EMGT 835 FIELD PROJECT:

Objective Project Prioritization
for
Information Technology

By

Cary R. Trowbridge

Master of Science

The University of Kansas

Summer Semester 2005

An EMGT Field Project report submitted to the Engineering Management Program and the Faculty of the Graduate School of The University of Kansas in partial fulfillment of the requirements for the degree of Master of Science.

_____
Name   Date
Committee Chair
Herb Tuttle

_____
Name   Date
Committee Member
Chick Keller

_____
Name   Date
Committee Member
Bob Zerwekh

Table of Contents

List of Figures

List of Tables

Acknowledgments

I want to thank the professors and staff of the Engineering Management department at the University of Kansas – Edwards Campus. My education and experience in the EMGT program has already helped guide me in my personal and professional life.

I would like to thank Professor Herb Tuttle for his guidance and consummate enthusiasm. You have made a difference in life my life through your instruction and positive attitude.

Thank you professors Bob Zerwekh and Chick Keller for your help and guidance on completing my Field Project. This has been a tougher endeavor than I had anticipated.

Thank you Riley for being my inspiration to continue. I appreciate your understanding and support when studying and homework would take up a great deal of my time.

Crystal, thank you for being there throughout. You were there reminding me how much I wanted to complete my Masters degree, even when I had forgotten myself. I could not have done it without you.

Executive Summary

One consummate problem that faces industry on a daily basis is how to prioritize. How do you prioritize the day? How do you prioritize the tasks for personnel? How do you prioritize what projects to work on?

This paper will address some of the common problems and issues that companies have when trying to prioritize and select Information Technology projects. The emphasis of the paper will be on a lightweight, quick, and easy method to begin a more objective process to select IT projects. Larger companies may have the resources available to analyze, manage, and monitor a rigorous project prioritization process, but most smaller or more agile companies will not embrace a process that takes significant resources and time.

The process described in this paper is geared to the smaller companies to help give them a baseline process to better bridge the gap between no process and a detailed, well-managed process.

Introduction

Information technology has become a part of our very infrastructure. The worldwide software costs increased at a 12% rate from 1985 to 1995, and the expenditures are expected to be about $2.7 trillion in 2005 [1]. Almost every business needs to deal with technology decisions in one way or another. Some businesses deal with technology entirely from an outsourcing point of view; others have a dedicated staff of resources to draw from in order to accomplish technology tasks.

The types of decisions about technology vary greatly and include:

- Desktop hardware and operating systems for the organization.

- Desktop applications to use.

- Integration with other companies as vendors, partners, or mergers.

- Backup, recover, replication.

- Outsource vs. In house development.

- Software development projects.

The scope of this paper will focus on the decision criteria and process for those companies that have internal software development projects. The information and concepts contained in this paper can be used outside this scope, but the variations and factors for all of these combinations prohibit effectively detailing each scenario.

This paper will address problems with decision processes for technology projects at many companies, the need for a defined process, and the importance of designing objectivity into the process.

The goal is to provide an architecture that any company can use as a baseline to begin to implement an objective process to prioritize projects. Many larger companies have the resources and structure in place to devote to developing a process and utilizing some of the tools available. Small and medium companies may feel they do not have the time or resources to develop a process. This paper will provide a simplified method to start an objective project decision process that can be used as a first step in developing a detailed system.

Example

At one insurance company, management placed a high value on technology from the company's inception and decided that they would use technology to create a competitive advantage. This company put an emphasis on technology and has had double-digit growth in the last 5 years. They have grown from a company of about 100 employees to more than 1000 and have branched out from one site to now three.

The IT staff has increased from 12 to more than 60. As a result of the growth the management of IT has had to change. Unfortunately for this company, the project prioritization and decision making process has stayed the same, as it was when the IT staff numbered 12 people.

Each Monday morning, the executive team gathers with IT leadership to review the current projects and proposed projects. And each Monday morning, the Vice President responsible for client relationships has additional projects that he feels are imperative to keeping the clients happy. Because of his position, his aggressive personality, and his close relationship with the President, many of these new initiatives are added to the list of projects with a high priority level.

The result of this decision making process causes a priority shift each week. It is not unheard for the #1 priority in this company to be different three or four weeks in a row. The result of changing priorities encourages a fire fighting approach to projects, which leads to a significant effort in applying maintenance patches and bug fixes. It prevents planning, discourages aligning resources and efforts to company strategy, and does not ensure that the projects that are being worked are not low value projects. This method also unfairly distributes the projects.

Even though it seems obvious that this is probably not the best method to determine project prioritization, a survey conducted by CIO Insight [2] revealed that out of 507 companies, 53% say that their IT project prioritization is politically driven. In fact,

Definitions

Before detailing the importance of an objective priority decision system, there are a few terms that need to be defined as they are used in this paper: Project Prioritization, Portfolio Management, Project Governance, Project Management, and Project Management Office. These terms all relate to the goal of determining the most efficient and effective mix of projects for a company.

Project Prioritization

Project prioritization is the process by which a ranking is given to the potential projects that the company might undertake. This process is part of portfolio management and governance. It is a responsibility of executive management and IT leadership to manage.

Portfolio Management

Portfolio management has been used for years in the financial circles to describe a balance of investments. More recently it has entered the technology industry, but has been used to describe many different aspects of project approval and management. For this paper, portfolio management will not be discussed in detail. Once the projects have been prioritized, the next step in the process would be to align the approved projects to balance the projects with regards to resources, expense, risk, etc.

Project Governance

Project Governance or IT Governance is a term that has gained visibility since the passing of the Sarbanes-Oxley act in 2002. The Sarbanes-Oxley act is a result of mismanagement by top executives at several companies. The act provides guidelines to enforce measurements and controls so that top executives must show that their decisions for a company were made in the best interest of the company and their shareholders. The act focuses on financial decisions, but has spread to other areas of decision-making including IT. Therefore, IT governance is the process by which a company makes decisions and who is accountable for those decisions.

IT governance must answer 3 questions:[3]

1. What decisions must be made to ensure effective management and use of IT?
2. Who should make these decisions?
3. How will these decisions be made and monitored?

This paper is not written to address compliance to Sarbanes-Oxley, but the concepts contained herein, can be used as part of the overall strategy for IT governance.

Project Management

Project management and portfolio management are many times used to mean the same thing, but they are not the same thing. Project management deals with the day-to-day decisions and managing of resources, time, and budget. You can have a very effective project management process and deliver projects on time, under budget, with all of the functionality. However, if it was the wrong project to be working on from the beginning, then it was not using the company's resources appropriately.

Portfolio management decides, "What projects should we be working on?" and project management addresses, "How will we get the project done?"

Project Management Office

Finally, another term has surfaced in the last few years Project Management Office (PMO). PMO refers to that functionality in the company that manages the process for portfolio management, project management, and to some extent IT governance. This function is not necessarily responsible for the decision making as much as it is responsible for making sure that the processes are followed.

Today there are several interrelated definitions involving PMO [4]:

- Project Office – The purpose of the Project Office is to focus on a set of projects that are related. Once the projects are complete, the office closes.

- Project Management Office – The purpose of this entity is to manage a portfolio of projects. These projects are usually the responsibility of Information Technology. This is the definition used in this paper for PMO.

- Product Management Office – This group has the same goals as the Project Management Office, but focuses on business objectives.

- Enterprise Program Management Office – The purpose of this group is to tie the Project and Product Management Offices together. The members of this group are usually at an Executive level.

Importance of a Project Prioritization Process

CIO Insight performed a research study and surveyed 507 companies on their management capabilities of IT projects [2].

- Over half (53%) of the CIO's say that their project prioritization is politically driven.

- Only 66% of the IT projects during the past 12 months came in on or below budget. Other sources [5] state that the successful project percentage is closer to 30%.

- Only 40% of the CIO's say that their companies use a portfolio management approach. And 86% of those that use a portfolio management process say that it leads to more successful projects.

- 13% of the projects failed to meet the goals of IT and business management.

Additionally, another study of 30 firms identified the items listed below as to why portfolio management is important [5].

1	To maximize return; to maximize R&D productivity; to achieve financial goals
2	To maintain the competitive position of the business – to increase sales and market share.

3	To properly and efficiently allocate scarce resources.
4	To forge the link between project selection and business strategy.
5	To achieve focus – not doing too many projects for the limited resources available.
6	To achieve balance – the right balance between long and short-term projects, low and high-risk projects, and consistent with the business's goals.
7	To better communicate priorities within the organization.
8	To provide better objectivity in project selection.

Table 1 Why Portfolio Management is Important

Some of the issues that arise from a lack of project prioritization have been discussed in the example earlier in this document. However, that is only one of the many issues that this paper will address. For companies that do not use an objective decision process, they may run into issues with the following areas.

Strategic Fit	Inefficient Use of Resources	Visibility
Low Valued Projects	Changing Priorities	

Table 2 Issues Without Using a Prioritization Process

Strategic Fit

Even with a decision process it is not guaranteed that the projects will be aligned with the company's strategic goals. First of all, the company needs to define the strategic goals, and the IT department must define their role in helping achieve these goals. Is IT tasked with creating a strategic advantage? Lowering costs?

Low Value Projects

Value can be defined differently for different people. It could mean return on investment. It could mean reduction in resources or workload. It could mean value to the client. What is of high value to one person or group may not be as high of value for another. Without an objective process, the projects being worked on may be a high value to one group, but not an overall value to the company.

It is important in this respect that all functions of the company have input into the project prioritization process. This way the project priorities are not always skewed towards one department or another.

It is also important to categorize the projects so that smaller projects will eventually get worked on. If the process prioritizes all the projects in one big basket, then all of the high profile larger projects will be prioritized at the top, and smaller projects will never be ranked high enough to be worked on. An example in the insurance company discussed earlier would be that build a user interface to manage the rights and access to the various applications that the company has. This would provide better security, reduce the current manpower to manage this information, and allow for the higher income associates working on this to concentrate on other tasks. However, although it is of great value for one group, it isn't for the other groups.

Inefficient Use of Resources

As with the insurance company example, the resources are being pulled in a different direction each week. For this particular company, a week is usually not enough time to accomplish the task with a high degree of quality and planning. This means that the project will most likely need to be redone at a later time when bugs in the system present themselves. This is costly and not an efficient use of the IT resources.

Changing priorities

Also as mentioned earlier, if the priorities keep changing it gives the perception to the staff that there is no planning and you are always in a fire-fighting mode. Confidence in the executive team will wane and the IT staff will take the position that there is no

need to work hard on the current project, because next week the focus will be on something else.

Visibility

If there is no process, then there is no visibility to how the decisions are being made. There is also no good means to measure the success of the decisions being made. AMR Research [6] states that as much as 75% of IT organizations have little visibility on their project portfolios. This report also suggests that just implementing a portfolio management process provides savings to the IT budget from 2% - 5%.

Desired Results of Project Prioritization

Several areas have been identified that are problems and issues when project prioritization is not used. But what are the advantages and desired results we are trying to achieve with using an objective prioritization process?

Financial Returns	Better Alignment with Strategic Goals	Better Acceptance of Projects
Better Communication	Improved Planning	Reduction of Politically Driven Decisions
Eliminate or Reduce Low Value Projects	Better Focus and Use of Resources	Visibility

Table 3 Benefits of Project Prioritization

Financial: Management sites return on investment or maximizing productivity as the most important reason to use a portfolio management strategy. This process will help provide a visible comparison of projects as well as a baseline value of the project that can be used in the future to analyze and improve the way that project ROI is measured.

Better Aligned with Strategic Goals: In many companies, the strategic goals are not as visible as they need to be, and in those companies where they are visible, the project decision process does not always take this into account when approving projects. This process will provide continuous evaluation against the strategic goals, which will reinforce the items that the company regards the most important.

Better Acceptance of Projects: Providing a process in which all areas are provided input into the decision as well as visibility to the importance of each project provides better understanding and acceptance of the projects.

Better Communication*:* With the proposed prioritization process, all areas of the company have input into the project pool as well as input into the outcome. This provides a stage for all areas to be able to communicate which projects are important to them as well as see the entire list of initiatives the company is considering undertaking.

Improved Planning*:* This process provides visibility to not only the current and immediate projects, but also the backlog of projects. Obviously, there will be high priority projects that will be introduced, but when they are introduced, one will be able to view the list of pending projects and determine the value and importance of this one vs. the others on the list.

Reduction of Politically Driven Decisions*:* Perhaps the biggest issue that may be resolved is to reduce the amount of politically, or personally driven decisions. Providing all areas input as well as standardized documentation on the projects

will make it more difficult for an individual, or individuals to dictate the project list entirely.

Eliminate or Reduce Low Value Projects*:* Using this process will give a better indication of the value of a project across the company. Evaluating each project using the same process will help in making sure that the company is focusing on the right projects.

Better Focus and Use of Resources: Instead of changing priorities on a weekly basis and having human and capital resources switching from one project to another without any regard to which is more critical to the company. If a project does find itself in trouble, the prioritization can be used to determine if resources can be pulled fro a lesser-prioritized project.

Visibility: Working hand-in-hand with communication. This process provides visibility to all areas as to the overall strategy and importance on the project list.

Prioritization Methods

For the companies that do use a prioritization process, there are several methods they employ. Each one has merit, but also problems. The following section breaks down each method and identifies the positive and negative aspects of each.

The pie chart below shows the methods of project prioritization and the percent of the companies that use each method as their dominant method according to the Cooper survey [5]. Many of the companies in the survey used more than one method for their process.
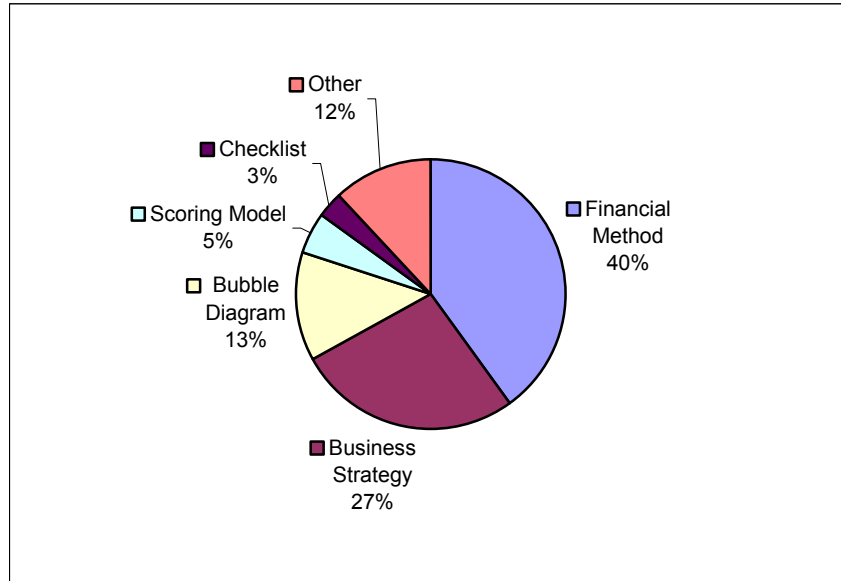
Figure 1 Dominant Prioritization Methods

Financial

The most popular measurement used to determine the value of the project is to determine how much money will be made or saved by the project and by default the one that makes the most money for the company is the highest priority. To determine this value, there are several methods that are used:

Payback Method: [7] This method is used to determine the amount of time it will take to get back the amount that has been invested in the project. This is a good method to get a rough idea on the return, but it does not take into account earnings after the payback period.

ROI: [7] The return on investment is calculated as the ratio of profit to capital invested. This method takes into account profits that are generated during the project life cycle. The key to using this method is to define what is capital and profit for the company and to stay with those definitions. This is the most popular method used.

NPV: [7] (Net Present Value) determines the value of the project in a quantitative manner. A rate of interest is selected and the present value of an investment is determined by calculating the future cash inflows minus the present value and future outflows. This method is probably the best method to use to determine the financial value of a project, but is sensitive to the discount percentage that is used in the calculation.

DCF: (Discounted Cash Flow) determines the value of the project by assuming that the current value is based on the future cash flows generated by the project. These cash flows are discounted at a rate depending upon the risk of the project.

ECV: [5] (Expected Commercial Value) determines the value of the project based on the expected value which is then adjusted for the technical as well as commercial probability of success.

ECV = [(NPV * Pcs – C)] * Pts – D]

Where :

NPV – Net Present Value

Pcs – Probability of commercial success

C – Commercialization costs

Pts – Probability of technical success

D – Development costs

Although the financial method is the most popular, it is the worst method to use as a sole decision factor. In the Cooper study [5], the companies were rated on 6 criteria:

- Projects are aligned with business's objectives

- Portfolio contains very high value projects

- Spending reflects the business's strategy

- Projects are done on time

- Portfolio has a good balance of projects

- Portfolio has the right number of projects.

The companies were then divided into the top 20%, middle 60%, and lower 20%. Of the lower 20%, 56% used the financial model as their leading decision factor in project selection. Only 36% of the top 20% used this method. This shows that using the financial method, as the top selection method does not improve the project portfolio.

For the project prioritization process defined later in this paper, we will assume that some due diligence will be done to determine a value for the project. However, the goal of the process is to be easy to use and quick to determine so instead of a detailed financial study of the project, we will look at the financial value of the project in broader terms.

Bubble Diagrams

Bubble diagrams [5] are used to provide a visual representation of the project portfolio based on several criteria. The most common is risk vs. reward as shown in Figure 2 Example of a Bubble Diagram. This diagram shows the cost of the project by the size of the circles. The expected business reward of the project is displayed along the Y-axis, and the probability of success or risk on the X-axis. The different colors represent the different categories or types of projects.
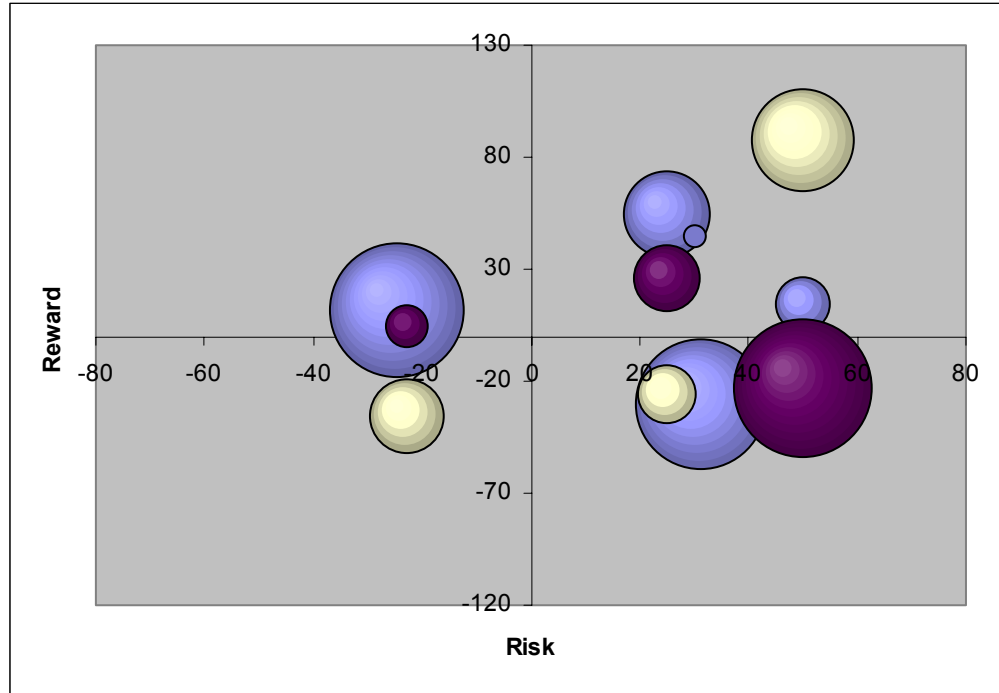
Figure 2 Example of a Bubble Diagram

The bubble diagram is a very useful tool to visually describe aspects with the projects. It is primarily used in project portfolio balancing. Although the bubble diagram is useful, it should not be used as a single tool to determine the selection of a project, but be used as one of the tools in selecting projects.

Scoring/Weighting

The scoring/weighting process uses a balanced scorecard approach to project selection. This method is the primary method to be explored in this paper. In the Cooper study [5], this method was the dominant method used by 13% of all groups.

The balanced scorecard provides a means for all groups to provide input into a proposed project. All of the inputs are scored and totaled. The result in each area is

multiplied by a weighting factor that is decided upon by the business executives and used for all project decisions.

As with the other methods, however, it is best to not rely on a single method, but to maximize the successful qualities form all the available methods. Although this paper will utilize the balanced scorecard and incorporate the financial, business strategy, and bubble diagram methods.

Business Strategy

The business strategy method divides the projects into certain silos and ranks the projects within each of these silos. Each silo is provided a budget based on the fit to the business strategy. The project prioritization within each silo is determined using one of the other methods discussed.

New Products: Product Line A Target Spend: $8.7M	New Products: Product Line B Target Spend: $18.5M	Maintenance of Business: Product Lines A&B Target Spend: $10.8M	Cost Reductions: All Products Target Spend: $7.8M
Project A 4.1	Project B 2.2	Project E 1.2	Project I 1.9
Project C 2.1	Project D 4.5	Project G 0.8	Project M 2.4
Project F 1.7	Project K 2.3	Project H 0.7	Project N 0.7
Project L 0.5	Project T 3.7	Project J 1.5	Project P 1.4
Project X 1.7	Gap = 5.8	Project Q 4.8	Project S 1.6
Project Y 2.9		Project R 1.5	Project U 1.0
Project Z 4.5		Project V 2.5	Project AA 1.2
Project BB 2.6		Project W 2.1	

Figure 3 Business Strategy Priority Decisions within Each Silo [5]

Checklist

The checklist method is where a project must meet all of the criteria on a Yes/No checklist in order to be selected. The number of YES answers determines the priority.

Project Prioritization Process

Now that we have determined that there is a need and a benefit for having a project prioritization process, we need to define what the process will be. As with any

process, it is easy to overwhelm the end users with so much rigor that the process is difficult to follow and will eventually not be used. It is also possible to not put enough rigor in the process so that there are loopholes and shortcuts. The latter problem is much easier to remedy by continuously evaluating and improving the process. The danger with too little rigor, however, is that in order to provide accurate metrics and fairly evaluate projects against one another, you should have a common baseline. If you continuously and significantly improve the process such that the process is different each time, then it may be impossible to correlate discernable metrics between the projects.

The goal of this paper is to provide a baseline for the process. Once the baseline is established, the process can be tailored and continuously improved with regards to each company's particular needs. For the baseline process discussed here, it is assumed that the project prioritization process is being used for software or information technology projects, and that the company has an in house technology staff to accomplish most of their project needs.

At a high level the process looks like this:
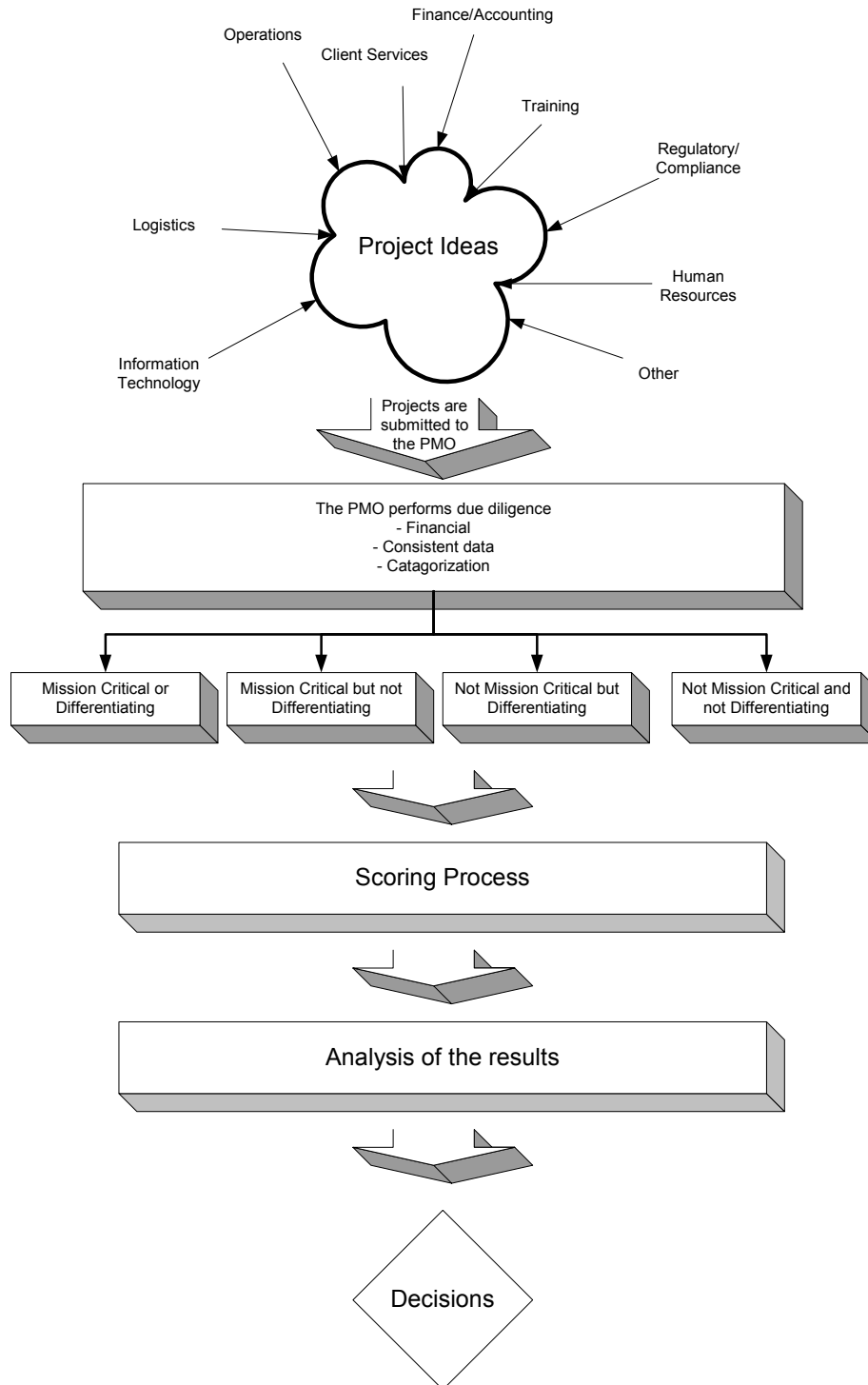
Figure 4 Process Flow

The prioritization system is based on combination of the methods listed earlier,

with an emphasis on the balanced scorecard approach.

Company Principles and Values

Before the process can be implemented, some pre-work needs to be accomplished by the Executive Team. The Executive Team is responsible for deciding the vision, direction, principles, values, and goals for the company. In order to put in place the project prioritization system, a value or weight must be placed on each of the decision factors that will be used. For example, if one company is averse to taking risk, while a second company is not, the first will put a lower value on the risk factor. In this case, if a high-risk project requested, it may not be added to the project list based on its risk score.

The following are the decision factors that will be discussed in this paper. The decision factors can be added to, removed, or tailored for each company's unique situations.

Strategic Objectives	Cost	Time Constraints
Risk	Revenue	Client Value
Core Competencies	Opportunity Cost	Internal Value
	Resource Load	Legal/Regulatory

Table 4 Principle Decision Factors

The weighting values should be chosen so that they have enough granularity to provide a differentiation, but not so granular that there is little difference. For example, if you use a weighting scale from 1 to 100, there is very little difference between 45 and 46. Conversely, if you use a scale from 1 to 3, there is a much larger relative difference between two adjacent values.

Another thing to keep in mind when determining the weighting is to not use 0. Because each individual project will scored in each of these areas and then multiplied by the overall weighting factor, if you use 0, then you will always negate that factor completely.

For this paper, it is recommended that the weighting be from 1 to 10. This provides enough variance to provide meaningful data. Below is an example of providing a weighting value for each of the decision factors. The higher the number, the more important the factor is to the company.

DECISION FACTOR	WEIGHT	EXPLANATION
Strategic Objectives	10	A value of 10 shows that this factor is one of, if not the most important decision factor for the company. This company does not want to stray from its corporate vision.
Legal/Regulatory	9	This decision factor will normally be a high number. If the project is to comply with legal or regulatory issues, then it will most probably be a project that has to be accomplished.
Revenue	8	Giving this decision factor a high value shows that higher revenue projects will be more likely to be accepted.
Cost	8	A higher value for the cost factor shows that cost is a high concern. A project that is more costly will less likely be accepted.
Client Value	7	This factor describes the value to the end user, or client. In most organizations, this number will be relatively high.
Opportunity Cost	7	The opportunity cost factor provides a means to show if the project has the potential to provide more opportunity for the company. In this example, the company has given this factor a higher value.
Internal Value	5	The internal value factor provides a means for other intangibles that the project might yield for the internal value of the company. This could be employee satisfaction, loyalty, goodwill, etc.
Risk	5	The company is middle of the road on whether to accept risky projects. A high number for this factor would mean that the company is averse to risk and that it is a significant factor in the decision process.
Core Competencies	3	A lower score shows that this company is

		willing to accept projects that do not match its core competencies.
Time Constraints	3	A lower value for the time constraints show that the company might forego a project even if it is something that needs to be done quickly. They are not driven solely on time constraints.
Resource Load	2	A low value for the resource load shows that the company is not as concerned with the load the projects will place on the resources.

Table 5 Weighted Decision Factors

Although many people would argue that all of the above factors are equally important, in reality an Executive team needs to look at these factors and be honest on which ones really drive their decision making.

Project Submission

The first step in the process is the collecting of potential projects. These can come from almost any level of the organization as well as client, regulatory, or legal requests external to the company. Therefore, there needs to be a means to enter a request for a project, but who does it go to and what is detailed in the request?

It is important to allow every functional group the ability to input project requests, but in order to help manage the flow of projects input into the process, it is recommended that the project submission be limited to a certain level of management. For this discussion, the mid level managers and above have the ability to provide a project request.

In order to provide a consistent approach and management of the process, a Project Management Office (PMO) should be created if one does not already exist in the company. The role of the PMO shall be to provide the following:

- Provide a common entity to manage the project prioritization process.

- Provide oversight and review of the project portfolio.

- Conduct reviews and audits of project progress.

- Assist in the start up of projects.

- Provide visibility to Executive management on the progress of the projects.

- Provide analysis of project trends and metrics.

The PMO may not have all of the responsibilities described above when it first starts. It, like any other discipline, will mature over time.

At this stage in the process the desire is to not weed out any projects, but to accept them and begin the process. The projects should be formally requested through some means. A Project Request Form (PRF) should be completed and delivered to the PMO. The PMO will accept the project request document and catalog the request. Cataloging the request can be as formal as entering the request into a tracking system, or as informal as keeping an Excel spreadsheet of the project requests and their status.

Project Request Form

The PRF must contain enough information to allow the PMO office to perform their due diligence, but must not be so cumbersome as to take a significant amount of time to complete.

Here are the areas that need to be addressed in the PRF:

- Requestor's name, group, and date of request

- Describe the need for the project. This must detail what the end goal is of the project.

- Mission Criticality (yes/no). If the requestor selects that the project is mission critical, they must also provide an explanation of it's importance and how not moving forward with the project will put the company at risk.

- Differentiating (yes/no). If the requestor selects that the project differentiates it from the competition, the requestor must provide an explanation of how this project provides a competitive advantage.

- Time frame for the project.

- Financial Data. The requestor must, to the best of their ability, provide financial information on what known expenses there will be as well as expected revenue or cost savings.

PMO Due Diligence

Now that the PMO has the request, there is a certain amount of due diligence that needs to be done. The PMO is responsible for these tasks to provide a controlled and consistent approach. The goal during this process is to gather and deliver enough information by a common means, to enable the decision makers to make an informed decision. This process should not last more than one workweek.

The PMO will take the information provided from the requestor and perform a financial analysis on the project, a review of the information, and a categorization of the project with respect to size and complexity.

Financial Analysis

Any of the financial analysis methods described earlier in this document are sufficient to provide a financial value to the project. This paper will not detail an analysis of the methods, but recommends the Net Present Value method be used. The reasons for

this are that it will be easy to go back and recalculate values if the different rate of interest is changed. Also, other methods, such as the Expected Commercial Value, require an expected probability of commercial success. Some of the projects may not be valued by commercial success.

Additional Information

The PMO will also be responsible for going back to the requestor and eliciting any additional information that may have been inadvertently left off of the PRF. This includes the objectives of the project, the time frame, areas that will be affected, etc. It is the responsibility of the requestor to detail the project and it's goals, but it is the responsibility of the PMO to make sure this information is provided in a consistent manner for the reviewers.

Project Categorization

One issue that plagued the insurance company discussed as an example was how to categorize projects. They had new business, maintenance projects, enhancement projects, etc. This company chose to categorize by maintenance vs. new. Quickly they found that some of the maintenance projects were large, and some of the new projects were small. Many times it was difficult to decide if an enhancement on a current product requested by the client was a new project, or a maintenance project.

Additionally, there were some projects that provided value internally to the company by automating a manual process, or providing a user interface to perform a tedious task. These types of projects usually get placed on the back burner while the high profile projects get all of the resources. When in reality, accepting some of these smaller projects could save the company manpower and effort for a long time with a little effort.

One method used that clearly categorizes projects is to separate the projects based on criticality to the business and differentiation [8]. Then the projects from each of these projects will be compared.

TYPE 1: MISSION CRITICAL and DIFFERENTIATING

The type 1 projects are those that are essential to the business in order for the company to remain in business. These projects also provide a means to differentiate itself from the competition.

An example of this would be a project to perform research and development on a new technology. If the competition successfully implements a solution with this technology, and your company does not, the company is at risk of losing out to the other company.

TYPE 2: MISSION CRITICAL but not DIFFERENTIATING

The type 2 projects are those that also are essential to the company. If this type of project is not done, it may put the company at risk. This type, however, does not provide a differentiation in the market place.

And example of this would be to implement a new backend process that will provide significant cost savings to the company, which in turn results in a client making a profit. It saves a client for the company, but to the marketplace, there is nothing that shows a differentiation.

TYPE 3: Not MISSION CRITICAL but DIFFERENTIATING

Type 3 projects are not essential to the company, but do provide a competitive advantage. These types of projects include a partnership. The

company does not have to partner to stay in business, but it will provide an advantage to do so.

TYPE 4: Not MISSION CRITICAL and not DIFFERENTIATING

Being a type 4 project does not mean that it is not important. Many projects fall into this category that are department or group specific. For example, if the Information Technology group could provide a user interface to allow a line worker to input data that is normally input by a production support analyst, then the company can maintain headcount in the analyst group instead of hiring, while offloading some of the every day tasks to others.

It is the responsibility of the PMO to evaluate the request on the basis of criticality and differentiation and assign a type. On the balanced scorecard, there is a space to allow the individual completing the form to disagree with the categorization. This will provide feedback to the PMO to allow for improvements in this area.

Project Scorecards

Now that the project has been submitted, the PMO office has performed their due diligence and provided financial numbers as well as a categorization, the next step is to disseminate the information to the individuals who will complete the balanced scorecards. It is important that each functional group has the ability to provide input into the process. Therefore, it is recommended that the scorecards not be provided to only the Executive Team, but include management at lower levels as well. In order to not give one group within the organization more of an input into the process due to their size, the number of managers should be limited. For this process, it has been determined that each

member of the executive team and two direct reports will asked to complete the scorecards. This way, each area gets a fair input into the project prioritization process. It is also recommended that the persons responsible for completing the scorecard remain as constant as possible to provide a more consistent scoring. Change is inevitable, but if the recipients are significantly different from project to project, then the results may vary widely as well. Whether or not the recipients remain the same is a decision that each company will need to make.

The chart below provides an example of the members of the organization to provide input into the project.
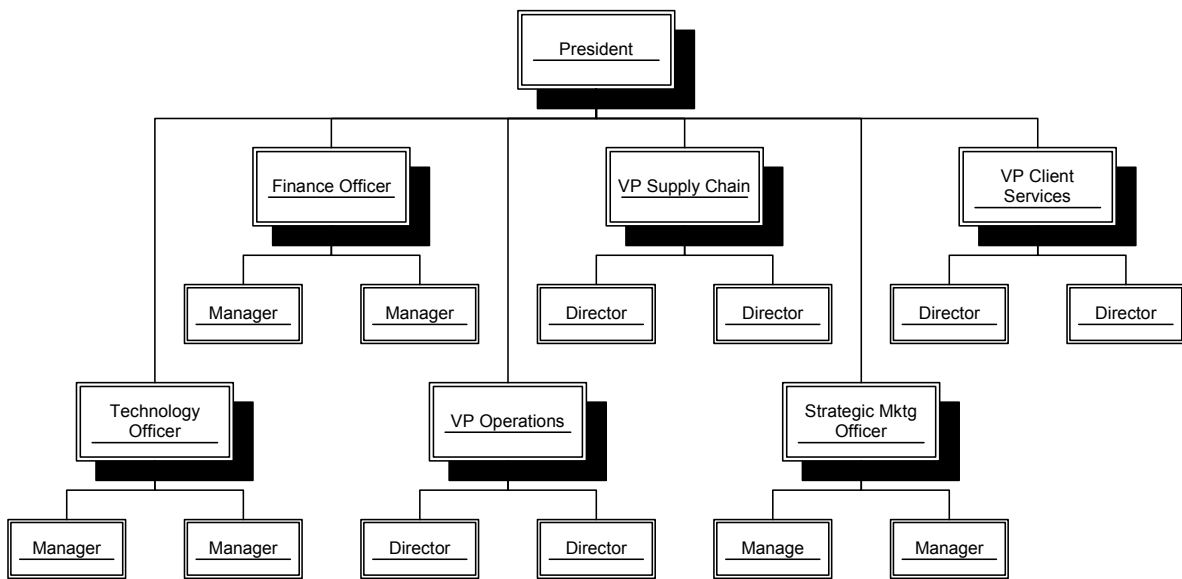
Figure 5 Organization Chart

An example of a scorecard is provided in the appendix. This scorecard needs to be delivered to the individuals identified above with a copy of the PRF. Because the process could already have taken a week up to this point to allow the PMO to perform

their analysis, it is important that the scorecards be returned within a couple of days. The scorecards are designed to be completed quickly.

The Scorecard Described

The scorecard provides the individual completing the form a choice for each of the principle decision factors described in Table 4 Principle Decision Factors. Each choice is given a score by those that complete the scorecard. The values are then averaged and the average multiplied by the weighting factor. This provides a total value for that project.

Scoring

Once each individual has completed the scorecard, the scorecards are returned to the PMO. One problem is that it is impossible to expect that everyone will respond to every project request. This will cause the data to be skewed. If one project only has two responses and other projects have 15 or more responses, it isn't balanced to score one against the other. Therefore, the PMO needs to monitor the responses and prompt the reviewers to return the scorecards. One requirement shall be that there be at least a 75% return rate on the scorecards for the project to be considered at all.

The scores will be added up and then multiplied by the weighting factor. This will provide a score in each of the decision factors as well as an overall score. Each decision factor has 7 possible responses. Each response corresponds to a numeric value. For example, from the scorecard shown in the appendix, these are the possible responses to the Strategic Objectives decision factor. The figure below shows the possible responses and their numeric value.

This project **aligns** with the company's strategic goals and 3 year plan	3
This project **mostly** aligns with the company's strategic goals and 3 year plan	2
This project **somewhat** aligns with the company's strategic goals and 3 year plan	1
I don't know, or this is not applicable.	0
This project **somewhat does not** align with the company's strategic goals and 3 year plan.	-1
This project **mostly does not** align with the company's strategic goals and 3 year plan.	-2
This project **does not** align with the strategic goals of the company and 3 year plan.	-3

Figure 6 Strategic Factor Values

The figure shows that it is possible to give a decision factor a negative score. This was designed so that there will be a 0 score. If a respondent does not have knowledge, or does not have an opinion on a certain decision factor, the scorecard provides a response for this instead of leaving it blank.

One of the decision factors is more black and white. For example, the project is either being done to meet a regulatory or compliance requirement or it isn't. It would not make sense to have the same scale as the Strategic Objective decision factor. Therefore, the responses and their values for several of the decision factors may be different. The table below shows the decision factor, the number of responses, and the scale for the responses used in this paper.

Decision Factor	Number of Possible Responses	Value Range
Strategic Objectives	7	-3 to 3
Risk of not Completing	7	-3 to 3
Core Competencies	7	-3 to 3
Cost	7	-3 to 3
Revenue	7	-3 to 3
Opportunity Cost	7	-3 to 3
Resource Load	7	-3 to 3
Time Constraints	7	-3 to 3
Client Value	7	-3 to 3
Internal Value	7	-3 to 3
Legal/Regulatory	4	0 to 3

Table 6 Decision Factor Values

Once the scorecards have been delivered, the PMO will need to balance the data based on the number of responses. The following steps will be accomplished:

1.   An average will be calculated for each decision factor.

2.   The average for each decision factor will be multiplied by the decision factor weight to get the weighted score for each criterion.

3.   The weighted scores will be added up and total value will be achieved. The total value will be the score for that project.

Analysis

After the scoring process, each project needs to be compared to the other potential projects. Additionally, the projects will need to be compared to existing projects. There are several tools that can be used to aid in the analysis. Some of these tools were described earlier in this paper.

First is the valuation from using the scorecards. The value determined by using this process will be evaluated against the other current and potential projects. It is important to include the current projects because the new project may be the highest priority of the new potential projects, but it may still not be prioritized at a level high enough to make the list.

Other analysis tools include the bubble diagrams and bar charts. In fact, now that there is data tied to each project request, the projects can be compared against each other in many ways.

Decision

Although it would be nice to pick the top few projects form the prioritization process and move on, that is not realistic. The decision is still the responsibility of the Executive Team. All of the information that has been compiled to this point goes a long way to providing an objective decision system. However, there are always exceptions to the rule. Therefore, it is recommended that the PMO compile the list of potential projects and provide the results to the Executive team with recommendations. There may still be some political decisions, but with the data in front of them, it will be a harder sell to push through a project that is not of high priority.

Another area of concern is when a new project has a higher priority than a currently active project. Is the current project stopped in order to start work on the new project? This would continue the practice of changing priorities and would undermine the goals of this process. In this case, the PMO will provide guidance and recommendations on how to proceed. Sometimes it will make sense to stop the project, and other times it will make sense to complete the current project.

Additionally, there may be a project that is time sensitive, or legally required. For example, the company has until next June to comply with a new federal regulation. Obviously, this project has to have a high priority. But the project still needs to go through the process. When it comes time to make a decision, it is understood that this project must be accomplished, but the metrics will be in place to determine at what cost to other projects.

Time Line

One of the goals for this process is to make sure that the process is simple and quick to accomplish. As a result, the timeline for the process is to take no more than two weeks.
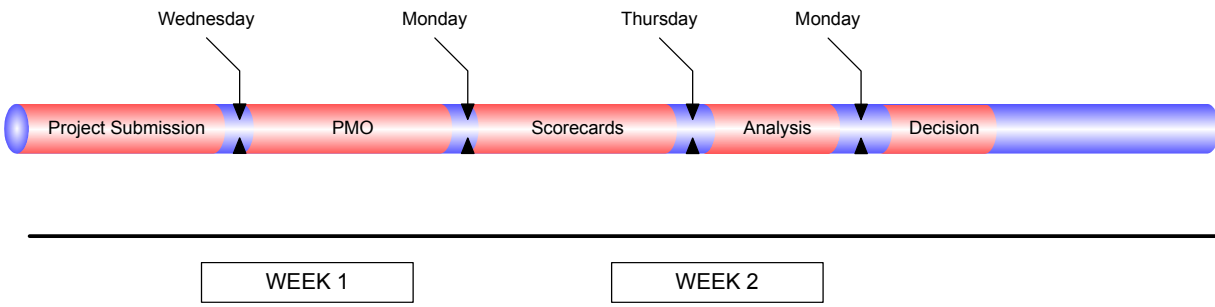

Figure 7 Time Line

Projects that are submitted prior to the close of business on Wednesday will be entered into the process. It would be unusual to have more than two or three projects submitted in a week.

Once the project has been submitted, the PMO has until the following Monday morning to prepare the information for the scorecards. Recipients of the scorecards have until Thursday to complete and return the scorecards to the PMO. Analysis on the results should easily automated and the recommendations will be delivered to the Executive Team for the following Monday morning meeting to identify the priorities.

Monitoring

When enough projects have been completed to provide a good sample of metrics, the success/failure of a project can be analyzed against the scorecard results. It may be determined that the company is not successful when they try projects that are outside their core competency, or that they fail on high-risk projects. This information is useful

for upper management to identify areas that they are strong in as well as areas in which they need to work on.

Areas that should be measured include normal project management measurements:

- Success/Failure of the project

- Project finished early, on schedule, or late

- Project costs were under budget, on budget, over budget

- Resource usage was less than expected, as expected, or more than expected

- Customer's satisfaction of the end product.

Challenges

Although the implementation of the objective project prioritization process is not extremely innovative or complicated, there are certain areas that will provide challenges to implementing the process.

First, it is imperative that all necessary groups feel as though their voices are heard. They not only need to be able to request projects, they also need to have an input on the prioritization of the project by completing the balanced scorecard. If a group doesn't feel as though they are treated equally, then they will not buy in to the process. Having each group participate also provides better visibility and communication of the projects that the Information Technology department is working on.

Second, the process needs to be laid out so that there is no confusion as to the tasks and responsibilities. The PMO needs to be consistent in the information that they provide, and the people completing the scorecards need to understand the process.

Third, this process describes a method to prioritize projects, but except for the decision factors on resources and cost, it does not provide a good measure for the number of staff members it will take to accomplish the projects, or the ability to afford the portfolio of projects. This decision-making will still reside with management. There are methods that the PMO can use to determine resource-staffing levels and comparisons on project costs, but this paper will not address those activities.

Fourth, this process does not totally eliminate politics from the project decision-making, but it does go a long way to reducing it. Certain additional measures can be put in place to combat the politics. One method could be to throw out the top two and bottom two scores for each decision factor. This would help in reducing results from individuals that either are for, or very much against the project. Another methods is to ensure that the scorecards are completed in anonymity.

Finally, this paper is written to provide an example on how to begin a process. Different companies will have different decision factors, weights, and various other unique concerns. Therefore, it is expected and recommended that the process be continuously improved upon. This however, makes it difficult to measure unless you go back and rescore each time there is a change made to the weights, scores, or decision factors.

Tools

It has been the intent of this paper to provide a starting point for project prioritization that a company can use easily in order to put some process in place. As the process matures, the company may wish to look into even more detailed tools. These software packages provide powerful measuring and tracking tools project performance. The problem with going to these tools for most companies is that they don't have the time or resources to spend on gathering the data that these tools expect. Trying to implement one of these tools into an environment that doesn't already have some process around their project selection, would inevitably fail.

These tools would probably benefit a larger company that has a history of implementing enterprise projects on a larger scale. These companies usually have the financial and human resources to implement such a big change in process.

Some of the tool vendors that provide software as well as consultant help for project portfolio management include:

United Management Technologies	ProSight
PlanView	Pacific Edge
ITCentrix	Expert Choice
Artemis	

A comparison done by the Meta Group [9] evaluated these tools as well as several others and listed United Management Technologies and ProSight the leaders in this industry.

Recommendations

The process described in this paper could easily provide a method to bring measurable parameters to project decision-making. As long as the company has a vision and goals as to what the important things are in growing the company, the process is communicated and adhered to, as well as multiple groups are provided the same level of input into the decision, this process has a much higher probability of success.

Therefore, this process is recommended for a company that is looking to take the next step in providing a more controlled and objective method for dedicating resources, time, and money on Information Technology projects. Smaller companies that have grown to a point where more rigor and process are needed are prime candidates to implement a process like this.

Literature Review

During the research for this paper, there is quite a bit of material that has been authored in the last few years on IT Governance, and Portfolio Management. Although these two areas affect and are tightly aligned with project prioritization and decision making, there was very little written on the actual process to accomplish the prioritization and decision making for projects. Of these other topics, each one could easily be a topic for a Field Project.

Many of the articles and books that were used in the research, proved to be very detailed. The books and articles were too detailed, cumbersome, and theoretical for the purpose of this paper.

The most useful and informative research came from the Cooper study [5]. Cooper, Edgett, and Kleinschmidt have published several pieces on project prioritization and portfolio management. The study that was used extensively in this paper contained a tremendous amount of information on the problems, and possible solutions to project go/no-go decision-making. The best part of the information that came from the study is that the information is based on real-world examples.

Bibliography

[1] McManus, John, Risk Management in Software Development Projects. Burlington, MA: Elsevier Butterworth-Heinemann, 2004.

[2] Alter, Alan, "The CIO Insight Research Study: Project Management; Are Your Projects Out of Control?", CIO Insight, July 1, 2004, page 65.

[3] Weill, Peter, and Jeanne W. Ross. IT Governance. Boston, MA: Harvard Business School, 2004.

[4] "Project Management Office (PMO)", http://www.progeto.com/PMO.htm

[5] Cooper, R.G., S. J. Edgett, and E. J. Kleinschmidt, "Portfolio Management for New Production Development: Results of an Industry Practices Study". R&D Management, vol 31, no. 4, 2001.

[6] Austvold, Eric, "IT Portfolio Management – Making Technology Investments Pay Off", AMR Research, Oct. 2002, http://www.amr.com.

[7] Van Grembergen, Wim, Strategies for Information Technology Governance. Hershey, PA: Idea Group Publishing, 2004.

[8] Low, Lafe, "First Things First", CIO Magazine March 15, 2004, http://www.cio.com/archive/031504/case.html?printversion=yes

[9] – Portfolio Management Tools, Metaspectrum Market Study, May 24, 2004 http://www.evolve.com/news/articles/2004METAspectrum.pdf#search='portfolio%20Management%20Tools%20meta%20group'

[10] Lang, Susan, "Sound Technology Business Decisions", APTA TransITech Conference Presentation, May 2003, http://spider.apta.com/lgwf/transitech/2003/long_susan.pdf#search='sound%20technology%20business%20decisions'

[11] Davis, Charles K., Technologies & Methodologies for Evaluating Information Technology in Business. Hershey, PA: IRM Press, 2003.

[12] Sifri, George, "Choosing and deploying a project priority selection system", CNETAsia, April 30, 2004, http://asia.cnet.com/builder/manage/project/printfriendly.htm?AT=39128482-39009352t-39000411c

[13] Block, Thomas R., "The Seven Secrets of a Successful Project Office", PM Network, April 1999 Volume 13, page 43.

[14] Lynn, Doug, "META Report: How To Ensure IT Projects Boost Profits", August 16, 2001, http://umt.phpwebhosting.com/site/Documents/META_-_How_to_Ensure%20_IT_Projects_Boost_Profits_-_16Aug01.pdf#search='How%20To%20Ensure%20IT%20Projects%20Boost%20Profits

[15] Datz, Todd, "Portfolio Management How To Do It Right", CIO.com, May 1, 2003, http://ww.cio.com/archive/050103/portfolio.html?printversion=yes

[16] "Portfolio Prioritization Workflow", Cross Organizational Consulting, http://www.xocp.com/PM_Templates/Portfolio_Prioritizatation.doc

[17] Ulfelder, Steve, "The Dirty Half-Dozen: Six Ways I.T. Projects Fail- and How You Can Avoid Them", June 2001, Darwinmag.com, http://www.darwinmag.com/read/060101/dirty.html

[18] Cooper, Robert, "Portfolio Management for New Products", 2001, Product Development Institute, http://www.stage-gate.com/pdfs/Working%20Paper%2011.pdf#search='portfolio%20management%20for%20new%20projects'

[19] Datz, Todd, "How To Do It Right", CIO Magazine May 1, 2003, http://www.cio.com/archive/050103/portfolio.html

[20] Alter, Allan, "How Can CIOs Keep Prioritzation Politics in Check?" CIO Insight, Jule 1, 2004, http://www.cioinsight.com/article2/0,1397,1620741,00.asp?kc=CTNKT0209KTX1K0100481

[21] Thorp, John, "The Challenge of Valu – Portfolio Management and the Myth of ROI", CIO.com, http://www2.cio.com/consultant/report1353.html

[22] Meyer, Dean, "Beneath the Buzz: Portfolio Management", CIO.com, Jan 31, 2005, http://www.cio.com/blog_view.html?ID=502

[23] Gerrard, Michael, "Creating an Effective IT Governance Process", CIO.com, September 24, 2004, http://www2.cio.com/analyst/report2936.html

Appendix A – Project Request Form

PROJECT REQUEST FORM

Project Name:	
Requestor:	
Group:	
Date of Request:	

Time Frame: *list all time constraints or requirements for the project.*

Need: *Explain the objectives that this project is hoping to accomplish or the problem that it is solving.*

Mission Criticality: *Explain why this project is essential for the continuation and success of the company. If this project is not completed, how will the company be negatively impacted? Do not list subjects concerning gain in market share, increased customers, or create a competitive adv*

Differentiation: *Provide information on why this project will differentiate this company from the others. Explain why this project will increase market share, gain customers, and provide a competitive advantage.*

Financial: *To the best of your ability provide information on the cost of the project and the expected return on the project. Include any known hardware or software expenditures.*

Resources: *To the best of your ability provide information on the areas that this will impact and any significant hardware or software resources that need to be used.*

Appendix B – Scorecard

PROJECT SCORECARD		
Project Name:		
Return Scorecard by:		
Your Name:	Group:	

Strategic Objectives *Does the project align with the company's strategic goals and 3-year plan?*	This project **aligns** with the company's strategic goals and 3 year plan	☐
	This project **mostly** aligns with the company's strategic goals and 3 year plan	☐
	This project **somewhat** aligns with the company's strategic goals and 3 year plan	☐
	I don't know, or this is not applicable.	☐
	This project **somewhat does not** align with the company's strategic goals and 3 year plan.	☐
	This project **mostly does not** align with the company's strategic goals and 3 year plan.	☐
	This project **does not** align with the strategic goals of the company and 3 year plan.	☐
Risk of not completing *Is this a risky project to undertake?*	There is **no risk** associated with this project. *(90 – 100% chance of completion)*	☐
	There is a **slight risk** that this project may be too risky to complete. *(70 – 90%)*	☐
	There is **some risk** that this project may not be completed. *(50 – 70%)*	☐
	I don't know, or this is not applicable.	☐
	There is **moderate risk** that this project will not be completed. *(30 – 50%)*	☐
	There is **considerable risk** in being able to complete this project. *(10 – 30%)*	☐
	There is **no chance** of this project being completed. *(0 - 10%)*	☐
Core Competencies *Can this project be accomplished with our current technical and business knowledge?*	This project **can be accomplished** using our current staff and knowledge	☐
	This project is **slightly outside** our current technical and business competencies.	☐
	This project is **somewhat outside** our current technical and business competencies.	☐
	I don't know, or this is not applicable.	☐
	This is **mostly outside** our technical and business competencies.	☐
	This project will be **difficult to accomplish** due to the differences from our current competencies.	☐
	This project is **completely outside** our current technical and business capabilities.	☐

Cost *How much will cost be a concern?*	There are **no cost concerns** for initiating this project.	☐
	There are **minor** cost concerns associated with this project.	☐
	There are **some** cost concerns associated with this project.	☐
	I don't know, or this is not applicable.	☐
	There are **significant** cost concerns associated with this project.	☐
	There are **major** cost concerns associated with this project.	☐
	The cost of this project is **prohibitive**. This project should not be initiated.	☐
Revenue *Is the expected revenue enough to initiate this project?*	The expected revenue is **significant** enough to initiate the project.	☐
	The expected revenue is **adequate**, and the project should probably be initiated.	☐
	The expected revenue is **just enough** to initiate the project.	☐
	I don't know, or this is not applicable.	☐
	The expected revenue is **not quite enough** to initiate the project.	☐
	This project **probably shouldn't** be undertaken based on revenue.	☐
	This project **should not** be undertaken based on the revenue figures.	☐
Opportunity Cost *Will this project lead to other opportunities that will be beneficial to the company?*	Completing this project will provide **tremendous** opportunities.	☐
	Completing this project will provide **some** additional opportunities.	☐
	This project **might** lead to other opportunities.	☐
	I don't know, or this is not applicable.	☐
	This project might take away from better opportunities.	☐
	This project will	☐
		☐
Resource Load *Do we have the hardware/software and people to accomplish this project?*	There are **no resource concerns** in accomplishing this project.	☐
	There a **slight** resource concerns in accomplishing this project.	☐
	There are **some** resource concerns in accomplishing this project.	☐
	I don't know, or this is not applicable.	☐
	There are **major** concerns.	☐
	There are **significant** resource concerns in undertaking this project.	☐
	This project **should not be undertaken** due to resource concerns.	☐

Time Constraints *Are there hard time constraints in accomplishing this project?*	This project is time sensitive. It must be accomplished by an externally delivered date.	☐
	This project needs to be accomplished as soon as possible.	☐
	This project needs to be accomplished in the near future.	☐
	I don't know, or this is not applicable.	☐
	This project needs to be accomplished within the next 6 months.	☐
	This project needs to be accomplished some time in the next 8 months.	☐
	There is no time frame for this project.	☐
Client Value *From the client's perspective, will this project add value for them?*	This project will provide **significant value** and customer satisfaction.	☐
	This project will provide **some** value to the client.	☐
	This project will provide a **little** value to the client.	☐
	I don't know, or this is not applicable.	☐
	This project has **no value** to the client.	☐
	This project **may adversely** affect the client.	☐
	This project **will adversely** affect the client.	☐
Internal Value *Will this project provide value to a group or group's within the company?*	This project will provide **significant value** to the organization.	☐
	This project will provide **some** value to the organization.	☐
	This project will provide a **little** value to the organization.	☐
	I don't know, or this is not applicable.	☐
	This project has **no value** to the organization.	☐
	This project **may adversely** affect the organization.	☐
	This project **will adversely** affect the organization.	☐
Legal/Regulatory Are there legal, regulatory or compliance reasons to do this project?	This project must be accomplished.	☐
	This project should be done based on significant legal or regulatory concerns.	☐
	This project should be done due to possible legal or regulatory concerns.	☐
	I don't know, or this is not applicable.	☐

Objective Project Prioritization for Information Technology

Type 1: Mission Critical and Differentiating
Type 2: Mission Critical but not Differentiating
Type 3: Not Mission Critical but Differentiating
Type 4: Not Mission Critical and not Differentiating

If you disagree with the project categorization, please explain below. This project is a Type _____ project.

Additional Comments:

Appendix C – Example Project Request Form

PROJECT REQUEST FORM	

Project Name:	XYZ Client Data Security Audit
Requestor:	Cary R. Trowbridge
Group:	XYZ Account Manager
Date of Request:	6/20/2005

Time Frame:
This project must be completed before 8/1. The client will be on-site to perform an audit the week of 8/1 – 8/5.

Need: *Explain the objectives that this project is hoping to accomplish or the problem that it is solving.*
The current system contains several data security issues that were addressed in the last independent audit conducted by XYZ client. The three outstanding issues that need to be completed are:

1. The user interface shows the customer SSN. The application needs to be updated so that only the last 4 digits are visible to the support staff.
2. The SSN's need to be encrypted in the database.
3. The login access to the database needs to be reviewed and persons not on the XYZ project, or have not signed the security access form need to be removed.

Mission Criticality: *Explain why this project is essential for the continuation and success of the company. If this project is not completed, how will the company be negatively impacted? Do not list subjects concerning gain in market share, increased customers, or create a competitive adv*
If these issues are not addressed, the client will assess a $50,000 fine. Additionally, the contract with this client runs through September. We are currently in the proposal process to not only keep the clients business, but to offer additional services.

Differentiation: *Provide information on why this project will differentiate this company from the others. Explain why this project will increase market share, gain customers, and provide a competitive advantage.*
N/A

Financial: *To the best of your ability provide information on the cost of the project and the expected return on the project. Include any known hardware or software expenditures.*
$50,000 fine.

Resources: *To the best of your ability provide information on the areas that this will impact and any significant hardware or software resources that need to be used.*
There are no additional external hardware or software purchases.
Estimate that 1 developer and 1 dba can accomplish this within a week.

Appendix D – Example Project Scorecard

	Strategic Objectives	Risk of not completing	Core Competencies	Cost	Revenue	Opportunity Cost	Resource Load	Time Constraints	Client Value	Internal Value	Legal/Regulatory
President	3	1	2	2	2	3	3	1	0	1	3
Technology Officer	1	0	0	2	0	1	2	2	2	1	2
Finance Officer	1	2	1	0	0	3	2	2	2	3	3
VP Operations	0	-3	2	2	1	1	1	2	2	1	1
VP Supply Chain	-2	2	3	3	0	2	1	2	2	1	3
Strategic Marketing Officer											
VP Client Services	2	2	3	1	0	1	2	1	1	2	1
IT Director	3	2	2	0	1	2	0	-2	0	1	2
IT Production Support Manager	2	1	2	3	1	2	-2	0	1	1	2
IT Quality Assurance											
IT Product Manger	1	1	2	3	0	3	2	3	2	2	0
IT	2	1	1	2	2	2	-1	2	1	1	1
Fraud Manager	1	0	1	0	2	2	2	-1	1	2	3
Accounting Manager	0	0	1	0	3	2	3	2	1	1	2
Finance Manager											
Compliance Manager	2	0	2	1	1	1	2	2	2	1	3
Supply Chain Manager	1	1	1	3	2	0	-1	0	-3	1	2
Training Manager	2	1	3	2	2	1	2	0	2	2	2
Workforce Manager	2	1	3	3	1	1	2	0	3	1	2
HR Director											
Marketing Manager	0	2	0	3	2	2	3	2	1	1	0
Strategic Marketing Manager											
Client Services Director 1	2	0	2	2	0	1	1	-2	1	1	2
Client Services Director 2	0	1	2	2	0	2	2	2	-3	1	0
Client Services Director 3	2	1	2	3	2	3	2	1	3	2	1
Client Services Director 4	3	2	3	3	1	1	1	1	2	2	2

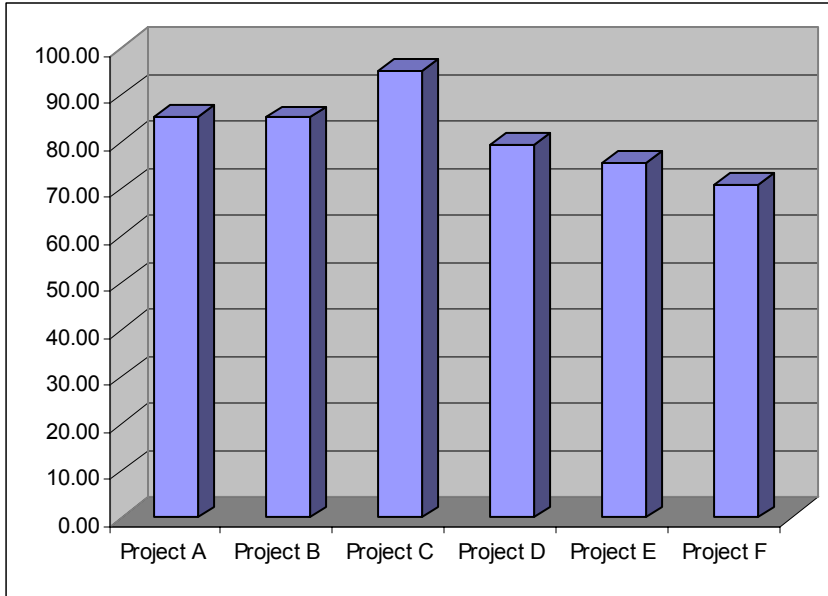|											
Decision Factor Total	28	18	38	40	23	36	29	20	23	29	37
Average	1.33	0.86	1.81	1.90	1.10	1.71	1.38	0.95	1.10	1.38	1.76
Weighting Multiplier	10	5	3	8	8	7	2	3	7	5	9
Totals	13.3	4.3	5.4	15	8.8	12	2.8	2.9	7.7	6.9	16

Total Score:	95.10

Appendix E – Example Project Scorecard Results

PROJECT SCORECARD RESULTS

	Project A	Project B	Project C	Project D	Project E	Project F	Totals
Strategic Objectives	11.56	9.99	13.33	10.08	14.20	12.55	71.71
Risk of not completing	5.21	5.33	4.29	3.50	4.25	5.12	27.70
Core Competencies	4.98	6.23	5.43	6.22	5.77	6.35	34.98
Cost	8.25	10.56	15.24	9.54	9.74	9.55	62.88
Revenue	11.25	7.69	8.76	2.65	8.21	7.84	46.40
Opportunity Cost	10.50	8.35	12.00	12.00	8.35	7.65	58.85
Resource Load	1.25	5.23	2.76	4.50	3.58	2.05	19.37
Time Constraints	3.50	5.01	2.86	6.32	5.00	1.10	23.79
Client Value	9.23	8.85	7.67	6.98	7.45	5.33	45.51
Internal Value	7.55	6.33	6.90	5.10	6.67	5.98	38.53
Legal/Regulatory	12.10	11.52	15.86	12.56	2.40	7.29	61.73
Total	85.38	85.09	95.10	79.45	75.62	70.81	

Appendix F – Example Analysis

Project Scores:

Decision Factors: