The Application of Support Documentation for the Mitrefinch™ Time Management System (TMS), a Client-centred Approach

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Abstract
Everyone has a preferred way of learning whether it involves seeing charts and graphs, hearing a lecture, or physically doing something. Software support documentation usually comes in only one format. This project addresses the use of multiple support documentation formats. Furthermore, the project reviews literature on learning styles, documentation structure, and usability, specifically looking at two learning style models: the Dunn and Dunn Model and the Felder and Silverman Model. This information is used to create a client-centred approach to software support documentation for Mitrefinch Ltd’s Time Management System. Three types of materials were created: visual guides, audio guides, and simulations based on the Top Five “How do I...?” queries from a Mitrefinch Ltd support department survey. This information provides the support department with a range of materials to guide clients toward a preferred learning method to suit any client.
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Chapter 1: Preface

1.1 Motivation

The motivation behind this project comes from the author’s personal experience working as a teacher/trainer. The author experienced both children and adult learning while working as a teacher/trainer. In the author’s experience, both adults and children require teaching to their individual strengths, and the presentation of information has to be a flexible process. As a previous client of Mitrefinch Ltd, the author notes that the company provides a traditional software manual to solve all problems in conjunction with a dedicated support line to call for any additional personal assistance. However, this support line is only available during U.K. business hours. As the manuals at Mitrefinch Ltd sometimes are unwieldy and address topics not in the purview of this project, the author decided to pare down this manual into small instructional guides for the users. Printable visual guides were mainly used as this was the normal training materials format. The author believes that by offering support documentation targeting different learning styles clients can answer general questions about TMS on their own without having to take up the support teams’ time leaving them free to answer the more complicated and unique queries. The project takes visual, auditory and tactile/kinaesthetic learning styles into account when creating a variety of guides and simulations, which are offered on the support website to centralise the location for easy access.

1.2 Aims and Objectives

The project aims to develop client-centred support documentation using different learning styles, which aids clients in the use of Mitrefinch™ Time Management System (TMS). In addition, the aim is to provide Mitrefinch Ltd and their clients with support documentation that adheres to the Mitrefinch Ltd standardised format, while developing a range of materials, such as visual and auditory guides, and simulations for tactile/kinaesthetic learners. This support documentation exists in addition to their original client support manual.

Moreover, the support documentation is maintained in a single, easy-to-find location (the support website) and is indexed in such a way that both clients and staff are able to locate a desired document quickly. Furthermore, the aim is to focus on repeat client
queries and the design of support documentation that considers practical end users, specifically with the use of non-technical language, allowing anyone to use the materials.

With these aims in mind, the following objectives will assist in achieving the goal of support documentation using a client-centred approach:

- To create materials that are client-centred using learning styles such as visual, auditory, and simulations for tactile/kinaesthetic learners

- To provide materials held in a centralised location, making them easily available

- To focus on repeat client queries, breaking them down into sections that are easy to navigate

- To clearly define and index sections for easy location of desired topics

- To consider documentation level centring on practical end users, specifically using non-technical language

- To provide documentation that is easy to read/understand and for a wide range of technical skills

- To provide documentation that is relevant and also current

- To provide documentation that describes practical step-by-step guides

- To adhere to Mitrefinch Ltd standardised format

- To use the most recent version of the software currently being provided to new clients or upgrading clients

- To provide documentation that is easy to use and self-explanatory, negating the need to phone the support line for instructions on how to use the support documentation
1.3 Project Description

The project focuses on the development of a variety of support documentation that incorporates different learning styles for an industrial partner, Mitrefinch Ltd, according to a specific plan (see Appendix C). The support documentation is presented in a range of formats for visual, auditory and tactile/kinaesthetic learners to choose from and assist them with their generic queries. Therefore, the main consideration of the project was investigating the different learning style models and integrating those concepts with the currently available support materials by Mitrefinch Ltd. During the course of the project the current materials were enhanced by developing smaller instructional guides in the format of visual guides, audio guides, and through short simulations.

Additionally, by interviewing the Chief Executive Officer (CEO) and Support Manager insight was gained on the desire to have online e-learning for support and further surveys of the support team brought to light the need for a centralised location, standardised authoring, and agreement that client-centred materials were considered necessary. For the scope of the project, the Top Five “How-do-I...?” queries that are repeatedly called into the support team were ascertained from the pre-survey as focus areas. Furthermore, development of additional repeat queries and extensions to the other software offered by Mitrefinch Ltd were considered outside the scope of the project but recommended as areas for future study.

Although a detailed project plan was originally generated, some changes were required once the project was initiated. These changes included dropping the description of each learning style. This is useful for helping clients to identify which learning style they prefer without having to test them. This was to be held on the website with the materials but the support manager did not think this was necessary and believed that clients would not read the descriptions. Other changes were the improvement of the materials timeline. Originally the materials were all to be created, then approved, and to be started in April. In reality, only one sample of each type of material was created before working in the Mitrefinch Ltd York headquarters in May. This allowed the samples to be reviewed and changes to be discussed before all the materials were completed. The PDFs were created, then reviewed and approved. Then the auditory
guides and simulations were created using the PDFs as a script before they were subsequently reviewed and approved.

The final major change that occurred was during the approval process of the materials. The company decided that new protocols needed to be produced to utilise the new materials in the best manner. This required a lengthy process for the company to follow their normal procedures of implementing new protocols. Due to this lengthy process the materials were not put directly into use by the support department. This meant that the materials were not used by enough clients to get meaningful critique information. Although some client use was mentioned in the post survey by the support department, client critiques could have been included if more time had been available.

Risk management must be considered in any project. Initial risks identified before the project began are discussed in the project plan found in Appendix C. Additional risks recognized during the course of the project include: unforeseen protocol changes within the company, the ability to test new materials on clients and the ability to gain meaningful client critiques of the new materials. However, through constant monitoring of the situation and good communication with the site contact, this obstacle was discovered early in July. This allowed plenty of time to make the required changes discussed previously by focusing more on the support department and eliminating the client aspect of the project. Non-compliance with evaluation questions was recognised as a possible risk that did occur but had minimal impact on the project. Reasons for non-compliance were noted on the surveys, which explained why questions were left unanswered. The impact was minimal as the reasons could be incorporated into the evaluation of the data.
Chapter 2: Literature Review

2.1 Introduction

The purpose of the review is to investigate the use of learning styles to produce support/training documentation for effective understanding of software by clients. Clients are provided with easy-to-use guidelines for supporting the software in a format that is easily understandable. Easy-to-use support material reduces the need for calls to the Mitrefinch support line for general queries.

The project looks at designing learning style-specific support documentation for Mitrefinch Ltd to use with their Time Management System (TMS). Information from reviewing current literature on learning theory, specifically learning styles, computer-based training (CBT), and usability, are explored (Coffield, Moseley, Hall & Ecclestone, 2004; Dunn & Dunn, 1972; Felder & Silverman, 1988; Graf, Lan, Liu & Kinshuk, 2009; Gregorc, 1984). According to Coffield, et al., 2004, 70+ learning styles are referenced in the available literature, with the earliest model being developed in 1909 by Betts and the majority of the development and creating of learn style models and measurement tools occurring in the 1970’s and 1980’s.

Two learning style models in particular define an individual’s learning style: the Felder-Silverman Learning Style Model and the Dunn and Dunn Model (Felder & Silverman, 1988; Dunn & Dunn, 1972). The Felder-Silverman Learning Style Model was chosen because it has been used with CBT and learning styles that have been reviewed (Graf, Liu, Chen, & Yang, 2009). The Dunn and Dunn Model was chosen because it looks at not only external variables that can be changed but also caters to well-grounded style ideas (Coffield, Moseley, Hall, & Ecclestone, 2004).

This project aims to offer Mitrefinch Ltd support materials for TMS in different formats, such as visual guides, how-to videos with auditory cues, and simulations. The clients have the opportunity to choose the support that best fits their learning style.

2.2 Industrial Partner

Mitrefinch Ltd is an international company that provides “employee management and security solutions” (Time and Attendance and Access Control Systems: Mitrefinch Ltd, 2011). They offer a range of packages that they tailor to the clients’ specifications. They
“serve over 2500 clients” ranging from the small business owner to large, multinational corporations (Time and Attendance and Access Control Systems: Mitrefinch Ltd, 2011). The Time Management System (TMS) provides clients with a time and attendance system that can collect and store data from users, maintain accurate records of attendance and hours worked and manage holiday entitlements. Other packages such as FlexiPay Payroll and HR Manager can be integrated with the TMS system to create a customised employee management system.

For this project the TMS system is investigated, specifically the support materials and documentation that are currently available to clients. These materials are then extended to include web-based e-learning to provide a range of materials clients can use that suit their individual learning style. By providing Mitrefinch Ltd clients with a web-based repository for locating general frequently asked questions (FAQs) they are given fast, easy access to a choice of simulations or visual and audio guides. As the Mitrefinch™ software suite is utilised by companies to manage costs and 'mine data' from their workforce, any time spent not using the system because of issues and customer queries is effectively costing the company money. Further, employees are not effectively using the software, and in addition to the immediate and obvious costs associated with 'system downtime' and learning challenges, there are hidden costs associated with 'finding out the answers' to questions. By having a central easily accessible and usable system of resources this 'hidden cost' should hopefully be minimised. Also, one must consider that as Mitrefinch Ltd is a multinational company people are not able to access the helpdesk 24/7 and therefore the Virtual Help System (VHS) could well prove invaluable. The VHS adds value to Mitrefinch Ltd as the company has the ability to charge clients a small fee for the privilege of using the VHS and saves the support team time by not having to answer general questions.

2.3 Effective Documentation

The objective is to enhance the current support documentation so that it is more effective. Effective documentation should meet the needs of the client; not just the information needs but also how the clients process that information (Albers, 2005). If the client cannot process what the documentation says, they do not use the documentation. Then the question becomes: ‘Why was the documentation created in the first place?’
There are three levels of documentation: global, detailed step-by-step and blending of the two (Holt, Boehm-Davis, & Schultz, 1986). The programmers creating the software produce global documentation at a highly technical level about the software. This rather technical documentation is used by highly-trained staff, which installs the software onto the clients’ system. Holt, et al., 1986 describe this as a top-down approach, looking first at the global overall scheme of the program and working down to the fine details. Then there are semi-technical training materials best aimed at mid-level clients (e.g. system administrators) who have some training on the TMS software. This type of documentation Holt, et al., 1986 refer to as being detailed, step-by-step documentation. In their research Holt, et al., 1986 found that end user-centred support documentation is best received if the global and detailed step-by-step documentation types are blended together. End users found that the global only documentation is unusable by itself. Those technical manuals are for those individuals who have extensive training. Clients do not have these skills necessarily. Client support documentation must be on a user level. User level documentation, written using non-technical language, providing not only the global overview but also a step-by-step process that can be easily followed, is welcomed by many clients.

Taking this further includes providing a range of resources organizing materials for visual, auditory and tactile learners giving clients the help they require. Effective documentation for clients was chosen as a focal point in order to increase awareness that individual differences in learning are applicable not only in educational institutions (where most research is focused) but also the business environment. In a business such as Mitrefinch Ltd, users and learners are now considered one and the same. Whether the learner is a student or a client looking for learning materials on a piece of software, the software designers are looking at the user (Leung, 2006). The user wants something fast and easy. The learner wants something that is going to solidify their understanding of whatever topic they are studying. Having introduced effective documentation, the next section moves to computer-based training (CBT).

2.4 Computer Based Training (CBT)

CBT has been a rapidly growing field in recent years. O’Leonard reports an increase in the use of CBT/Web-Based Training (WBT), from 16 % in 2008 to 20% in 2009 and an increase in Virtual Classroom Training (VCT), from 8% in 2008 to 13% in 2009
Businesses are taking on board what educational institutions have been developing and using for several years in technology-based learning. For example, ‘massive results’ were revealed from an eight-year-old study of the use of e-learning in 10 major companies. In one year IBM saved $200 million by using e-learning instead of formal classroom training (Brandon Hall, within Stephenson, 2003). Using CBT to enhance the current Mitrefinch Ltd support documentation is a way to provide clients with a variety of materials all from a centralised support website. CBT offers quick access to answers, helps reduce call volume to the support phone line and therefore saves time that can be spent on more complicated support issues. This also provides a cost savings with call reduction.

The Dunn and Dunn perpetual element breaks down into four learning types: visual, auditory, tactile and kinaesthetic learner (Dunn et al., 1998). In some cases tactile and kinaesthetic are combined, which is what this project does as simulations provide a learning environment for both the tactile and kinaesthetic learners. Visual learners prefer to have information presented to them in the form of a diagram or illustration, whereas auditory learners prefer lectures, discussion and hearing the sequence of events (Pritchard, 2009). The kinaesthetic learner benefits from doing something actively, participating in the learning by manipulating objects to gain “practical first-hand experience” (Pritchard, 2009). This enables the tactile learner to have access to a simulation, and a visual learner to see a printed guide (downloadable and printable off the same set of instructions but presented in a way that best fits their learning style).

In its 2008 State of the Industry report, the American Society for Training and Development (ASTD) declared that “technology accounts for nearly one-third of the delivery methods for employee learning and development used by companies and government agencies” (Tidalfire Ltd, 2011). However, businesses are becoming aware that the use of CBT/WBT as a tool is only as good as the materials provided. There is no one-size-fits-all application in CBT/WBT that provides effective learning for all individuals, each with individual learning styles.

Visual and auditory materials and simulations foster the greatest degree of understanding across a range of learning styles, as is illustrated by the reviewed literature (Dunn & Dunn, 1998; Dunn & Dunn, 1972; Felder & Brent, 2005; Felder & Silverman, 1988; Felder, 2002; Pritchard, 2009). Visual learners comprise about 65% of
the population, auditory learners about 30% and kinaesthetic learners about 5% (The Algorithm Base, 2010). Examples of how this knowledge of learning styles can be used for this project include creating materials like illustrated guides, the use of colour to indicate important points, auditory guides with videos that step the user through a topic, and simulations of how-to queries that get the user actively engaged in the learning process.

2.5 Discussion

In this section learning is defined, the origins of the study of learning are explored, learning styles are described, and finally learning style models and measurement tools are considered. Furthermore, the Felder-Silverman Learning Style Model and the Dunn and Dunn Model are considered in depth. These models were chosen because both have been used in other e-learning projects so some comparisons can be drawn.

2.5.1 Learning

Learning is something in which all individuals participate, be it formal learning in an educational institution or informal, on-the-job learning. Learning can be defined as gaining "knowledge of or skill in, something through study, teaching, instruction or experience" (Pritchard, 2009). This definition was chosen because support documentation is utilized in each of the categories to facilitate learning. They are used to study from, to teach from, to gain step-by-step instruction from and to solve problems through experience.

The study of learning originates in psychology. There is the overall umbrella of cognitive psychology, which diverges into two types of research: behaviourism or constructivism, each of these then being divided into subcategories. According to MSN Encarta (Bloomsbury, 2009), behaviourism is a branch of psychology based on the observation and modification of the way that people behave. Constructivism is the theory of knowledge (or epistemology) which argues that humans generate knowledge and meaning from an interaction between their experiences and their ideas (Piaget, 1967).

2.5.2 Learning Styles

Learning styles are considered a subcategory of constructivism. Learning styles have been defined in a multitude of ways and are synonymous with terms like ‘cognitive
styles,’ ‘learning preferences,’ and ‘learning strategies’. Researchers in the early 20th Century referred to them as cognitive styles, defined as “…an individual’s preferred and habitual approach to organising and representing information” (Riding & Rayner, 1998). “Learning style is a biologically and developmentally imposed set of personal characteristics that make the same teaching method effective for some and ineffective for others” (Dunn, Beaudry, & Klavas, 2002). Finally, learning styles can sometimes be termed as learning preferences, strategies, or “learned as a way to adapt” (Riding, et al., 1998). For the purposes of this review the term learning styles is used. Graf et al., 2007, assert that because learners prefer to learn in different ways, learning style models encourage the exploration into these differences and the development of variations to the current system. Felder indicates that a mismatch of learning style to teaching style (i.e. materials or methods) can actually make learning more difficult for the learner (Felder, 2002). Gregorc substantiates this through his interviews (Gregorc, 1984). Gregorc found that when the learning environment was attuned with the individual’s learning style tasks were considered easy, but when there was mismatch learning was thought of as “challenge[ing], hard or distasteful” (Gregorc, 1984). Graf, et al. confirm this as their study results found that student performance was not actually affected by the mismatching of learning style, but the students indicated that if suitable materials were not provided they sought them out themselves (Graf, et al., 2009). Providing a variety of materials for learners to use in any training situation should eliminate the mismatch of learning styles.

Planning requirements for this project include the creation of audio visual guides, illustrated guides with step-by-step process and simulations that require client interaction. Having reviewed learning styles the focus can shift to why and how user needs for tailoring are required.

2.5.3 Individual learning

Tailoring individual learning sessions requires a learner to know their respective learning style. Dunn, et al., 1998, evaluated the Business Excellence Survey while Litzinger, et al., 2007, assessed the Learning Style Index and both papers agree that the learning style models’ assessment tools determine preferences on how an individual learns best. Understanding these preferences and how they can be utilized to develop
and enhance support documentation is examined; however, the actual testing of clients to determine learning styles is outside the scope of this project.

As part of the preparation for this project a survey was conducted with the Mitrefinch Ltd support department. The support team survey results indicate that 64.3% rated the current support materials as fair and 21.4% rated them poor. This indicates that the support department is not satisfied with the current materials and 35.7% indicate that the current support documentation is not geared toward clients. Next, the learning style models are examined in depth.

As previously mentioned, in chapter 2, section 1, there are many learning style models and each classifies dimensions of learning style for individuals. Even though this project does not actually use the tools provided by the models it is still necessary to understand and examine the models. By examining and understanding what the tools are testing for evidence is provided as to what works best for different learners so the example material can target a wide range of learners. For this review the Felder-Silverman Learning Style Model (Felder, 2002), (Felder & Silverman, 1988), and the Dunn and Dunn Learning Style Model (Dunn & Dunn, 1972) is considered.

2.6 Felder-Silverman Learning Style Model


Three key sources of literature are used to gain an overall picture of the Felder-Silverman Learning Style Model (FSLSM) (Felder & Silverman, 1988; Felder, 2002; Felder & Soloman, 1997; and Graf, Viola, Leo, & Kinshuk, 2007). The FSLSM looks at the individual falling on a sliding scale between paired dimensions. Felder and Silverman, 1988, defined for their model five paired dimensions: sensory/intuitive, visual/auditory, inductive/deductive, active/reflective and sequential/global. In 2002 Felder revised the model to reduce it to four paired dimensions by dropping inductive/deductive and changing visual/auditory to visual/verbal, to include the written word (Felder, 2002). The first dimension is sensory versus intuitive. The sensory learners like concrete, tangible courses of action. They deal well with memorising data and facts. They like standard methods for dealing with problems.
They are patient, detailed-oriented and careful (this sometimes causes them to be slower at completing tasks).

Quite the opposite is true for the intuitive learners. They deal better with theories or principles. Innovations, surprises and complications keep them interested. They get bored with details and repetition but enjoy new concepts and grasp them quickly. They can be careless due to the speed at which they complete tasks.

The second dimension is visual and auditory though the new revised version refers to it as visual and verbal. Felder realised that the learning style pair visual/auditory leaves a vital piece of educational resource out of the equation (Felder, 2002). Written words do not simply fall into either category and Felder believed it would be a mistake to force it into one or the other. Obviously, words on a page are visual but they are not the equal to a picture illustrating information. Cognitive scientists have studied what our brains do with written words. The brain converts them so the individual hears them in their mind and then processes them as they would audibly spoken words. Verbal encompasses both auditory words and written words thus solving the categorization dilemma.

Pictures, diagrams and demonstrations help visual learners remember best whereas verbal learners learn best when they have the opportunity to hear lectures or discuss topics in groups or read information for themselves. As the inductive and deductive dimension has now been dropped it is not discussed here.

The third learning style pair is active/reflective. Active learners like to do a task to help solidify their understanding. In contrast, reflective learners prefer the opportunity to think about a topic. They also work better in pairs or alone whereas active learners are happiest in a group or team.

The final learning style pair dimension is sequential/global. Sequential learners process information best when presented in a linear manner and by using a step-by-step method building on previous knowledge. The global learners process information in a holistic manner, by leaping. They bounce around the material picking up bits and pieces until they have a 'light bulb' moment. This is the moment everything 'clicks' for them and then they are able to use their knowledge in solving complex problems. The only problem is they may have difficulty explaining how they arrived at a solution.
Every individual has both ends of the scale defined in this model but they tend to show a preference for one end or the other unless they are what is called balanced and so no preference for either end of the scale is absolute.

### 2.6.1 Measurement Tool

The tool developed for the Felder and Silverman model was designed by Felder and Solomon in 1997. It is called the Index of Learning Styles (ILS). It is a questionnaire which identifies the learner styles by asking 44 questions about individual preferences. There are 11 questions asked per dimension, which gives the individual a scale of +11 to -11 for each incremented by +/- 2. Based on the answers provided for the 11 questions the score is increased or decreased by one. Since all the questions have either an A or a B answer A's always add one and B's always subtract one. After having answered all 11 questions, if the score falls between 1 and 3, the individual is considered balanced. If the score is 5-7 the individual shows a preference toward one side of the other and finds learning easier if that preference is catered for. If the score is 9-11 the individual has a strong preference and finds it difficult to learn if that preference is not used.

### 2.6.2 How does this model relate to this project?

For this project some of the concepts from the paired dimensions are used to develop the support materials, specifically the sensory/intuitive, visual/auditory, and sequential/global dimensions. Information discovered during the research of this model is also incorporated into the descriptions of the visual, auditory, and tactile/kinaesthetic learners. These descriptions provide a brief overview and learning techniques that have proven helpful to each type of learner. Next the Dunn and Dunn Learning Style Model is discussed.

### 2.7 Dunn and Dunn Learning Style Model

*Key sources:* (Dunn & Dunn, 1972), (Coffield, Moseley, Hall, & Ecclestone, 2004) (Dunn & Dunn, 1998), (Dunn & Dunn, 1978)

Coffield, et al., 2004 and Dunn and Dunn’s Practical Approaches to Individualizing Instruction, 1972 are the primary sources used for understanding the Dunn and Dunn Model, in addition to Practical Approaches to Individualizing Staff Development for Adults, 1998. The Dunn and Dunn Learning Style Model originated in 1972 and has been modified for adult and business use in 1998. Both models divide into what Dunn
labels *stimuli* which have *elements* that can be altered. For students there are only five stimuli: *environmental, emotional, sociological, physiological*, and *psychological*. For the adult version the *physiological* is further divided and a sixth stimulus is added for *perceptual*.

An individual’s preference for *environmental* elements such as lighting, temperature, noise level, and overall room/space set up are examined. The *emotional* elements focus on the individual’s motivation, task persistence, responsibility, and need for structure. The *sociological* elements have the most division of elements. The focus is on whether individuals like to work as a team, with peers, in pairs, or alone but also incorporates adult involvement in the learning process or if they like a variety of the elements depending on the task at hand. *Physiological* elements are perceptual use of senses (i.e. visual, auditory, tactile or kinaesthetic), in addition to preferences of food intake, time of day, and the ability to be mobile. The final elements are considered psychological such as global versus analytical learners and reflective versus impulsive learners however, these were not measured in the early version of the models.

With the modification for business and adult use we see the same stimuli but the elements are arranged slightly differently. The *environmental* and *psychological* elements do stay the same as did the *emotional* with one minor alteration from responsibility to conformity. The *sociological* elements were reduced to looking only at team interaction and authority preferences still including the idea of variety depending on the task at hand. The assumption here is that individuals, when in the business environment, work within teams or departments. They have individual tasks that they handle but these tasks can affect the overall team task completion. The major change to the model is taking the *perception* element out of *physiological* stimulus and developing it as a stimulus all on its own. Within the adult/business model visual and auditory remain single elements however, tactile and kinaesthetic are combined, and a verbal element is included. Visual and auditory deal with what you see and what you hear but where does the written word get included? It does not fit neatly into either category as it can be considered visual but also the spoken word would be auditory. Dunn’s solution is slightly different from Felder’s as it was to have all three facets visual, auditory and verbal. The other physiological elements remain unchanged within the original category.
2.7.1 Measurement Tool

As it stands now some 20 variables are investigated to identify an individual’s learning style. With the Dunn and Dunn Learning Style Model this has increased from the original 12 variables that the Dunn’s initially thought important. They have revised and modified their tools for adapting to different age groups. The original tool used to measure the Dunn and Dunn Model was the Learning Style Questionnaire (LSQ). The LSQ gives individuals a question with three possible outcomes from which the individual chooses the closest fitting preference. There is no right or wrong answer as answers are totally based on an individual’s preference. An example question asked is *School is...* a) Not important to me, b) Important to me, or c) Sometimes important to me. The business adult version is called Business Excellence Survey (BES). This questionnaire allows older individuals to use a Likert scale (1 to 5) strongly agree to strongly disagree with 3 being neutral. The reliability and validly of this tool has been criticised due to its sliding scale. However, Coffield, et al., 2004, points out the strength lies in that supporters of this tool are confident that self-reported measurements can be ‘objective’, but then illustrates objective measurement as questionable.

2.7.2 How this model relates to this project?

Additionally, elements from the Dunn and Dunn model are integrated into the development of the support materials. The *perception* element is a key feature within the adult version of this model (Dunn & Dunn, 1998). The perception element specifically looks at the visual, auditory, and tactile/kinaesthetic, which are the main areas of focus for the support materials being developed for this project. Equally, information gathered from this model regarding what methods work for each type of learner are incorporated into the previously mentioned description of each type of learner. Usability is the next section discussed as it is a key component in extending the support documentation currently available to Mitrefinch Ltd clients.

2.8 Usability

Both of the models presented have been used to identify learning styles in individuals. For this project however, the focus being support documentation, the Dunn and Dunn perspective works better specifically with the design model for adults and business. “The discipline of human-computer interaction (HCI) studies the nature of its
interaction and recommends that systems be designed according to a clear cognitive or conceptual model to allow users to understand and navigate their way through a system” (Shedroff within Leung, 2006). This is not unlike how “educators help learners navigate through information with the aim of enabling their knowledge construction” (Leung, 2006).

The support documentation falls under the auspices of the perception stimuli (Dunn & Dunn, 1998). As previously discussed in chapter 2 section 3 on effective documentation there are different levels of documentation. However, just as important as targeting the correct level one must consider usability of support documentation. Creating documentation that is usable by all clients is the challenge. An attempt to solve the issues of usability for all levels of clients is addressed in this paper by providing visual guides, auditory guides and simulations.

Perception deals with how an individual processes information: (e.g. visual, auditory, or tactile). “Changes that make it easier to process information also increase the information’s impact” (Albers, 2005). Albers has the correct idea here and it can be applied to support documentation which is supposed to cause an impact.

The user is looking for a specific answer to a query. They need to be able to locate this information and for that information to be easily processed. The information needs to be in a format that makes sense to their personal learn style, ingraining their understanding of the solution for future use with the software. Higher education institutions are using information technology as an instrument to deliver learning materials to learners (Fan, 2005; Gou, 2008; Jen-Hwa, et al., 2007). Information technology is equally a suitable delivery method for TMS support documentation.

Visual guides can be delivered on screen but also provided in a PDF format that can be printed if the client prefers a hard copy. Learners are now showing that they not only have a relationship between teacher and learner for knowledge transfer but also a relationship is emerging between technology and learner (Leung, 2006). Leung states this is causing learners to have an additional role as end user of information technology software designed primarily to assist in learning as a tool. Human computer interaction
literature is presenting usability as a key factor (Albers, 2005; Leung, 2006; Nikmehr & Doroodchi, 2008). This movement is to ensure ease and speed for the learner/user which is considered usability. However, the learner/user seems to be tangling up the ideas that if they use an e-learning system that it should make the learning faster and easier.

2.8.1 Relevance to this Project

Felder and Brent, 2005, indicate that it is impractical to completely individualise instruction for each client as it is equally inadequate to only provide clients with one set of instructions, so they recommend a balanced approach. This project ventures to find that balance by developing three types of material: visual, audio, and simulations to provide clients with more options. Usability is a key feature of this project. The current materials are useable by clients but provide only a global level of documentation.

This project endeavours to enhance the current support materials of Mitrefinch Ltd, making them more user-friendly, easy-to-read, and to focus on a smaller scope pertaining to one general question at a time. The next step is to progress the development of support materials by providing that enhancement in the different learning formats: visual, audio and simulation. Mitrefinch Ltd then is centring its support documentation on the client’s needs and the client gets valuable materials, saves time by not having to queue for the support helpdesk, and saves money as any general issues regarding the clients’ software can be fixed by using the client-centred documentation, therefore shortening the amount of software down time.
Chapter 3: Requirements Analysis

In this chapter, the process for gathering requirements is discussed. The techniques that are used to collect data such as pre-surveys, interviews, and post-evaluations/surveys are described. Additionally, the functional and non-functional requirements are planned and discussed.

3.1 Requirements

For obtaining Mitrefinch Ltd requirements, interviews were held with the CEO and the Support Manager about the general issues related to the subject of support documentation and their expectations for a client-centred approach to support documentation. Then, a review of the literature on the use of learning styles to provide a foundation to create documentation that would best meet the client’s requirements for support was undertaken. This review of the literature identified the following learning style type: visual, auditory, and tactical/kinaesthetic. For attaining the user’s requirements, the support team was surveyed because they answer the users’ support questions on a daily basis. Further into the project evaluation surveys are given to both the support team and clients to assess the effectiveness of the enhanced online support documentation. All survey and evaluation data are analysed.

3.1.1 Interviews

Interviews were conducted to determine further requirements of both the CEO and the Support Manager at Mitrefinch Ltd. The initial objective of the interviews was to ascertain if enhancement of current support documentation to include online e-learning would benefit the clients. Interviews were difficult to schedule so both initial interviews were conducted via a conference call. Two interviews were arranged with senior and middle management. These provided an overview of general requirements that helped in establishing the supplementary points to incorporate.

Current documentation is available online but consists of a large PDF manual. Raising the point of that the answers might already be available but clients are unable to easily locate the necessary information. By breaking down the large document to step through sections with the variety of materials for the different learning styles meets the needs of a range of clients.
Another point raised is that due to the way the software is designed and marketed to clients they are able to customise their purchased software to fit the needs of their company. This means that one set of instructions does not satisfy all clients’ needs. Therefore, only general queries are focused on for the purposes of this project.

3.1.2 Pre-Survey

Functional requirements for the project were derived from pre-surveys created based on the information provided in the interviews by the CEO and Support Manager. The sample size was the whole of the support department at Mitrefinch Ltd (total of 16 individuals). The pre-survey consisted of ten questions that focused on evaluation, usability, ease of access, improvements to the current support materials and repetitive queries. The pre-survey was written in two forms in a hard copy using Microsoft Excel and also a web-formatted Google document form that was easy to email. Both forms of the documents were used. (See Appendix A)

Results of the pre-survey were analysed and it was found that of the 16 staff employed in the support department 87.5% returned the pre-survey. Other results from the 87.5% returned were that they were 100% full-time employees, 100% male and 100% from the United Kingdom. The support department operates on a tiered system first through fourth call lines. First line made up 37.5% and 28.6% made up second line. Third made up 14.3% and fourth line made up 21.4% of the sample population. Five out of the six first-liners responded. All of the second and fourth-liners responded and two thirds of the third-liners responded.

Though the sample size is small having all four lines represented is beneficial. The staff members who have been working for support for ten or more years have a different perspective from the staff members who have been with the company for less than a year. However, by having each line represented a greater understanding of the requirements for this project is established and helps to give the project a well-rounded finish.

3.1.3 Site Visit

An onsite visit was arranged to have the TMS software installed and to meet with the Support Manager and a support department analyst. The meeting with the Support Manager outlined the media file types to be used consisting of optimised PDFs for the
visual guides, and .F4V files for both the audio demonstrations and simulations. The files are housed on the support website that is currently being updated.

The meeting with the support analyst was used to clarify what general questions would be examined and used for the project and to go over the answers to the questions. This allowed for looking at the question from two sides, one - the client perspective but also from the support team perspective. By clarifying the steps taken to answer the general query aspects of how a client might misread or misunderstand current documentation are already becoming evident and can therefore be addressed. For example, current documentation omits a pre-step of logging in as the Master user instead of an individual user. By applying changes to the Master user all other users gain the ability to access the changes however, if a user made changes within their individual account they are the only user able to access the new change. The support team perspective makes that leap to Master user whereas a client might not due to different levels of knowledge about the system. Noting small insights like this one in documentation makes the documentation more usable.

3.1.4 Post-Evaluations

Post evaluations were created for both the support department to gain insight on the before and after picture of the enhancement of the original support documentation. Due to time constrains and business protocols for implementing new procedures clients were unable to be included in the evaluation process of the enhanced support materials by the completion of the project. Additional, insight and further evaluation could be gained once new implementation procedures were in place and could be studied by the company in the future. The evaluation information from the support department was analysed to determine the effectiveness of the materials.

3.2 Functional Requirements

The functional requirements were derived from both the interviews and surveys described above. They are looked at in further detail in the projects plan chapter as they include tasks that have to be addressed:

1. Created materials are client-centred using learning styles such as visual, auditory, and simulations for tactile/kinaesthetic learners.
2. Particular attention was paid to repeat client queries, in particular by providing these as easily navigable links on the support website.

3. Client’s topics of interest were clearly defined and indexed in such a way as to improve ease of location within the support system.

### 3.3 Non-Functional Requirements

Non-functional requirements were derived from researching the literature review and from being advised by my supervisor. These requirements are listed and subsequently described below:

1. The materials are held in a centralised location, for example on the support website. Therefore this makes them easily available.

2. Documentation level was considered, centring on practical end users specifically using non-technical language.

3. Documentation was written for any level of user to understand.

4. Mitrefinch Ltd has a standardised format that was adhered to.

5. The current version of the software presently being provided to new clients or upgrading clients was used.

6. Documentation must be relevant and also current and updatable.

7. Documentation described practice not just theory - how it can be applied and how it could not be applied.

8. Documentation is easy to use and self-explanatory therefore not requiring a call to the support line for instructions on how to use the support documentation.

9. Documentation provides value for money from both the client point of view as well as the company point of view.
10. The capacity of the repository should be able to extend to other software or additional “How do I...?” queries.

11. The enhanced support materials still covered current support documentation concepts.

12. The enhanced support materials repository has the ability to serve multiple clients at the same time.

3.4 Evaluation Criteria

Based on the information gained from the interviews and pre-survey, three sets of evaluation criteria are required. First, the senior and middle management evaluate the materials created to deem them suitable for client use. Second, the support department evaluate the materials as they are the ones using them in some cases but mostly directing clients to them. Finally, clients need to evaluate the materials for effectiveness and usability. Ultimately it is the client who uses the materials and their feedback can provide positive points for the things they found helpful and possible further enhancements to the support documentation. One non-intrusive way to gain insight on how the materials are being used is to keep a count of how many times each individual support document is downloaded from the support site. Referring back to the chapter 2, section 5, the majority (65%) of individuals are visual learners so a hypothesis that the visual guides and simulations will be download more often will be examined. Based on feedback provided, the project’s success is discussed in the summary section. The feedback on the availability of different types of materials can be specifically looked at for trends in the choice of materials downloaded. These trends can be compared to the data cited in chapter 2, section 5, about percentages of visual, auditory and tactile learners used to assess the effectiveness of the enhancements to the support documentation.
Chapter 4: Implementation

In this chapter the three types of learning materials (visual guides, audio guides, and tactile simulations), that were created based on the learning models from chapter 2, section 5 is discussed. The materials target the top five “How do I...?” queries identified by the Mitrefinch Ltd support department previously discussed in chapter 3, section 1. Each of the five questions is addressed by the three types of learning materials. Figure 4.1 illustrates each of the five queries concentrated on by this project. Below are the five commonly asked queries identified from the survey issued to the support department. Each query is addressed with regards to the three different types of materials, visual, audio or simulation guide.

Figure 4.1: Three types of guides and the queries that they address

The first query looked at how to direct users on how to add a new department (in section one), then how to assign that department to an employee (in section two) and finally how to verify that appropriate users can see the changes (in section three). The second query was intended to direct users how to book an absence for a range of employees (in section one), then how to book an absence for a group of employees (in
section two) and finally how to verify gaining access to a particular group through
selection option (in section three). The third query illustrated for the user how to create
a new absence code and a new worked hours code, in addition to how to add the newly
created worked hours code to the clock card. The fourth query was intended to direct
users how to setup/maintain a shift or roster. The final query addressed how to
perform the year end procedure.

After reviewing various options of screen capturing software, the trial version of
Adobe® Captivate® 5 was chosen as the preferred software since it could create both
the videos and simulations. In addition, a freeware video converter was used to convert
the Adobe® Captivate® 5 videos into the preferred file format of .wmv; this was done
for two reasons. The first being Mitrefinch Ltd used .wmv files for their internal videos;
therefore the company wanted to maintain uniformity and requested the .wmv format.
The second reason for the .wmv format is that .wmv files are more compatible with
Mitrefinch Ltd client systems. Mitrefinch Ltd already uses .wmv files for internal videos
and the Mitrefinch Ltd marketing department is using the same file type within their
department. Using their preferred file type keeps consistency with the company's
guidelines. The printable visual guides were created using Microsoft® Word and screen
shots for the Mitrefinch™ TMS software. These were saved into a .pdf format to make
them accessible to all clients due to its cross platform capability.

There were five “How do I...” queries identified by the pre-support survey these refer
back to figure 4.1. A document or file matching the three different learning styles was
designed for each of the five queries. Figure 4.2 more specifically illustrates the file
format for each query based on the learning style. These file types were agreed as they
corresponded to the recommended standards already in place for file type used by
Mitrefinch Ltd in other areas of the company. The file type will be further discussed in
the following sections.
Figure 4.2: File types for the three types of guides

4.1 Samples – Stage 1

The project requirements were discussed with the Support Manager and Team Leader. The functional requirements from chapter 3, section 2, remained unchanged. The Support Manager and Team Leader were satisfied with the basic requirements; a few additional requirements were added. They wanted to specify the file formats to maintain a company standard as optimised .pdf and .wmv files. As for the simulation, no file type was specified as this was a new material for them to use. The manager had previously discussed hosting the video files on the Mitrefinch YouTube channel at the suggestion of the marketing department. During the early stages of the development of the project, for security purposes, it was deemed that it is better to have all the materials held in a secure location on the support website instead. This was due to the upper managements’ concern that competitors might view the videos on such a public site. Securing the materials within the support website requires the clients to login with a username and password specific to their maintenance contract. This also allows Mitrefinch Ltd to monitor which materials are used.

Before creating all of the materials, a sample of each type of learning style material was presented to the Support Manager and Team Leader. The sample visual guide was presented, and the notes and shortcut sections were considered an important addition from the original documentation that they had produced. Another stated improvement from the original documentation was breaking the queries down into small sections and providing additional information about similar topics within their own section. The Support Manager requested that a brief introductory description of what would be
found in the visual guide be added and that a table of contents put in place. These new requirements were put into place in the revised versions of the support guides. Next, the sample video was viewed. The video went through the steps outlined in the visual guide and this was a nine-minute video. It was considered too long to keep the attention of the client. The same principle used in the visual guide was then discussed, essentially making each section a separate video. Therefore, clients have more choice, only watching the portions they felt they needed to see to answer their query. Having separated the videos into three-minute videos focuses the clients’ attention onto one single point.

Ridinger (1998) agrees with this concept of keeping videos short and succinct due to the average adult attention span being twelve minutes. Pritchard (2009) advises similarly that the average concentration length for an American adult is seven minutes whereas a British adult has a greater concentration at eleven minutes. Optimal video duration of three-minutes is in line with the authors’ views and allows for an international audience to be considered. According to this research, a nine-minute video time length does not exceed the average adult attention span; however, since the visual guide was already split into distinct sections, the videos where short and succinct and had the added benefit of maintaining a smaller file size. The smaller file size would require less bandwidth to be used when transferring files to clients.

By using shorter three-minute videos, the minor issue of momentary audio unsynchronisation with the actions taking place on screen was solved. The final sample of the tactile simulation was demonstrated. The Support Manager was unconvinced this type of material would be useful as a support to the clients and suggested they be created last. This allowed the majority of the time to be used on the visual and audio guides that the Support Manager considered of more use to the company. With the sample materials initially approved, contingent upon the changes indicated above, a task list was devised.

The first task was to create all of the visual guides that would be created and submitted to be tested and approved by the support department. The documentation being created needed to be broken down into simple steps, using non-technical language. The documentation also required selecting the optimal screen shots to illustrate the steps
and the most effective way to draw attention to important aspects of the illustrations using boxes and arrows to outline key points.

The second task was to create the videos that would be created using the approved documentation as the basic script for the videos, including an introduction and explanation that the video was made up of sections that could be viewed at the discretion of the client. Each video was given a title (e.g. How Do I Add a New Department and then separated into parts e.g. Part 1). This was a way to keep the naming of the files consistent. The recording of the videos required the additional need of a quiet space that allowed for the audio to be recorded without being interrupted by general office noise.

The final task was to create the simulations. The simulations followed the script of the visual guides but instead of audio there were captions and pop ups that walked the client through each step. The simulation required the client to engage in the process of each step to keep the simulation progressing to the end. It was decided that as each task was completed the materials would be reviewed and approved with meetings to see how the project was progressing. Following through with this process helped with the completion of good support materials that met the requirements outlined in chapter 3.

4.2 Visual Guide – Stage 2

The first step in creating the visual guides was to take the sample and add the table of contents and the introductory explanation of what the guide was to answer. The sample was created by using version 6 of the Mitrefinch™ TMS system to outline each of the eleven steps it took to add a new department. First, these were just written down as each step was performed. Follow on questions that came to mind were noted and added as separate sections within the same visual guide. Examples such as how to assign this new department to an employee and how to change user rights to see the new department were included to assist the client in likely follow-on queries. Noting each of the subsequent steps for the follow-on query, and typing up the list of steps, enhanced the usability of the visual guide without overloading the client with too much additional information. Once the steps were typed up then relevant screenshots of each action were captured. Then the screenshots were added in between each step. Figure 4.3 exemplifies the visual guide using both textual step and pictures of menus, screens and dialog boxes.
Then additional formatting was applied to crop the screenshots and key features were highlighted. In some cases arrows were used to point to a specific location. Finally, any notes that the client might find helpful were added in their own text box separate from the other text. This drew attention to software subtleties or the difference between options (e.g. edit versus update). Figure 4.4 depicts the process used to create the visual guides, which consists of six stages. Each stage is illustrated in a box with arrows indicating the sequence of events.

This process was repeated for each of the five queries highlighted by the pre-support survey. The visual guides ranged from having two to four sections (usually averaging to
three sections). After each of the sections was completed then the table of contents was updated to include a brief description of each section and the page number. A title page was also added with the company logo, the title of the visual guide, the version number(s) and the date created. This was done to help the support staff to know when the guide was last updated and which version the guide was using. Figure 4.5 shows the cover page with logo and query along with the version and date last updated. It also features the table of contents page with introduction and description of each query or follow on query along with the page number.

Figure 4.5: Example of visual guide design

It was decided that the guides would work for both versions five and six of TMS but a note was included in the table of contents that stated that the screenshots were from version six. This was to let clients know that some screens might look different if they were using an earlier version. Finally, before saving in a .pdf format, the document was read start to finish and each step was tested.

When all five of the visual guides were completed they were passed to the Support Manager. Then two analysts, one from the second line and one from the third line, tested the materials. The tiered system that is in place within the support department was described in chapter 3, section 1, sub-section 2. They found one typographical error
and indicated that some of the screen shots had shifted causing steps to be on the next page. This prevented some of the steps and screenshots from correlating. Once these identified issues were amended, the documentation was approved. The whole testing and approval process took five days.

4.3 Audio Guides – Stage 3

Following on from task one, once the visual guide materials met the specification desired by the Support Manager and Team Leader the audio guides were started. This required a quiet space for the audio to be recorded. Adobe® Captivate® 5 was used to capture the on screen activity while the audio script was being recorded. Creating one video per section decreased the video time and also assisted in synchronising the audio with the action, which had been a previous problem. The text from the visual guide was used to create a script to walk the client through each query step by step, showing and telling them simultaneously what to do to accomplish answering the query.

Previously, in chapter 2, the learning style models both identified visual, auditory, and verbal as senses clients could use to learn. A client will have a preferred learning style but by using a computer-based medium for all the support materials any of the materials can be used by a visual learner because they all have some form of visual basis. As stated in chapter 2, section 4, 95% of all learners are either visual or auditory. The video demonstration therefore targets the majority of the clients. Dual-coding theory is something that Mayer et al. (1994) describes as presenting information in two or more formats. Figure 4.6 illustrates the consistent beginning screen with the company’s logo to give the client a visual while the audio introduces the video.
While the start screen with the company logo was shown each video started with an introduction of what topic/query the video would guide the client through. The introduction included how many parts the video was split into so the client would know that subsequent videos were available with related/follow on topics to the query.

An issue with the original documentation was that it assumed the clients knew how to log in. However, to make universal changes to the whole system the client was required to log in as the Master user. To avoid any client confusion the log in process was added as steps one through three to all the materials. Figure 4.7 shows the login screen reminding the client to log in as the master user.
The video proceeded through each of the steps guided by both auditory cues and corresponding visual interpretation of those auditory cues. Adobe® Captivate® 5 allowed for sounds to be added (e.g. a manual typewriter sound for each key stroke or a sound like a camera taking a photo when the mouse was clicked). These were deemed to be distracting and consequently that feature was turned off. The mouse trail being a visible feature was left as it drew the attention to a specified area of the screen. Figure 4.8 demonstrates step seven modifying the department list.
When the client had been talked through all the steps and the query was answered, the video concluded with a short summary of what query had been answered and reiterated that subsequent videos of relevant follow on queries were available. If the client needed further assistance they were directed to the support team and the relevant phone number was provided. The videos were only saved and reformatted into .wmv files if they were error free. Once all the videos were saved and reformatted they were then turned over to the Support Manager who had them reviewed by a second and third line analyst. The videos were approved after 8 days of deliberation over the content and method used in the videos by the testers.

4.4 Simulations - Stage 4

The final task was to construct the simulations. The sample simulation did not meet the requirements set out in chapter 3, section 2. It did not allow the client to interact with the TMS system to the desired degree. The sample was too similar to the video and required the client to watch more than interact. The simulation software was only catching every third or fourth mouse click or keystroke instead of capturing each one. The premise of the simulation is to give the client who prefers to learn by doing an opportunity to do each step as required for the query. Several versions were created before the interaction level was satisfactory enough that each of the step-by-step instructions had to be completed by the client before the next step could happen. Each simulation file contained the entirety of the steps described in the visual guide; however, each individual section was labelled with associated query or follow on query so the client would know to what the following steps pertained.
Pritchard (2009) identifies kinaesthetic/tactile learners as relying on “doing” to make connections. Though only 5% of the population prefers to use a tactile method for learning, as discussed previously in chapter 2, section 4, the simulation medium allows the client the flexibility to learn when and where they need to. In chapter 1, section 1, the fact that the support department is not available 24/7 is mentioned. This type of medium allows a learner to make connections and answer queries without the aid of a person. Bell et al. (2008) describes the uniqueness of simulation as having benefits that no other instructional medium can offer. The process of using a simulation gives the client the ability to practice going through the step-by-step procedure without actually affecting their system. The benefit here is that no accidental mistakes or damage is done to a live system.

Figure 4.9 illustrates three screenshot stages in the simulation showing sections labelled to give the client a cue that the following steps are for the displayed query. Text captions were inserted to instruct and guide the client through each step.

Figure 4.9: Examples of how the simulation is broken into sections

Notes that would help the client’s understanding or clarify any options were also included using the same bright blue box with white text to make them stand out and appear noticeably different from the light blue text captions that delivered specific actions/steps to take to perform the next step. This kept a uniform look to the
simulations and used similar colours to blend with the company branding. Figure 4.10 depicts how notes are added to the simulation so that clients know what option they have or to help the clients’ understanding of an option.

**Figure 4.10: Example of how notes are added for clients’ convenience**

There are also light blue text captions that indicate specifically which window has been opened. Each simulation was created in the same fashion and then presented to the Support Manager. During the initial showing of the samples the Support Manager expressed that the simulations did not fit within the purview of the support team. However, after seeing the final version, using increased interaction and the use of text to guide the client through each step, he changed his opinion and thought they would be of use as a support material.

Mitrefinch Ltd is in the process of introducing new procedures for first line staff whereby the new support materials are provided directly to clients rather than talking through the procedure. After the new procedure is in place the new support materials will be housed on the support web page where clients have access beyond the normal business hours. The support materials were evaluated by the whole of the support department. The results will be discussed in the following chapter.
Chapter 5: Evaluation

Due to time constraints and business needs the evaluation process for the project focused on how the support department evaluated the original support materials compared to the new support materials. The support department was surveyed before the project and then again after the project was completed. The results are discussed below.

The pre-project survey (see appendix A) had a total of ten questions and an additional comment section for the support staff to indicate specific repeat questions. The post-project survey (see appendix B) had a total of twelve questions and the additional comment section. Question one gauged the amount of experience each participant had with the support department. All levels of experience were represented from just a few months to more than ten years. By having a wide scope of experience the data returned gave perspective from those still learning to experts on the software.

Question two illustrated in figure 5.1 was a direct comparison where the pre-project survey rated the original support materials and post-project survey rated the new support materials.

Figure 5.1: Pre/Post Project Survey Q2

![Pre/Post Project Survey Q2](image-url)
As figure 5.1 illustrates 9 out of 14 (64.3%) only rated the original support material at an okay to fair level and 3 out of 14 (21.4%) rated them poor. Whereas the rating from the post-project survey 3 out of 14 (21.4%) rated the new materials at an excellent level, 5 out of 14 (35.7%) rated at a very good level and 4 out of 14 (28.6%) rated at good level. This shows an increased confidence in the support materials now available.

Question three looked at the usage of the original support materials and then at the usage of the new support materials. In question three, 10 out of 14 (71.4%) said they sometimes used the original support materials, 1 participant said that they used them frequently and the other 3 said that they rarely used them. A similar pattern was emerging by the time the post-project survey was issued. In the post-project survey, 2 out of the 14 (14.3%) said that they used the new support materials frequently, 4 out of the 14 (28.6%) said that they were using them sometimes, 1 said that they rarely used them but the interesting data came from the other 7 who either did not answer the question or indicated that they never used the materials. However these last 7 respondents stated in the additional comments section that they had only become aware of the new material recently and had not yet had time to use them. Looking back at question 2, with the high rating of the new materials by all but two, those two having only recently been made aware of the new materials, it demonstrates that the support staff took the time to assess the new materials but that some did not had ample time to use them. The author believes that had the support staff been given more time that they would move to the ‘yes frequently’ or ‘sometimes use them’ category.

One of the key issues raised from the pre-project survey is the need for a centralised or structured location to house the materials. This is discussed in question ten later in this chapter. However it ties into question four from the pre-project survey and questions four and five from the post-project survey. In the pre-project survey the question it was asked: ‘are the current (original) materials grouped together and easy to find when required?’ This question was split for the post-project survey by asking: ‘are the new support materials organised together?’ and ‘are the new support materials easy to find when required?’ As can be seen from the pre-project survey graph 7 out of 14 (50%) thought the original materials were not really grouped together or easy to find and 2 out of 14 (14.3%) thought the original materials were not at all grouped together or easy to
find. The other 5 out of 14 (35.7%) only thought they were reasonably grouped together and easy to find.

**Figure 5.2: Pre-project survey Q4**

The post-project survey results show a much more positive response with 5 out of 14 (35.7%) stating that the new materials were organised exactly right and 7 out of 14 (50%) responded that they were ‘somewhat organised’. Only 1 participant answered ‘reasonably organised’ and 1 other answered not much organisation.

**Figure 5.3: Post-project survey Q4**
As to the response to the question ‘are the new materials easy to find?’ 6 out of 14 (42.9%) of the support department responded ‘exactly in the right place’ and ‘easy to find,’ 2 out of 14 (14.3%) said ‘somewhat easy to find’ and 6 out of 14 (42.9%) said ‘reasonably easy to find’. However this ties back to answers given in question three about support staff not being made aware of the materials until recently.

Question five pre-project survey and question six post-project survey reveal the most important change. In the pre-project survey, when asked ‘are all the original support materials written for non-technical clients to use?’ answers ranged across the board. Specifically, 8 out of 14 (57.1%) support staff answered that the original support material targeted clients who had been trained on the software. However, through speaking with the support staff it became clear that many of the queries came from clients who had inherited the software from a predecessor, therefore having little to no training (or with limited IT skills).
On asking if the support materials were geared toward clients 3 out of the 14 (21.4%) of IT staff felt this way. Approximately 2 out of 14 (14.3%) thought that the support materials were intended for the support department staff or the training staff and 1 out of the 14 (7.1%) was unsure as to who the support materials were best directed.

In the post-project survey the answers became much clearer as 7 out of 14 (50%) stated that the new support materials were geared for anyone and 6 out of 14 (42.9%) rated the materials for clients trained on the software. This left one participant (who chose not to answer the question) and harkens back to the comment about only being recently made aware of the existence of the new support materials.

Pre-project survey question six and seven asked the support department about their thoughts on alternative self-help resources and different types of support materials clients could choose from whereas the post-project survey question seven rephrased the two questions to ask do you think having options of different types of support materials will benefit clients. As can be seen in figures 5.6 and 5.7 from the pre-project survey the answers fell middle to low end of the range in the survey with 5 out of 14 (35.7%) answering both somewhat or reasonably and 3 out of 14 (21.4%) answering not much. When asked about an alternative self-help resource and 4 out of 14 (28.6%) answered somewhat, 5 out of 14 (35.7%) answered reasonably, 2 answered not much and 2 did
not answer at all when asked about thoughts of having different types of support materials from which clients could choose.

**Figure 5.6: Pre-project survey Q6**

*Graph showing distribution of responses to the question: “Do you think call volume could be reduced by having alternative self help resources for FAQs?”*

**Figure 5.7: Pre-project survey Q7**

*Graph showing distribution of responses to the question: “Do you think call volume could be reduced by having different types of support materials clients could choose from?”*

However, when the post-project survey was administered question seven asked, “Do you think having options of different types of support materials will benefit the client?” Nine out of 14 (64.3%) said very much and 2 out of 14 (14.3%) answered somewhat and another 2 answered reasonably. This indicated a notable shift in perception of the benefit to clients having choices when it comes to support materials.
Question eight from the pre-project survey looked at the idea of repeat queries. Similarly, question nine looks at whether clients repeatedly call with the same query. The support staff answered question eight with 2 out of the 14 (14.3%) replying that that was exactly what happened, 4 out of 14 (28.6%) said that this happened somewhat and 3 out of 14 (21.4%) said this happened reasonably often. Of the remaining 5 participants 4 out of 14 (28.6%) said this did not happen much however these answers came from the 3rd and 4th line staff members who deal with the more complicated issues and one person did not answer the question.

Question nine had a similar pattern to eight with 1 out of 14 (7.1%) replying that was exactly right that the same client would repeatedly called to ask the same query, 5 out of 14 (35.7%) said somewhat of the time this occurred, 3 out of 14 (21.4%) thought it occurred reasonably often and the remain 5 out of 14 (35.7%) said this did not happen to them very often. Just like in question eight the 1st and 2nd line staff would be the first line of defence when it comes to troubleshooting problems. They are the ones that receive the more general and frequently asked questions. The answers to these two questions fall along the scale as expected when dealing with four different levels of support staff. As the queries get more complicated or more client-specific the less likely it would be for another client to have exactly the same query.
The final question on the pre-project survey was a write-in question. Therefore the answers were widely varied. The pie chart illustrates the amalgamation of the answers provided by the support staff about how the original support materials could be improved.

Figure 5.9: Pre-project survey Q10

![Pie chart showing the distribution of answers to the question on how to improve the current support materials.]

As can be seen in figure 5.9, 32% of the staff answered that having a centralised or structured location was the most needed improvement. Following closely to this were 21% that said a standardised format and author was required. One of the comments written in was "(materials) often difficult to find. Mitrefinch requires a full time technical author to document and manage our support materials." This comment directly ties back to the need for both a standardised format and author as well as the need for a centralised location. Another commented that "most present documentation describes the theory of how (the software) works - not the practice (of how to use the software)."

When this comment was referred to while onsite the support staff expanded on the thought by indicating that the developers of the software created the documentation targeting the implementers, trainers, and support staff whose job it is to then disseminate this information to the client in a manner that the client can understand. Although this could be seen as pointing to no standard author or format for
documentation the comment is presented in figure 5.9 as a standalone 5% because the
comment also points to the content of the support materials.

Having been previously discussed when looking at pre-project question four, in
comparison with answers given for post-project question four and five, the centralised
location had been addressed. The requirement that a standardised format and author
be considered was concentrated on throughout the project. This was seen in responses
to post-project survey question two on how the new materials were rated and seen
further when each individual type of material was rated in questions eight through ten.
The 5% who recommended having materials written for anyone was directly addressed
in pre-survey question five and post-survey question six. That finished the pre-project
survey; however, as mentioned above there are a few more post-project survey
questions to analyse.

Questions eight, nine and ten look at each of the individual types of support materials
created during the project. The questions asked the support department to rate the PDF
visual guides, the video audio guides and the tactile simulations. The PDF visual guides
received the most positive feedback having 5 out of 14 (35.7%) rated them as excellent,
4 out of 14 (28.6%) rated them as very good and the remaining 5 rated them as good.
The video audio guides were also rated positively with 1 out of 14 (7.1%) rating them as
excellent, 4 out of 14 (28.6%) rating them very good, and 5 out of 14 (35.7%) rating
them as good.

There were three participants who did not rate this type of material and two notes were
made in the additional comment area. The first of these comments being that the
participants did not have a media player currently installed on their work PC, and the
second having only recently been informed of their existence the participants had not
yet had time to see all the videos. Additionally, comments about the videos being a good
medium for clients and as a training tool were mentioned.

One of the interesting outcomes was the ratings of the tactile simulations. The
simulations got mixed reviews. Speculation would be that this type of medium has not
been used before and took the support department out of their comfort zone. They
rated them 2 out of 14 (14.3%) as excellent, 3 out of 14 (21.4%) as very good, 2 out of 14
(14.3%) as good and 3 out of 14 (21.4%) as ok/fair. Furthermore, 4 out of the 14
(28.6%) chose not to answer this question.
Question eleven asked the support department to choose which type of guide they thought was most helpful and question twelve asked them how they would decide which type would be best for a client. The author wanted to see if they would decide for the client or allow the client to make a choice. As can be seen in figures 5.10 and 5.11 the PDF visual guides were thought to be the most helpful by the support staff. However, it was encouraging to have 40% of the support staff say they would let the client choose, “by asking (the client)” or “(have) discussion with the (client),” although 50% of the support department did indicate that PDFs would be the simplest medium to send to the client via email.

When asked in question eleven “which guide do you think is most helpful?” most answered with one word, “PDF”. However, some did comment and qualify their answer. For example, one stated “I would tend to use the PDF for ease of distribution.” Another said “I found the tactile simulations very good,” while another believed, “Video is probably the most helpful medium as it shows (the software) actually working.”

In question eleven the distribution falls in line with the percentages quoted in chapter 2, section 4, about the population make-up of different learner types. Due to the small population size of the support department the percentages did not come out exactly the same. However, the percentages are close enough to support the evidence that even within a small group such as a department there will be visual, auditory, and kinaesthetic/tactile learners.
Chapter 6: Professional, Legal and Ethical Issues

The web-based e-learning support documentation developed during this dissertation project is of relatively small scope but the project is developed, organised and implemented in a professional manner. The final product therefore is of value to the industrial partner, Mitrefinch Ltd and impacts positively on the creators’ professional experience.

During the proposed time frame of this project organisation, time management and attention to detail is required to create professional support documentation that is worthy of being utilised by Mitrefinch Ltd. The materials produced are tested and approved by the relevant parties before making them available to client evaluation.

At the request of Mitrefinch Ltd all clients’ names are kept confidential and are not be specifically named within the dissertations. In addition, all survey results are attributed to the whole group and no individual is singled out. All evaluations and surveys remain anonymous.

The Code of Good Practice produced by the British Computer Society is used as a guide for professional standards.

All computer laws such as contract law, the intellectual property law, the data protection law, the computer misuse law, and all other associated regulations are strictly observed.

All documents and sources are attributed by a citation within the dissertation as well as appropriately cited within the bibliography.

All information gathered from interviews, surveys and evaluations will be kept until the final submission of the dissertation project, after which this information, although generally anonymous, will be destroyed for data protection purposes.
Chapter 7: Summary

The project was personally motivated from the author’s previous work experiences and use of the Mitrefinch™ TMS software. After discussion of the motivation behind the project, the objectives and aims were synthesised. During the project, enhancements were made to the current Mitrefinch Ltd support documentation using a client-centred approach by incorporating learning styles into the development of software support materials. These enhancements filled a real need indicated by speaking with the Support Manager, support analyst and other support staff and that was why different materials addressing client needs were made available. The project aimed to construct three types of materials: visual and audio guides and simulations. These three types of materials were intended to give clients more options in how the information was presented to them, particularly focusing on general queries that the support department highlighted as top repeat queries handled by the helpdesk.

Next the current literature on learning styles, levels of documentation and usability of documentation were reviewed and analysed. Two models, the Dunn and Dunn Learning Style model and the Felder and Silverman model were specifically investigated to help identify key types of learners and how to address their individual needs. This literature emphasised that individuals learn differently and have preferences as to how information is disseminated but that there is also a balance to be met between one-size-fits-all and total individualisation for the sake of practicality. The literature on how to structure documentation highlights a similar need for balance between a global view and a step-by-step view. Informative papers on how to structure documentation and how to determine learning styles raise the idea of usability for individuals as being easy to use and understandable. Further, the list of project requirements, to which were adhered, include information about how they were gathered and how the evaluation criteria was analysed. Finally, the professional, legal and ethical issues are discussed.

The result of this project was intended to confirm that providing different types of user level support materials improves client understanding of general repeat queries by increasing the likelihood that the chosen materials will match the personal learning style of a user. Since the client evaluation had to be eliminated, due to the need to follow company procedure for implementing new protocols, this confirmation was not attained. However, what successful results did emerge from the project included: the
change of perceptions of the support department to a customer/learning-centred experience, and on the support materials themselves. The project helped the support department to regain confidence in their support materials; 85.7% initially rated their materials as fair or poor but at the end of the project the new support materials had 85.7% rating them from excellent to good. No longer was the support department discontented with the existing, ineffectual support materials. Instead the department found the variety of visual, auditory and simulations beneficial to the clients and helpful for departmental productivity. Another positive outcome was that many of the support staff communicated that they would discuss with the client the available materials allowing the client to choose the best option on an individual basis.
Appendix A: Support Department Pre-Survey

Please fill in the survey. I will be keeping this as anonymous as possible. I would like to survey you before and after this project. Thank you for your time.

<table>
<thead>
<tr>
<th>Questions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long have you worked with Mitrefinch’s support line?</td>
<td>0-3 years</td>
<td>4-7 years</td>
<td>8-10 years</td>
<td>+10 years</td>
<td></td>
</tr>
<tr>
<td>How would you rate current support materials for clients?</td>
<td>Excellent</td>
<td>Very Good</td>
<td>Good</td>
<td>OK/Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Do you use the current support materials when clients have general queries?</td>
<td>Yes, I use them</td>
<td>Sometime use them</td>
<td>Rarely use them</td>
<td>Never use them</td>
<td></td>
</tr>
<tr>
<td>Are the current support materials grouped together and easy to find when required?</td>
<td>Exactly</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>Are all the current support materials written for non technical clients to use?</td>
<td>Geared for anyone</td>
<td>Geared for clients trained on software</td>
<td>Geared for IT staff</td>
<td>Geared for support or trainer</td>
<td>Not sure</td>
</tr>
<tr>
<td>Do you think call volume could be reduced by having alternative self help resources for FAQs?</td>
<td>Exactly</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>Do you think call volume could be reduced by having different types of support materials clients could choose from?</td>
<td>Exactly</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>Do you find you get asked the same questions/topics by clients phoning the help line repeatedly?</td>
<td>Exactly</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>Do you have the same clients called the help line about the same “how do I...?” queries repeatedly?</td>
<td>Exactly</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>How do you think the current support materials can be improved?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Comments:
1) (i.e. Top 3 repeat questions you think could be answered using support self help materials for the TMS software?)
2) 
3)
Q1: How long have you worked with Mitrefinch's support line?

- 0-3 years: 42.9%
- 4-7 years: 28.6%
- 8-10 years: 7.1%
- +10 years: 21.4%

Q2: How would you rate current support materials for clients?

- Excellent: 64.3%
- Very Good: 7.1%
- Good: 7.1%
- OK/Fair: 21.4%
- Poor: 0.0%
Q3: Do you use the current support materials when clients have general queries?

- Yes, I use them: 71.4%
- Sometimes use them: 21.4%
- Rarely use them: 7.1%
- Never use them: 0.0%

Q4: Are the current support materials grouped together and easy to find when required?

- Exactly: 0.0%
- Some what: 0.0%
- Reasonably: 35.7%
- Not much: 50.0%
- Not at all: 14.3%
Q5: Are all the current support materials written for non technical clients to use?

Q6: Do you think call volume could be reduced by having alternative self help resources for FAQs?
Q7: Do you think call volume could be reduced by having different types of support materials clients could choose from?

Q8: Do you find you get asked the same questions/topics by clients phoning the help line repeatedly?
Q9: Do you have the same clients called the help line about the same "how do I...?" queries repeatedly?

- Exactly: 7.1%
- Some what: 35.7%
- Reasonably: 21.4%
- Not much: 35.7%
- Not at all: 0.0%

Q10: How do you think the current support materials can be improved?

- Centralised/structured location: 32%
- Standardised format/author: 11%
- Indexed/sorting: 16%
- Access via web: 5%
- Broken down to address repeat issues: 5%
- Describe practice not theory: 5%
- Documentation matches software version: 5%
- Written for a level of anyone: 5%
Appendix B: Support Department Post Survey

Please fill in the survey. I will be keeping this as anonymous as possible. I would like to survey you before and after this project. Thank you for your time.

<table>
<thead>
<tr>
<th>Questions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long have you worked with Mitrefinch's support line?</td>
<td>0-3 years</td>
<td>4-7 years</td>
<td>8-10 years</td>
<td>+10 years</td>
<td></td>
</tr>
<tr>
<td>How would you rate new support materials for clients?</td>
<td>Excellent</td>
<td>Very Good</td>
<td>Good</td>
<td>OK/Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Do you use the new support materials when clients have general queries?</td>
<td>Yes, I use them</td>
<td>Sometimes use them</td>
<td>Rarely use them</td>
<td>Never use them</td>
<td></td>
</tr>
<tr>
<td>Are the new support materials organised together?</td>
<td>Exactly</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>Are the new support materials easy to find when required?</td>
<td>Exactly</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>Are all the new support materials written for non technical clients to use?</td>
<td>Geared for anyone</td>
<td>Geared for clients trained on software</td>
<td>Geared for IT staff</td>
<td>Geared for support or trainer</td>
<td>Not sure</td>
</tr>
<tr>
<td>Do you think having options of different types of support materials will benefit clients?</td>
<td>Very Much</td>
<td>Some what</td>
<td>Reasonably</td>
<td>Not much</td>
<td>Not at all</td>
</tr>
<tr>
<td>How would you rate the pdf (visual guides)?</td>
<td>Excellent</td>
<td>Very Good</td>
<td>Good</td>
<td>OK/Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>How would you rate the videos (audio guides)?</td>
<td>Excellent</td>
<td>Very Good</td>
<td>Good</td>
<td>OK/Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>How would you rate the tactile simulations?</td>
<td>Excellent</td>
<td>Very Good</td>
<td>Good</td>
<td>OK/Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Which of the guides (pdf, video, or simulation) do you think is most helpful?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When talking to a customer how are you determining which type of new support material is best for them?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Comments:
Q1: How long have you worked with Mitrefinch's support line?

- 0-3 years: 35.7%
- 4-7 years: 35.7%
- 8-10 years: 7.1%
- +10 years: 21.4%

Q2: How would you rate new support materials for clients?

- Excellent: 21.4%
- Very Good: 35.7%
- Good: 28.6%
- OK/Fair: 0.0%
- Poor: 0.0%
- Null: 14.3%
Q3: Do you use the new support materials when clients have general queries?

- Yes, I use them: 14.3%
- Sometime use them: 28.6%
- Rarely use them: 7.1%
- Never use them: 21.4%
- Null: 29.6%

Q4: Are the new support materials organised together?

- Exactly: 35.7%
- Some what: 50.0%
- Reasonably: 7.1%
- Not much: 7.1%
- Not at all: 0.0%
Q5: Are the new support materials easy to find when required?

- Exactly: 42.9%
- Some what: 14.3%
- Reasonably: 42.9%
- Not much: 0.0%
- Not at all: 0.0%

Q6: Are all the new support materials written for non technical clients to use?

- Geared for anyone: 50.0%
- Geared for clients trained on software: 42.9%
- Geared for IT staff: 0.0%
- Geared for support or trainer: 0.0%
- Not sure: 7.1%
- Null: 0.0%
Q7: Do you think having options of different types of support materials will benefit clients?

- Very Much: 64.3%
- Somewhat: 14.3%
- Reasonably: 14.3%
- Not much: 7.1%
- Not at all: 0.0%

Q8: How would you rate the pdf (visual guides)?

- Excellent: 35.7%
- Very Good: 28.6%
- Good: 35.7%
- OK/Fair: 0.0%
- Poor: 0.0%
Q9: How would you rate the videos (audio guides)?

- Excellent: 7.1%
- Very Good: 28.6%
- Good: 35.7%
- OK/Fair: 7.1%
- Poor: 0.0%
- Null: 21.4%

Q10: How would you rate the tactile simulations?

- Excellent: 14.3%
- Very Good: 21.4%
- Good: 14.3%
- OK/Fair: 21.4%
- Poor: 0.0%
- Null: 28.6%
Q11: Which of the guides (pdf, video, or simulation) do you think is most helpful?

- PDF - Visual Guide: 69%
- Video - Audio Guide: 23%
- Tactile Simulation: 8%

Q12: When talking to a customer how are you determining which type of new support material is best for them?

- Let customer choose: 50%
- PDF - easiest to email: 40%
- Use past experience: 10%
Appendix C: Project Plan

Project Goals

One of the two main goals of the project is to meet the stakeholder’s needs and address as many of their wants as possible within the scope and timeframe of this project. The second main goal is to produce a selection of effective support materials using learning styles to meet client’s needs. Table 1 illustrates the nine stakeholders identified for this project.

Table 1: Stakeholders

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Needs/Wants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitrefinch Ltd</td>
<td>Better client care from support standpoint</td>
</tr>
<tr>
<td>CEO</td>
<td>Enhanced learning support/client-centred</td>
</tr>
<tr>
<td>Clients</td>
<td>Easy to use client-centred materials based on learning styles</td>
</tr>
<tr>
<td>Support Manager</td>
<td>Provide more to clients</td>
</tr>
<tr>
<td>Support Department</td>
<td>Centralised/standards documentation</td>
</tr>
<tr>
<td>Training Department</td>
<td>Usable materials</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Happy with project</td>
</tr>
<tr>
<td>Me</td>
<td>Happy with project and possible job offer</td>
</tr>
<tr>
<td>Marketing</td>
<td>Something that they can promote</td>
</tr>
</tbody>
</table>

Interviews and pre-surveys will be used to gather the requirements of the stakeholders such as the CEO, Support Manager, and departments within Mitrefinch Ltd. The requirements will then be analysed to prioritise the need of the individual stakeholders.

Project Deliverables

Nine project deliverables have been identified at this stage of the process. The pre-survey has been created both in Microsoft Excel and using the web-based Google documents. These were distributed to the support department and 81% were returned. The next deliverable will be this research project report consisting of the literature review, requirements analysis, section on professional, legal and ethical issues and the project plan. Then the description of the three categories of learning styles that the
materials will be targeting. Actual user material and software enhanced guides will be
developed. Once the materials are developed they will need to be reviewed by the CEO,
Support Manager, and Support team. After the materials are approved then notifications
for clients will need to be designed in conjunction with the marketing department to
promote the enhanced online e-learning support documentation. The next deliverable
will be post surveys/evaluations of the materials by the support department. An
additional evaluation for the training department and clients will also be produced at
this time. The final deliverable will be the dissertation write up of this project.
Project Schedule

Each of the tasks is illustrated below with the estimated time frame. There is a start date and end date for the individual tasks along with the estimated duration. Each task follows on from the next. There is a bit of float added to make sure that tasks are completed on time.

<table>
<thead>
<tr>
<th>Name</th>
<th>Begin date</th>
<th>End date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Evaluation Survey by Support</td>
<td>21/02/11</td>
<td>02/03/11</td>
</tr>
<tr>
<td>Background work</td>
<td>14/02/11</td>
<td>09/04/11</td>
</tr>
<tr>
<td>Literature Review</td>
<td>14/02/11</td>
<td>09/04/11</td>
</tr>
<tr>
<td>Presentation</td>
<td>28/02/11</td>
<td>03/03/11</td>
</tr>
<tr>
<td>Requirements Analysis</td>
<td>14/03/11</td>
<td>19/03/11</td>
</tr>
<tr>
<td>Professional, Legal and Ethical Issues</td>
<td>07/03/11</td>
<td>12/03/11</td>
</tr>
<tr>
<td>Project Plan</td>
<td>21/03/11</td>
<td>26/03/11</td>
</tr>
<tr>
<td>Risk Management</td>
<td>21/03/11</td>
<td>26/03/11</td>
</tr>
<tr>
<td>Gantt Chart</td>
<td>21/03/11</td>
<td>26/03/11</td>
</tr>
<tr>
<td>Task Analysis</td>
<td>21/03/11</td>
<td>26/03/11</td>
</tr>
<tr>
<td>Visit Münchener's Office in York</td>
<td>28/03/11</td>
<td>29/03/11</td>
</tr>
<tr>
<td>Meeting with Manager about Requirements</td>
<td>28/03/11</td>
<td>29/03/11</td>
</tr>
<tr>
<td>Have software installed</td>
<td>28/03/11</td>
<td>29/03/11</td>
</tr>
<tr>
<td>Meeting with 2nd Line Analyst</td>
<td>28/03/11</td>
<td>29/03/11</td>
</tr>
<tr>
<td>Description of Learning Styles</td>
<td>11/04/11</td>
<td>15/04/11</td>
</tr>
<tr>
<td>Visual Learning Style Description</td>
<td>11/04/11</td>
<td>13/04/11</td>
</tr>
<tr>
<td>Auditory Learning Style Description</td>
<td>12/04/11</td>
<td>14/04/11</td>
</tr>
<tr>
<td>Tactile/Kinaesthetic Learning Style Description</td>
<td>13/04/11</td>
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<td>Create Materials - written to accomodate (VATK)</td>
<td>11/04/11</td>
<td>21/05/11</td>
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<td>Visual guides</td>
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<td>23/04/11</td>
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<tr>
<td>Auditory guides</td>
<td>25/04/11</td>
<td>07/05/11</td>
</tr>
<tr>
<td>Tactile/Kinaesthetic simulations</td>
<td>09/05/11</td>
<td>21/05/11</td>
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<tr>
<td>Materials Reviewed/Approved by</td>
<td>23/05/11</td>
<td>04/06/11</td>
</tr>
<tr>
<td>Get materials on to Support website</td>
<td>06/06/11</td>
<td>11/06/11</td>
</tr>
<tr>
<td>Issue Client Final exhibition new materials</td>
<td>06/06/11</td>
<td>11/06/11</td>
</tr>
<tr>
<td>Used by Clients</td>
<td>13/06/11</td>
<td>22/07/11</td>
</tr>
<tr>
<td>Evaluations by Support Department</td>
<td>25/07/11</td>
<td>06/08/11</td>
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<tr>
<td>Evaluations by Clients</td>
<td>25/07/11</td>
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<tr>
<td>Write up of Dissertation</td>
<td>09/05/11</td>
<td>13/08/11</td>
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</table>

Project Supporting Plans and Risk Management

Support Plan

Support for this project is mainly handled via weekly meetings with supervisor, email correspondence and occasional phone conversations with the Support Manager for
clarification and answers to queries. Weekly meetings with supervisor are used to check progress of report/project, get general advice and queries answered, and agree changes to the report. All correspondence with the Support Manager has been used to gain insight on the inner working of the support department such as standards, current materials available, and obtaining a copy of the current version of their software.

Risk Management

All projects incur some form of risk. These are adverse consequences to an action which are unforeseen from the start of the project. However, by identifying possible risks, how likely they are to occur and what impact they could have will help identify what can be done to reduce their effect on the project.

Identified risks are as follows:

- Industrial partner backs out of project
- Lack of access to materials
- Lack of access to software
- Surveys fail to be returned
- Evaluations not returned
- Non-compliance with evaluations
- Unable to create all the support materials planned for in the time frame given
- Software licence runs out
- Technology failure

Using the Risk Map from the Dr. Helen Hastie presentation on MSc project planning, if the industrial partner backs out of project this would have a low probability but would impact highly on the project. The best preventative for this risk is to keep open communication with the onsite contact. Lack of access to materials and software has a
low probability but would have a medium to high impact on the project. As access to materials has already been made available this is a moot point and software is scheduled to be installed at the end of March, so again a moot point but if this were to change the project would need to be quickly redesigned. Surveys and evaluations not being returned or non-compliance with questions is a medium probability and would have a medium impact on the project. This is a risk that is hard to minimise. Having too many support materials to create in the time frame allotted is a medium probability but would have a low impact. Scaling back to three instead of five “How do I...?” queries would be one way of still producing a quality project. Software licence running out would be a medium risk with a high impact. The way to minimise this would be to buy the software after the trial version is used. The final risk being technology failure, this has a low probability and a medium impact. Multiple copies of this project are saved on different media types.
# Gantt Chart:

| Pre Evaluation Survey by Support | Background work |  |
|----------------------------------|-----------------|--
| Literature Review                | Presentation    |  |
| Requirements Analysis            | Professional, Legal and Ethical Issues |  |
| Project Plan                     | Risk Management |  |
| Task Analysis                    | Gantt Chart      |  |

## Visit Midlothian Office in York
- Meeting with Manager about Requirements
- Have software installed
- Meeting with 2nd Line Analyst

## Description of Learning Styles
- Visual Learning Style Description
- Auditory Learning Style Description
- Tactile/kinesthetic Learning Style Description

## Create Materials - willing to accommodate (YATY)
- Visual guides
- Auditory guides
- Tactile/kinesthetic simulations

## Materials Reviewed/Approved by
- Get materials on to Support website
- Issue Client Email explaining new materials

## Used by Clients
- Evaluations by Support Department
- Evaluations by Clients
- Write up of Dissertation
Bibliography


