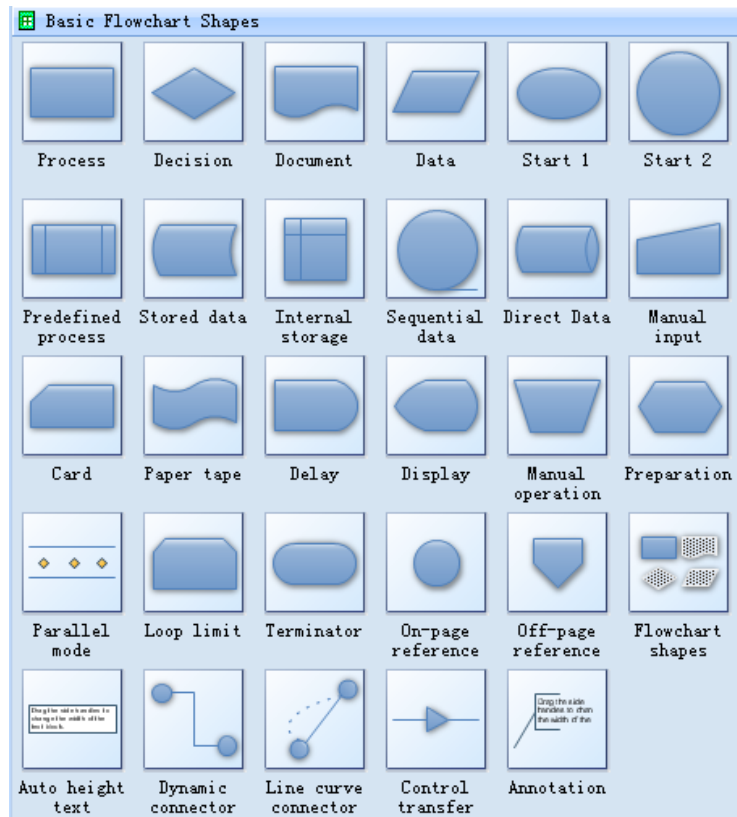
4.5.1.1 Basic Flowchart (Flow Diagram)

"A Flowchart is a pictorial representation showing all of the steps of a process" (Brassard, 2008). Basic flowcharts are the easiest to create and are useful for sketching an "As-Is" process. They form the basis for more complex types of maps. Benefits of using flowcharts are that they:

- Promote process understanding
- Provide a tool for training
- Identify problem areas and improvement opportunities

A disadvantage of a flowchart is that it is very basic, and therefore can't contain as much information as other methods.

4.5.1.2 Swimlane Diagram

Swimlane diagrams consist of a variety of process flow diagrams, and are based on the IDEF3 standard. They are often called deployment maps or cross functional flowcharts. Lanes are added to a basic flowchart to indicate the roles that different departments or people play in the process being mapped .These lanes are compared to those found in a swimming pool. Swimlane diagrams are most useful for indicating the roles and responsibilities between activities. Figure 7 displays an example of such a diagram.

Figure 7 : Example of Swimlane Diagram (adopted from (ConseptDraw.com))
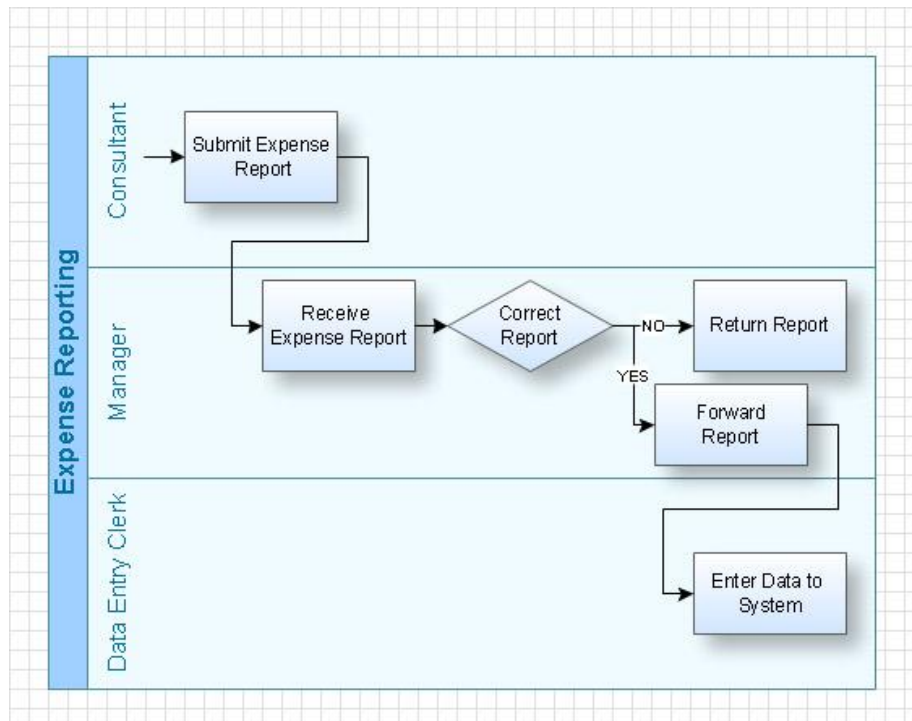
Swimlane diagrams are used in BPMN and UML methodologies, and referred to Cross-Functional Flowcharts in Microsoft Visio.

4.5.1.3 Value Stream Map

Value Stream Maps (VSM) are commonly used in Lean and Six Sigma initiatives. They are primarily used to identify problems and opportunities for improvement in a process. VSM are

used to analyse the flow of materials and information currently required to bring a service to a customer. There are seven VSM tools:

1. Process Activity Mapping
2. Overall Structure Maps
3. Supply chain responsiveness matrix
4. Quality filter mapping
5. Forrester effect mapping
6. Product Variety Funnel
7. Decision point analysis

A variety of software programs or add-ons to existing software such as Microsoft Visio, iGrafx, the ARIS Platform and FlowCharter are available for mapping the different tools. Although VSM are not difficult to construct, these types of software programs do speed up the process considerably.

4.5.1.4 SIPOC Diagram

SIPOC (Suppliers Input Process Output Customers) diagrams are one of the tools used in Six Sigma methodology and are also known as high level process maps. SIPOC diagrams help to identify and define the relevant elements required for a process improvement project. The advantage if SIPOC diagrams are that they can quickly and easily capture the "As-Is" state of the process or system under consideration.

Figure 8 : High Level Map of SIPOC Process
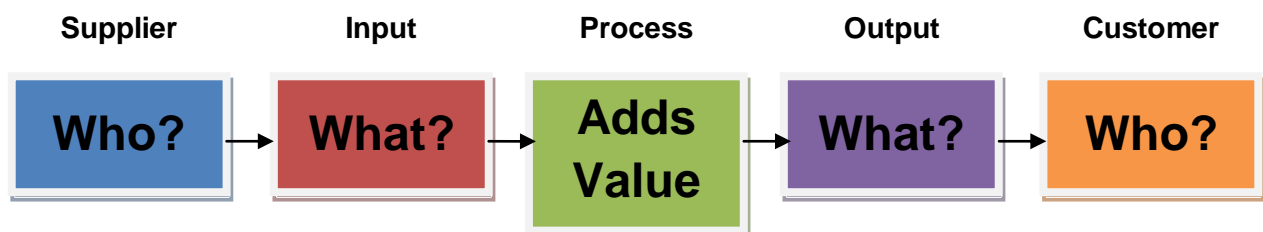
Figure 8 illustrates the idea behind a SIPOC diagram. The supplier provides input to the process, which adds value and creates an output. This results in an output that meets the

customers' requirements. Who (manager, mechanic, secretary, etc) and what (information, material, etc) are questions that are asked at each step and the value added by the process is also stated.

A SIPOC diagram is a useful tool for identifying the basics of processes that need to be mapped. The drawback to this technique is that it doesn't supply in depth information about the steps involved in the process being mapped. Therefore it is more an identification tool than an actual mapping tool.

4.5.2   Event-driven Process Chains

According to (van der Aalst, 2000), "Event-driven process chains are an intuitive graphical business process description language", and that this type of diagram shows the flow of the process as a chain of events and functions.

There are 3 types of elements (Figure 9) used to construct EPC's:

- Functions (Activities) – a task or process step
- Events – link functions
- Logical connectors – connect activities and events and 3 types exist
  - V (and)
  - *XOR* (exclusive or)
  - Λ (or)
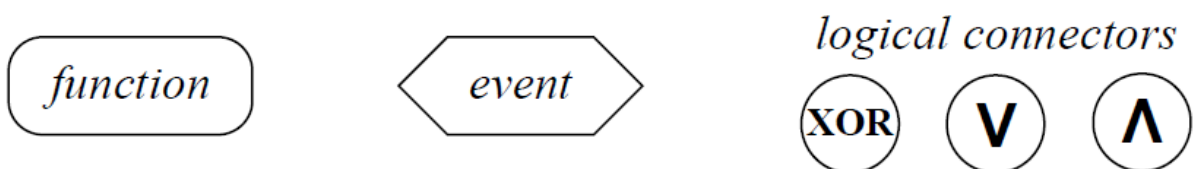
Figure 9 : Notation used in constructing EPC's

Huge advantages of EPC's are that they are easy to read and understand. So no extensive training of employees is required to understand and also to map EPC's. Software used to map EPC's comes in the form of ARIS (Architecture of Integrated Information Systems) and

SAP R/3. ARIS techniques differ from swim lane methods because it is process orientated, whereas swim lane is function orientated. Below is an excerpt of an EPC diagram from an SAP R/3 reference model in ARIS.

Figure 10 : EPC from an R/3 referencing model in ARIS (Scheer, 1998)
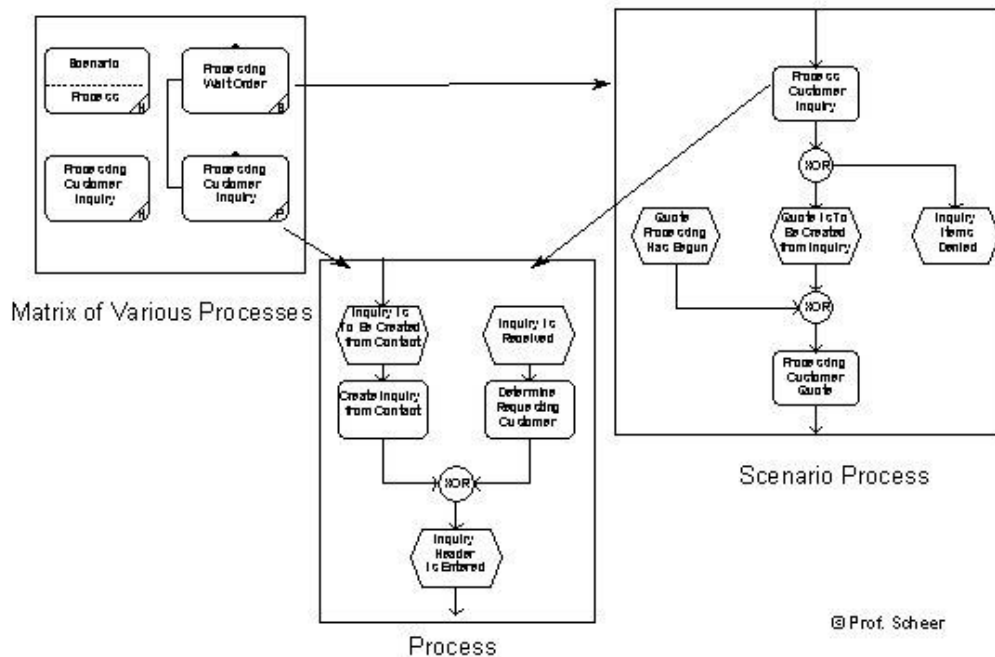
4.5.3 Business Process Modelling Notation

Business Process Modelling Notation (BPMN) has been developed by the Object Management Group (OMG). The primary goal of BPMN is to provide notation that is easily understandable by all types of users. As explained in (Business Process Model and Notation ,2009), BPMN bridges the gap between business process design and process implementation. An important objective of BPMN is to combine the best existing, divergent business process modelling notations and methodologies into a single standard notation. These include UML Activity Diagrams, IDEF, Event-driven Process Chains (EPC's) and several more. BPMN allows businesses to fully understand their internal business processes by using graphical notation.

"BPMN follows the tradition of flowcharting notations for readability and flexibility" (Object Management Group, 2009), but also uses the business process notations preceding BPMN experiences to add expandability. As one of the drivers for developing BPMN is to create simple and understandable ways for compiling business process models, graphical notation is divided into 5 basic categories of elements:

- **Flow objects**
    - Events
    - Activities
    - Gateways
- **Data**
    - Data objects
    - Data inputs
    - Data outputs
    - Data stores
- **Connecting objects**
    - Sequence flow
    - Message flow
    - Association
    - Data association
- **Swimlanes**
    - Pools
    - Lanes
- **Artifacts** (provide additional information about process, therefore more can be added)
    - Group
    - Text annotation

As discussed by (Owen, Martin and Raj, 2003), if the BPMN standard is used to design a business process, it can be directly mapped to any business modelling executable languages for immediate execution. Many software programs are available online such as BizAgi, Sparx Systems and a plug-in for Microsoft Visio.

4.5.4   Unified Modelling Language

Unified Modelling Language (UML) was created, and is managed by, the Object Management Group (OMG). It is a standardized all purpose modelling language used in the field of software engineering. UML models represent two different views of a system model (Jon Holt Institution of Electrical Engineers, 2004), and UML 2.2 has 14 types of diagrams divided between these two views (Object Management Group, 2009):

- **Static view**
    - Profile diagram
    - Class diagram
    - Composite structure diagram
    - Component diagram
    - Deployment diagram
    - Object diagram
    - Package diagram
- **Dynamic view**
    - Activity diagram
    - Use Case diagram
    - State Machine diagram
    - Interaction diagram
        - Sequence diagram
        - Communication diagram
        - Interaction Overview Diagram
        - Timing diagram

UML 2 has a variety of elements and notations that are used; therefore it is a highly complex method with vast capabilities. This is an advantage over some of the other methodologies previously discussed which were too basic and don't go into enough detail about a process. On the other hand it is also a disadvantage, as the complexity of UML 2 makes it difficult for novice users to use and understand.

4.6 User Manual

User guides (also called User Manuals) are written to help people understand IT systems or software applications. User guides are often written for non-technical individuals and therefore must be easily understandable and usable. The table below represents the required and optional, content and format components of user documentation as prescribed in the 1063™ IEEE Standard for Software User Documentation.

Table 2 : Components of software user documentation adopted from (Software Engineering Standards Committee of the IEEE Computer Society 2001)

Component	Required?
Identification data (Title Page)	Yes
Table of Contents	Yes, in documents of more than eight pages after the identification data
List of Illustrations	Optional
Introduction	Yes
Information for use of the documentation	Yes
Concept of operations	Yes
Procedures	Yes (instructional mode)
Information on software commands	Yes (reference mode)
Error messages and problem resolution	Yes
Glossary	Yes, if documentation contains unfamiliar terms
Related information sources	Optional
Navigational features	Yes
Index	Yes, in document of more than 40 pages
Search capability	Yes, in electronic documents

User documents come in two forms:

- Printed format
- Electronic format

The form should be decided on before the process of documenting is commenced, as many different factors have to be considered and included or excluded depending on the format. Technical writing required to compile user manuals and specifications as to how all aspects should be documented can be found in the 1063™ IEEE Standard for Software User Documentation.

4.7 Identification of Roles and Responsibilities

The identification of roles and responsibilities within an organization are of utmost importance to avoid duplication, confusion, and to ensure that an efficient operation is maintained. The best way to document roles and responsibilities is to use a Roles and Responsibilities Matrix (Table 3).

Table 3 : Roles and Responsibilities Matrix

Title	Role
Title of person	Role person plays
Responsibilities	
• Tasks and activities that person is responsible for	

4.8 Conclusion

Software documentation is an important part, and plays a major role in the implementation of a new system. The understanding of where and how a process fits into a system aids in the identification of processes. Various techniques discussed above are appropriate for mapping and defining processes or procedures that have to be followed in order for a system to

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function. Roles and responsibilities that are identified help companies and systems to operate efficiently, and aid in the creation of a User Manual. These can then be used in a User's guide. The specifications for compiling such a document are presented in the 1063™ IEEE Standard for Software User Documentation document.

5. Conceptual Design

5.1 Method Selection

To decide which method to use for documenting the various processes and procedures was a difficult task, as many of the techniques share common thoughts but also differ in so many ways. In order to choose the method/tools/techniques to be used, the following criteria were considered.

Criteria considered in decision making:

- **Readability** – Is it easy to understand?
- **Complexity** – Level of detail that can be achieved
- **Flexibility** – Can many different types of processes be mapped ranging from very basic to highly complex?
- **Verifiable** – Can it be checked for correctness using the available software
- **Software** – Is software available and at what cost?
    - Is extensive training required to be able to operate software?
- Can method be used throughout the entire organisation?

After considering the criteria, it was decided that BPMN would be used in conjunction with the BizAgi Process Modelling software.

BPMN was designed so that it could be easily understood by all users and also combines all of the best available and tried modelling notations into one standard notation. The notation is also rapidly becoming a standard in many companies and organisations around the world, many large companies have already adopted this notation.

The BizAgi software can be downloaded from the internet for free from www.bizagi.com, the software is easy to use and diagrams can be converted into many formats such as MS Word and Excel, Adobe, XML, etc with ease.

Approval was granted from Fast 'n Fresh to use BPMN and the BizAgi software. The letter of approval can be found in Appendix B.

Note! The average employee/user was kept in mind throughout the selection process.

The steps involved in creating a flow diagram:

1. Start with the big picture – a macro-level flow diagram
2. Observe the current process/procedure
3. Record process/procedure steps – can use post-it™ notes
4. Arrange the steps in sequence – the post-it™ notes (saves time)
5. Draw the flow diagram

A roles and responsibilities matrix and organisational charts will be used to record the roles and responsibilities of all the stakeholders, users of the system. The User Manual will be compiled according to the (1063 IEEE Standard for Software User Documentation) and will make use of the information collected from the other tools/techniques used.

5.2 How the methods/tools will be used to solve the problems

1. Identify the different processes/procedures/roles and responsibilities

Meet with each stakeholder and go through the processes/procedures required by each of them in a step-by-step fashion. Document all the processes/procedures, roles and responsibilities identified.

2. Confirm all findings

Sit down with Managing Director and Systems Administrator to confirm and clarify any confusion within the processes/procedures and roles and responsibilities.

3. Document the findings

Document all the findings in the decided methods and according to standards.

4. Compile format for User Manual

Decide on final formats, styles, what must be included and what must not. Confirm these with Managing Director and Systems Administrator.

5. Compile the User Manual

User Manual will be compiled according to the (1063 IEEE Standard for Software User Documentation) specifications.

6. **Design a method for maintaining the User Manual**

6. Solution

6.1 Procedures Identified

The notes indicate which link to follow in the User Manual to complete the activity. The lanes indicate who is responsible for each step. The procedure below shows a trip from beginning to end. The "Create Trip Sheet" procedure below is displayed in Figure 12 and the "Dispatch Driver" procedure below is displayed in Figure 13.

Figure 11 : Procedure for Trip from Beginning to End
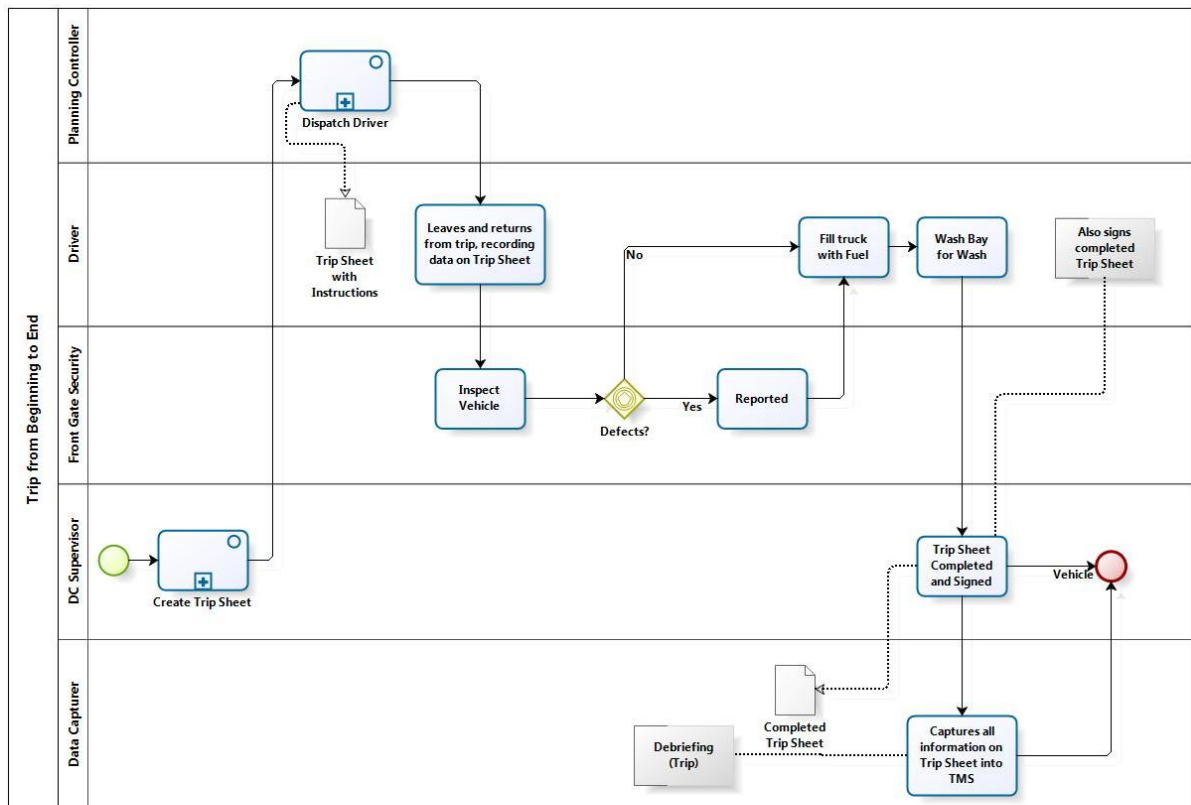
Figure 12 : Procedure for Creating a Trip Sheet
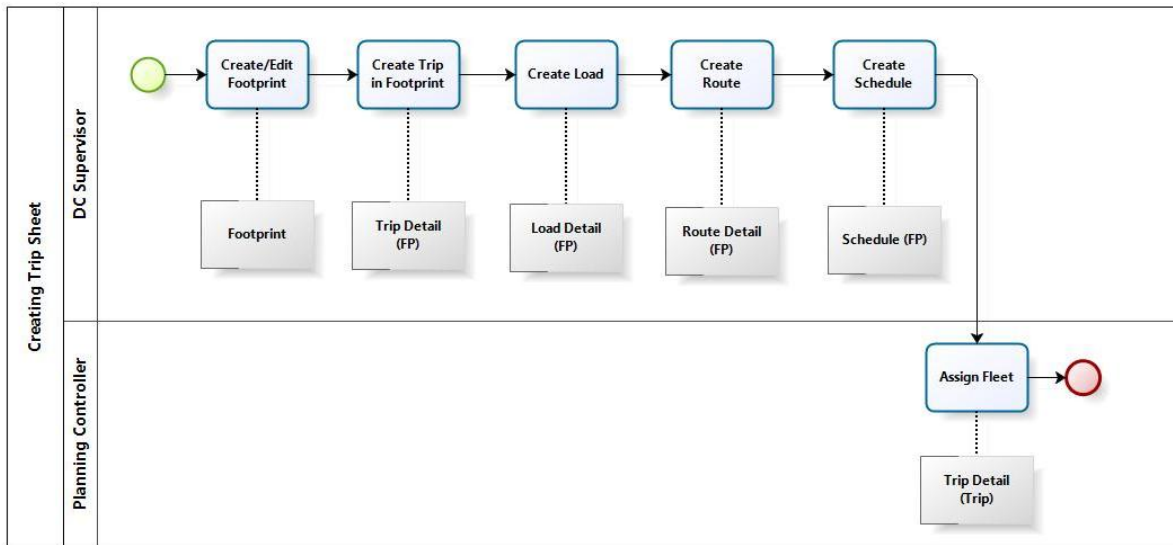
Figure 13 : Procedure for Dispatching a Driver
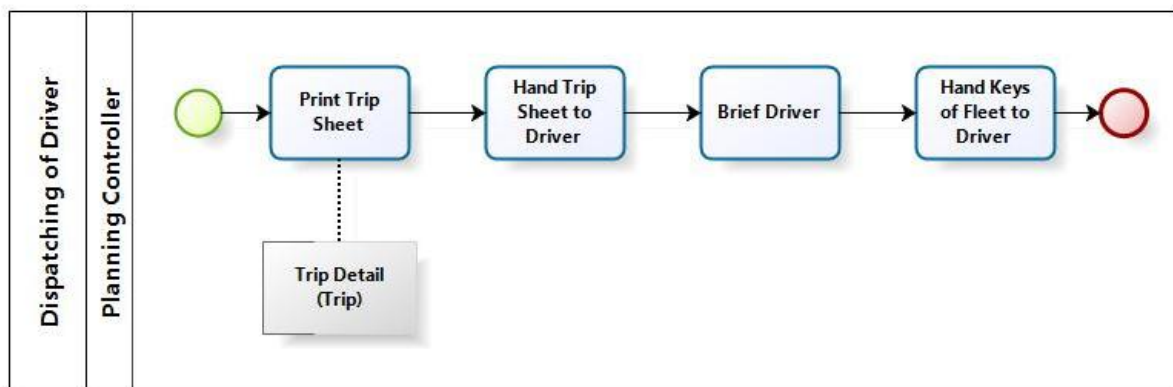
In the procedure below there is a referral to Power Track, this is the software used by FnF to track their entire fleet and is a separate software program and does not form part of the TMS.

Figure 14 : Procedure for Creating a New Location
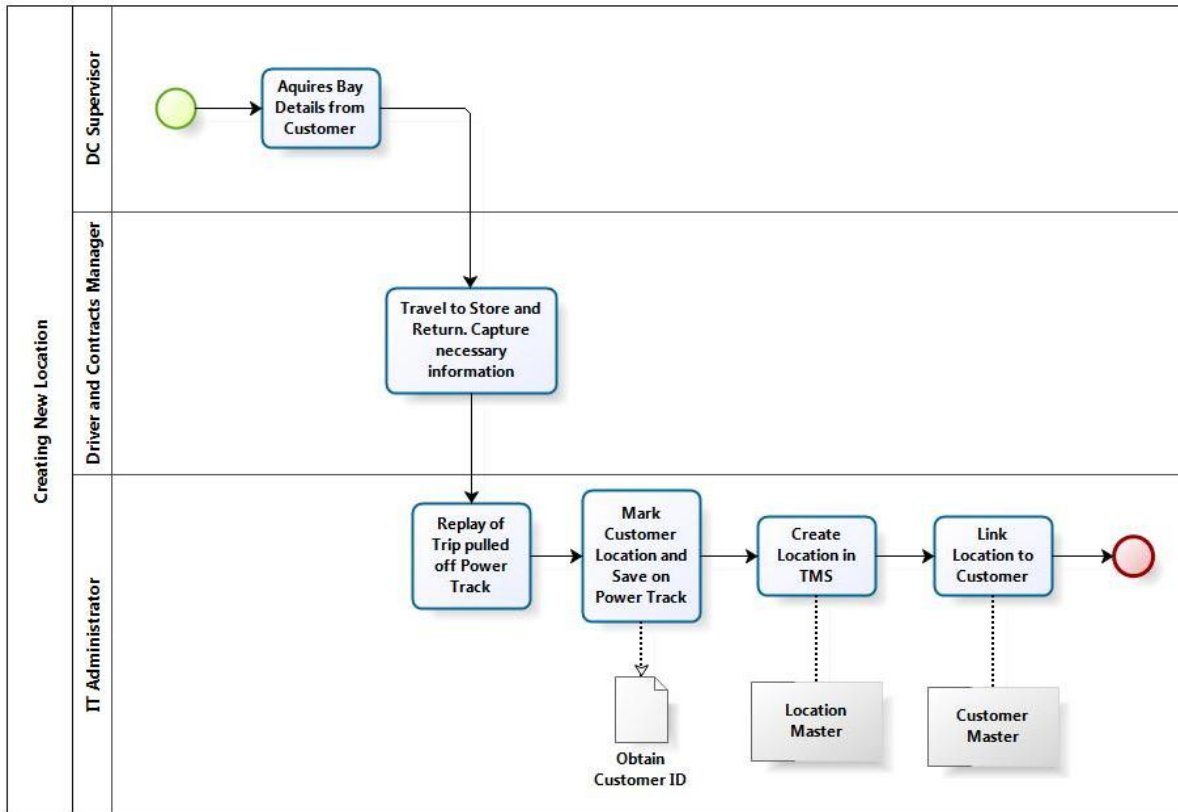
Figure 15 : Maintenance Procedure
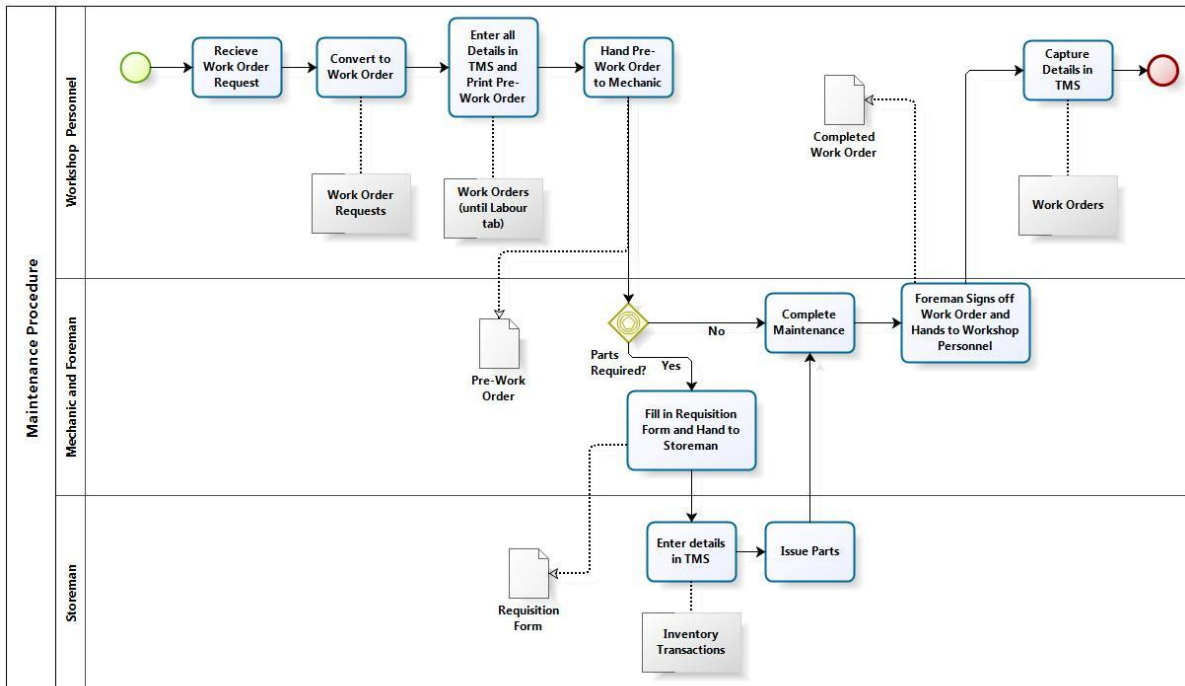
Figure 16 : Procedure for Creating a Purchase Order
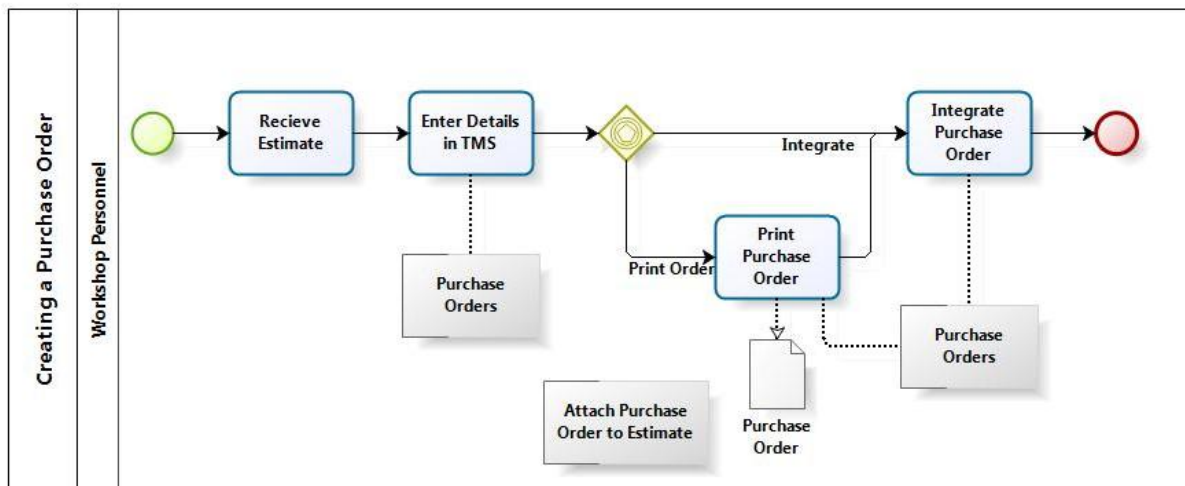
Figure 17 : Procedure for the Receiving of a Purchase Order
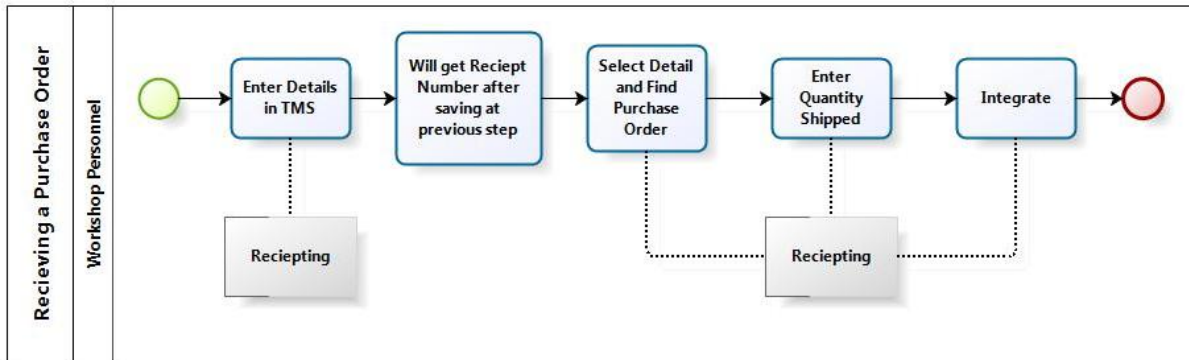
6.2 Method for Maintaining the User Manual

Training will be given to the Systems Administrator for the usage of BizAgi Process Modeller so that he/she is able to understand the basics of the program and be able to make the necessary changes to the structure using the program.

Figure 18 : Procedure for Maintaining the User Manual
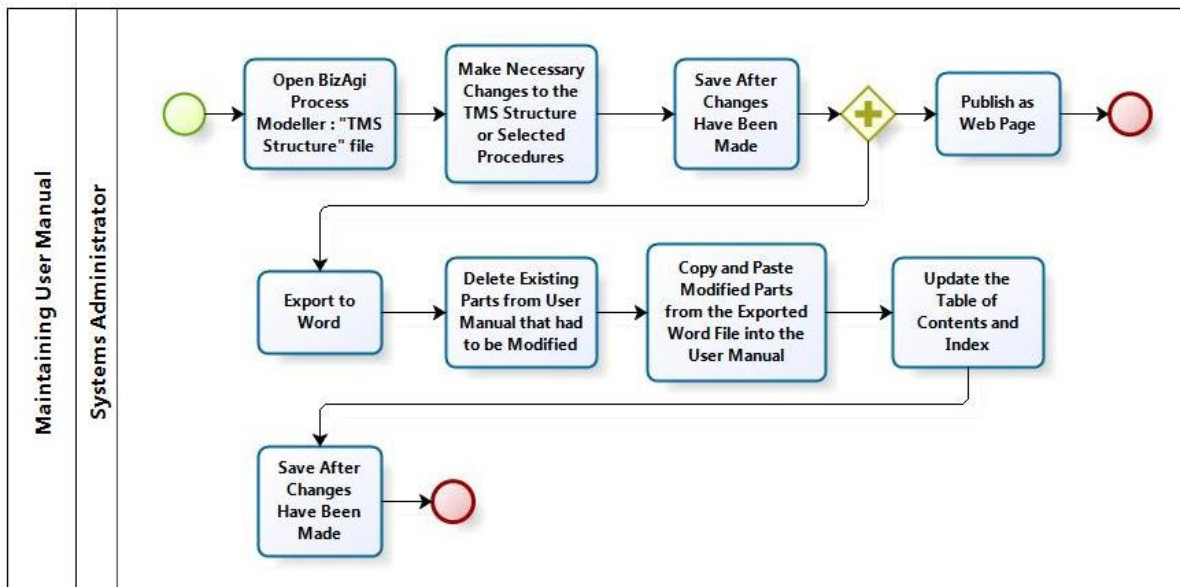
6.3 Roles and Responsibilities Identified

The roles and responsibilities identified are provided in the matrixes below, they supply the title of the designation, a short description of their role and the responsibilities of that person within TMS. It is important to note that the responsibilities recorded are only those that apply within the TMS environment and **not** those required outside of TMS such as meetings, physical purchasing of fleet, etc.

Table 4 : Role and Responsibilities matrix for Contracts Manager

Title	Role
Contracts Manager	Management of Operations for Contracted Services
Responsibilities	
- Maintenance of Shift Master - Maintenance of Team Master - Maintenance of Resource Activities	

Table 5 : Role and Responsibilities matrix for Systems Administrator

Title	Role
Systems Administrator	Management of IT Systems and TMS
Responsibilities	
- Network Operating Systems Management and Support. - TMS Administration and Security - Maintaining the User Manual - Maintenance of PM Profile Master - Maintenance of Workshop Master - Maintenance of Failure Category Master - Maintenance of PM Task Master	

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- Maintenance of Lubricant Type Master

- Maintenance of PM Task Profile Master

- Maintenance of Equipment Master

- Maintenance of Shipment Category Master

- Maintenance of Document Type Master

- Maintenance of Shipment UOM Master

- Maintenance of Major Route Master

- Maintenance of Route Master

- Maintenance of Activity Master

- Maintenance of Debrief Task Master

- Maintenance of Department Master

- Maintenance of Position Master

- Maintenance of Licence Type Master

- Maintenance of PDP Type Master

- Maintenance of Fleet Type Master

- Maintenance of Manufacturer Master

- Maintenance of Owner Master

- Maintenance of Accessory Master

- Maintenance of KPI Master

- Maintenance of KPI Reason Master

- Maintenance of Revenue Type Master

- Maintenance of Schedule Time Profile

Table 6 : Role and Responsibilities matrix for DC Supervisor

Title	Role
DC Supervisor	Trip Creation and Planning
Responsibilities	
- Create and Maintain Trips - Create and Maintain Loads - Create and Maintain Footprints - Resource Planning - Maintaining Loan Resources - Resource Mapping - Schedule Preventative Maintenance - Creation of Work Order Requests and must ensure Maintenance gets carried out - Acquiring Initial Bay Details for the First Visit to a New Location	

Table 7 : Role and Responsibilities matrix for Planning Controller

Title	Role
Planning Controller	Dispatching
Responsibilities	
- Dispatch Drivers - Print Trip Sheets for Drivers - Hand Keys of Fleet to Drivers - Assigning Fleet to Loads - Manage Shift Controllers	

Table 8 : Role and Responsibilities matrix for IT Administrator

Title	Role
IT Administrator	Administration of IT Systems and TMS
Responsibilities	
- Maintenance of Customer Master - Assists Users with Problem Resolution - Maintenance of Location Master - Linking of Locations to Customers - Maintenance of Suburb Master	

Table 9 : Role and Responsibilities matrix for Workshop Personnel

Title	Role
Workshop Personnel	Workshop Administration
Responsibilities	
- Process Work Order Requests - Create and Maintain Work Orders - Maintaining Lubricant Usage - Administration of Wash Bay - Assists in Workshop Activities - Create and Maintain Purchase Orders - Receiving of Purchase Orders	

Table 10 : Role and Responsibilities matrix for Storeman

Title	Role
Storeman	Management of Parts Warehouse
Responsibilities	
- Receiving of Stock Items - Creating and Maintaining Inventory Transactions - Process Requisition forms and Enter into TMS	

Table 11 : Role and Responsibilities matrix for HR Manager

Title	Role
HR Manager	Management of Human Resources
Responsibilities	
Maintenance of Employee Master	

Table 12 : Role and Responsibilities matrix for Data Capturer

Title	Role
Data Capturer	Capturing of Information into TMS
Responsibilities	
Capturing of Information into TMS from Trip Sheets, etc.	

6.4 User Manual

The User manual contains the overall layout of the TMS, all the procedures that are required for use of the system, information required for use of the User manual together with a revision table to keep track of changes and updates to the manual. The 1063™ IEEE

Standard for Software User Documentation was used as a guide for compiling the User Manual as some aspects had to be modified to suit FnF's needs.

The screenshots used in the manual contain the logo of Imperial Logistics Refrigerated Services (ILRS) and not that of FnF as a result of changes that came about during the project, but as the TMS is only being implemented for FnF the project and User Manual remain titled for FnF. The User Manual can be found in Appendix C. It is important to note that the screen shots in the User Manual are mostly there so that the user can confirm that he/she is on the correct screen. A web based form of the User Manual was also supplied with examples given below in the form of screen shots.
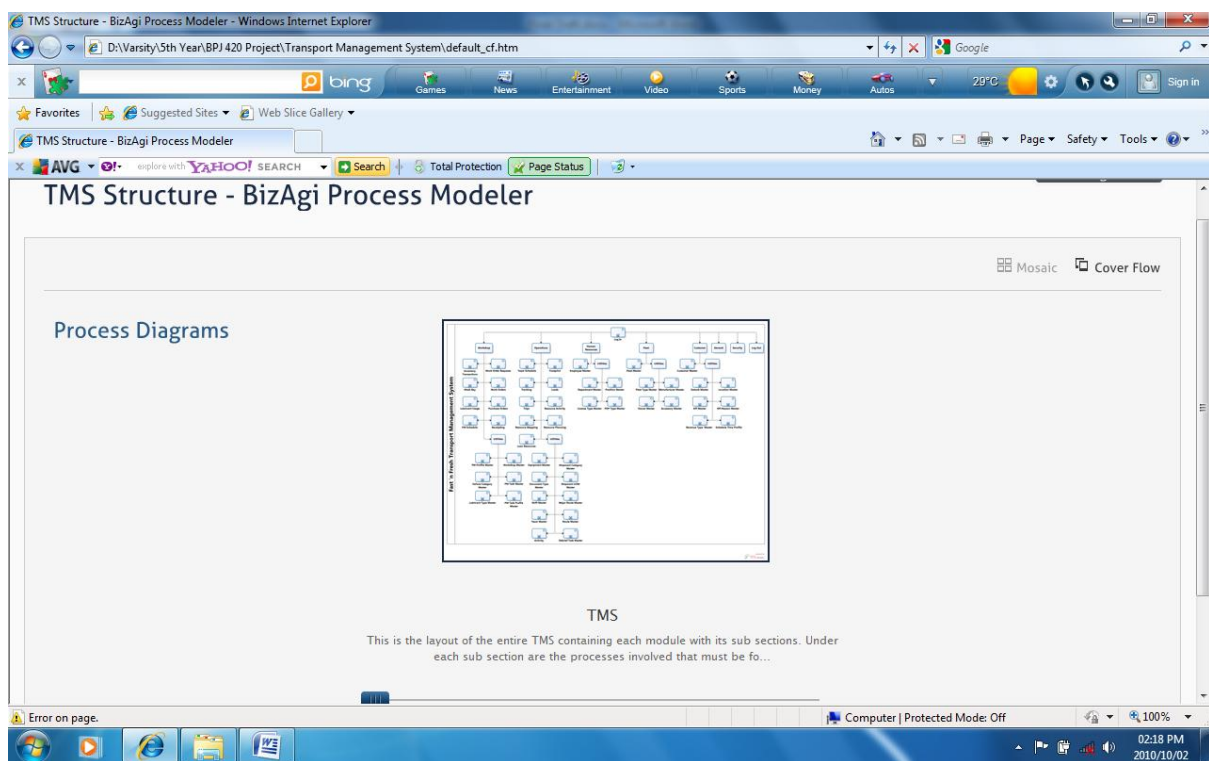
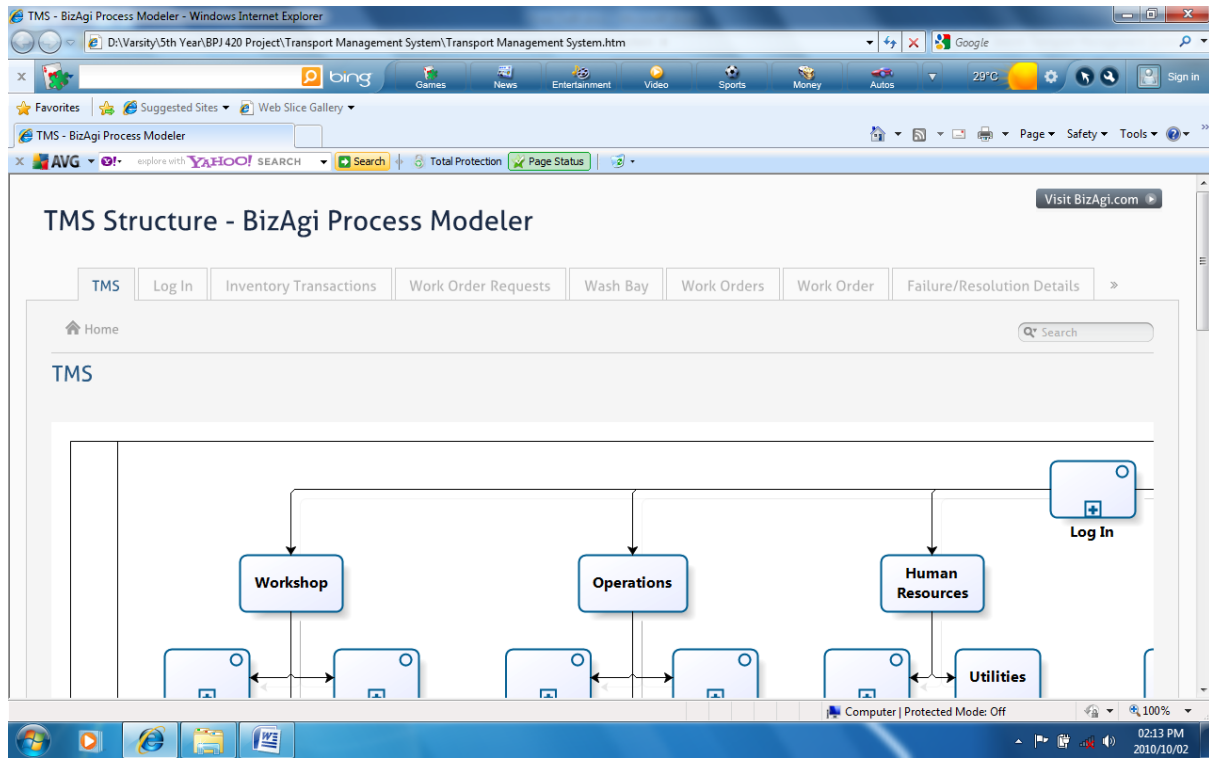**Figure 19 : Home Screen**

Figure 20 : Screen with Overview of TMS

Figure 21 : Example of Process

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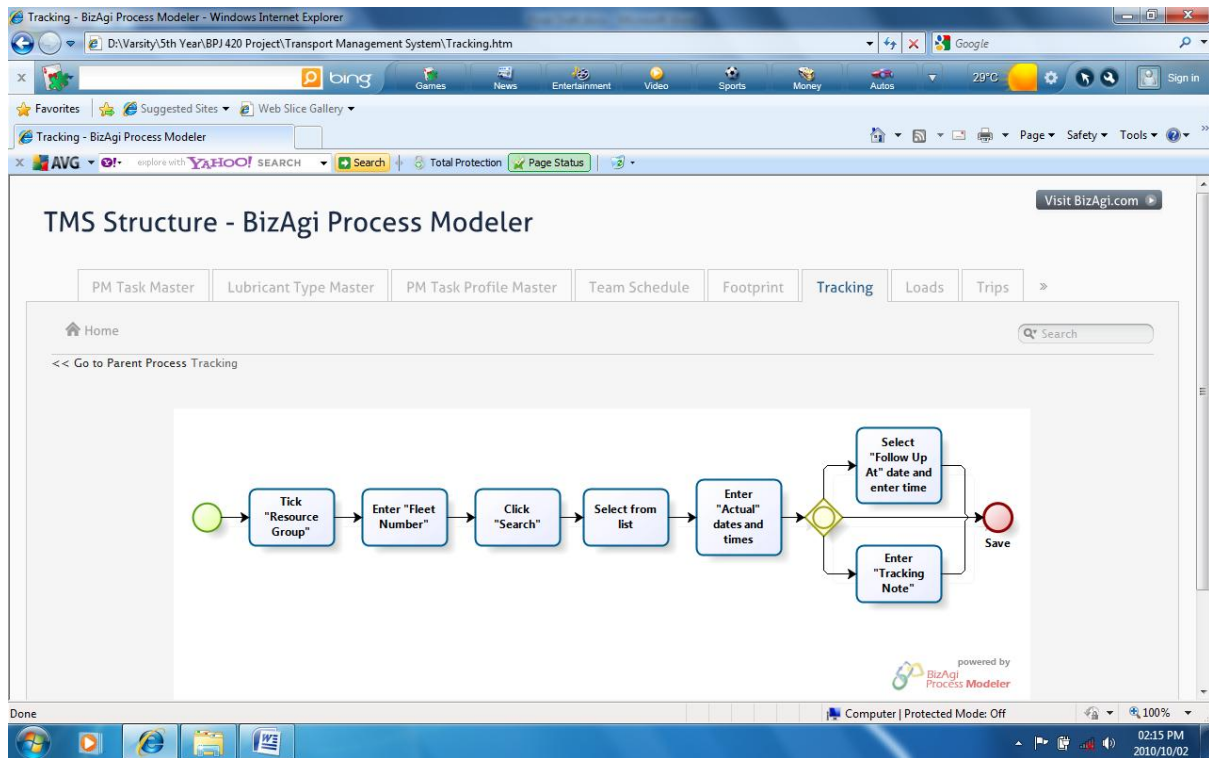
Figure 22 : Example of Description and Tab linking to Process and Screenshot
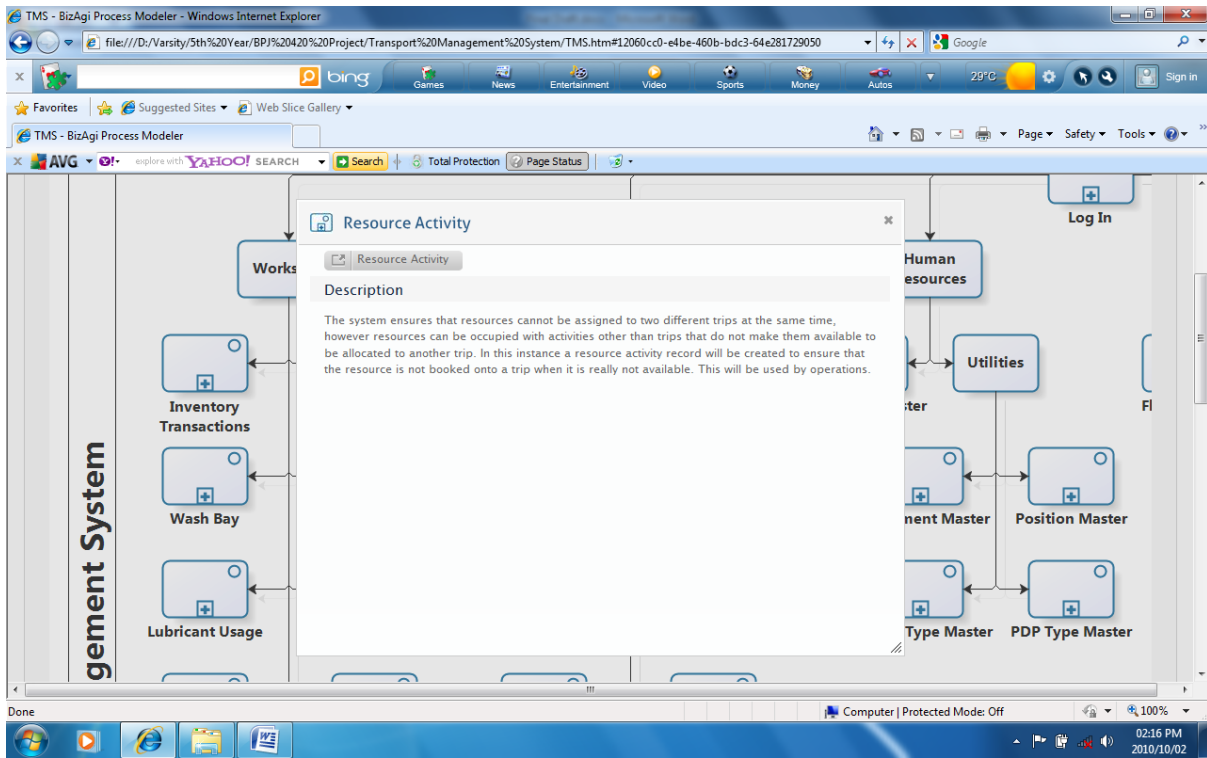
7. Conclusion

After describing the problem faced by Fast 'n Fresh, a review of all the methods, techniques and tools available was done. Different notations and types of process documenting tools were considered, including methods of identifying and documenting aspects within a system. Once a good understanding of these was obtained by the student, several were selected and used to create solutions for the problems defined by Fast 'n Fresh. These were to use BPMN to map the identified processes, roles and responsibilities matrixes and software documentation standards.

The best methods for use were selected according to knowledge gained by the student while keeping the environment and users in mind. BizAgi Process Modeller was used to compile the procedures documented. The User Manual was presented in the form of a hard copy, an electronic version in Microsoft Office Word and in the form of a web page.

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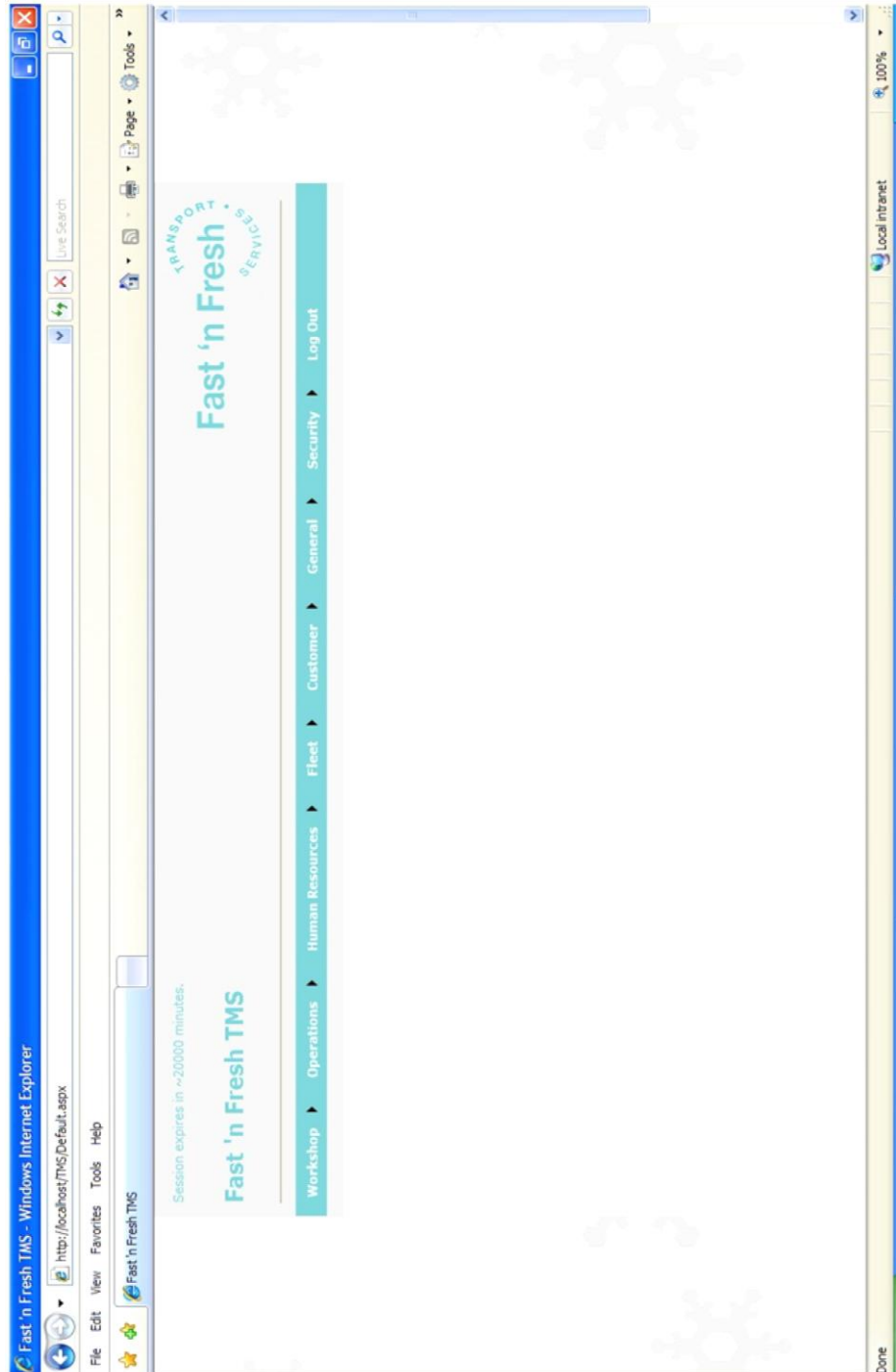
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9. Appendices

9.1 Appendix A

9.2 Appendix B

Fast 'n Fresh

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Mr. Kelvin Smit
University of Pretoria

27 July 2010

APPROVAL FOR USE OF BPMN IN PROJECT

Dear Kelvin

This is in response to your request for approval to use Business Process Modeling Notation (BPMN) to map the required processes at Fast 'n Fresh Transport (Pty) Ltd and for use in the User Manual also requested by Fast 'n Fresh Transport (Pty) Ltd.

We are pleased to inform you that Fast 'n Fresh Transport (Pty) Ltd has approved your request to use BPMN to carry out the tasks required from you.

We wish you all the luck and success in your project.

Best regards,

GAVIN WILSON
MANAGING DIRECTOR

Fast 'n Fresh Transport (Pty) Ltd. Reg No. 1992/004467 – A member of Imperial Holdings Ltd.
Directors: G G Wilson (Managing), A S Crafford, L W Hyman, J D V Rabie, T J Truscott, C S Els*, F C Truter*. *Non-Executive Directors

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9.3 Appendix C