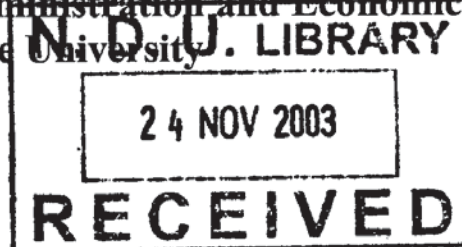


**A SUCCESSFUL SMALL BUSINESS MANAGEMENT  
APPLYING PROJECT MANAGER APPROACH**

**BY  
GEORGE Y. BREIDY**

**A Study Project  
Submitted in partial fulfillment of the requirements  
For the degree of Master in Business Administration  
Of the Faculty of Business Administration and Economics  
At Notre Dame University**



**LOUAIZE-LEBANON  
AUGUST, 2003**

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Master in Business Administration


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2003

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# Summary

This thesis will be a study of the Small and Medium Enterprises (SME) in the United States of America, with some comparison to the SME business sector in the third world countries, such as Lebanon.

The study will focus on developing a Management Model for the small business enterprise using state of the art software and techniques to improve the quality and efficiency. It will also include some analysis to minimize the risk and to compete locally and globally. Finally, the study will include hypothetical cases of applying the model to start new small business as well as an application to modify an existing one.

Several business software are now accessible and affordable for the small businesses. Many small businesses are using such software, but not in a coherent, systematic, and permanent way. A considerable number of small businesses use some accounting software that runs on a personal computer (PC). In addition to the standard accounting transaction handling, this type of software package may include other modules such as personnel, payroll, inventory control, and finance. Some examples of these software are MS Great Plains, Peach Tree accounting software, and MAS90 accounting software.

Project Manager software has been used for many years to plan and control the execution of large projects. The project manager techniques can be implemented in the operation of many small businesses and its benefits will vary with the type of business. Most small companies don't apply such techniques and especially in a similar model that we will develop in this paper. There are several types of project manager software in the market but the most known ones are Primavera and Microsoft Project Manager.

This thesis will explain how a small business can run smoother and more efficient by applying the developed Management Model. Combining the latest version of MS Project and advanced current accounting software with implementation of project management techniques, the small business will run smoother and with higher efficiency.

The Management Model will use customization setup and interface with other business software packages. If the software is setup properly, the small business manager will have much better knowledge of how the business is running and he will have more control and faster respond to fix or avoid any foreseen problems. In addition, applying the Model will increase employees' efficiency and the quality of customer/business relationships.

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# Section 1: Introduction

In this section we will give an overview of the small business sector, particularly in the United States. We will discuss the appealing factors of owning and managing a small business (Entrepreneurship). We will include some statistics such as the percentage of small business, the survival rate and the distribution of small business among the various industries. Then we will state some causes of failure and some traditional ways of reducing the risk of failure. We will state the advantages and disadvantages of the types of ownerships of small business, including a brief on the S-corporation and Limited Liability corporation (LLC).

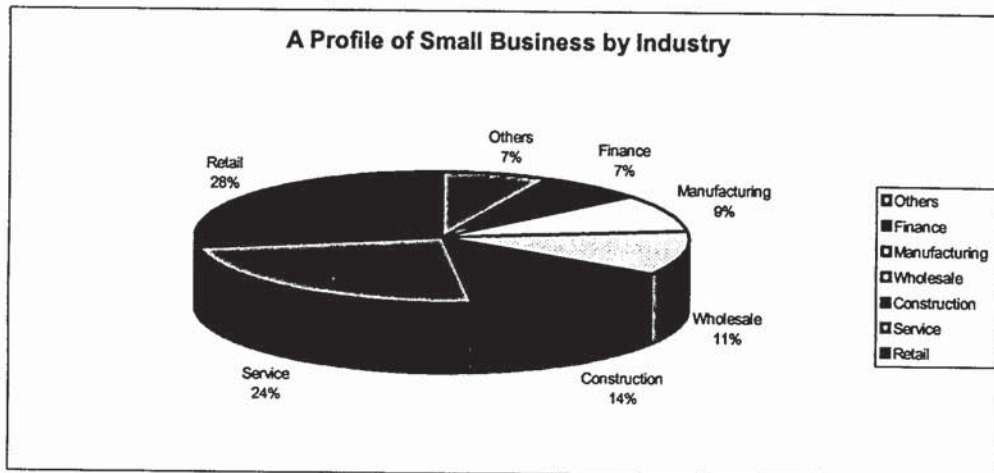
## 1 - Small Business Sector

Approximately 99% of the number of all the United State businesses fall in the category of small and medium enterprise (SME). And approximately 90% of the SME businesses employ less than 20 employees. In 1996, approximately 21.75 million of the 22 million businesses in the United State were considered "small." (Zimmerer, 21)

Small businesses in the United States produce 48% of the country GDP. Small firms create 4 times more innovations per research and development (R&D) dollar than medium-sized firms and 24 times as many as large companies. (Zimmerer, 22)

Small companies in the United States are expected to grow by 13.5% during the next 15 years, while large companies are expected to grow by just 10.5%. Currently, between 800,000 and 900,000 new company come into existence each year. (Zimmerer, 23)

The majorities of the small businesses are concentrated in the retail and service industry. Figure 1.1 shows the profile of Small Business by Industry.



**Figure 1.1 A Profile of Small Business by Industry**  
 Source: Adapted from Small Business Administration, Washington, D.C.

## 2 - The Entrepreneur Spirit

The Great American Dream of owning and operating ones own business is becoming the dream of many people all over the world. Owning and operating ones own business is an appealing idea to many people, especially those who exhibit entrepreneur characteristics.

Currently, in the United States, one out of every 25 adults is actively involved in trying to start a new business. During the past two decades we noticed a new record of the number of entrepreneurs launching new businesses. Fig 1.2 shows the yearly number of new businesses from 1976 until 1994. (Zimmerer, 2)

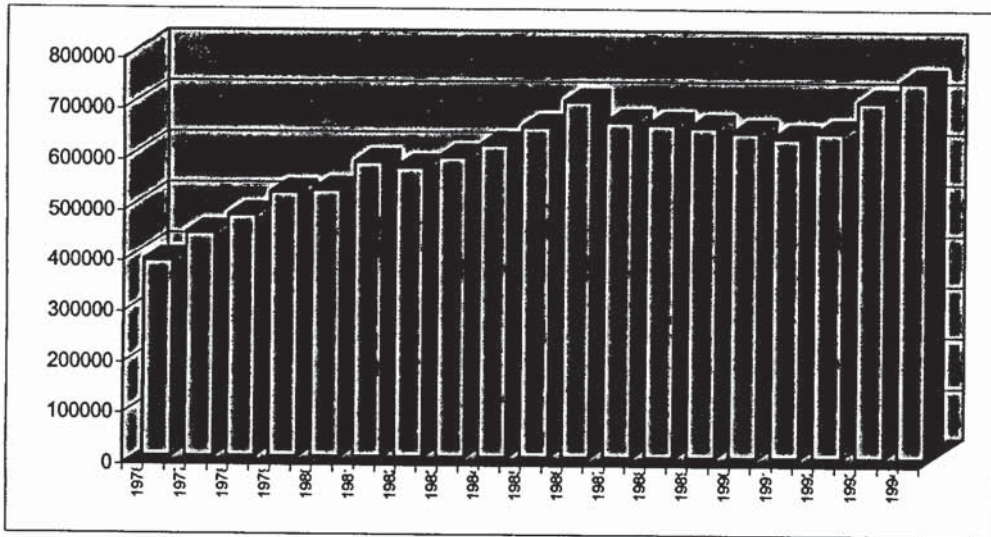


Figure 1.2: Number of New Incorporation

(Source: Copyright 1996, Dun & Bradstreet, a company of The Dun & Bradstreet Corporation.)

An entrepreneur likes to take responsibility, makes his own decisions, and harvests his own results. Most entrepreneurs are not gamblers or risk takers. When possible, they try to avoid any risk, but in many cases they must take a moderate risk. An entrepreneur must have confidence in his knowledge and ability; he is future oriented and has a high level of energy.

In general, an entrepreneur likes to get an immediate feedback to analyze his performance and take corrective or adjustment measures. An entrepreneur must watch for opportunities and beneficial ideas and take advantage of implementing them in a fast responsive manner. Finally, an entrepreneur does not always start a business only for money, but in many cases an entrepreneur will value achievement over money.

Entrepreneurs are the roots of small businesses. The behavior and attitude of an entrepreneur differ in many ways from the behavior and attitude of a traditional manager. Table 1.1 shows a comparison between the conventional manager and the entrepreneur views. (Zimmerer, 7)



Conventional Manager	Entrepreneur
<ul style="list-style-type: none"> <li>• Very conscious of rules and taboos.</li> </ul>	<ul style="list-style-type: none"> <li>• Views rules as guidelines only.</li> </ul>
<ul style="list-style-type: none"> <li>• Sensitive to the future and willing to postpone rewards.</li> </ul>	<ul style="list-style-type: none"> <li>• Concept of the future based on personal fantasy. Low threshold of frustration.</li> </ul>
<ul style="list-style-type: none"> <li>• Has a powerful need for acceptance.</li> </ul>	<ul style="list-style-type: none"> <li>• Ambivalent toward control, success, and responsibility. Can be manipulative and exploitative of others.</li> </ul>
<ul style="list-style-type: none"> <li>• Able to identify problems in any course of action. Makes detailed plans.</li> </ul>	<ul style="list-style-type: none"> <li>• Impatient with discussions and theories, is prone to action and seems impulsive.</li> </ul>

Table 1.1: Conventional Manager and the Entrepreneur Views.  
 (Source: Adapted from The Journal of Creative Behavior, Vol. 21, no. 3, 1995.)

### 3 - The Benefits and Drawback of Entrepreneurship

The main benefit of owning ones own business is the feeling of freedom and of having control over his destiny. An entrepreneur does not have to obey someone else's demands or rules. In most cases an entrepreneur will make more money than an employee with similar qualifications. In addition, an entrepreneur has the opportunity to make a difference and to reach his full potential. In most cases, an employee cannot change the way things run in a company. He has to perform according to the existing methods and culture. He faces limitation of developing and advancing to the level he desires.

On the other hand, an entrepreneur has to bare many drawbacks. In many cases he has uncertainty of the income. Some times, there is a risk of loosing his whole investment, if the business fails. Surveys show that a large number of entrepreneurs have to work long hours (figure 1.3). Mostly during the initial stage of creating and running the business, the entrepreneur suffers low quality of life, a high level of stress, and a lack of security. An entrepreneur carries a great sense of responsibility towards himself and his dependents.



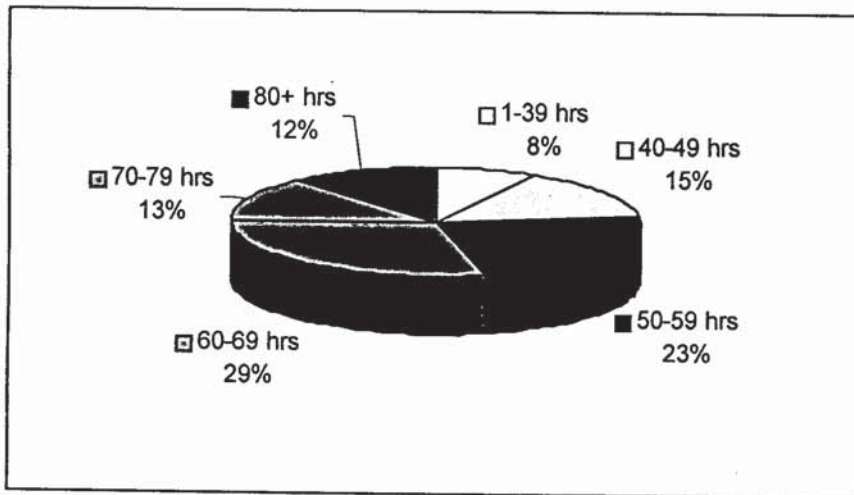


Figure 1.3: Number of Hours New Business Owners Work Per Week  
 (Source: Copyright 1996, Dun & Bradstreet, a company of The Dun & Bradstreet Corporation.)

#### 4 - The Common Small Business Types of Ownership

Sole Proprietorship indicates a business that is owned and managed by one individual. Approximately 73% of the American businesses are sole proprietorships (Zimmerer, 22). Sole proprietorship business is easy to create and less costly. It provides profit incentive and gives the owner the total decision making authority. It does not require special legal restrictions and it is easy to discontinue.

On the other hand, the owner of sole proprietorship bears unlimited personal liability and has a limited access to capital. The owner has limited skills and capabilities and experiences feelings of isolation. In many cases the sole proprietorship lacks continuity. Family business is a form of sole proprietorship, and its continuity depends on training members of the new family generation to take over and run the business. Most small businesses are sole proprietorships.

Partnership is formed when two or more individuals co-own a business. The partners share assets, liabilities, and profits according to the partnership agreement. The partnership can provide complementary skills and larger pool of capital. It is easy to form, can attract limited partners, and is subjected to little government regulations. However, at least one partner (general partner) must bear unlimited liability. It lacks continuity because it

is difficult to dispose a partner's interest without dissolving the partnership. Partnership has a great potential of personality and authority conflicts among the partners.

Limited partnership is composed of at least one general partner and at least one limited partner. The general partner liabilities are the same as in the standard partnership's regulations, but the limited partners can loose only the amount they invested in the business.

Master Limited Partnership (MLP) has the same regulation as limited partnership; with the exception that its shares are traded on the stock exchanges and it provides the investors with most of the same advantages as a corporation.

A corporation is usually the type of ownership for large companies. A corporation must meet complex rules and requirements. It offers stockholders benefits with limited liability. It has the ability to attract capital by selling stock. A corporation can continue indefinitely and it is distinguished by its easy transferable ownership. On the other hand, corporation is the most difficult to establish. Forming a corporation involves cost and time. It must comply with many legal requirements and regulatory red tape. Double taxation is a drawback of corporation. And due to the usual large size of corporation, there is a potential loss of control by the founders. S corporation is another form of corporation created basically for tax purposes. It has some the advantages of a corporation with some limitations. Limited Liability Company (LLC) is similar to S Corporation with less restrictions and limitations.

In addition, there are other types of businesses that are not in concern in this paper, such as Professional Corporation, Joint Venture, and Franchising. Even though franchising contains a large chunk of the retail and service small businesses, the franchisee in general don't make most of the decisions on how to run the business but he adapts the ways of the franchiser, which is usually a very large company.



## 5 - Small Business Structure

Small business has usually a flat structure, two or three levels. Figure 1.4 shows an actual small business organizational chart of a landscaping and property maintenance company "Greenshade" ( Robey & Sales, 5). The company has a total of 25 employees.

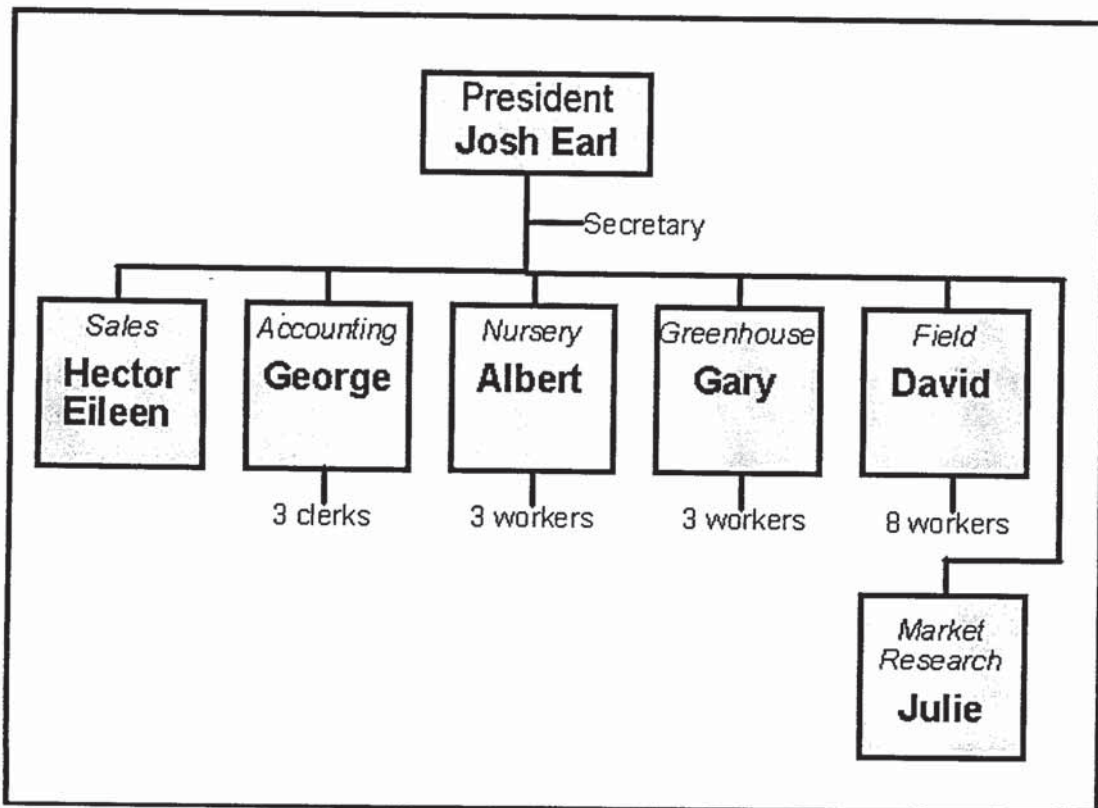


Figure 1.4 Greenshade Organizational Chart.

In small business, the manager (usually the owner) is in contact with most of the employees and he knows great deal about their attitudes and personal lives. He makes most of the decisions and influences the company's culture. He is usually fully aware of the company's operations. Many small business structures are simpler and include fewer employees.

## 6 - Reasons of Small Business Failure

A small business is like a cup of glass, once it falls it will break, while a large organization may survive few falls. He who is holding a cup of glass must be extra careful. He may slip or swing a little but he should not fall. He should always be watching and doing what it takes to get back on the track without falling. Small businesses suffer a higher mortality rate than large established businesses for several reasons.

Small businesses usually have limited resources. The limited resources can lead to a longer time to perform a task with more cost and less efficiency. Job requirements fluctuate and small business may not have the needed resources to cope with the fluctuation successfully.

In many cases, the manager or owner of the small business does not have management experience. He or she may be excellent in his or her domain, but managing a successful business requires more than knowing the technical aspect of the work. It includes many other aspects such as managing people, financing, accounting, marketing, and customer relation. For instance, a talented engineer may want to start his own business, because he is excellent in designing certain products. However, his business may fail because he does not know how to manage his subordinates, he does not apply the suitable marketing strategy, or because of many other management issues.

Many entrepreneurs are over optimistic when they start their businesses. This leads to underestimating the amount of capital required. In turn this will affect negatively their financial plans and lead to the business failure. Small business cannot raise money easily; therefore a sound financial planning is a must.

Some small business managers have a clear vision, but they tend to focus on conducting the work according to their limited point of view. They try to run the business without setting a strategic plan, implementing and controlling the plan, and taking any required corrective measures. The lack of strategic plan may put the business in a fuzzy state and consequently leads to the business failure.



Growth is a positive and desirable aspect of any enterprise. However, growing fast without being ready, especially for small businesses with limited resources, may lead to devastation. A small business manager may sign a contract without being able to meet the terms. A small business may face a greater demand than expected for its products or services, without being able to meet this demand. This may lead to the loss of customers' trust and opens the door for new competitors, which may cause a business loss and possible failure.

The right location is an important factor of a successful small business. Sometimes the small business manager chooses a location because of the low cost incentive. However this may have negative effects on the amount of expected business and may lead to losses and failure. Some other times the small business manager doesn't consider the cost but chooses a more appealing location. This in turn may produce more business but with a much higher cost. The extra business produced does not always justify the extra costs. A careful study of costs and expected business should be made to find a suitable location for a particular business.

Unplanned inventory may create shortage or tie up scarce small business capital. The small business manager must have good inventory control. He should maintain in stock only the necessary quantity needed to meet the expected customers demand. Customer demand expectation must be based on careful study of current situation with some focus on the history. For instance, if a retail business was selling a certain quantity of one product type each month for the last six months, it will give an idea of the quantity needed for the next month. However if the study showed that a similar more appealing type was just introduced into the market, the manager should not blindly acquire the same quantity of products.

## 7 - Avoiding Small Business Failure

To avoid small business failure, we must avoid the possible causes of failure stated in the last section. We must find ways to overcome the causes that are out of our control such as strong competition, strict regulations, and economic conditions.

A small business manager must acquire the right experience. It is not enough to know only the technical aspects of the business, but he should acquire other management experience.

It is important to have a solid business plan. The business manager should set tangible goals and construct a strategic plan to achieve these goals. He should monitor the progress at all times and take the necessary actions and changes to help implementing the plan properly.

The small business manager must manage his financial resources very efficiently taking careful precaution measures. He should reserve an operating budget and an adequate capital for his particular type of business. He should not be over optimistic in estimating the business returns. The business manager must make sure that he has enough cash to pay bills, payroll and other obligations. And finally, he should maintain some high liquidity assets to be used as a contingency if the business faces sudden chance to grow or to be used to absorb the negative effects of any temporary slow down of the business.

The business manager must understand the financial, accounting, payroll, and other business statements to know the condition of the business at all times. He must understand at least the basics of finance and accounting because information from accounting and financial statements may include indicators of potential problems. He must be able to interpret the statements and pin point the causes so that he may take the necessary actions.

Human resources may be the most valuable resources for the small business. The small business manager should know how to manage his scarce human resources to get the full potential of his employees. Many small businesses depend on close customer-employee relationships as a pinch to gain competitive advantage. The small business manager must create comfortable work conditions for his employees. He must select suitable methods of behavioral control such as punishments, rewards, and promotions. In addition he should be inventive in creating activities and allocating bonuses to lift up the employee's morale. A satisfied employee can produce twice as much as an unhappy one.



## 8 - The Need and Limitation of This Study

Through history, small businesses were and still are the bone of the economy. Many small businesses are launched every year, but a large percentage of these businesses will close out before they have the chance of growing or sustaining. In today's slow economy and fast changing technology, managing a small business is more challenging than ever. During the last few years, large corporations were getting larger by merging and acquisition. They were eating up the small businesses. They were transforming into giants with a great amount of power and resources. Small companies must manage their scarce resources in a very efficient way to compete with the large corporation as well as with the other small businesses. In spite of that, small businesses, if managed properly, may gain some competitive advantages. Small business can be faster to exploit market opportunities. They can use modern technology to create in short time, products and services that once took long time and great resources. Nowadays, new technologies such as all kinds of business software and Internet services are accessible for small businesses with affordable prices. Many small businesses are using the new technology but not in a systematic way.

This study can be applied to many types of small business regardless of the geographical location. However, most of the statistical data are related to the small business sector in the United States of America. The application examples of the model were designed for small businesses in Lebanon.

## 9 - Definition of Terms

**ASCII:** American Standard Code for Information Interchange.

**Cost performance index (CPI):** The ratio of budgeted, or baseline, costs of work performed to actual costs of work performed (BCWP/ACWP). The cumulative CPI, which is the sum of the BCWP for all tasks divided by the sum of the actual costs of work performed ACWP for all tasks, is often used to predict whether a project will go over budget and by how much.

**Cost variance (CV):** The difference between the budgeted cost of work performed (BCWP) on a task and its actual cost (actual cost of work performed or ACWP). If the CV is positive, the cost is currently under the



budgeted (or baseline) amount; if the CV is negative, the task is currently over budget.  $CV = \text{Budgeted Cost of Work Performed} - \text{Actual Cost of Work Performed}$ .

**Critical path method (CPM):** A project management method of calculating the total duration of a project based on individual task's durations and their dependencies.

**Dynamic data exchange (DDE):** A protocol for the active exchange of data copied among documents. When the information changes in the source document, it can be updated in the copy automatically. Not all programs support DDE. Consult the documentation for your other programs to see whether they support DDE.

**Graphics Interchange Format (GIF) file:** A compressed, graphics file format that Web browsers can display as inline graphics. GIF is widely used for transmitting images across the Internet.

**HTML:** An acronym for Hypertext Markup Language, which is a formatting convention for presenting text and graphics on the World Wide Web. Based on SGML, HTML uses tags that are embedded in the text.

**Macro:** In Microsoft Visual Basic for Applications, an automated set of instructions you use to accomplish a specific task.

**MAPI:** The acronym for Messaging Application Programming Interface, which is the standard programming interface proposed and supported by Microsoft for accessing electronic messaging.

**Milestone:** A reference point marking a major event in a project and used to monitor the project's progress. Any task with zero duration is automatically displayed as a milestone; you can also mark any other task of any duration a milestone.

**MPD file format:** The Microsoft Project Database (MPD) file format is a record-based Microsoft Access-compliant file format that you can use for saving an entire project. Files saved in this format have a .mpd extension.

**MPX file format:** The Microsoft Project Exchange (MPX) file format is a record-based ASCII text format used to import data into Microsoft Project.

**NOHSC:** An Australian government agency called (National Occupational Health & Safety Commission). It develops communication strategies and information products to assist small business operators to understand how to manage health and safety effectively and comply with OHS regulations.

**ODBC:** Open Database Connectivity (ODBC) is a vendor-neutral interface, based on the SQL Access Group specifications, announced by Microsoft in December 1991. A developer can use ODBC to access data in a heterogeneous environment of relational and non-relational databases.



**OLE server:** The program or document originating an OLE object that is used in another (container) program or document.

**OLE:** A program-integration technology you can use to share information between programs. Microsoft Project and all of the Office programs support OLE, so you can share information through linked and embedded objects.

**PERT analysis:** PERT (Program, Evaluation, and Review Technique) analysis is a process by which you evaluate a probable outcome based on three scenarios: a best-case, expected-case, and worst-case scenario. The outcome in question may be the duration of a task, its start date, or its finish date.

**RTF field:** A type of field whose content can consist of Rich Text Format (formatted) text. For example, a note can be formatted with bulleted lists and bold type.

**SBA:** Small Business Association, a U.S. government entity that provides help and financial assistance for small businesses.

**Schedule performance index (SPI):** The ratio of work performed to work scheduled (BCWP/BCWS), which is often used to estimate the project completion date.

**Schedule variance (SV):** The difference between the budgeted cost of work performed (BCWP) and the budgeted cost of work scheduled (BCWS). If the SV is positive, the project is ahead of schedule in cost terms; if the SV is negative, the project is behind schedule in cost terms.  $SV = \text{Budgeted Cost of Work Performed} - \text{Budgeted Cost of Work Scheduled}$ .

**Shared resource:** A resource that is used by more than one project. One resource can be a part of different projects individual resource lists. Or the resource can be a part of a single shared resource pool.

**Slack:** The amount of time a task can slip before it affects another task's dates or the project finish date. Free slack is the amount of time a task can slip before it delays another task. Total slack is the amount of time a task can slip before it delays the project finish date. When the total slack is negative, the task duration is too long for its successor to begin on the date required by a constraint.

**SME:** a term used for Small and Medium Enterprises.

**SWOT Analysis:** Strength, Weakness, Opportunity and threats analysis. Used to analyze the external and internal factors in a business.

**TQM:** Total Quality Management (TQM) is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices.

**URL:** An acronym for Uniform Resource Locator, which is a standard for naming and locating an object on the Internet, such as a file or newsgroup.

URLs are used extensively on the World Wide Web. They are used in HTML documents to specify the target of a hyperlink.

**Variance at completion (VAC):** The earned value field that shows the difference between the budget at completion (BAC) and the estimate at completion (EAC). In Microsoft Project, the EAC is the Total Cost field, and the BAC is the Baseline Cost field.

**Work breakdown structure (WBS):** A hierarchical structure used to organize tasks for reporting schedules and tracking costs. With Microsoft Project, you can represent the work breakdown structure by using task IDs or by assigning your own WBS code to each task.

## 10 – Overview of the Next Sections

In the next sections we will provide a review of the literature, which will include some detailed description of the software used to build the Management Model. The main focus will be on Microsoft Project Manager 2002. Then we will discuss the purpose and goals of the study. After that, we will go through the procedures and methodology used to develop the model. Then we will analyze and put the model into action through two examples. One example is starting new business using the developed model and the other example is adapting the model on existing small business. Finally, we will conclude the study by discussing recommendations of applying the model to various types of small businesses.



## Section 2: Review of Literature

To get a clear understanding of the small business sector and to support the reasons behind this study we used as reference several books and many articles obtained through the Internet. We also based the building of the model on using Microsoft Project Manager software. In this section we will provide a preview of the literature.

### *1 – The Essentials of Entrepreneurship and Small Business Management:*

This book was a very useful source of information. It explains all the aspects of managing small business. It starts by stating the foundations of entrepreneurship with statistical data on the small business size and failure rate. Then it elaborates on the necessity of using common management methods to manage small business such as strategic management process and searching for competitive advantages. It also explains the various types of ownership. And it explains some marketing strategies and advertising methods suitable for small businesses. Managing cash flow and creating a sound financial plan are some of the other topics covered in this book. And finally it covers some areas of the ethical, legal and regulatory environment.

### *2 – Managing Through People:*

Since most small businesses have a limited number of employees and in a few cases the employees must wear several hats, the small business manager must acquire a great deal of knowledge on managing human resources. This book is a great reference to handle human resources in small business. It starts by explaining the manager's role and how a manager should manage himself and should emphasize on quality rather than quantity. It also describes communication methods such as speaking effectively, listening and employing reflective skills. It explains methods of motivating people and learning to delegate.

“The most difficult thing in the world is to know how to do a thing and to watch someone else doing it wrong, without comment.” – T H White. (Humphries, 47)

“The surest way for an executive to kill himself is to refuse to learn how, when and to whom to delegate work.” – J C Penny. (Humphries, 47)

This book includes detailed discussions on managing problems, time, innovation and interviews. It also discusses the management of change. Changes to an organization are caused by both internal and external factors. Many of these changes are unpredictable and, whatever the causes or circumstances, invariably involve people. The way in which people react to change will depend on how the change is presented to them and how they perceive it will affect them. (Humphries, 124)

### *3 – Human Resource Management:*

This is a recent book on human resource management. It covers most of the human resource management basics, included in “Managing Through People”. However, we used this book because it also covers current issues such as globalization effects, the current dynamic business environment and the high-performance work system challenge. In the discussions of several issues such as training and performance management, this book emphasizes on the use of new technology and computer software. It also explains how the human resource strategy should be coherent with the overall strategy and goals of the company. Another important covered topic is how to build a suitable human resource asset and gain through it a competitive advantage.

### *4 – Designing Organizations:*

This book gives a clear detailed description of many aspects of the organizations and their structures. It defines organization and explains the Micro and Macro perspective. It also gives a strategic view of the design process and the organizational effectiveness. It relates the organizational structure to various affecting areas such as environment, technology, size,



differentiation and integration. Then it explains departmental and Team-Based designs as well as inter-organizational designs. It explains in details the design process and some topics such as politics, control, growth, decline and turnaround. After that it discusses the organizational culture, innovation and organizational learning. Finally, it gives some views on future organizational designs.

### *5 – Project Management, The Managerial Process:*

This paper is about developing a small business Management Model using high tech software and in particular project management techniques and software. This book describes in details the modern view of project management. It explains the integration of the organizational strategy with projects. It includes detailed discussions on how to define the projects and how to develop the network plans. Then it explains some techniques used to manage the risk in the project and to reduce project time. It also explains how to manage resources which are a very important aspect for the small business. It contains a section on the traits and behaviors necessary for an effective project manager. And it elaborates on the process of performance measurement and evaluation. And finally, it discusses some future expectations of the use of project management techniques.

### *6 – Articles:*

A - Project Management for a Major Small Business Upgrade: this article explains why project management is very important for one particular small business. [customersvc@smallbiztechtalk.com](mailto:customersvc@smallbiztechtalk.com) (Copyright © 2001-2003, Joshua Feinberg. All Rights Reserved.)

B - Small Business Alliances the Virtual Company: Explanation of how a small business can create alliances with other businesses to form a virtual company. Also refer to proposal, bid, corporation, teams, perception, marketing, contractor, agreement, School for Champions, Kurtus Technologies, Milwaukee, Wisconsin Copyright restriction, by Ron Kurtus (14 February 2000)

C - Microsoft Announces Inclusion of Small Business Tools in Office 2000: REDMOND, Wash. - May 24, 1999 - Microsoft Corp. announced the inclusion of Microsoft® Small Business Tools in Office 2000, designed to make it easier for small businesses to communicate with customers, make better business decisions, and operate more efficiently. The Small Business Tools are Small Business Customer Manager, Business Planner, Direct Mail Manager and Small Business Financial Manager. These tools take advantage of the power of core Office 2000 applications and leading third-party applications to provide out-of-the-box solutions to everyday business tasks such as tracking customer information, writing a business plan, conducting a direct mail campaign, and managing finances. (<http://www.designerdream.co.uk/> (©1997/2002, Active Network.)

D - Succeed in Business with Total Quality Management: Total Quality Management (TQM) is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices. An important part of TQM is its a philosophy toward continually improving your business and products. (<http://www.ronkurtus.com/kurtech.htm>)

E - Can You Make Money With Your Business Idea: This guide is a checklist for the owner/manager of a business enterprise or for one contemplating going into business for the first time. The questions concentrate on areas you must consider seriously to determine if your idea represents a real business opportunity and if you can really know what you are getting into. You can use it to evaluate a completely new venture proposal or an apparent opportunity in your existing business. <http://www.liraz.com/> (Copyright ©2001 Liraz Publishing Co. All Rights Reserved)

F - New age challenges for the project manager: This article explains the role expected of the Project Manager for achieving successful software development.

“The project manager must be deliberate and sometimes heroic to achieve coherence in the team so that there is effective performance management, feels” *Dr R Srinivasan*

"Computers rely for their functioning on reason but projects defy logic because of human caprice" - *Tony Collins*



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## *7 – Software:*

A – MS Project Manager and PrimaVera: Project management software both have similar features such as planning, Gantt chart, time and cost determination, progress feedback, and many other features.

B- SPSS : Statistical analysis software.

C- Account Express, Account Pro 7.0, Accpac Simply Accounting, Critec Accounting Deluxe, GSTA/VAT Accounting, MYOB Premier Plus, Metastock professional, Peachtree First accounting, Sage MAS Accounting, Smart Accounting and USB Complete system: These are all accounting software with various venders and various features. But they all include the basic accounting forms and transaction methods common to business applications.

## Section 3: Purpose of the Study

As we have discussed in section one, there are several management strategies and techniques to improve the performance of small businesses. This model does not replace or conflict with the basic management principles. It encourages manager to comply with the hints of avoiding small business failure stated in section 1, topic 7. The model will help in enhancing the operation and increasing the efficiency of small businesses. It will facilitate the implementation of a sound managerial strategy.

The purpose of developing this Management Model is to use the new technology and specially project management techniques to improve the operation and efficiency, so that a small business will have better chance to compete and grow. By using this model we expect improvement in various areas related to the management of small business.

### 1 - Managing Resources Efficiently

Small businesses usually have limited resources. The cash flow, equipment and capital are not excessively available. By using project management technique the small business can use its resources more efficiently. If a business needs to perform simultaneously few tasks that require certain equipment, we may face shortage of equipment and some tasks will not be done or they will be postponed. In addition to the time delay, some employee's time will be lost in waiting or trying to perform the task in more primitive ways. This could happen frequently, so that it will affect inventory management. The business may purchase expensive material without using it for some time. Several resources will be lost or used inefficiently if we don't have a systematic planning and close control to stick to the plan.



## 2 - Control Cost

The overall cost of a task can be reduced if it is planned right. When we have a plan and observe its completion, we may notice ways that will reduce some of the cost. These ways can be implemented in the next project planning. Utilities and other overhead costs can also be reduced if we have a solid plan. For instance, some small companies have to rent heavy equipment to perform some tasks, if we plan to group or perform these particular tasks all in one day, when possible, we will probably save on the rental costs. Or if we plan that certain section of the building or certain high power equipment, not to be needed at certain days then we may also save some costs. So planning will help us use space and equipment efficiently and therefore reduce costs.

## 3 - Enhance Quality

This Management Model will improve the quality in many ways.

First, it will minimize the need of using substitution to high quality materials. Sometimes in small business, the manager will have to use substitution to an unplanned task or material because there is not enough time to find or obtain the better materials, which in turn may bring down the quality.

Second, the model will assure the proper time delegation suitable for each task. Sometimes the small business manager will rush the execution of some tasks to ease customer pressure or to make up for unplanned delays, which may decrease the quality. With this model, we will plan the required time for each individual task ahead of time and we will include safety margin for delay risks.

Third, this model will determine and plan the proper process steps and sequences, and we may plan some tasks to be executed in parallel to optimize the efficiency while maintaining the desired quality of work. Fourth, this model will allow including planned tasks designed specifically for quality control purposes such as not moving from one task to another before passing by inspection. Sometimes a problem of one task can be

corrected easily at the time when the task is just finished but it may be extremely difficult to correct it when the whole project is almost done.

Finally, this model will make it easier to design, develop and implement new quality improvement tasks within the project. For example, if the manager notices a repeated inspection problem in one task, he may add an extra quality procedure in the task itself or as an additional task to improve the quality.

#### 4 - Enhance Company's Image and Customer Relation

The company's name and reputation are a very important competitive advantage for the small business. This model, in its various aspects, will improve the company's reputation and image. It will assure a professional image of the business conducts. It will provide desirable transparency between the customer and the company. By the continuous feedback and awareness of the process, certain tasks may be included in the overall planning of the business, which will improve the business image and build customer trust of the company's name.

#### 5 - Optimize the Efficiency of Human Resources

The model will allow the small business manager to manage the employees efficiently based on solid evaluation of the individual performance. In addition, the inherited planning of tasks in project management will increase the time efficiency of the employees. The model includes continuous reporting steps that produce concrete data of the individual performance. The desired problem detection, punishment or reward system may be implemented based on the recorded facts. For example, if two employees are performing the exact same tasks in the same period of time, and one employee's output failed inspection several times in one month while the other employee's output passed all inspections; the model may produce a flag for the manager. Then, the manager will have to act and correct the problem and reward the employee with excellent performance. First, he must analyze the reasons of such noticeable problem. The employee may need some training, may lack some physical or mental



ability, or simply he may not like doing this task. Now, the proper action may be taken such as providing the needed training or changing the position of the employee. The Management Model will provide the manager with better knowledge and control of the employees' performance and behavior.

## 6 - Improve Financial Planning

The Management Model includes cost estimation, schedule of task's expenditure and a link to the financial software. The manager can plan the financial status of the company more efficiently based on the planned tasks. The small business manager does not have to allocate the financial requirement of a project as soon as it starts but he can spread the allocation throughout the life of the project and at the needed time. Even though in small business the projects are small and run for short periods of time, having an excess finance for one day on many projects will cause a considerable increase of the financial costs.

## 7 – Learning from the Past

The Management Model relies heavily on using computers and multiple software including problem notes and history keeping of finished projects and tasks. The projects in a small business are usually similar with some variations of size and content. Having the old projects data available, the manager can setup new projects quickly and efficiently. In addition, the manager can forecast some risks based on the history and take precautionary or corrective measures. For example if several projects have faced delay due to a delay of the delivery of a particular material, the manager can prevent this problem by placing enough time between the ordering task of purchasing this material and the execution of the task itself. On the other hand, if several projects have faced delays due to the delivery of various materials, the manager would not order all the materials ahead of time but he would take a precautionary measure by increasing the estimated time of the project by the average of previously occurred delays.

## 8 - Provide Immediate Status Information

The Management Model gives the manager, the employees and possibly the customer immediate and current information of the work progress. It also provides the manager with current status information, not only about the progress but also about the financial, accounting and other aspects of the business. The manager can setup the information access level for the employees and he can setup access of a particular project progress to a particular customer.

## 9 - Increase the Coordination Among Employees and with Customers.

The Model's transparency and detailed tracking of the tasks will increase the level of coordination among the employees. Every employee is interfaced to the system with some preset access rights. Therefore, the employee must enter his output status in the system according to a predefined procedure stated in the employee's job description. Also, each employee has access to the system's information pertaining to his job, which includes other employees' output status. For instance, a painter in a furniture manufacturing company will have to report the status of his work and will have access to the woodwork status. If the painter is supposed to start a job but the woodwork for this job is delayed, the manager will assign another job or the system will be setup to automatically assign an alternative task. In this way there will be no loss or minimum loss of the painter's time. The customer may also benefit from the system. If a customer have access to his particular project (limited access "view only"), he can connect to the system and know the status of his project online, he may also read some notes that could be left for him by the manager. The model will include the feature of parallel processing and interfacing. Several users can take advantage of the system at the same time. If applied correctly, the model will eliminate or minimize the over all possible human error of coordination among the employees and with the customers.



## Section 4: Procedure and Methodology.

After having performed a detailed research and study of the small business sector, we will now go through the procedure and methodology to develop the Management Model that uses new applied technology to improve the overall efficiency of many small businesses. The model will be based on using the Project Manager software and techniques in coordination with other software such as accounting, finance, inventory control, cost estimator and form creator software.

We will proceed through several steps starting with the selection of the software. Then we will explain the software's installation, setup, interface and customization. After that, we will discuss the minimum required employees' and manager's knowledge and the required training. Then we will develop the model with its interface, definition and detailed structure. Finally we will provide information on using the model with explanation of the manager's, employees' and customers' interface.

### 1 – Selecting the Software.

The model will use software that is easily interfaced with each other, but it is not necessary to stick to them. The manager may choose other favorable software as long as the overall characteristics of the model remain intact. For instance, if the employees of certain company are using and are familiar with an accounting software different than the one chosen for the model, the manager can substitute the model's accounting software by the one he chose as long as his software allows exchange and share of information.

A – Project Manager: (Copyright Microsoft Corporation 1990-2002)

Project management is the process of planning, organizing, and managing tasks and resources to accomplish a defined objective, usually within limitations on time, resources, or cost. A project plan can be simple, for example, a list of tasks and their start and finish dates written on a notepad. Or it can be complex, for example, thousands of interdependent tasks and resources with a million-dollar budget. Whether simple or complex, however, all projects consist of three major phases:

- Build the plan
- Track and manage the project
- Close the project
- 

The more successful these phases are, the greater your chance of a successful project. In addition, every project is shaped by three factors:

**Time:** The time to complete the project as reflected in your project schedule.

**Money:** The project budget, based on the cost of the resources, that is, the people, equipment, and materials required to do the tasks.

**Scope:** The goals and tasks of the project and the work required to complete them.

This trio of time, money, and scope is the project triangle (shown in Figure 4.1). Adjusting one of these elements affects the other two. While all three elements are important, typically one will have the most influence on your project.

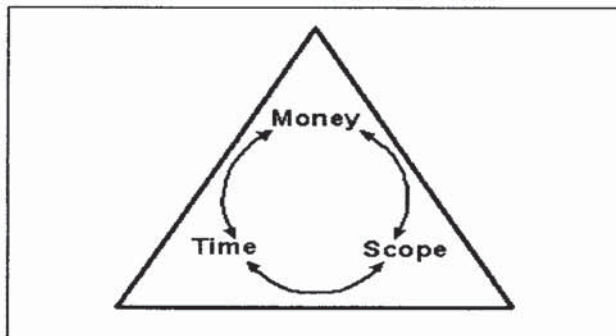


Figure 4.1 The Project's Trio.



The model will use MS Project Manager 2002. This is the main software that will be used to display data and work status to the manager, employees and customers. We have chosen this software because of its easy interface to MS Office, MS Access and MS Excel and because it allows the use of MS Visual Basic (high level programming language) to write programs for customization and for task automation.

B – Peachtree Complete Accounting: (Copyright 1992-2002 Peachtree Software, Inc)

Many small business owners choose a Peachtree solution to help them streamline operations and get the insight behind their numbers. By combining comprehensive business management tools with professional accounting basics in flexible, user-friendly products, a Peachtree solution will help you better understand your business so you can make better decisions. Peachtree Complete Accounting includes the robust, multi-user ready accounting features you want, and helps provide the valuable insight you need. Better manage your accounting and business with advanced features such as in-depth inventory, job costing, time and billing and fixed assets. Peachtree Complete Accounting 2004 is available in a Single or Multi-Users Pack.

We have chosen Peachtree Complete Accounting 2002 because it includes General Ledger, Accounts receivable, Accounts Payable, Inventory, Payroll, Time & Billing and Job Costing, and finally Fixed Assets Management. Also, we have chosen this software package because it has flexible features such as importing and exporting data, form designer and customization.

C - Smart Business Plan 8.0: (Copyright Smart Online, Inc. 2001)

This fully interactive software includes stand-alone applications for writing business plans, marketing plans and a financial advisor. Build a rock-solid business plan and learn how and where to obtain the dollars you need for your business. Create a strategic and vital marketing plan with up-to-the-minute web based market research. Smart Business Plan® consists of three main modules, “Business Plan”, “Marketing Plan”, and “Financial Advisor”.

Smart Business Plan 8.0 gives you the option of compiling your business and marketing plans in the following word processor applications if properly installed on your computer:

- >> Microsoft Word 97
- >> Microsoft Word 2000
- >> Lotus Word Pro 97
- >> Lotus Word Pro Millennium

You may also compile your plan in Smart Plan Editor word processor Module, included with Smart Business Plan 8.0.

We have chosen this software package to be used by the manager as an aid to create the overall plan and strategy of the business.

#### D – Cost Estimator: (Copyright 2002 Craftsman Book Company)

Cost Estimator software package includes current materials and labor costs and sources in the United States of America. It includes 2500 pages of costs information pertaining to many areas of business such as Construction, Electrical, Insurance, Plumbing, Painting and Repair. The prices are updated frequently and can be accessed through the Internet. Even though the data represents directly the prices in the United States, a small business manager in another country can use this data to get some ideas of the prices or to approximate the local prices.

We have chosen this software package as an optional tool for the small business manager so that, from time to time, he can compare his actual costs to the enclosed costs in the software.

#### E – ‘SPSS’ v11.0: (Copyright ‘SPSS’ Inc, 1989-2001)

SPSS is the most popular statistical analysis software. It includes several analysis options and procedures and it interfaces with almost any Windows based software. SPSS is an excellent tool for the small business manager to analyze and interpret data. In addition our model can export data into excel and therefore the data can be read by SPSS so that the manager can perform the desired analysis.



## F – Project Manager Forms:

A two CDs collection of various forms designed for project management, such as Material Requisition, Memorandum of Delay, Job Site Safety Checklist and Field Problem Report. All the forms are in Excel file format and can be imported to any of the software used in this model.

## 2 - Software's Installation and Setup

All the software packages used to develop our Management Model run under various version of Windows operating system. Therefore the setups of most of these software are similar. We will give brief instruction on setting up each software package. However, we will emphasize on how to customize each package to be adapted and become a part of our Management Model.

### A – Project Manager:

It is recommended that the company is equipped with a computer network and a connection to the Internet. Obtain the project manager server and install it on the network from the Microsoft Project Server CD-ROM. Server CD-ROM. Instructions for installing Microsoft Project Server are provided in the installation guide (pjsvr10.chm) on the CD-ROM. Consult with the Microsoft Project Server. Using MS Project Server, a Microsoft Project companion product, you can collaborate online with team members and other stakeholders. It allows you to easily exchange project information with your team members and incorporate updated. Set up an e-mail-based team collaboration system. You can exchange project information with your team members using a MAPI-based e-mail system that Microsoft Project supports. Team members use the e-mail system to send and receive team collaboration messages.

As the project manager, you use your e-mail system to view team collaboration messages from team members and update your project. Set up an alternative communication system. You can exchange project information

by sending or routing project files and sending notes to team members. This method does not allow you to easily incorporate updated information in your project. You must manually update your project with information you gathered from team members.

#### B – Peachtree Complete Accounting:

Once you insert the Peachtree complete accounting CD into the CD drive, the Auto Run program will start and guide you through the installation of the software. You can install the Peachtree software on the accounting computer or on the server. In both cases you should establish communication (connection) with the network.

There are only three menus available to you when a company is not open: the **File**, **Options**, and **Help** menus. At this point, you can

- Open an existing company
- Create a new company
- Change global options
- Check to view the status bar, navigation aid, or startup screen
- Use Peachtree Help
- Run the Peachtree tutorials

One of the first things you'll want to do when you receive your Peachtree Accounting package is set up your company. To get things started, Peachtree provides the New Company Setup wizard. When you set up your company, you provide Peachtree with basic information such as name and address. In addition, you select your chart of accounts, choose your accounting and posting methods, and specify how your accounting periods are set up.

When you complete New Company Setup and select the Finish button, Peachtree presents the setup checklist. Then, you can start entering default information, record data (such as employee, vendor and customer records), and beginning balances. Or, you can go right ahead and start using Peachtree to generate invoices and pay bills.

Select the option of creating new company. At this point the Setup New Company wizard will guide you in details on setting up the new company information.



#### C - Smart Business Plan 8.0:

To install Smart Business Plan, simply place the original Smart Business Plan 8.0 CD in your computer and double click on a file located on the CD labeled as "Setup", and follow the Instructions displayed on the screen.

Smart Business Plan 8.0 safety module will prompt you in case of any problem with one or more of the files associated with the program. Such problems could occur after installation of other software on your computer. In the event you receive such message, simply place the original Smart Business Plan 8.0 CD in your computer. Double click on a file located on the CD labeled as "restore.bat", and follow the instructions displayed on the screen.

#### D – Cost Estimator:

To install Cost Estimator, simply place the original Cost Estimator CD in your computer and double click on a file located on the CD labeled as "Setup", and follow the Instructions displayed on the screen.

#### E – SPSS v11.0:

To install SPSS v11.0, simply place the original SPSS v11.0 in your computer and double click on a file located on the CD labeled as "Setup", and follow the Instructions displayed on the screen.

#### F – Project Manager Forms:

The project manager forms are Excel's files with self-explanatory titles. Simply copy those files to one directory and open them with Excel when you need them.

### 3 – Interfacing to the Software.

The manager, the employees and the customers need to interface with the Management Model and therefore, they need to interface with the individual software at various levels and complexities.

The customer needs only to interface to the online resources with minimum interface requirement or knowledge. The employees' level of interface varies according to their position. For instance, the accountant needs to have thorough understanding and interface knowledge to the accounting software, while a common worker needs to interface to Project Manager with the ability to retrieve and report information. The manager must have the greatest ability to understand and interface to all the software including customization and interconnectivity. The manager interface can be simplified by having a software consultant build user-friendly task automations, templates and procedures.

#### A - Project Manager:

First we must set up a method for communicating with the project team and keeping the project updated during the project. For small business the team can be composed of one or very few employees. You can select from the online team collaboration solutions supported by Microsoft Project or use selected Microsoft Project features to convey information. You can use any combination of the collaboration solutions to accommodate the people on your project. We may also plan communication that doesn't require Microsoft Project collaboration solutions. If you are not using Microsoft Project Server or Microsoft Project's e-mail workgroup features, you should decide how to update team members about changes to the project plan and how to gather information from team members about the status of the project. You can distribute project files and information in a variety of ways by using your e-mail system to send or route project information.

To distribute project information, specify the location where Microsoft Project Server is installed, specify Microsoft Project Server as your default team collaboration solution, and create an account in Microsoft Project Server. This way, at any time, you can republish all assignment information to your team members in one step to update their task information in Microsoft Project Server. Depending on how you set up the



Microsoft Project Server, team members may be able to view project information other than their own assigned tasks. If your project is available for viewing, you can determine whether team members see changes to project information every time you save the project or only when you specifically choose to update them. This is very useful to control customers' relation, because in the Management Model the customer has some access to his own project. The manager can allow team members to delegate tasks to one another. When a task is delegated to another team member, that team member actually does the work on the task, although the person who delegates the task can review and approve status and facts on the task before returning this information to the manager. The manager can also specify which information team members send you about tasks. You use this information to update the project during the project.

To accomplish online communication we must, set up an e-mail system to receive team collaboration messages. First we setup the system to send and receive messages, and then we connect the teams with their identifications to the system and we specify the defaults.

#### B – Peachtree Complete Accounting:

The primary users of this software are the accounting personnel. However, the manager needs to use this software to stay current with the accounting and financial status of the company. An accounting system operates according to well-established rules, called generally accepted accounting principles. In order to record data correctly and to understand the meaning of the numbers in the financial statements, you need to be familiar with these principles. To be comfortable with your accounting system, you need to understand how the computer program operates. You also need to understand some technical accounting terms.

The software is menu driven and includes help, tutorials and many wizards to assist the user. First the accountant must set up the company's information and chart of account. To do this the accountant can use the Company Setup Wizard or he can download a sample company setup and modify it. The manager or accountant can set up "Jobs" for each client. Then they can track both expenses and income for specific projects, including payroll hours or amounts. MS Project will handle current status, detailed



tracking, and progress reports. Jobs are set up under the Maintain menu in Peachtree Accounting and they should be linked through programming customization to MS Project. You can estimate the completion percentage of jobs, and the expected revenue and expense. In addition, you can track the planned and actual end date for projects. When you purchase an item specifically for a client, you can specify this job. When you invoice the client, you can include this item, whether you charge for it or not. Then you can run reports, such as the Job Register, that list transactions (both purchases and sales) by job. Without setting up a job, you have no way of tying a customer to a purchase.

#### C - Smart Business Plan 8.0:

The manager is the main user of this software. The Business Plan module offers the option of writing a plan for a “New” or “Existing” business for five different business sectors. Plus, each module offers sample plans for each economic sector. The Business Plan module offers ten sample plans.

The Plan Composer is divided into three central areas. The top right side of the screen is where your text/tables are typed/filled. The heading in this area reflects which section of your plan with which the text/table refers. The tabs indicate either “text” or “table” associated with the section of the plan. The “table” tab will be disabled if there is no table associated with a particular section.

The bottom right area of the screen illustrates one of three options: instructions for the text area above, Example Text for that section or an Example Table. The bottom left side of the screen is the table of contents for the plan. The Business Plan uses a simple menu/tree control as its main navigation function. This menu illustrates all chapters and sections of your plan. Right mouse click over chapter or section names in this navigation control offers various functions, these functions are explained in detail in the How to Navigate Your Plan section of this Help file.

The icons on the far left are your command tools. A “tool tip” with the description of its function will appear as the cursor is moved over each icon. Also included are three icons to change the view quickly. Once you



have completed your Business Plan, (or just want to view what you have done so far), click on the Compile Plan icon to have you plan assembled and then displayed as a single document.

All command buttons in Plan Composer are also accessible from the menu bar. The Business Plan module includes help and tutorial to further assist the user.

#### D – Cost Estimator:

An individual employee who is asked to provide his estimation of the cost of certain task can use cost Estimator. The manager or accountant can use Cost Estimator to approximate costs. To use cost estimator, someone can just start the program and start selecting items and quantities from the cost book related to the area of interest.

To start a new estimate:

1. Click on File on the menu bar.
2. Click on New.

National Estimator 32 begins a new estimate automatically every time you begin using National Estimator 32. The name of the first new estimate is Estimate1 until you save it to disk. Then you can assign the file name of your choice.

National Estimator 32 can open several costbooks at a time, whether these costbooks are on the hard drive or the CD-ROM drive of your computer.

To open a costbook on your hard disk drive:

1. Click on File.
2. Click on Open Costbook.
3. Click the down triangle to the right of Look in to go to any other disk and folder. The default location for costbooks is C:\Program Files\Craftsman\National Estimator\Costbooks.
4. Double-click on the costbook name to open that costbook.

#### E - SPSS v11.0:

The manager is the main user of this software, but other accounting and marketing people can find it beneficial. Analyzing data with SPSS is easy. All you have to do is:

Get your data into SPSS. You can open a previously saved SPSS data file; read a spreadsheet, database, or text data file; or enter your data directly in the Data Editor. Then select a procedure from the menus to calculate statistics or to create a chart. Select the variables for the analysis. The variables in the data file are displayed in a dialog box for the procedure. Finally, run the procedure and look at the results. The results are displayed in the Viewer' window.

## 4 – Setup of Forms and Default Values.

#### A - Project Manager:

Microsoft Project includes several templates of projects in various area of business. The small business manager can chose one of the templates related to his type of business, modify it and save it for future use. The management model is based on running the small business using project manager approach. Some small business procedures and or transactions will be grouped and considered as a small project. The small business will have several projects running concurrently. Therefore, the saved template can be used repeatedly for quick setup of these projects.

MS Project 2002 includes the following templates:

- Commercial Construction template.
- Engineering template.
- Home Move template.
- Infrastructure Deployment template.
- Microsoft Office XP Corporate Deployment template.



- Microsoft Windows XP Deployment template.
- MSF Application Development template.
- New Business template.
- New Product template.
- Office Move template.
- Project Office template.
- Residential Construction template.
- Software Development template.

In addition, MS Project 2002 includes many ready forms to report progress, to get feedback, to report delays and problems, to request materials and to handle many aspects of the project's process. Several forms can be used to relay information to and from employees using the online server or through printed materials.

#### B – Peachtree Complete Accounting:

In Peachtree Complete Accounting, we can set up different formats, known as templates. We can use templates to enter and review sales and purchase transactions. We can use predefined templates, those that come with Peachtree Accounting, or design our own ones by hiding one or more data-entry fields that are not needed. We design our new templates or customize the predefined template for the following topics:

- Quotes.
- Sales Orders.
- Sales/Invoicing. (Product and Service)
- Purchase Orders.
- Purchases.
- Inventory.

Peachtree provides another kind of predefined templates to assist the user in setting up the company's accounts. In the Peachtree help section the user can select the type of his business and get a chart of accounts that can be loaded and modified to match his needs.

An example of the available chart of accounts is shown in table 4-1.

Account	Description	Type	Account	Description	Type
10000	Petty Cash	Cash	24900	Suspense-Clearing Account	Other Current Liabilities
10100	Cash on Hand	Cash	27000	Notes Payable-Noncurrent	Long Term Liabilities
10200	Regular Checking Account	Cash	27100	Deferred Revenue	Long Term Liabilities
10300	Payroll Checking Account	Cash	27400	Other Long-Term Liabilities	Long Term Liabilities
10400	Savings Account	Cash	40000	Consulting Income	Income
10500	Special Account	Cash	40200	Other Regular Income	Income
10600	Trust Account	Cash	40400	Interest Income	Income
10700	Money Market Savings	Cash	40600	Other Income	Income
10800	Certificates of Deposit	Cash	45400	Finance Charge Income	Income
11000	Client Fees Receivable	Accounts Receivable	45500	Shipping Charges Reimbursed	Income
11400	Other Receivables	Accounts Receivable	48000	Fee Refunds	Income
11500	Allowance for Doubtful Account	Accounts Receivable	49000	Fee Discounts	Income
12000	Inventory	Inventory	50000	Cost of Sales	Cost of Sales
14000	Prepaid Expenses	Other Current Assets	57000	Cost of Sales-Salaries and Wages	Cost of Sales
14100	Employee Advances	Other Current Assets	60000	Default Purchase Expense	Expenses
14200	Notes Receivable-Current	Other Current Assets	60100	Advertising Expense	Expenses
14700	Other Current Assets	Other Current Assets	60500	Amortization Expense	Expenses
15000	Furniture and Fixtures	Fixed Assets	61000	Auto Expenses	Expenses
15100	Equipment	Fixed Assets	61500	Bad Debt Expense	Expenses
15200	Automobiles	Fixed Assets	62000	Bank Charges	Expenses
15300	Other Depreciable Property	Fixed Assets	62500	Cash Over and Short	Expenses
15400	Leasehold Improvements	Fixed Assets	63000	Charitable Contributions Exp	Expenses
15500	Building	Fixed Assets	63500	Commissions and Fees Exp	Expenses
15600	Building Improvements	Fixed Assets	64000	Depreciation Expense	Expenses
16900	Land	Fixed Assets	64500	Dues and Subscriptions Exp	Expenses
17000	Accum. Depreciation - Furniture	Accumulated Depreciation	65000	Employee Benefit Programs Exp	Expenses
17100	Accum. Depreciation - Equipment	Accumulated Depreciation	65500	Freight Expense	Expenses
17200	Accum. Depreciation - Automobile	Accumulated Depreciation	66000	Gifts Expense	Expenses
17300	Accum. Depreciation - Other	Accumulated Depreciation	66500	Income Tax Expense	Expenses
17400	Accum. Depreciation - Leasehold	Accumulated Depreciation	67000	Insurance Expense	Expenses
17500	Accum. Depreciation - Building	Accumulated Depreciation	67500	Interest Expense	Expenses
17600	Accum. Depreciation - Bldg Imp	Accumulated Depreciation	68000	Laundry and Cleaning Exp	Expenses
19000	Deposits	Other Assets	68500	Legal and Professional Expense	Expenses
19100	Organization Costs	Other Assets	69000	Licenses Expense	Expenses
19150	Accum. Amortiz. - Org. Costs	Other Assets	69500	Loss on NSF Checks	Expenses
19200	Note Receivable-Noncurrent	Other Assets	70000	Maintenance Expense	Expenses
19900	Other Noncurrent Assets	Other Assets	70500	Meals and Entertainment Exp	Expenses
20000	Accounts Payable	Accounts Payable	71000	Office Expense	Expenses
23000	Accrued Expenses	Other Current Liabilities	72000	Payroll Tax Expense	Expenses
23100	Sales Tax Payable	Other Current Liabilities	72500	Penalties and Fines Exp	Expenses
23200	Wages Payable	Other Current Liabilities	73000	Other Taxes	Expenses
23300	Deductions Payable	Other Current Liabilities	73500	Postage Expense	Expenses
23400	Federal Payroll Taxes Payable	Other Current Liabilities	74000	Rent or Lease Expense	Expenses
23500	FUTA Tax Payable	Other Current Liabilities	74500	Repairs Expense	Expenses
23600	State Payroll Taxes Payable	Other Current Liabilities	75500	Supplies Expense	Expenses
23700	SUTA Payable	Other Current Liabilities	76000	Telephone Expense	Expenses
23800	Local Payroll Taxes Payable	Other Current Liabilities	76500	Travel Expense	Expenses
23900	Income Taxes Payable	Other Current Liabilities	77000	Salaries Expense	Expenses
24000	Other Taxes Payable	Other Current Liabilities	77500	Wages Expense	Expenses
24100	Employee Benefits Payable	Other Current Liabilities	78000	Utilities Expense	Expenses
24200	Current Portion Long-Term Debt	Other Current Liabilities	89000	Other Expense	Expenses
24400	Client Escrow Funds	Other Current Liabilities	89500	Purchase Disc-Expense Items	Expenses
24800	Other Current Liabilities	Other Current Liabilities	90000	Gain/Loss on Sale of Assets	Expenses

Table 4-1 Sample Company Accounts Setup (Construction)

(Source: Peachtree Complete Accounting Help, Copyright Peachtree Inc, 2002)



You could say that reports are the reason for all the work you do in Peachtree Accounting. You need to know how your business is doing at a given time, or compared to prior periods. Peachtree supplies your company with the information to assess the health of your business. Key reports for management include:

- Balance Sheet.
- Balance Sheet – 2 year.
- Income Statement.
- Income Statement – 2 year.
- Income Statement – Actual vs. Budget.
- Audit Trail Report.
- Aged Receivables.

A form in Peachtree is a document that you exchange with customers, vendors, or employees. The forms that come with Peachtree include checks, tax forms, invoices, statements, mailing labels, quotes, and collection letters. **Note:** You cannot modify the standard forms that are included with Peachtree. This prevents you from losing a necessary form accidentally.

You can, however, create a custom form by saving a standard form with a different name. If you delete a standard form accidentally, you can reinstall Peachtree and select the Install Sample forms setup option.

#### C - SPSS v11.0:

The user can apply the chart specifications from the selected SPSS chart template file to an existing chart. Optionally, you can specify whether the title and footnote from the chart template should also be applied.

When you apply templates to charts from split or weighted data files, the chart subtitles that identify the split or weight variable are lost. (Split File and Weight Cases are Data menu commands.)

You can also apply a template to a new chart when you create it, by selecting Use Specifications from file in the dialog box where you first define the chart. To specify a default template that is automatically applied to all charts, choose Options from the Edit menu and click the Charts tab.

“Use Template” from File allows you to apply the chart specifications from an existing SPSS chart file to the current chart. For example, if you have already customized the title, point size, and bar style in a previously saved bar chart, you can apply the same specifications to all new bar charts that you create.

The file that you specify should be an SPSS chart template file saved after modifying the chart in the SPSS Navigator. The template file need not be of the same chart type; however, applying specifications from a chart of a different type may not always give expected results.

## 5 – Developing and Defining the Model.

We will develop a user-friendly model based on the previously stated software’s information. We will include in the model a detailed chart of the overall software structure and connectivity. We will explain how to interface between various software used embedding actual task’s automations. However, we will not go deeply into the detailed software programming. A specialized programmer consultant could be assigned to handle the detailed procedures and specialization suitable for the particular type of small business. We will also emphasize on customer’s participation and satisfaction, so that the customer will feel that he is a part of the model.

The Microsoft Project Software Development Kit (SDK) is important to the Management Model because it provides a variety of programming examples and reference material that demonstrate the use of the components in Microsoft Project. The intended audience for this SDK is anyone interested in extending the capabilities of Microsoft Project through the use of Microsoft Visual Basic for Applications (VBA); Component Object Model (COM) add-ins; OLE DB, ActiveX Data Objects (ADO) and the Microsoft Project database format; and the controls available through Microsoft Project Server.



#### A - Management Model Definition:

The developed Management Model is a high quality; high efficiency management method specialized for the small business sector. The management model is based on implementing new technology in the small business management process to achieve better organization and collaboration, to enhance customer/business relation, to produce high quality products or services and to maximize efficiency and profit. The Model in its structure uses two major software: MS Project 2002 and Peachtree Complete Accounting 2002. In addition it uses management enhancement software such as Smart Business Plan 8.0, SPSS v11.0 and Cost Estimator.

#### B - Management Model Structure:

The management model is developed to work with many types of small businesses. The main software structure is shown in figure 4-2. It assumes that the business has established network system with one server and several users' terminals. However, this structure can be altered and customized to fit the small business ability and equipment. It can be developed with only one or two computers, but most of the communication will be carried out through printed forms.

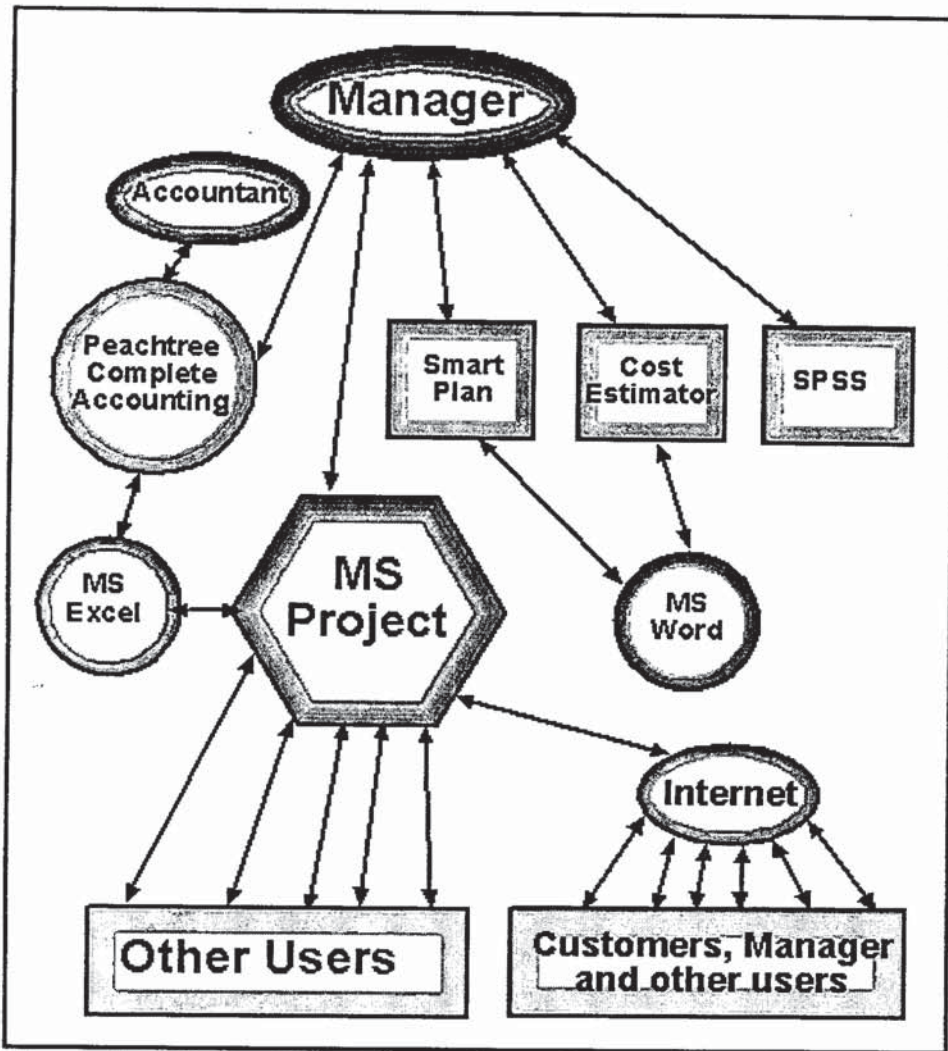


Figure 4-2 The Main Software Structure.

In the software structure, the Peachtree Complete Accounting software is interfaced with MS Excel through DDE (Direct Data Exchange protocol). If the data changes in the Excel linked document, the change will automatically appear in the Peachtree Complete Accounting and vice versa.

Peachtree software will handle inventory and purchasing, therefore if a delay in receiving some purchased material occurs, the information will be directly shown in the Excel linked document and can be retrieved by the MS Project. On the other hand, if the Project manager updates a schedule of tasks in the MS Excel and delays the required date of some materials, the accounting system through purchasing will not order the material before it is needed. The process is valid, not only for material requisition, but also for



all aspects of work and scheduling process. It will report human resource time from MS Project directly to Payroll Module.

It is very important to notice in the Model that individual project in the MS Project is linked to an individual job account number in the Peachtree software. At all times, the manager can preview the estimated cost of a project in MS Project and at the same time he can preview the actual cost to date for this project in the accounting software.

MS project 2002 has several ways of importing or exporting data, in many formats; however, this version does not support DDE. In our Management Model we have chosen MS Excel as an intermediate link. If DDE interface protocol is added to future MS Project version, we will not need an intermediate link such as MS Excel. However, the Model will still work as is. The export/import map in MS Project is a set of instructions that maps out for Microsoft Project exactly what types of data you want to export or import, in what order, and what the fields will be named in the destination format. Microsoft Project comes with default export/import maps. You can also create and customize your own maps. An export or import map can include specific instructions for exporting task, resource, and assignment data. Using export/import maps, you can export or import as little or as much data as you want into a wide variety of formats.

In the Model, Ms Project is the main information source to the Internet connection because MS Project 2002 is developed with many online features. It includes HTML export templates and tags. When you export project data to HTML format, you can use a template. A template is an HTML file that contains tags that act as placeholders for exported project data. Microsoft Project includes several predefined HTML templates. Microsoft Project uses a standard set of HTML tags to export project data to HTML format. If you want to view or edit an HTML export template, open the desired HTML document and edit it in the Microsoft Project Web subfolder.

MS Project includes import/export wizards, which are suitable methods for the Management Model. The Import Wizard or Export Wizard is a helpful tool for transferring project data between Microsoft Project and other programs. Each wizard provides the user with easy-to-follow instructions for placing imported or exported data in the appropriate destination fields. The Import Wizard can also help the user merge data from

another file format into an existing project. When merging data, information is added to the particular project, and existing data is updated, but not deleted. Merging is powerful and useful. We can use it to synchronize our project data with information in the accounting system. For example, we may want to use merging and mapping to keep the resource information in our project current with the resource information in our company's human resources database.

To construct the Management Model we need some hardware. The hardware structure is basically a computer network with one server computer and several computer stations. In addition, we will need printer, scanner and backup system such as CD recorder. Figure 4-3 shows the initial suggested hardware setup; however the model can still be used with an alternative, simpler hardware setup.

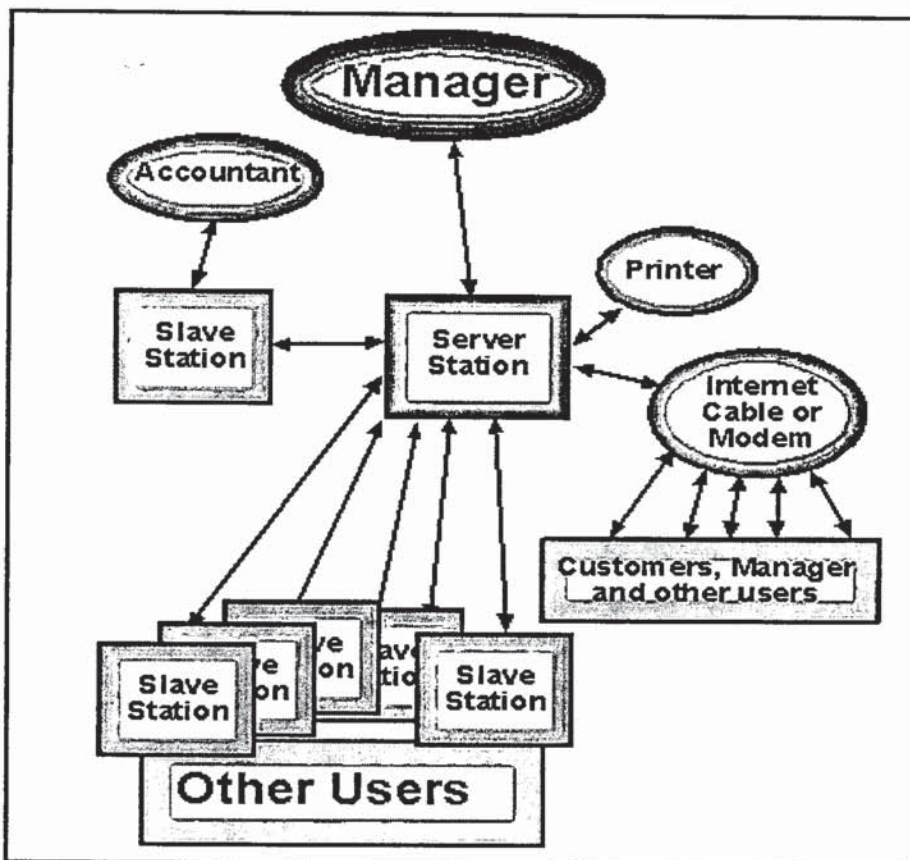


Figure 4-3 Hardware Structure.



## 6 – Required Trainings.

The type and level of training varies with the individual role and interface to the Management Model. All users connected to the network must have basic computer knowledge. They must know how to use The Windows operating system and MS Office as a minimum. We subdivided the training levels into three groups: Primary users, Secondary users and employees without network connection.

### A - Primary users:

The primary users of the model require the most training. The manager is the most involved user and must get the necessary training to operate all the enclosed software, except for detailed accounting. However he must understand the common accounting principles and the various accounting statements. The other intensively involved user is the accountant or accounting personnel. This group must get training on the general principles of MS Project and must have an intensive training on the use of Peachtree complete Accounting. The enclosed help and tutorials in the used software can be a great help.

In addition to the software training, this group including the manager must understand project management methods and techniques and how they apply to the Management Model. They should get training on controlling tasks, transferring information and allocating resources.

### B - Secondary users:

This group includes all the employees connected to the network. They should get training on how to log in, retrieve messages or assignments and report information through the network. This group also includes customers. Customers should receive minimum instructions on how to log in through the online connection and how to view the data related to their project.

C - Employees without network connections:

This group needs training only on the overall process of the Model. Each individual may required minimum training to perform his particular task in coherent with the Management model. The individual should know how to get assignment and what, how and to whom to report.

## 7 – Using the Model (Manager, Employees, Customers)

To apply this model to a small business, we must keep in mind a management process relying on project management methods and techniques. We will sub group some tasks into a small project. The sub-grouping may be based on a particular customer order, in the case of retail or service business, or on producing one or a several products and their installation, in the case of manufacturing business.

We classified the use of the model according the people involvement. We will explain who will use the model and to what extents.

A – Manager:

The manager is the primary user of the system. He has all the privileges including changing some of the model's aspects. He can hire a consultant to customize or enhance the system. Once the system is setup the way the manager desire, the manager will use the system to have full control over the operation of the business and to have current thorough knowledge of the business status.

B – Employees:

The employees will use the system to perform their duties in an efficient way. The model is designed in a way to assist the employees and simplify their jobs. For instance, if a salesman want to answer a customer's concern about delivery time, he can obtain a clear answer quickly and simply from the system.



### C – Customers:

The customers also can benefit from the use of the system. The customer can use the online connection at anytime to log into the network and check the status of his project or order. He can also view notes that may have been left for him by the sales person or the manager.

We will show more detailed user information in the next section by applying the Management Model to actual examples.

## Section 5: Applications and Analysis.

In this section we will start by introducing an example of applying the Model to an existing small business. Then we will use the developed Management model to setup and manage new small business. Based on these two examples, we will perform analysis and interpretation of the developed Management Model.

### 1 – Applying the Model to an Existing Business.

To apply the model to an existing business, we will study the existing business and figure out the most suitable and economical hardware setup. Then we will discuss the training needs for all the personnel. We will explain in details the operation of the business using the Developed Management Model. And finally, we will explain the expected benefits of applying the model using hypothetical assumptions.

#### A - Business Description:

The business is a furniture showroom and custom-made furniture manufacture. The manufacturing sight is about 10 Km away from the showroom. The manager manages both sections of the business. In addition to management, the manager performs other tasks such as sales, customer relation and marketing.

In the shown room there are four employees: an architect, an accountant, a sales person and a cleaning person. In the manufacture there are ten employees: one Forman, one driver with one driver's helper, three carpenters with two carpenter's helpers and one painter with one painter's helper.

The customer visiting the showroom may purchase some ready made furniture, may place an order for custom-made furniture, or may chose a combination of both. If the customer chooses to order custom-made



furniture, the architect will discuss with the customer the desired details and specifications, then he will give the manager the approximate time and cost of the project. The manager will give a price and time quotation to the customer trying to get the business. The manager may also provide some financial assistance to the customer. Usually the customer expects to get the time and price quotation instantly while he is waiting in the show room.

The business is running fair using the traditional way. However, sometimes the manufacture cannot meet the promised time and some times even the cost estimate is less than the actual cost. Several times the manager does not know the exact actual cost of a project, but he uses approximate figures to run his business. The manager has little knowledge of when a delay may occur. Some customers are dissatisfied with the delays when they happened. The profit margin is not maintained at constant level. The overall efficiency of the business is low.

#### B - New Management Model Structure:

The software structure of the business remains the one shown in Figure 4-1. However, a customized hardware structure is planned to minimize the cost, considering the size and capability of the business.

The company already has two computers and one printer in the showroom. The accountant uses one computer, and the architect uses the other one. The accountant uses old and primitive accounting software. To apply the Model the company will have to acquire the software recommended by the Model and will have to purchase two new computer systems and some supporting hardware. Figure 5-1 shows the new hardware structure of the business.

The Architect computer will be left for technical drawing but may be connected as a slave unit to the network. The accountant computer will be moved to the manufacturing sight, upgraded with network card or modem and setup as another slave unit. One of the two new computers will be setup as a server and will be used by the manager. The accountant will use the other computer after setting it up as a slave station.

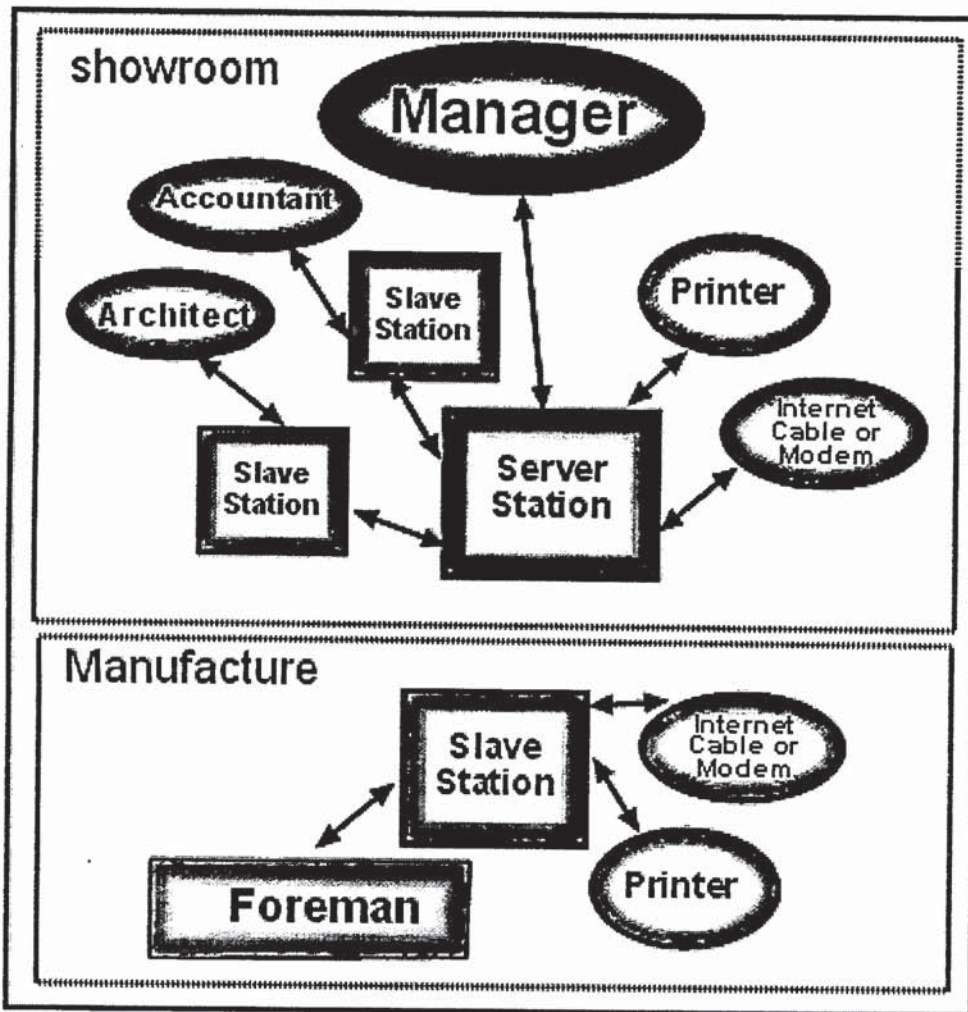


Figure 5-1. New Hardware Structure.

C – Training:

- **Manager:** The manager has little computer knowledge, and he has no management education. His management knowledge was acquired only through experience. This is typical of many small business owners. However, we can still apply our Management Model to such case. The manager does not have to be involved in the detailed setup; he can hire a computer consultant to perform the set up and customization. The manager will need training on how to operate the Management model system and how to input and retrieve information. The manager must get some training in accounting to understand the basic accounting and finance statements. Also it is preferable for the manager to be trained on



using some analysis and management enhancement software such as Smart Business Plan and SPSS. The manager should be able to contact the software consultant when he has a question or when he needs to alter some of the software aspects.

- Accountant: The accountant has been using computer based accounting software, so he is familiar with many aspects of using computer accounting software. He may still need some training on using the Peachtree complete Accounting. He can always refer to the enclosed help file and tutorials. In addition the accountant must get some training on the overall operation and techniques of project management and on the data exchange methods used in the Management Model.
  
- Architect: Sometimes the architect supervises the execution of certain projects. He is the one that makes sure the project is done according to the customer specification. Therefore, the architect must get training in using MS Project. He must learn how to retrieve the right information and how to plan some tasks to assure time delivery and quality.
  
- Sales person: The salesman must acquire the proper training to interface with the accounting system and MS Project. He should be able to use the system tools to quickly deliver the quotation to the customer. He should be trained on how to track the progress of the tasks so that he can provide the customer with the correct answers. At many times the salesman is the business representative with the customer. He should be trained on how to use the online feature of the Model so that he can assist the customer to use this feature.
  
- Foreman: The Foreman is the liaison between the system and the workers. He should be fully trained on the operation of MS Project. He should be able to provide the system the appropriate time and cost estimates. He should be able to report the progress and any foreseen problems. In addition he should setup form for the workers and assist them to become an active part of the Management Model.

- Workers: The workers (carpenters, Painters and helpers) should be trained on the overall process. They should know how to get their assignments, how to provide time estimate to perform certain tasks and how to fill up certain forms.

#### D – Operation:

The most important aspect of the Management Model is that it provides detailed and accurate information of the employees' performances, the status of the projects, the common problems, and the actual time and cost versus the estimated time and cost. Knowing all this, the manager can make better decisions.

For this particular business, the overall business operation and procedure will as follows:

1 – The MS Projects will be set up to handle many projects sharing the same resources. Two project's templates will be developed: one for purchasing ready-made furniture and the other for custom made furniture.

2 – Two or three “wild projects” will be set. These projects consist of manufacturing of items that can be sold as ready-made furniture. These projects will have minimum priority. The purpose of these projects is to fill up the time of the resources whenever the existing projects are not enough to fill up the full time schedule of some workers.

3 – When a customer purchases ready-made furniture, the project will be entered in MS Project using the appropriate template with very few tasks: (disassembly, carpenter or carpenter's helper), (delivery, Driver and driver's helper) and (assembly, carpenter or carpenter's helper). After a quick analysis the system will provide the nearest time available and the cost. The quoted price will include the total cost with the profit margin set by the manager.

4 – When a customer requests a quote on some specified custom made furniture. The project will be entered in the MS Project with all the



appropriate tasks. The system will provide the estimated time of completion including delivery and assembly and the estimated cost of the project. The manager will quote the customer a price including the desired profit and allowing some extra time to compensate for any risk of delays. If the customer agrees on the terms management will proceed with the project, if not the manager may negotiate the price or he may delete the project from the system.

5 - Once a project is set in MS Project, the system will update the human resource assignments. Then the user, including the customer, may track the progress of the project online. If an unrecoverable delay occurs, the customer will know ahead of time.

6 – If a new project has high priority, the system will use first all the time planned for the wild projects, and then it will use one half the extra safety time planned in the other projects. If the time is not enough, it will prompt the manager of the possible imposed delay on the other projects. The manager can accept the imposed delays or he may decide to make people work overtime. The system will respond to the manager decision by providing him with the new higher estimated cost.

The Model's operation is flexible allowing the manager to update the templates and the process.

## 2 – Applying the Model to a new Business.

This example is about starting new high tech business using the management model. In the previous example the manager and employees background was a little far from the computer world. In this example, the manager and employees have an excellent background on computers and their uses. Therefore, the implementation of the Model requires less training and less outside help.

## A - Business Description:

The name of the new company is High Tech Support; it was chosen to be broad and to allow the company to grow into several sub-units in the same field. Yet, it is narrow enough to place the company in a specific area of the electronics industry. The company's goal is to provide state of the art products and services to support a possible growth in the electronics industry. The company will strive to become the leader in manufacturing prototype quantity professional Printed Circuit Board (PCB). PCB's are a necessary part in the development of any electronic product. The company will also provide artwork and engineering assistant that are needed in the process of designing the PCB.

Applying our Management Model is necessary to improve the efficiency and performance of the process and to maintain the goal and image of the company. For the company to remain a leader in the high tech area it should respond fast to the revolving high tech industry.

Excellent quality and the best customer services are emphasized from the beginning. Target customers are initially, electronics engineering students, consultant engineers, electronics hobbyists, and small run production companies in Lebanon

Starting a High Tech company in Lebanon is a challenging innovation move. The uncertainty factor in this type of business is high and the unstable environment in this part of the world imposes greater challenge. Therefore the company's expectation of the market must be conservative. The structure must be narrow, where every few related functions are consolidated into one department. Arranging the proper related functions under one department will minimize the lack of specialization, and will allow the company to implement the Management Model with fewer terminals and less costs.

The company is structured into very few departments. Figure 5-2 shows the company's structure. An installed computer network will facilitate the implementation of the developed Management Model and the flow of information from one department to another. The workload may not exceed several PCB's per week. The overall atmosphere of the company will be dynamic.



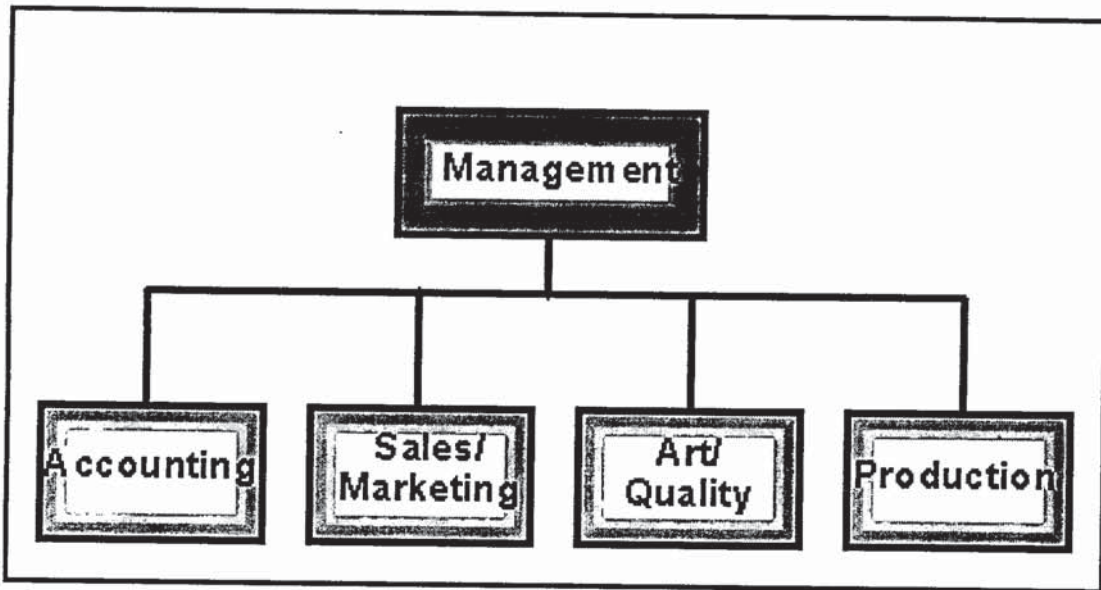


Figure 5-2. Company's Structure.

The Company has a total of eight employees including the manager. The employees are distributed among the structural departments in the following manner:

- Management: The Company is financed through personal funds of the owner. The owner himself will manage the company. He will oversee the operation of the existing departments.
- Accounting: An experienced accountant will handle accounting and finance.
- Sales/Marketing Department: An experienced salesman and one assistant are the only employees of this department. The sales/marketing department will handle all sales transactions. It will handle marketing through standard advertising methods and through the Internet services. It will also handle all shipping and receiving.
- Art/Customer Service Department: An electrical engineer experienced in the art of designing PCBs and one assistant are the only employees of this department. The art/customer service department will handle all the process of developing all the artworks needed for the individual PCB orders. It will assist the customers with their questions to provide the correct specification.

And it will keep a close contact with the customers to assure customer satisfaction. In addition, the art department is responsible of setting and updating the company's Internet page and services. It will handle receiving and transmitting artwork files and messages through the Internet. It will also inspect and assure the quality of the finished products prior to shipping to the customers. Since the art department is familiar with the material needed for production, it will handle purchasing as well.

- Production Department: An electrical technician and one worker are the only employees of this department. The production department will handle all the processes required to manufacture a state of the art PCB. It will rely a great deal on the automated machines.

#### B - Management Model Structure:

The software structure of the business remains the one shown in Figure 4-2. Figure 5-3 shows the company's suggested hardware structure. The manager's server can access every station while each department has one slave station. A shared laser printer is connected to the network.



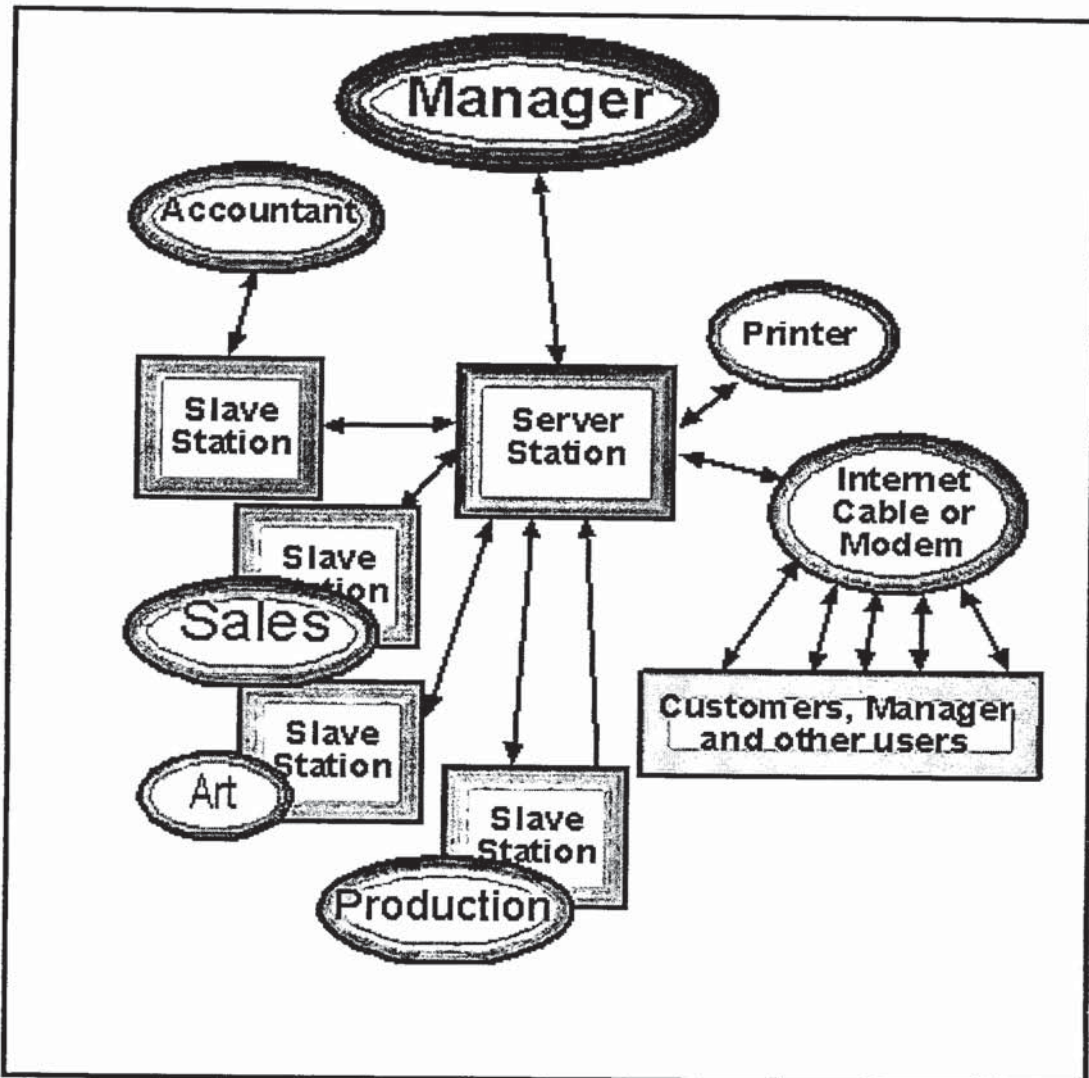


Figure 5-3. Management Model Hardware.

C – Training:

Due to the nature of the business, most of the employees have strong computer background. Once they understand the overall operation of the developed Management Model, they will require minimum training. They can perform most of the templates and customization setups. Very little help will be required from outside the business.

D – Operation:

The manager will estimate the total cost of manufacturing certain sizes of PCB and he will develop a price list. A sample price sheet is shown in table 5-1.

<b>HTS Pricing Double Sided PCB</b>				
<b>Plated holes with overlay and silk screen. (FR-4 material, 10Z copper)</b>				
<b>Quantity</b>	<b>Specification</b>	<b>Size</b>	<b>Time</b>	<b>Price</b>
3	Layout Provided	up to 10cm X 10cm	24hrs	125
3	Include Layout Design	up to 10cm X 10cm	24hrs	150
3	Layout Provided	up to 10cm X 10cm	72hrs	75
3	Include Layout Design	up to 10cm X 10cm	72hrs	100
3	Layout Provided	up to 10cm X 10cm	1Week	50
3	Include Layout Design	up to 10cm X 10cm	1Week	75
10	Layout Provided	up to 10cm X 10cm	24hrs	300
10	Include Layout Design	up to 10cm X 10cm	24hrs	325
10	Layout Provided	up to 10cm X 10cm	72hrs	200
10	Include Layout Design	up to 10cm X 10cm	72hrs	225
10	Layout Provided	up to 10cm X 10cm	1Week	150
10	Include Layout Design	up to 10cm X 10cm	1Week	175
3	Layout Provided	10cm X 10cm to 15cm X 15cm	24hrs	200
3	Include Layout Design	10cm X 10cm to 15cm X 15cm	24hrs	250
3	Layout Provided	10cm X 10cm to 15cm X 15cm	72hrs	125
3	Include Layout Design	10cm X 10cm to 15cm X 15cm	72hrs	175
3	Layout Provided	10cm X 10cm to 15cm X 15cm	1Week	90
3	Include Layout Design	10cm X 10cm to 15cm X 15cm	1Week	140
10	Layout Provided	10cm X 10cm to 15cm X 15cm	24hrs	400
10	Include Layout Design	10cm X 10cm to 15cm X 15cm	24hrs	450
10	Layout Provided	10cm X 10cm to 15cm X 15cm	72hrs	325
10	Include Layout Design	10cm X 10cm to 15cm X 15cm	72hrs	375
10	Layout Provided	10cm X 10cm to 15cm X 15cm	1Week	225
10	Include Layout Design	10cm X 10cm to 15cm X 15cm	1Week	275
3	Layout Provided	15cm X 15cm to 17cm X 22cm	24hrs	250
3	Include Layout Design	15cm X 15cm to 17cm X 22cm	24hrs	325
3	Layout Provided	15cm X 15cm to 17cm X 22cm	72hrs	200
3	Include Layout Design	15cm X 15cm to 17cm X 22cm	72hrs	275
3	Layout Provided	15cm X 15cm to 17cm X 22cm	1Week	100
3	Include Layout Design	15cm X 15cm to 17cm X 22cm	1Week	175
10	Layout Provided	15cm X 15cm to 17cm X 22cm	24hrs	500
10	Include Layout Design	15cm X 15cm to 17cm X 22cm	24hrs	575
10	Layout Provided	15cm X 15cm to 17cm X 22cm	72hrs	350
10	Include Layout Design	15cm X 15cm to 17cm X 22cm	72hrs	425
10	Layout Provided	15cm X 15cm to 17cm X 22cm	1Week	275
10	Include Layout Design	15cm X 15cm to 17cm X 22cm	1Week	350
<b>All prices include local tax (TVA) and local delivery.</b>				

Table 5-1. A Sample Pricing List.



The company will receive the orders by Internet, telephone or walk in. If the order is a standard size and quantity, the salesman will enter it in the system using the already designed template. If a customer places a special order, the salesman will have to enter the information into the system and quote a price to the customer.

As we stated in the previous example wild projects may be set to fill up the employees' full load. And the business will rely on overtime to meet rush orders. If the business picks up, the manager may hire new employees as needed.

Most projects will be set according to the following tasks:

- The salesman will enter the order into the system.
- The art department will check the provided design files, and will produce the artworks.
- The production department will manufacture the order.
- The art department will check the quality of the produces PCBs.
- The salesman will handle the delivery and billing.

Some other tasks may be added to further improve the quality. The customer will have a limited access to the MS Project to check the progress of his project and to receive any message if the design files he supplied are corrupted or missing information.

### 3 – Analysis.

As we can notice from the two examples, the amount of training and the difficulties of applying the Management model to a small business vary with the type of business and with the knowledge level of the employees. Because the project is build around customization of existing software, it can be altered to suit many types of small businesses.

The Management Model is based on using current technology to improve the efficiency, quality and overall performance of the small business. If we look closely at example one, a person can see so many flocks in the existing way of running the business. The manager was never able to get an exact cost of any of his projects. The employees were wasting many of their time waiting for each other. There was no coherence in the interface

between employees or among different projects. Employees performance was based on the opinion of the Foreman, who maybe judgmental in some cases. The management model will eliminate or at least minimize many of these problems. Depending on the way the business is running and on the type of business, the Management Model can create an improvement on average of 35% in efficiency.

In the second example we can notice that applying the Management Model was simpler and required less training. Even with out the Model, the manager and employees will probably apply some automation in the process. Therefore the percentage of improvement caused by applying the Model may be less than that created in the first business example. Nevertheless the Management Model will have positive effect on collaboration, organization, quality and the overall image of the company.



## Section 6: Conclusions and Recommendations

Everyday in every area of business new technology is making a difference. Recently more and more computer programs are being introduced or updated to assist business managers in various aspects such as accounting, marketing, project management, human resources and planning. In this study we put the effort to take advantage of such technology and apply it to the small business sector. We concluded that it is possible to combine several software programs to develop a Management Model beneficial to the small business.

We noticed through the study of the small business sector that many small business managers don't have managerial education. Some of them create a business because they have a great technical knowledge of their profession. Others decide to start a small business for the sake of freedom and entrepreneur spirit. From this we conclude that many small business owners need management assistance and they usually cannot afford the cost of hiring a manager or just cannot accept the idea that a hired person would care and run the business better than themselves. This was a clear indication of the importance of our Model to the small businesses.

We also noticed that the small business usually has very limited resources and very small size in comparison to a large corporation. The accounting department of a large corporation can be larger than the size of several small businesses. However, the number of small businesses in an economy is hundreds of times higher than the number of large corporations. This leads to a conclusion that the controlling forces of a country's economy are not the large corporations but the small businesses. Any small improvement in the small business sector will lead to a great improvement in the country's output. This points out the importance of our Model to the overall country's economy.

In this study we did not aim on inventing new technology or new software. Our aim was to prove that there is a need to management improvement in the small business sector and this need can be fulfilled by

already affordable and available technology. We concluded that our hypothesis is valid by developing our small business Management Model.

The Management Model implements several high tech methods for data manipulation such as Transaction-Processing System (TPS), Operational Information System (OIS), Decision Support System (DSS) and Executive Support System (ESS).

This study provided theoretical examples with some details on how to setup and apply the developed model to the various small business operations. However, we recommend that this model be put to test in an actual real situation. Were the model will be applied to an actual small business for a period of time. Then a comparative analysis will be performed on the historical performance and efficiency data of the business verse the new performance and efficiency data after applying the model.

We recommend to develop this model in more detailed and to enhance it with some features beyond the normal operation of the business. For instance it could include more management decision-making. With the available local and global communication, the model can have direct access to many economical indicators, so the model may take predefined decisions toward any change in these indicators or simply the model will prompt the manager of such changes and propose various decision hints.

We recommend this model to be used by the small business manager to help him gain better knowledge and control over his business status. We also recommend the use of this Model for the employees because it will simplify the employees' tasks and improve their efficiencies without adding extra burdens on their shoulders. And finally we recommend the use of this Model for the customers because it will enhance customer/company relationships and will get the customer involve and aware of the process of his order.



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# Appendix

This appendix is a list of useful small business sites. It is a copy of a section available for the public on the Internet. The site is: [business-to-business-resources.com](http://business-to-business-resources.com), Copyright 2001.



## **Entrepreneur Magazine**

The online small business authority with information to help you start grow or manage your small business.

URL: <http://www.entrepreneurmag.com/>



## **Advanced Small Business Information**

Collection of guides and tips. Offers information on making a profit marketing starting a business Internet business home business and more.

URL: <http://www.businesslead.com/>



## **CCH Incorporated**

Provides small business owners a portfolio of tactical information services news forms sample contracts checklists and software tools to help them start run and grow a successful small business.

URL: <http://www.toolkit.cch.com/>



## **InfoWord Services - Virtual Assistant**

InfoWord Services provides information and office support as a virtual assistant to small business owners entrepreneurs and individuals.

URL: <http://www.infoword.com/>



## **Alpha3000 Business Page**

Free information and articles covering how to start and promote your business legal guides and earning commissions with online businesses.

URL: <http://www.a3k.com/business/business.shtml>



## **Finding Customers (article)**

A work at home business person's guide to finding customers.

URL: <http://www.suite101.com/articles/article.cfm/6185>



## **The Home Office Press**

Dedicated to providing business resources information and services to small businesses.

URL: <http://members.aol.com/THOPress/index.html>



## **1099 Magazine**

Advice for independent professionals consultants one person businesses on topics like finance and taxes tips on business card and other areas of concern wide ranging.

URL: <http://1099.com>



## **Business Resource Center**

A resource center for business professionals and owners. Featuring stock quotes free marketing & legal advice business forums and more.



**URL:** <http://www.imswest.com/>

 **Business Start Page**

Business news virtual desk business tips advertising depot financial resources desk an interesting joint venture resource page business reference library and links to business-related resources.

**URL:** <http://www.bspage.com/>

 **Opportunities in European Franchise**

A resource for franchisees and franchisors that contains the latest news views and opportunities in the industry. Updated regularly. McGarry Consulting maintains this franchise directory and offers its services to visitors of the site.

**URL:** <http://www.franchisedirect.com/>

 **The FRMC Benchmarking Team**

Information for small business people accountants schools and legal firms.

**URL:** <http://www.benchmarking.au.com/>

 **BusinessTown**

Comprehensive guide to planning starting growing and managing a small business. Access hundreds of articles addressing dozens of topics participate in forums and connect to additional resources on the Web.

**URL:** <http://www.businesstown.com/>

 **InfoWorth**

Features an "Ask the Experts" forum where panel of published authors provide advice and give online answers to business-related questions at no charge. Topics include start-up planning financing managing growing and marketing small businesses.

**URL:** <http://www.infoworth.com/>

 **One Stop Home Business Shop**

A small business resource site with a lot of free things thrown in. Includes articles web forum newsletter and product/services reviews.

**URL:** <http://members.tripod.com/~dbaker/index.html>

 **Pertinent Information Ltd.**

Free business building information for busy entrepreneurs and small business owners.

**URL:** <http://www.pertinent.com/>

 **The Small Business Knowledge Base**

Internet's largest and most comprehensive free resource of small business information. Packed with hundreds of guides and worksheets. All the guidelines and tools you need to start operate and succeed in a business of your own.

**URL:** <http://www.bizmove.com>

 **Small Business Resource Center**

A free resource and help center for all small business owners anyone who wants to start a small business entrepreneurs independent publishers and mail order dealers.

**URL:** <http://www.smallbizhelp.net>

 **SBA - States**

U.S. Map provided by the Small Business Administration of the U.S. Government. Site permits immediately going to any local SBA office with local contact information and links.

**URL:** <http://www.sba.gov/regions/states.html>


 **Small Business in Internet**

Various resources for small businesses on the net. Geared toward free stuff like Hotmail and free hosting.

**URL:** <http://www.geocities.com/MadisonAvenue/Newsstand/4334/>

 **10 Ways to Start Your Own Home Business**

How to start your business on the internet affiliate programs reviews opportunities more.  
URL: <http://www.bizinfo2000.com/>

 **QuickNetBiz.com**

Resource for business owners internet marketers entrepreneurs independent publishers mail order dealers etc.  
URL: <http://quicknetbiz.com/>

 **TalkBiz**

Resource for small businesses with articles on every phase of improving your profits getting more leads and sales and cutting costs.  
URL: <http://www.talkbiz.com/>

 **U.S.Labor's OSBP**

Explains what is involved and answers common questions about employing people in small businesses.  
URL: <http://www.dol.gov/dol/osbp/>

 **Chicago Tribune Small Business Guide**

The Tribune's guide to finding the best small business information on the Web. Includes the latest news and office and business classifieds.  
URL: <http://chicagotribune.com/business/smallbusiness/>

 **WebSite 101**

Entertaining and easy introduction to small business e-commerce for entrepreneurs expanding their companies to the web. Definitions resources and advice for the beginning webmaster as well as a weekly tip sheet called the "Reading List."  
URL: <http://www.website101.com/>

 **Whooper**

Information about building your business and surviving the experience.  
URL: <http://www.whooper.com/>

 **SBDCNET**

Facilitates the sharing and exchange of information among small business development centers the small business administration and other business-oriented contacts.  
URL: <http://sbdnet.utsa.edu/>

 **Badger Information Service**

Offering free forms reports and letters to help entrepreneurs start and run businesses and a directory of wholesale suppliers.  
URL: <http://www.max-info.com/>

 **Bloomberg.com - Let's Talk Business Network**

Latest ideas and information for small business and entrepreneur.  
URL: <http://www.bloomberg.com/business/index.html>

 **Entrepreneur.com: Start-Up Kits**

Provides business start-up reports by industry.  
URL: <http://www.entrepreneur.com/toolkit>

 **SmallBusinessDepot.com**

Network of small businesses providing information on government contracts and corporate contracts.  
URL: <http://www.sbdepot.com/>

 **Network Marketing World**



Facts figures and comments from the independent resource for network marketers.  
**URL:** <http://www.nmworld.com/>

 **The Beginners' Free Business Resource Center**

Provides content and links to sites offering mostly free a wide variety of business resources. This page and site is intended to facilitate the introduction to online and offline business by the newbie or beginner via the internet.

**URL:** <http://www.ion.com.au/~phil/bfbr/index.html>

 **Integra Information**

Integra provides the financial benchmark information to compare the performance of privately held businesses to their peers.

**URL:** <http://www.integrainfo.com/>

 **Practical Cash Magazine**

Online magazine devoted to home and small business - dozens of articles and resource listing.

**URL:** <http://www.ipw.com/pc>

 **Online Business Advice**

Offers help and advice to businesses involved in web ventures particularly female business owners.

**URL:** <http://www.emphasise.com/>

 **Good Performance**


Offers articles and commentary on current trends in performance appraisal and small business management.

**URL:** <http://www.goodperformance.com>

 **Business and Marketing pages**

Articles on starting a business principles of web marketing and writing a business plan.

**URL:** <http://www.action-links.com/businesspages/>

 **easy2you International**

Secure more customers increase your sales and find more products from reliable manufacturers and sources. Build your dynamic site with us and we will promote your site and products to major buyers and suppliers worldwide. This is the place where you find many overseas buyers and sellers around the world!

**URL:** <http://www.easy2you.net>

 **Small Business Is Here**

Free small business articles guides news and business planning eBook as well as start-up marketing sales e-commerce and web site design.

**URL:** <http://sbishere.com>

 **Ask Biz Shrink Advice Column**

Ask the Expert. Advice from Emily Card a small business columnist at Women.com. Questions and answers for people starting a new business.

**URL:** <http://womenswire.com/bizshrink/>

 **In Mind Communications**

Better business meetings tips and links.

**URL:** <http://www.openthis.com/>

 **Online Business Advisor**

Free business and management information advice and training.

**URL:** <http://www.onlinebusadv.com/>

 **Palo Alto Software Co Advice Column**

Ask a business question browse the answers. Board of experts sends confidential email answer and may post an anonymous version in the answer database.

**URL:** <http://www.paloaltosoftware.com/resources/>

 **The WebWorkz**

Online service that gives your small business the tools utilities and information you need to succeed online.

**URL:** <http://www.theWebWorkz.com/>

 **A Guide for Comprehensive and Effective Computer Policies**

This computer and Internet policy drafting guide covers all areas of computer related policies that are necessary for protecting your organization.

**URL:** <http://www.computer-policy.com/>

 **Paul Fredrick MenStyle Online**

Chat with business owners professionals and others in a selected occupation live. Submit your business card to establish contacts today. Provided by Paul Fredrick MenStyle.

**URL:** <http://www.paulfredrick.com/conference/pfbiz.htm>

 **Business Philosophy Fleet**

Forums and live chats for exchanging business philosophies and advice.

**URL:** <http://killdevilhill.com/z/ybusinessd/nantucket.html>

 **Entrepreneur Forum Frigate**

Discussion forum and live chat pertaining to entrepreneurs and entrepreneurship.

**URL:** <http://killdevilhill.com/z/ybusinessd/Entrepreneurhall/shakespeare1.html>

 **American Business Dynamics**

Contains articles on small business support in marketing management and operations.

**URL:** <http://abdynamics.com/>

 **Welcomeinfo.com**

Provides reports on business programs and services designed for small businesses.

**URL:** <http://www.welcomeinfo.com>

 **SOHORadio-The Internet's Small Business Radio Channel**

Provides in-depth coverage for the small business owner or manager in Real Audio.

**URL:** <http://www.sohoradio.com/>

 **Internet Business Communications**

A premier source of information and expert articles for the small business community. Interviews with other entrepreneurs articles on marketing motivation tips and tricks. Business book reviews web site reviews suggested sites for business information. A list of over 400 free ezines to check out for yourself. All that and free classifieds as well.

**URL:** <http://www.in-biz.com>

 **BizOffice.com Home Based Business**

Reference materials and services for small and home based business owners. Includes a library business forms and free software.

**URL:** <http://www.bizoffice.com>

 **U.S. Business Advisor**

A one-stop electronic link to all the information and services government provides for the business community.

**URL:** <http://www.business.gov>





#### **Microsoft bCentral**

Microsoft's entry in the small business arena. A lot of information about conducting business online.  
**URL:** <http://www.bcentral.com>



#### **Federal Contracts Center**

Daily news and Insights on federal contracts regulations policies and people  
**URL:** <http://fedgovcontracts.com>



#### **Business Assistance Center**

Helping business in Northeast Wisconsin to grow and thrive with a variety of services and programs.  
**URL:** <http://www.mybusinesshelp.org>



#### **Dessertexperts.com**

Dessertexperts.com provides foodservice operators with information trends tips desserts (recipes and pre-made sources) merchandising and menu planning ideas focusing solely on maximizing profitable dessert sales within your foodservice operation  
**URL:** <http://www.dessertexperts.com/>



#### **CostBlaster**

Portal for reducing small business expenses. In depth cost management solutions and resources for every expense category. The profit improvement guide for entrepreneurs.  
**URL:** <http://www.costblaster.com>



#### **Small Business Information Library**

Offering business resources for the small businesses.  
**URL:** <http://www.bizoffice.com/library/library.html>



#### **Small Business Television Network - SBTv**

All-video small business portal delivering small business advice and information via free on-demand video and audio segments.  
**URL:** <http://www.sbtv.com>



#### **Local Business.com**

Business news and information for selected metro areas across the United States.  
**URL:** <http://www.localbusiness.com>



#### **MonitorBusiness**

MonitorBusiness presents news and information through newspaper website and email network along with business services and products.  
**URL:** <http://www.monitorbusiness.com.au/gaia.cfm>



#### **MBAdesk.com**

Free business tools forms guides email and more. Virtual desktop with things you need to run your business effectively.  
**URL:** <http://MBAdesk.com>



#### **Business E-zine NOVA News**

This newsletter is for small and home based business owners and entrepreneurs. Topics include accounting taxes marketing sales growth business plans and bartering.  
**URL:** <http://www.novaplaza.com/newsletter.shtml>



#### **Digital Women**

An online community for women entrepreneurs on the Internet.  
**URL:** <http://www.digital-women.com/>



#### **Bizzadvice**