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MS CSIS Capstone Project

Exploring Methods to Justify Projects with Intangible Benefits

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interesting. I enjoyed learning about the different methods that companies in Wilmington, NC, utilize. This project would have not been possible without these volunteers.

Exploring Methods to Justify Projects with Intangible Benefits

I. Introduction

As Information Technology (IT) investments increase in organizations, the need to provide financial justification for these projects increases. IT must compete with other corporate projects for approval. Information technology and business unit managers face a particular difficult challenge when they attempt to define and justify investments in IT projects, as they are comprised of intangible items. Corporate management expects most projects to provide a return on the firm's investment dollars. Phillips [2006] indicates that IT projects are a measurement challenge when quantifying intangible benefits in a monetary way. The goal of this capstone project is to provide IT managers a summary of quantitative research and experiences incorporated from the Wilmington, NC IT community. A secondary goal is to provide guidelines for measurement of intangibles as a component of the IT project approval process.

Typically IT projects compete for funding against non-IT projects and justification follows normal capital financial ratios justification. [Bon, Kemmerling, Pondman, 2002] Key ratios include Return on Investment (ROI), Cash Flow, Internal Rate of Return (IRR), and Payback Period. IT projects may have direct tangible benefits such as: cost savings, improvement of product quality, or increased revenue in dollars, which gives a direct cost ratio. Those intangible benefits that are difficult to quantify to the organization include benefits from services, quality, organization, and policy. These concepts provide the backdrop for measurement of intangible values and provide links between the various elements. [Bon, Kemmerling, Pondman, 2002]

A definition of intangible benefits is offered by Grembergen [2001] "indicate that there are two main intangible benefits in IT investments. The first is internal improvement or infrastructure investment and the second related to customers." Examples of intangibles are: efficient customer service, courteous employee's, decrease wait time, repeat customers, process orders, hits on website, and increase in additional orders. Measuring intangible values is not simple. Research literature and textbooks provide a beginning point for measuring intangible value added to a project's value. IT projects compete for corporate capital spending dollars and many managers become frustrated and ignore the quantification of intangible values because of the difficulty in identifying monetary terms.

This capstone project is important because it builds on prevailing research literature and also incorporates knowledge and practice from local IT professionals. My research aims to incorporate current developments in the field related to guidelines on how managers can effectively measure intangible values. A fundamental component of this project involves interviewing members of the Wilmington, NC IT community.

Additionally, this capstone project helps demonstrate that measuring intangibles is still a problem and the industry can no longer afford to focus only on ROI to justify projects while ignoring intangible benefits. [Bon, Kemmerling, Pondman, 2002] In total, this capstone project involves: researching intangible measurements, conducting industry interviews, summarizing their recommendations, and researching information to increase IT community awareness of this pertinent issue.

A. Benefits to Industry

The benefits of this project are advantageous to the IT community. Examples include: consolidating research for project justification, incorporating practices found in our University service area, and providing additional guidelines to the IT community. "Given the desire for assistance in this area, new developments, additional materials and recommendations could assist the IT professionals." [Bon, Kemmerling, Pondman, 2002] This research may lead to assist in justifying more IT projects to upper management.

Most current research in project justification relates to the importance of measuring, but not specifically "*how to"* measure intangibles. This capstone project will define and clarify measurement techniques in IT projects to evaluate intangibles. These guidelines will summarize best practices, literature research and practical experience.

B. Personal Benefit

A personal benefit from the capstone project includes building a relationship with quality experienced IT professionals in Wilmington, NC. Interviews were conducted from May through August 2007, to learn about local organizations and how they were justifying intangible assets for management approval.

II. Background

This project began with the intention to learn more about IT projects, justification and measurement techniques. However, I narrowed my focus from the broad area of project management measurement techniques to a deeper understand of the problem of

measuring intangibles. As part of my master's degree requirements, I completed three courses in the areas of project management and IT project justification.

This narrowing of focus began the summer of 2006, in the Information Analysis and Management MBA 513 class. This course focused on IT project justification and the quantification of IT projects for IT and business unit managers. This inquiry began as an extra credit literature research assignment in the summer of 2006, for the MBA 513 class. This capstone project started during the fall of 2006, semester as part of an Independent Study (MIS 591) and Project Management (MIS 592) classes. My topic originally commenced as a detailed understanding of the IT Project Management process with a minor portion dedicated to intangible results. However, I began to realize that my original capstone project topic would not significantly challenge me. It became obvious there was vague or limited research on measuring intangibles for IT projects. Since organizations are becoming increasingly dependent on IT to fulfill their corporate objectives, it turned out to be more pressing for IT professionals to measure intangibles. [Bon, Kemmerling, Pondman, 2002]

A. Past Work

As mentioned earlier, the first formal class I completed that relates to my capstone project was Information Analysis and Management (MBA 513). This class initiated my informal study of measuring intangibles. In order to receive credit for the MBA/MIS course, I was assigned an extra project on measuring intangibles. During this early literary research, I discovered that there was not a great deal of published literature within the area of measuring intangibles. However, industry and academics do admit there are

IT projects justified exclusively with intangible benefits, yet research declares there is no formal way of providing a dollar amount. [Bon, Kemmerling, and Pondman, 2002]

Expanding on the initial literature review, I completed an independent study to further broaden my research and understanding of the quantification of intangible values. The independent study assisted me in narrowing my topic focus to the issues related to intangible values into the project justification process. This process helped me to gain additional knowledge in the specific area of my project.

B. Independent Study

A part of my independent study, I was required to present my research to a Fall 2006, MBA 513 class. This presentation was given at AAI Pharmaceuticals in Wilmington, NC. It was an excellent way to present information that I had already researched and receive feedback from industry professionals and business unit managers who submit IT projects for approval.

Project Management (MIS 592) was the third class that I completed to learn more about project management. This class broadened my knowledge and revealed the challenges of project management. I completed a research paper on Project Scope Management and learned the nine knowledge areas of project management.

Each inclusive area is listed as follows:

- Integration management
- Scope management
- Time management
- Cost management

- Quality management
- Human resource management
- Communications management
- Risk management
- Procurement management

[A Guide to the Project Management Body of Knowledge Third Edition, 2004]

In this class, I participated in a simulation game portraying the amount of planning and preparation required for project management. Dr. Meyer (the instructor) taught me the importance of project management group affiliations such as the Project Management Institute and how to become a certified project manager.

III. Methodology and Program of Work

The methodology utilized in this capstone project is shown in Figure 1. The methodology includes: developing components of IT project management, reviewing literature, defining current practices, developing interview questions, testing pilot questions, revising interview questions, conducting interviews, identifying a summary of Wilmington IT challenges, and recommending results. The steps of the project were:

A. Developing competency and deeper understanding of project management basic components during formal coursework in 2005-2006.
B. Reviewing literature included library research of business databases, from an independent study course in fall of 2006, with Dr. Janicki in project management.

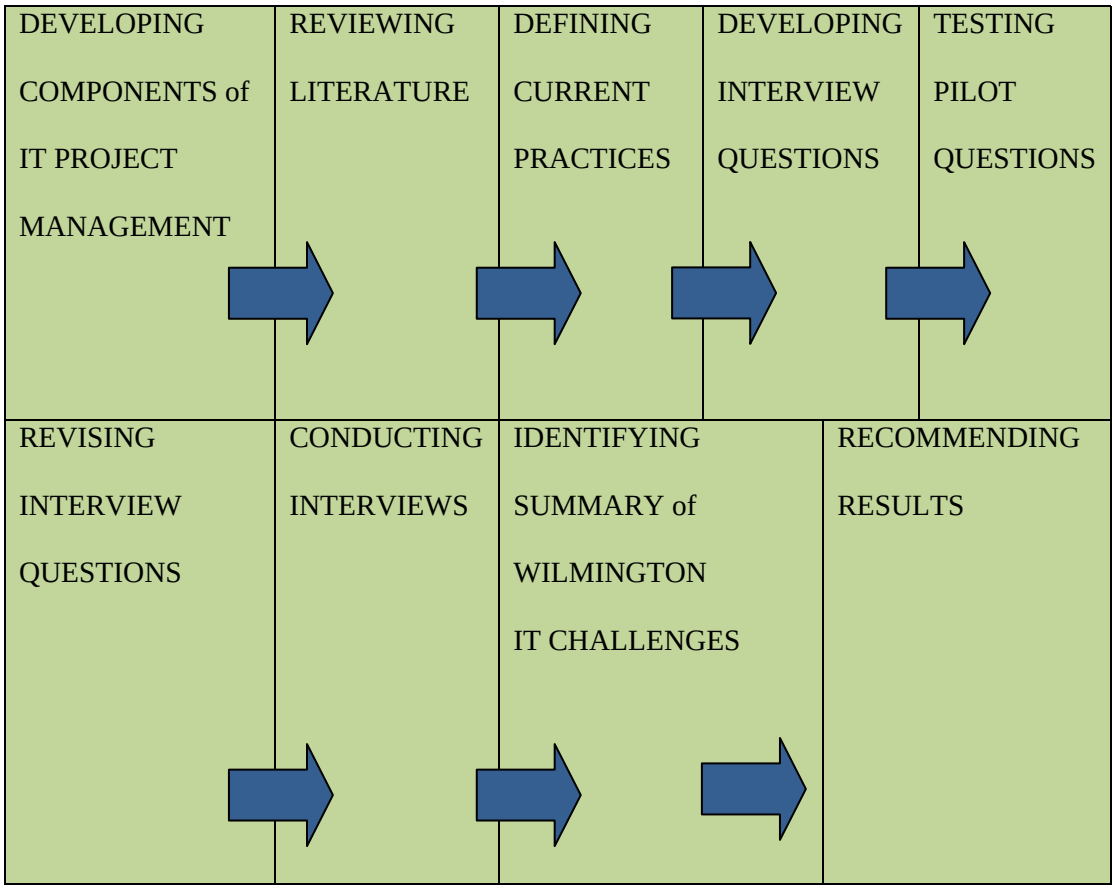

Figure 1. Methodology and Program of Work

C. Defining current practices for IT justification came from the literature review.

D. Developing open-ended interview questions stimulated participants' response.

E. Testing pilot questions included interviewing a select group of Wilmington, NC IT business professionals from the ISOM/CSC Advisory Board.

F. Revising interview questions included project background information, about this study, so everyone would know what type of research was being conducted.

G. Conducting interviews with twenty-one Wilmington, NC Information Technology Professionals included CIO's, IT Consultants, and IT Directors.

H. Identifying summary of Wilmington IT challenges included: personal interviews that allowed more information and opinions rather than a survey. Survey drawback did not permit for follow-up questions.

I. Recommending results and making interpretations to IT professionals.

Figure two details the work plan and milestones for each month of the project.

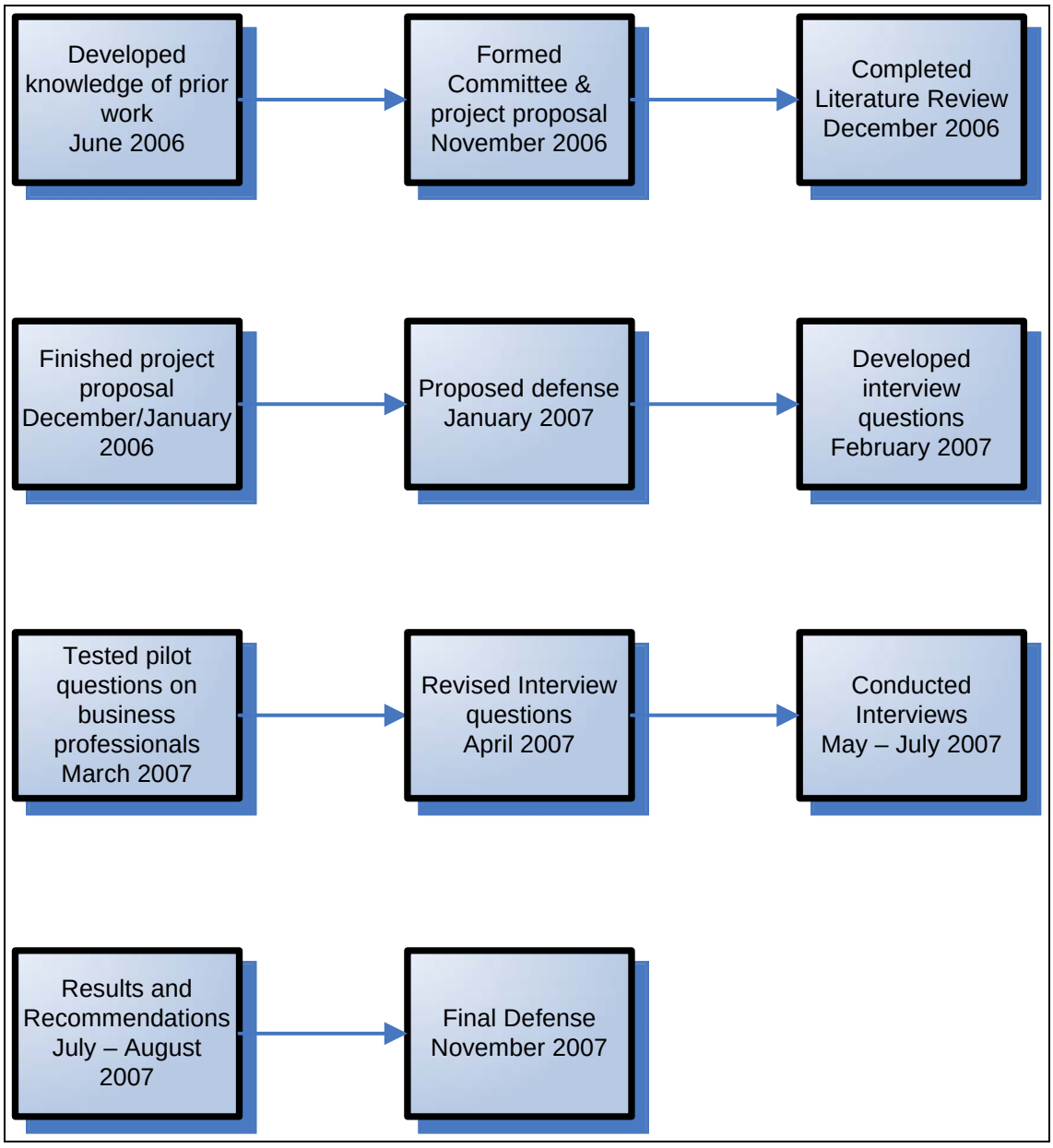

Figure 2. Timeline of Capstone Project Milestones

IV. Literature Review

As part of the literature review, I researched the following topics: project management, project proposals, project approval process, and measurement of intangible benefits in projects. This section reviews the current theory as they relate to intangible values and project justification in general.

Most literature available today about the measurement of intangible values is vague. Literature and business journals detail the burden of measuring intangibles, but provide no guidelines or recommendations. Therefore, because of the difficulty in measuring intangible values most companies do not have a standardized practice or guidelines.

In addition, when upper management evaluates intangibles, they do not have a process to weigh the "merit". This section will review current practices in justification, measurement techniques, and post implementation. It is observed that authors wrote about the need to measure intangibles, but the articles made only a small mention about "how to" measure intangibles.

A. Definition of Intangible Value

There are many different versions of the definition of intangible values relating to information technology. A definition of intangible benefits is offered by Grembergen [2001] "indicates that there are two main intangible benefits in IT investments. The first is internal improvement or infrastructure investment and the second relates to customers." Examples of intangible benefits are change in the production process, retained customers, increased sales, customer satisfaction, and market gain. [Grembergen, 2001] Because

consumers have easy access to the Internet, they have become a panel of experts and are more enlightened in comparisons and quality. "Companies of IT services can no longer afford to focus on technology and their internal organization; they now have to consider the quality of services they provide and focus on customer relationships." [Bon, Kemmerling, Pondman, 2002]

B. Project Justification

Many information technology professionals find it difficult to justify gains in monetary terms of a potential project. Chircu, Kauffman, and Keskey [2001] discuss some examples of intangible benefits that are difficult to justify. These include: improvements in a competitive position, increased customer relationship strength, and changes of power in the firm's distribution and supply channels.

Likewise, a common problem with measuring intangibles is described by Chircu, Kauffman, and Keskey [2001],

> "Others may gain from even more difficult to measure intangible benefits, though they may not be able to formally measure them. However, few IT investors actually have the time, motivation, or training to carefully analyze the intangibles. Thus, an effective IT value assessment toolkit for senior managers requires methodologies and perspectives that emphasize understanding the actual or *realized value* achieved relative to the *potential value* upon which the justification was based."

Finding the time to investigate the potential benefits of a project should be top priority. Chircu, Kauffman, and Keskey [2001] continue, "Research suggests that to maximize the IT investments, managers need to understand the potential value first." Understanding the capacity for growth of projects can help justify the potential aspects. There has been discussion over whether measuring intangibles is important or necessary. According to Davenport and Harris [2004],

> "For more than a decade, there have been arguments in favor of measuring and managing intangible resources. This class of assets (something the organization has) and capabilities (something it can do) includes: human & knowledge capital, brand, R&D (Research & Development) capability, IT (Information Technology) management capability, and other non-financial resources."

They continue that all assets and capabilities are an important part of a business reputation and should be valued.

A company's perception is very critical to the long-term success of a company. "Intangible resources are important to both company success and external perceptions of company value". [Davenport and Harris, 2004] Intangible values are important because you cannot put a price on how a company is perceived, which is something gained with trust. "How the customer distinguishes the service and what the provider thinks they supply, both largely depend on their personal experiences and expectations." [Bon, Kemmerling, Pondman, 2002]

The ability to justify intangible benefits of a project can help companies make pronounced decisions for future information technology projects. Davenport and Harris

[2004] recommend that leading companies need to take steps today to make intangible resources an element of their information, justification, and reporting approaches. They added there is an enhanced value and performance in managing intangibles and executives have no excuse to delay decisions based on intangible assets now. Information technology projects can be justified by various accounting data.

Standard financial measurements for IT projects include:

1. Return on Investment (ROI)
2. Internal Rate of Return (IRR)
3. Net Present Value (NPV)
4. Cash Flow

[Curley, 2005]

Bharadwaj and Konsynski [1997] support the concept that intangible benefits add to tangible values and therefore help support IT investments. The benefits and values create strategic needs to increase the prospect of project approval.

Companies consider some project proposals especially if it surpasses a specific dollar return on investment (ROI). The best practices developed in industry and theory does not always have a common approach. Several authors in the area of project justification conclude that ROI may not the best method of measuring project benefits. Maglitta [1997] states such traditional accounting measures too often are time consuming, ineffective and unnecessary. Bharadwaj and Konsynski [1997] continue that one problem with accounting measures; they look only at a company's past performance and do not consider the future profit.

Other researchers agree that quantifying intangible values are important, but difficult for most professionals to accomplish. According to Fraumeni [2001], there is no question that knowledge and information is important, but difficult to quantify. “Very little is known about how to quantify intangibles, yet they seem to be particularly important source of market valuations for new-economy firms.” [Fraumeni, 2001] She continues that more research and studies need to be done due to the lack of information available. Kristensen and Westlund [2003] concur, “The discrepancy between the high importance of intangibles and the general inability to measure and account for these types of assets constitutes a growing challenge for business and society, in particular within the framework of Non-Financial Reporting.”

There needs to be more documentation on how to report intangible values. Kristensen and Westlund [2003] argue, “Lack of reliable and relevant information on intangible assets implies there is no basis for non-financial reporting, which in turn implies that market values will change over time in a less well-founded way.” The continuous reporting of intangible values is going to be necessary, in the future, for measuring success to correlate with increased monetary value. [Bon, Kemmerling, Pondman, 2002]

Project justification was one of the main areas researched when investigating the measurement of intangibles. Many different techniques were discovered that IT professionals use to justify measuring intangible values. In order to quantify the benefits of intangible values, IT professionals must understand the total added value to a project. Being able to identify a true measurement and develop an acceptable metric has been the main problem with justifying intangible values.

Many IT professionals find it difficult to "sell" intangible values of IT projects to upper management. The main reason is that upper management needs to be able to compare various projects competing for capital dollars. Intangible values may be vague and not easily compared to other projects. Some IT professionals use a common technique that relates projects to the companies overall strategies or goals.

C. Measurement Techniques

There are many accounting measurements used for tangible values. "This points to an important difference between tangible and intangible resources-their imitability, or lack thereof." [Kline, Michalisin, Smith, 2000] Bharadwaj and Konsynski [1997] report most companies measure with traditional accounting measurements and upper management is very comfortable with those measurements. Value for an organization can come from many different areas. Bharadwaj and Konsynski [1997] continue, "There is growing evidence that IT investments are creating substantial intangible value for companies."

Most accounting measurements are not adaptable in measuring intangible values. Maglitta [1997] argues, "Traditional accounting measures too often are time-consuming, ineffective and unnecessary. He argues that alternative measurements such as "business value-added" and "intangible value" acknowledge the imprecise and often immeasurable benefit of IT. A Guide to the Project Management Body of Knowledge Third Edition [2004] reports, "Measuring intangibles is another old-economy problem which may be exacerbated by e-commerce and the digital economy."

Measurement techniques for intangible values are considered informal to most accounting metrics. Maglitta [1997] states "Intangible value is less a formal metric than

an evaluation of soft benefits such as attracting new staff, improving product quality and enhancing company reputation." Intangible values do not have a formal metric measuring system and values often goes unacknowledged. According to Johnson and Rubin [2001] "Convincing our clients that measurement is a key aspect of success has been an uphill battle." Skiold [1999] agrees "What is crucial is the ability of companies to survive intangibles such as knowledge and expertise."

Intangibles are also considered a type of asset that needs to have some type of measurement. A Guide to the Project Management Body of Knowledge Third Edition [2004] describes: "Other types of intangible capital that are frequently mentioned include intellectual, organizational, institutional, and reputational assets." All of these intangible assets are significant and should be considered as a measurement technique.

Benefits from intangible values needs to include project gain and defined tangible values. Kristensen and Westlund [2003] state:

> "The malfunction of risky capital markets partly depends on the lack of reliable information on intangibles. Thus, measurements of intangibles must be significantly improved. The information on intangibles needs to be based on the right measurements, it needs to be comparable and it needs to be verifiable and understood by the users."

Measurement techniques were another important aspect of quantifying intangible values that displayed many inconsistencies. The articles had different measurement techniques and varied data with some techniques being immeasurable. For example,

labeling intangible values as “business added value” or as a “risk” eliminates consistency and cohesion for the entire project. These techniques are not working and the industry wants more information, for a framework, outlining a description to apply regulations and structure to this difficult subject. [Bon, Kemmerling, Pondman, 2002]

D. Post Implementation Review

Post implementation review was another area explored during the research. Post implementation of a project involves the analysis of comparing actual vs. monetary projections. Reviewing benefits of a project after completion allows for intangible benefits to be discovered or prove their value to the project.

It is important to have guidelines for follow-up implementation and provide a strategic assessment (on the quantitative method used for measurement) of intangible values. However, these measurement techniques need to be defined in advance. Future projects will have a probability of greater approval if track records are established to show a history of documentation. Only when greater emphasis is put on previous standards, will an organization learn from experience and implement continuous improvement of identifying and measuring intangibles. [Bon, Kemmerling, and Pondman, 2002] According to Kristensen and Westlund [2003], “The recommendations so far from researchers seem to be voluntary disclosure information on intangibles. Some companies now report externally on various aspects of intangible assets, but this happens in a very non-standardized way and seems to be of limited value for investors’ decisions.”

Post project review was the last area of quantifying intangibles from the current literature researched. After a project's approval and implementation, inadequate post evaluation existed for a projects success or failure based on intangibles. Although, most literature reported if IT had confidence to include intangible values they would more than likely reap the benefits.

Since there is little documentation about the pros and cons of intangible values for an IT project, the learning curve is greatly affected. [Kristensen, Westlund, 2003] By regulating better documentation on post implementation of projects with intangible values, it would justify other projects future approval based on their predecessors. Standardized implementation strategies persuade upper management and investors that intangible values compete with tangible values.

E. Summary

One of the main obstacles proved to be the difficulty of measuring intangibles. Literature review was completed on the definition of intangible value, project justification, measurement technique, and post implementation review. The project approval process is challenging for most IT professionals. However, the IT industry has a desire for more documentation and research of measuring intangibles.

V. Survey Development and Refinement

One of the goals, of the project, is to incorporate industry IT professionals' best practices to correlate with literature. A survey was developed for open-ended questions to learn more about the Wilmington, NC community practices.

A. Develop Interview Questions

Developing the interview questions involved a multiple step process. First, the pilot test included a set of 15 questions based on the literature review of common project management issues related to project justification. The research areas used to help develop interview questions were: justification, measurement techniques, and implementation.

Each area of research, such as project proposals and project justification was reviewed in order to develop the correct questions for interviews. For example, a question was developed regarding post measurement of intangibles due to some organizations not measuring results after project completion. This was an important question because measuring a project after completion could help justify intangible benefits for future projects. One interview question was "Are you required to go back and measure after the project has been implemented?" Another example, based on the literature research was: "How do IT professionals develop ways to persuade top managers to commit dollars to a project that mainly has intangible values?" By measuring a project once completed, IT professionals will be able to determine how successful the intangible value related to the overall project.

It was very important for questions to be generic and open-ended so every IT professional interviewed could answer without bias since affiliation was unknown. Early on, some questions such as "what do you enjoy about your job?" were designed to be an icebreaker. After a few questions about their career and company, a brief description was introduced about the project. The remainder of questions was about measuring intangibles and their potential benefits. See Appendix A for the interview questions.

B. Pilot Test

In March 2007, pilot testing of the interview questions occurred. The main purpose of the pilot test interview was to refine the interview questions and to improve my interviewing skills. Following the interview, an Information Technology professional e-mailed me with advice to add a description about the scope of my capstone project in the interview. Another idea was made to include detailed information about the capstone project in the e-mail sent to potential Information Technology professionals for interviews.

Overall, the test pilot process was a successful learning curve experience that gave me confidence to help improve my post interviews. Before the pilot test, I was very anxious about properly conducting the interview process. My interpersonal skills and confidence from conducting these interviews will help my performance for interviews in the job market.

C. Survey Review

After pilot test question revisions had been completed, additional questions were added to the original inquiry. The revision and correction process lasted for about two weeks.

During the actual interview process, several questions needed to be customized because some companies were nonprofit or the IT professional was retired. For retired professionals, questions were tailored to interview about past projects and problems.

The interview questions were designed to be open-ended and challenging more in depth concepts. Many times during an interview, I had to alter questions based on the

company. Also, creating interview questions to be open-ended made it easy for questions to be versatile, but still provided a common basis of data to analyze.

D. Summary

The process of developing a pilot test and revising the questions was vital. If questions did not reveal pertinent information and data that relates, the interview process would have been a waste. Questions presented during the interview resulted in first hand knowledge about the participant's processes.

VI. Interviews

Interviews for the project taught me management skills while facilitating, scheduling and interviewing IT professionals in the Wilmington, NC area. Scheduling of the interviews occurred two weeks before the interview was conducted.

A. Background

The interview process was conducted over a three-month span between May and July 2007. The initial list of IT professionals came from members of the Information System/Operation Management and Computer Science advisory board. Potential IT professionals were contacted by e-mail coordinating the content of the interview. Each week, three to five e-mails were sent requesting an interview for site visits. A copy of the interview e-mail may be found in Appendix B.

A total of thirty-one IT professionals were contacted and twenty-one agreed to be interviewed. I indicated to participants that all answers would not identify them or their organization. Participates were given the consent to participate in the research study

which details the confidentiality of their answers. See Appendix C. Five additional professionals responded, but did not have the time or availability to participate in the research study. The other five individuals did not respond to the interview.

During a busy week, two interviews were scheduled on the same day. Most of the interviews were in the mornings from Monday through Thursday. Few interviews were rescheduled due to a last minute cancellation. For example, an IT professional had an emergency and was rescheduled the next week.

B. IT Professionals That Participated

As previously noted, the IT professionals that participated in this research study were from Wilmington, North Carolina region. Most professionals interviewed were in management positions such as a CIO or an IT manager. Figure 3 below details job titles of IT professionals that participated in the interviews. Figure 4 lists the type of organizations for these IT professionals.

JOB TITLE	PARTICIPATED
CIO	4
IT Consulting	4
IT Director	2
IT Manager	2
Retired	2
Systems and Operations Manager	2
Desktop Service Manager	1
Director Client Services	1
Founder	1
General Manager	1
Lead IT Analyst	1
Total	21

Figure 3. Job Titles of Interview Participates

TYPE OF ORGANIZATION	PARTICIPATED
Corporation	9
Government	3
Retired	3
Education	2
LLC 3	2
Nonprofits	2
Total	21

Figure 4. Type of Organizations

C. Conducted

Many of the interviews were conducted at the IT professional's personal office. However, some were completed at UNCW or a coffee shop. Nineteen questions were asked during the interview with open-ended questions. The interview questions can be referenced in Appendix A. Some questions had to be altered due to nonprofit companies or retired participants.

Before the interview, each participant was provided with two copies of Consent to Participate in a Research Study. One copy was signed and returned to the interviewer and the participant was allowed to keep a copy. A reference of the Consent to Participate in a Research Study can be found in Appendix C. The Consent to Participate in a Research Study was followed by the University of North Carolina Wilmington Institutional Review Board (IRB) Human Subjects Protocol Form.

Participates signed an agreement, to have the conversation recorded, as shown in Appendix C. A digital recorder taped the conversation and handwritten notes were taken.

The interviews typically lasted thirty to forty-five minutes long. However, a few interviews lasted over an hour. A written summary of each interview conducted can be found in Appendix E.

Overall, the total time with preparation, commuting, and the actual interview took about two to three hours each. Each interview environment was different and the experience of speaking with someone in their own environment made them more comfortable.

It was complicated to locate many of the offices in Wilmington, NC, even with directions. For example, one office relocated and had their old address on the website so I arrived at the wrong office. I called the IT professional and the phone was busy for an hour. To prevent this misunderstanding again, I began to ask for detailed directions to every interview and never to assume anything.

D. Summary

The interview process was an overall success and rewarding experience. Discussing the troubles and difficulties with measuring intangible was interesting to the participant and me. IT professionals were eager to learn more about this project related to intangible values. They were intrigued to learn how to improve the justification and quantitative process. Since little has been researched in this area, most IT professionals asked for a copy of this project recommendation to give them insight on justifying intangible values. A copy will be e-mailed to them after completion of the project along with a condensed worksheet.

VII. Challenges Related to Measuring Intangibles

As a result of conducting interviews in the Wilmington, NC, IT community several common problems emerged while trying to measure intangible values. Based on the literature reviews, the Wilmington IT professionals had similar issues. They were identifying intangibles, developing measuring standards, and incorporating intangibles

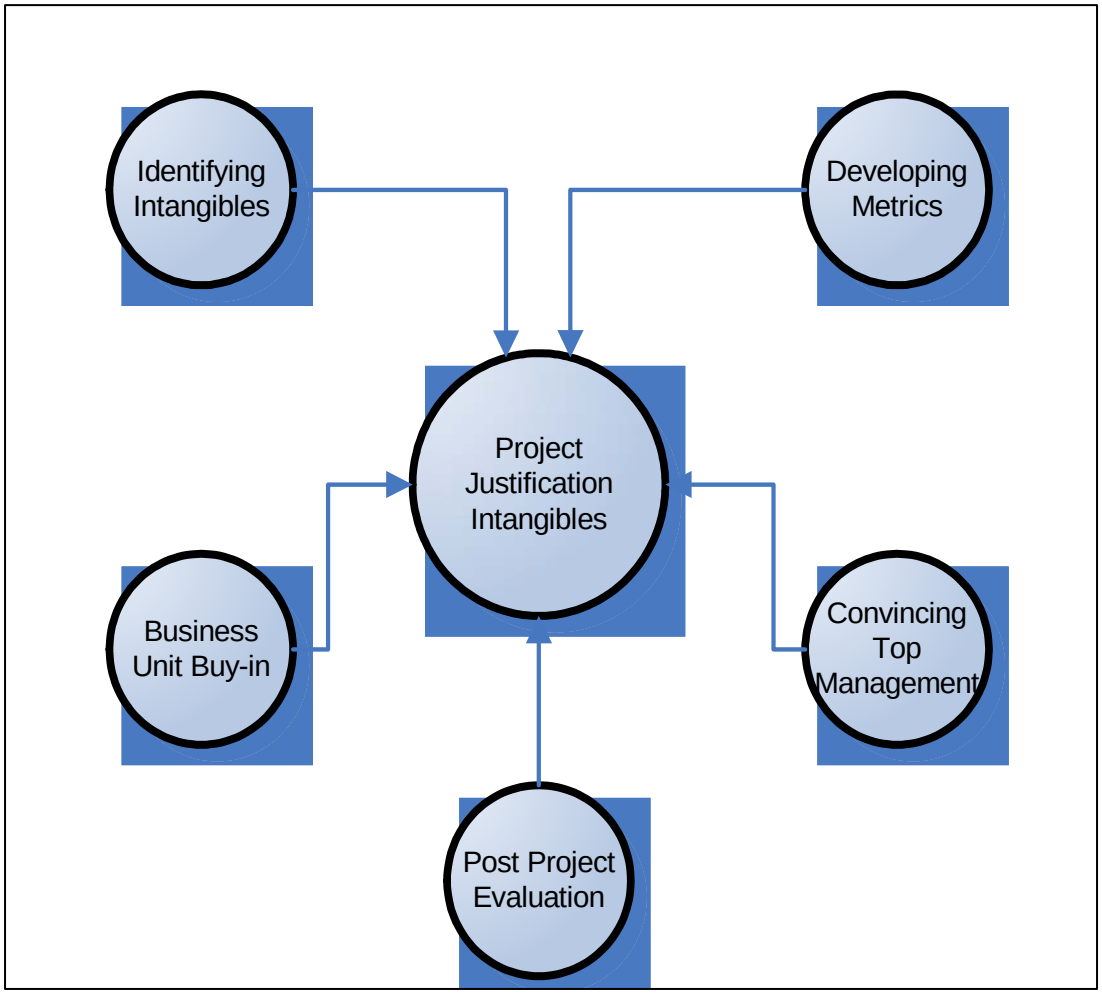

Figure 5. Key Problems Identified in Wilmington, NC

into ROI, business unit buy-in, and post project evaluation. Most professionals that I interviewed really struggled to gain upper level and business unit management

acceptance of intangible values in IT project proposal. See Figure 5 for a diagram of key problems.

A. Identifying Intangibles

The concept of identifying and the problem of quantifying intangibles are difficult for many IT professionals. Intangible benefits are harder to identify than a tangible benefit because of the obvious monetary advantages. Several CIO's reported that identifying intangibles are difficult for their employees since it is perplexing to define intangible benefits and thus becomes a struggle. Possible solution may include more training to help alleviate the insecurities of working with intangible values.

B. Developing Metrics and Justification

Developing metrics standards for projects is a complaint relayed by many interviewees. Quantifying intangible values for project justification is difficult because there is no hard dollar amount to justify the project, only potential profits. Most IT professionals reported in the interviews that their employees do find it difficult to measure intangibles. One IT professional interviewed said, "It is only natural for a benefit that does not have dollar value associated, to be hard to measure because we associate everything with money."

Measuring potential benefits for an IT project is easier if there are some tangible benefits. However, many projects have intangible values and measuring the benefits becomes difficult. The professional reported that, "due to this difficulty many IT managers avoid including intangible benefits." To help overcome this challenge in

measuring deficient guidelines, more industry standards and training needs to be developed for IT professionals.

Justifying intangible benefits is a key problem that many IT professionals expressed to me while conducting my interviews. The ability to justify a benefit that does not return any monetary gain is laborious. Several professionals have tried different methods to justify needs such as, "what will happen if the project is not approved." A CIO believes that, "imaging a future for the company and visualization helps sell intangible values to upper management."

Justification can also be accomplished by using models from other companies. If a similar project was successful, the "halo effect" of success might help convince management of the potential project prosperity. Justifying a project requires confidence and belief by the person sponsoring the project. According to one IT professional, "projects are challenging and approved on faith, credibility, and a person's track record."

C. Buy-In of Business Unit Manager

Business unit manager buy-in is key in any part of business and coordinates with upper level management and the CEO. The manager should own the process of selecting projects with vision, technical abilities, and initiative to build a business. Responsibilities include: revenue, profit margins, strategies, product and technology planning and staffing. The buy-in plan describes all activities utilized for project success. How business unit managers relate to intangible values:

Being able to communicate possible intangible benefits and values that tie the company's strategic goals is important. A Wilmington IT interviewee CIO reported,

"Communication is the key part of a project success." If project benefits are proclaimed effectively, the project has a good chance of acceptance.

The business unit manager plans efficiently and discovers all intangible benefits. Yearly plans such as: annual (budget), long-term, and quarterly (scheduled changes) provide a level of increased detail to substantiate intangibles. When presenting information about intangible benefits, business unit managers should clarify project details to ensure clearly written and defined goals and objectives. The information on intangibles needs to be based on correct measurements and have validity.

D. Post Project Evaluation

Post project evaluation is an area that IT professionals in Wilmington are challenged by persistence of follow-up. Many companies were understaffed and over committed to projects and therefore, few organizations did post project evaluations. Only seven companies of the twenty-one interviewed re-examined benefits, success, and failure of a project after completion. A retired IT professional stated, "Measuring after a project is completed is part of good project management."

All companies indicated the need to evaluate a project at intervals and especially after completion. This review helps to identify problems, trends, changes, and consequences of failure or success. Past project information can help IT professionals justify project benefits for a similar project in the future. Several IT professionals stated, "We are currently trying to establish re-examining guidelines for completed projects." Documentation of a completed project will not only help justify intangible benefits for future projects, but will help improve project success rates.

E. Convincing Top Management

Convincing top management that a project with intangible values is necessary becomes a struggle for many IT professionals. The challenge with convincing top management involves bottom line profit or loss. Therefore, it is the project leader's job to develop and plan a convincing presentation to: work towards the same corporate objectives, agree on common interest about measures to be taken, and prevent failure to meet profit expectations. [Bon, Kemmerling, Pondman, 2002] During this process, any potential pitfalls can be explored and tactics developed to prevent future issues. A CIO reported, "Projects are first developed and presented by an IT employee and the presentation is a key element for the project to get approved by the board." Developing a strategy helps the project leader to consider every aspect of the project. While presenting the project to top management, a number of critical success factors and key performance indicators have to be identified to optimize the process for extensive consideration. [Bon, Kemmerling, Pondman, 2002]

F. Summary

Identifying intangibles, developing metrics, justifying intangibles, business unit buy-in, post project evaluation, and convincing top management were the main problems that were identified during the interviews. Many IT professionals have not been able to develop a set of standard practices that work well for each of these challenges.

XIII. Guidelines for Project Justification

The next two sections will provide a set of guidelines for the development and approval of IT projects. Many project managers follow Project Portfolio Process (PPP)

to guide them though a typical project progress. As recommend by [Mantel and Meredith, 2006] this process involves a total of eight steps that can help a project reach goals and success to include:

Steps of project portfolio process include:

- Establish a project council
- Identify project categories and criteria
- Collect project data
- Assess resource availability
- Reduce the project and criteria set
- Prioritize the projects within categories
- Select projects to be funded and held in reserve
- Implement the process

A. Establish a Project Council

Establishing a project council is the first step of PPP to ensure the direction of the project. Mantel and Meredith [2006] mention that it is very important senior managers are involved in this council to meet goals. Burd, Jackson, and Stazinger [2005] agree that upper management is very important for project support. Projects often lead to a number of changes. An interviewed IT manager said, "Keeping staff motivated is very important." Project managers should coordinate effectively with management through the relevant process. Anyone can submit proposals to improve services, but specifically, personnel must contribute procedure and budgets to associate intangibles. [Bon, Kemmerling, Pondman, 2002]

B. Identify Project Categories and Criteria

Identifying project categories and criteria helps to achieve agreed objectives within a specific timeframe using assigned resources. Categories are identified by contributions to the project and are known for overlapping different organizations. Mantel and Meredith [2006] and Stazinger [2005] believe that clear system requirement definitions are essential to a successful project.

Project category and criteria examples according to Curley [2005] are:

- Maintenance of current system
- Reduce cost
- Increase revenue
- IT customer pull
- Firm strategic fit/ impact
- New or enhanced capability
- Impact on firms business risk
- Level of innovative and learning for IT customers
- Impact on key business variables
- Impact on firms revenue
- End customer satisfaction and VOC
- Size and level of customer impact
- Use of firm's own products
- Confidence of success
- Other intangible benefits

C. Collect Project Data

Collecting project data is important at the beginning of a project and vital throughout the project process. Data reports from similar projects in the past can be used

to: monitor progress, implement changes, resolve resolutions, and estimate cost. [Bon, Kemmerling, Pondman, 2002] Project applications and requirements need to be determined. [Curley, 2005] It is necessary to continue collecting project data because projects continue and change during the project life cycle. [Mantel and Meredith, 2006]

D. Assess Resource Availability

Resource availability of employees is important to the project success, especially because of commitment and loyalty to the project. Outsourcing consultants should be considered if there is not enough internal staff for the project. The project manager needs to consider timelines such as: vacations, holidays, and illness. [Mantel and Meredith, 2006] For example, when a project last for one year, the project manager needs to access other projects and determine if there are enough employees. The resource availability is a critical part of the IT project approval process.

E. Reduce the Project and Set Criteria

Reducing the project criteria involves evaluating similar projects against each other. Criteria used for reducing projects include market potential, risky project, resources, and a good fit within the organization. If similar projects have been risky, then the company might decide to reject the project. Some projects are rejected because the organization currently does not have enough resources to undertake the project. [Mantel and Meredith, 2006]

According to Curley [2005] there are examples of assessment criteria:

- Internal IT customer demand
- IT strategic fit and impact
- Level of innovation and learning for IT

- Unit cost reduction
- Time to market
- IT employee satisfactions impact
- Confidence of success
- Size and level of impact to IT
- Impact to IT employee productivity

F. Prioritize the Projects within Categories

In each project category a ranking system should be used to evaluate the current projects. Stazinger [2005] states that project feasibility should be considered before a project is approved. Project risks are evaluated in a separate section of the project. [Mantel and Meredith, 2006]

Curley [2005] gives examples of how some IT companies prioritize project based financials:

- Net Present Value (NPV)
- Payback period
- Level of investment
- Option Value
- Cost/Benefit ratio
- Return on Investment (ROI)
- Internal Rate of Return (IRR)

G. Select Projects to be Funded and Held in Reserve

Selecting projects to be funded and held in reserved for later use is based on resources and time periods. Before some projects begin, they are already labeled as: dead-end, delayed, or impossible to achieve targeted results due to incorrect analysis. These promises are unachievable by consultants because of project constraints or unfilled

promises made in order to obtain the contract. Top management and project managers are responsible for allocating the correct number of employees and funds for each IT project. Resources are carefully allocated to each new and existing project to ensure that every project can be successful. [Mantel and Meredith, 2006]

H. Implement the Process

The implementation of projects occurs when project evaluations and decisions are shared with the organization. Everyone, especially top management should commit to the Project Portfolio Process (PPP). Implementation of the process happens when planning has been formulated and contributes to a flexible protocol. Projects can now be approved by the organization and the project can begin. [Bon, Kemmerling, Pondman, 2002] Having a confident team that can implement the process is critical to overall success of the project. [Mantel and Meredith, 2006]

I. Summary

Eight steps of Project Portfolio Process (PPP) help IT professionals keep control of the progress of projects. Every project is unique and the PPP steps should be adaptable and changeable to coincide with unforeseen variables in the project. These steps are only guidelines and are not to be used verbatim. PPP helps to keep project requirements and criteria of the project focused.

IX. Recommendations/ Best Practices for Including Intangible Values

From both the literary research and interviews with the Wilmington IT interviewee's, a list of recommendations and best practices evolved for the inclusion of intangible items in this project. These recommendations are a summary and guidelines

that can be altered depending on the project. By following these recommendations, IT professionals may be able to evaluate intangibles and gain project approval. Shown in Figure 6 are the recommendations made to the IT community.

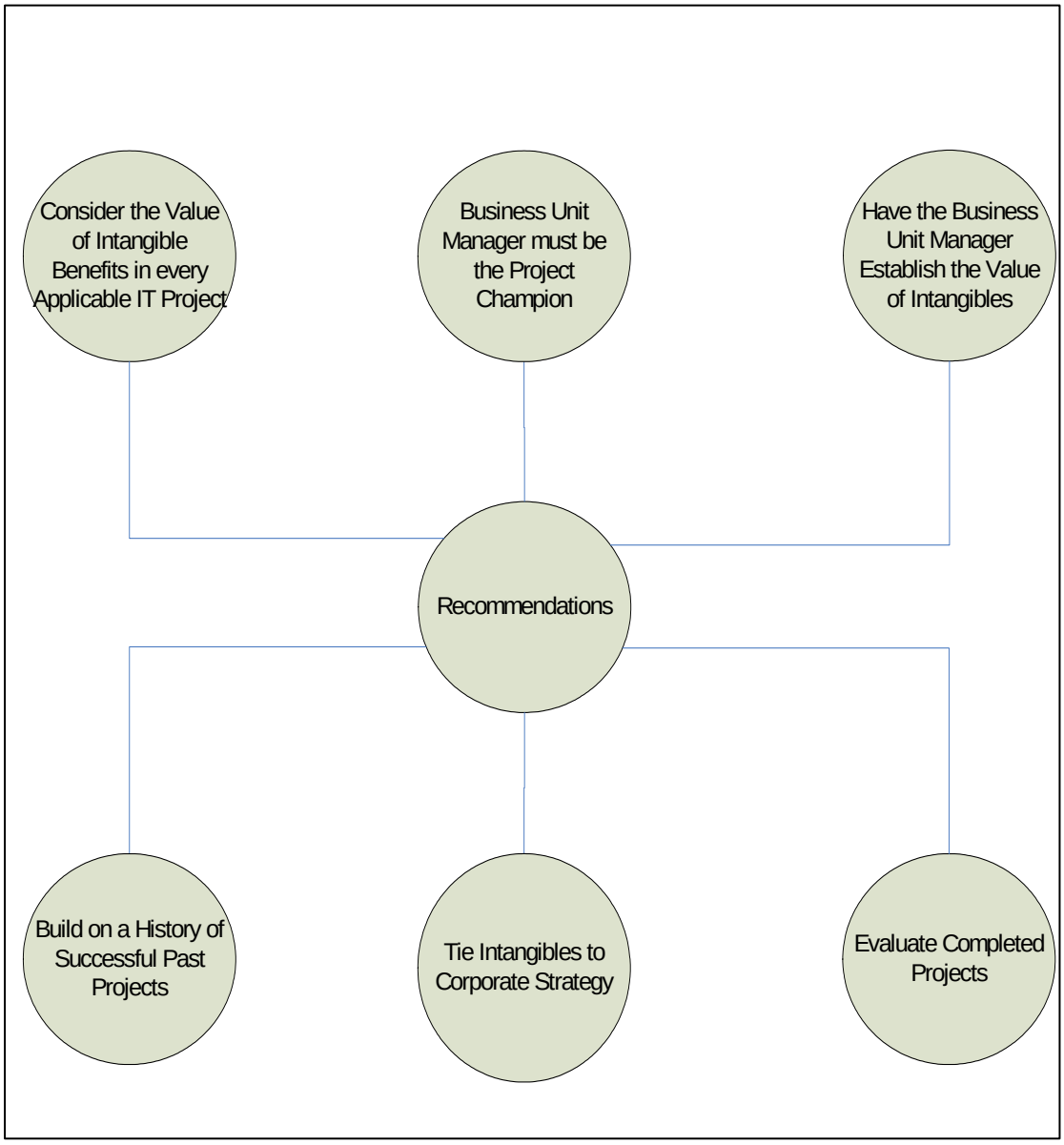

Figure 6. Recommendations made to the IT community.

In summary:

- Consider the value of intangible benefits in every applicable IT project
- Business unit manager must be the project champion

- Have the business unit manager establish the value of intangibles
- Build on a history of successful past projects
- Tie intangibles to corporate strategy
- Evaluate completed projects

A. Consider the Value of Intangible Benefits in Applicable IT Projects

Many IT interviewees's reported during the interview, "We only evaluate the tangible benefits of a project". Fifty-percent of the interviewed IT professionals reported that they do not measure intangibles because it is difficult to measure and justify. Important intangible benefits and the true assessment, of potential benefits, for a project are lost. Tangible benefits are definitely not more important than intangible benefits because they are easier to measure. According to Curley [2005] "Even when there is no reduction in cost, significant benefits can be realized in projects that enhance customer loyalty, open up new business opportunities, or increased productivity." By including intangible benefits in every project, IT professionals will have a better understanding of the true value of the project.

B. Business Unit Manager must be the Project Champion

Every project needs to have a project champion, especially projects that have intangible values. Having one person that truly supports a project and convince others to get on board is essential. During interviews, some interviewee's reported that project approval is based on great justification. Project champions can promote the projects intangible benefits to individuals and presentations. The business unit manager needs to

help build measurements for the IT project. Getting everyone on board and excited is key to helping a project that mainly has intangible values approved.

C. Have the Business Unit Manager Establish the Value of Intangibles

Business unit manager buy-in is key in any part of business, but sometimes is forgotten as a main component of project justification. The business unit manager should own the process of selecting projects that have intangible and tangible benefits. Being able to communicate the possible intangible benefits is important. The business unit manager should communicate intangible benefits tied to the company's strategy and goals. A Wilmington IT interviewee CIO reported, "Communication is the key part of a project success." The business unit manager needs to communicate the intangible benefits and values that tie to the company's strategic goals. If project benefits are communicated effectively, the project will be understood and it has a good chance of being approved.

The business unit manager must be able to ensure that the business needs are going to be met by planning efficiently and discovering all intangible benefits. "The information on intangibles needs to be based on the right measurements, it needs to be comparable and it needs to be verifiable and understood by the users." [Kristensen and Westlund, 2003] By having the right measurements clearly defined at the beginning of the project makes the intangible values expected. If professionals do not understand a projects true value, outcome benefits will become vague. When presenting information about intangible benefits, business unit managers should clarify project details to ensure clearly written and defined goals and objectives.

D. Build on a History of Successful Past Projects

Keeping good creditability from past successful projects ensures more respect for future projects. "This past track record has prevented surprises, unrushed purchases by making better use of available resources, increase capacity, or control of resources." [Bon, Kemmerling, Pondman, 2002] Past reference could even determine project approval based on beliefs or opinions. One project manager in Wilmington stated, "Some of the projects are approved on faith, reputation, and track record." If a project manager has been successful on past questionable projects, then upper management might be more willing to accept intangible values as justification for project approval.

A project with intangible values that needs approval should reference parallel projects. By having documented projects that have been successful proves intangible values are important. According to Kristensen and Westlund [2003] "Some companies now report externally on various aspects of intangible assets, but this happens in a very non-standardized way and seems to be of limited value for investors' decisions."

E. Tie Intangibles to Corporate Strategy

Trying to convince upper management to approve a project that has intangible values involves creative thinking. Tie the intangible to corporate strategies and intangible benefits may be seen as highly important. Keep expanding project ideas and become more diverse, despite generalizations and assumptions surrounding negativity of the project. The possibilities are endless with new ideas and ways to show the importance of intangible values. For example, Figure 7 details how intangibles strategically impact a project and can be quantified.

Strategic Impacts	Measurement	Quantifiable Impact
EXTENT OF IT INTEGRATION – ALL CORPORATION DIVISIONS	*Increase level of communications between departments, especially meeting times.*	Cost per manager per meeting hour. Better decision support system provides historical data and outside database.
DECISION MAKING	*Change in meeting anticipated ROI.*	Measure actual ROI vs. projected. System provides 2% reduction in the gap, providing management a better means to evaluate projects.
INSTALLATION OF NETWORK	Change in data access.	Measure screen retrieval time before/after new network.
INSTALLATION OF AUTOMATIC TRACKING – KEY COMPETITOR PRICES	Respond to changes in competitor's price changes quicker.	Every minute of price difference between prices and a competitor costs.
INSTALL ERP SYSTEM	*Reduce steps in all phases of the operation.*	Select departments or processes and measure time difference before and after.

Figure 7. Intangibles Strategically Impact
[Bysinger, Knight, 1996; Wilmington IT community]

Chircu, Kauffman, and Keskey [2001] state that various approaches are needed to assess the "true" value of an investment. An interviewee, a CIO in Wilmington also reported that telling "imaginative stories" help people visualize the potential of a project.

Vision is the art of seeing things invisible. Communicating in different ways help professionals respond better to new ideas. Figure 8 provides examples of how initial intangibles can be connected to a tangible benefit.

Operation IT Impacts	Measurement	Quantifiable Impact
SALES PER EMPLOYEE	*Change in # of 'closes' per day, per salesperson.*	New system increased... closes from 13 to 15. Average sale is $100 = $200/per salesperson per day increase.
WAIT TIMES CUSTOMER SERVICED	*Before and after wait times per average customer.*	System time reduced 5 to 3 minutes… 20% less dropped calls. Increased sales as each completed call results in $50 revenue. Pay for the 800 number.
SATISFIED CUSTOMERS	*Change in # of customer complaints per 1000 orders.*	Each complaint takes 12 minutes of customer service at $15/hour… measure reduction. Satisfied customer rates less than 75% will not repurchase. Increase 5% customer service satisfaction.
PROBLEMS RESOLVED	*Measure # of customer complaints resolved before/after.* *Help Desk Tickets.*	Increase problem resolution by 25%, happy customers… reorder $100/year. Historically customers whose problems are not solved are lost. If 10 customer problems are resolved per year. $5000/month for help desk employee… add 2 help desk tickets per hour.

ORDERS PROCESSED	*Increase in orders/out the door per day.* *Orders processed within 24 hours.*	Measure impact on cash flow by more orders per day… resulting in quicker receivables. 20% not processed within 24 hours are cancelled… reduce cancellations.
RETURNING CUSTOMERS	*Measure repeat purchases per year by customer.*	System maintains better customer corresponding… 3% annual increase. Repeat customer spends 33% more on average then a 1st time customer.
RETURNING CUSTOMERS	*Retention Ratio.*	Renewals represent 50% decrease in processing… customer data in computer file.
WEBSITE CONVERSIONS	*Change in customer information requested.*	10% of requests turn into a customer… each customer yields $1200 per year.
HITS WEBSITE E-MAIL NEWSLETTERS	*Increase in email addresses submitted to received newsletter.*	1000 hits = 100 emails that result in 5 sales… $100 per person.
HIGH QUALITY PIECES PRODUCED	*Change in # of defects per million.*	Productivity increase 96% to 97%, % is worth 10,000 per 1 million… defective product with a warranty costs $100.00, decrease from 10 to 5%.

Figure 8. Quantify Intangible Benefits
[Devaraj, Kohli, 1996; Wilmington IT community]

Tying intangible benefits to a tangible benefit will help make a hard case for explaining the benefits to upper management. For example, if a new phone system helps decrease the waiting time, tie it to some form of tangible. An example of decrease phone waiting time can be referenced in Figure 8. The decrease in wait time is the intangible

benefit and the employee can help more customers in an eight-hour workday. If an employee regularly helps 50 customers a day, then wait time for the customers is decreased by one minute. That gives the employee fifty more minutes a day to help other customers. Bharadwaj and Konsynski [1997] believe "There is growing evidence that IT investments are creating substantial intangible value for companies." The IT professionals interviewed include a Project Manager, Director of IT, Product Manager, and IT Manager reported they tied intangible benefits to tangible benefits in the past. An understanding of the business process while continuously aiming to maximize ideas and customer satisfaction make an important contribution. [Bon, Kemmerling, Pondman, 2002]

F. Evaluate Completed Projects

Evaluating completed projects establishes documentation about a project that has intangible values. Kristensen and Westlund [2003] argue "Lack of reliable and relevant information on intangible assets implies there is no basis for non-financial reporting, which in turn implies that market values will change over time in a less well-founded way." Ten IT interviewee's from Wilmington, NC, reported, "We measure the benefits after a project is completed." A retired IT professional stated that "Yes, measuring after a project has been completed is part of good project management." Make it mandatory that every project is evaluated upon completion for future improvements.

X. Executive Summary

The problem of identifying and quantify intangible benefits was emphasized not only in the literature but also in the interviews of IT professionals in South East North

Carolina. The worksheet in Appendix D is designed for IT professionals to help manage the difficulties with measuring and justifying intangible values.

The following are the key recommendations to increase the likelihood of justifying projects where significant value is from intangibles. This summarizes the literature related to project management, best practices, and recommendations for IT professionals.

A. Challenges Related to Measuring Intangibles

- Identifying Intangibles
- Developing Metrics and Justification
- Buy-In of Business Unit Manager
- Post Project Evaluation
- Convincing Top Management

B. Guidelines for Project Justification

Steps of project portfolio process include:

- Establish a project council
- Identify project categories and criteria
- Collect project data
- Assess resource availability
- Reduce the project and criteria set
- Prioritize the projects within categories
- Select projects to be funded and held in reserve
- Implement the process

C. Recommendations

- Consider the value of intangible benefits in every applicable IT project

- Business unit manager must be the project champion
- Have the business unit manager establish the value of intangibles
- Build on a history of successful past projects
- Tie intangibles to corporate strategy
- Evaluate completed projects

XI. MS Computer Science Information System Courses

Many of the courses in the CSIS program provided background for my capstone project experience. These included: Software Engineering, Systems Analysis, Management Information Analysis (MBA 513), Independent Study, Project Management, and Entrepreneurship courses have been the foundation of knowledge to be able to understand the interviewee's IT infrastructure.

One of my first courses in the program was Software Engineering in the fall of 2005. This course exposed me in-depth to technical literature and hard to understand articles. A majority of this course was designed to broaden project skills outside of the academic textbooks.

Systems Analysis course was taken in the spring of 2006. This course taught more in-depth components about project life cycle. The class was divided into two groups that had project organizations. My group was assigned to the UNCW Center for Marine Science. This project involved conducting interviews with scientist at the Marine Science Center. We had deliverables that were due on certain time frames. My group project did the entire analysis part of the project. The UNCW Center for Marine Science liked our proposal so much that they hired someone to complete the project.

The focus of my capstone project began in the summer of 2006, in the MIS /MBA 513 class. This course focused on justification and quantification of IT projects for IT and business unit managers. Moreover, my knowledge of project analysis was broadened by this course. This research started as a literature review assignment in the summer of 2006, for an extra assignment in the MIS 513 class.

In the fall of 2006, my capstone project was still in the early stages of narrowing focus. This project crystallized during the fall semester 2006, as part of an independent study (MIS 591) class. My topic originally began as a detailed understanding of the IT Project Management process with a minor portion dedicated to intangible results. I soon realized that my original capstone project would not significantly challenge me.

Also in the fall of 2006, I enrolled in a project management course (MIS 592). The Project Management course helped me to understand the daily tasks of a project manager and the difficulties they encounter. This class broadened my knowledge and challenges of project management as I completed a research paper on Project Scope Management.

I took an Entrepreneurship course in the spring of 2007. This course was designed to help students explore entrepreneurial ideas and thoughts. For an extra assignment, I had to conduct an interview and write a paper based on the company interviewed. This was my first experience interviewing a professional and it helped me to gain confidence later in my interviews for the capstone project.

Overall, the MS-CSIS program helped me to gain the knowledge for my capstone experience. Every class was important and furthered my knowledge in different areas of

Information Technology. My education at UNCW has given me the knowledge for a luminous and prominent future.

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Appendix A.

Interview Questions

1. Please give a brief synopsis of your career to date?
2. Tell me some about what you enjoy about your job.
3. How long have you been at _____?
4. What are some your current projects that you are working on?
5. Were you involved in process for getting projects approved for funding and could you describe some examples?
6. Describe the levels of approval necessary to approve projects.
7. What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?
8. How do you justify project benefits and revenue?

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. Currently how does your organization measure these intangibles?
10. How does your organization evaluate intangibles for project approval?
11. Do your employees at your organization find it challenging to evaluate intangible values?
12. Give me some examples of some of your intangibles.
13. What methods have you used in the past to prove these intangible values?
14. What would you do differently?
15. Are you required to go back and measure after the project is done?
16. Have you ever had a project approved that only had intangible values?

17. Do you go back and measure after the project is done?
18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.
19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Appendix B.

Introduction E-mail

Hello _____,

My name is Alisha Oliver and I am a graduate student at UNCW. I am in the MS Computer Science Information Systems program. I am working on my capstone project for the program.

My project involves how IT projects are justified and increasing the guidelines for measuring the intangible values. Dr. Janicki, chair of my committee has recommended you as a potential source of the information. Would it be possible to interview you for thirty to possibly forty-five minutes? Please be aware that no data gathered during the interview will be reported by company or by individual. It will be a summary of key findings. I would be happy to share the results with you once completed.

I am available the mornings of _____ please let me know which time and day works best for you. Thank you for your consideration.

Sincerely,

Alisha Oliver

Appendix C.

Consent to Participate in Research Study

Increasing the Guidelines for the Measurement of Intangibles as a Component of the IT Project Approval Process

What Is The Research About?

You are being invited to take part in a research study about **Increasing the Guidelines for the Measurement of Intangibles as a Component of the IT Project Approval Process**. If you take part in this study, you will be one of about 25 people to do so.

Who Is Doing The Study?

The person in charge of this study is Dr. Janicki of the University of North Carolina at Wilmington. UNCW student, Alisha Oliver, will be gathering and analyzing the information for the study.

Do Any Of The Researchers Stand To Gain Financially Or Personally From This Research?

None of the researchers stand to gain financially or personally from this research.

What Is The Purpose Of This Study?

By doing this study we hope to increase the guidelines for the measurement of intangibles.

Where Is The Study Going To Take Place And How Long Will It Last?

For your convenience, the research procedures will be conducted at your office. Ms. Oliver's visit will take about 45 minutes, which is the total amount of time you will be asked to volunteer.

What Will I Be Asked To Do?

Ms. Oliver will ask you a series of questions which she will then discuss with your. If you agree, Ms. Oliver will audiotape your responses. The researchers are the only people who will have access to the taped information. The tape will be stored in a locked file cabinet in Dr. Janicki's office and will be destroyed upon completion of the study.

What Are The Possible Risks And Discomforts?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

Will I Benefit From Taking Part In This Study?

You will not get any personal benefit from taking part in this study.

Do I Have To Take Part In This Study?

If you decide to take part in the study, it should be because you really want to volunteer. There will be no penalty and you will not lose any benefits or rights you would normally have if you choose not to volunteer. You will not be treated differently by anyone if you choose not to participate in the study. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

What Will It Cost Me To Participate?

There are no costs associated with taking part in this study.

Will I Receive Any Payment Or Reward For Taking Part In This Study?

You will not receive any payment or reward for taking part in this study.

Who Will See The Information I Give?

Your information will be combined with information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about the combined information. You will not be identified in any published or presented materials.

Can My Taking Part In The Study End Early?

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. There will be no penalty and no loss of benefits or rights if you stop participating in the study. You will not be treated differently by anyone if you decide to stop participating in the study.

What If I Have Questions?

Before you decide whether or not to participate in the study, please ask any questions that come to mind now. Later, if you have questions about the study, you can contact the investigator, Dr. Janicki at 962-4077. If you have any questions about your rights as a research participant, contact Dr. Candace Gauthier, Chair of the UNCW Institutional Review Board, at 910-962-3558.

What Else Do I Need To Know?
I am required by federal law to provide you with a copy of this informed consent form.

You may request a copy of the project summary or final report.

Research Participant Statement and Signature

I understand that my participation in this research study is entirely voluntary. I may refuse to participate without penalty or loss of benefits. I may also stop participating at any time without penalty or loss of benefits. I have received a copy of this consent form to take home with me.

_____ _____

Signature of person consenting to take part in the study — Date

_____

Printed name of person consenting to take part in the study

_____ _____

Name of person providing information to the participant — Date

Permission to Audio Tape Discussion

I give Alisha Oliver permission to audio tape my responses to her questions and any discussion we have thereafter. I understand that Alisha Oliver is the only person who will have access to the tape, that it will be stored in a locked file cabinet, and that it will be destroyed upon completion of the study.

_____ _____

Signature of person consenting to be recorded Date

_____

Printed name of person consenting to be recorded

Appendix D.

Intangible Benefit Worksheet

CREATE PROJECT TITLE	Date completed:

- Create title relevant to the project.
- Communicate project benefits through the title.
- Collaborate with team members to proclaim acceptance.

DETERMINE PROJECT CHAMPION (s)	Date completed:

- Every project needs to have a project champion, especially projects that have intangible values.
- Having one person that truly supports a project and convince others to get on board is essential.
- Project champions can promote the projects intangible benefits to individuals and presentations.

ESTABLISH PROJECT COUNCIL	Date completed:

To ensure project goals are met identify the following:

- Establishing a project council is the first step of PPP.
- Projects often lead to a number of changes and project managers should coordinate effectively with management through the relevant process.
- Anyone can submit proposals to improve services, but specifically personnel must contribute procedure and budgets to associate intangibles. [Bon, Kemmerling, Pondman, 2002]

PROJECT CATEGORY & CRITERIA Date completed:

Identifying project categories and criteria helps to achieve agreed objectives within a specific timeframe using assigned resources such as:

- Maintenance of current system with reduced cost & increase revenue
- IT customer pull
- New or enhanced capability with a firm strategic fit/impact
- Impact on firms' business risk, revenue, & business variables
- Level of innovative and learning for IT customers
- End customer satisfaction and VOC
- Size and level of customer impact
- Use of firm's own products
- Confidence of success & other intangible benefits

  [Curley, 2005]

COLLECT PROJECT DATA Date completed:

- Collecting project data is important at the beginning of a project and vital throughout the project process.
- Data reports from similar past projects can be used to: monitor progress, implement changes, resolve resolutions, and estimate cost.
- It is necessary to continue collecting project data because projects continue and change during the project life cycle. [Mantel and Meredith, 2006]

CONSIDER VALUE of INTANGIBLES Date completed:

Important intangible benefits and true assessments of potential benefits for a project are lost if not measured.

- Tangible benefits are definitely not more important than intangible benefits because they are easier to measure.

- "Even when there is no reduction in cost, significant benefits can be realized in projects that enhance customer loyalty, open up new business opportunities, or increased productivity." [Curley, 2005]

- By including intangible benefits in every project, the true value of the project is better understood.

LIST PAST SUCCESSFUL PROJECTS Date completed:

- Keeping good creditability from past successful projects ensures more respect for future projects.

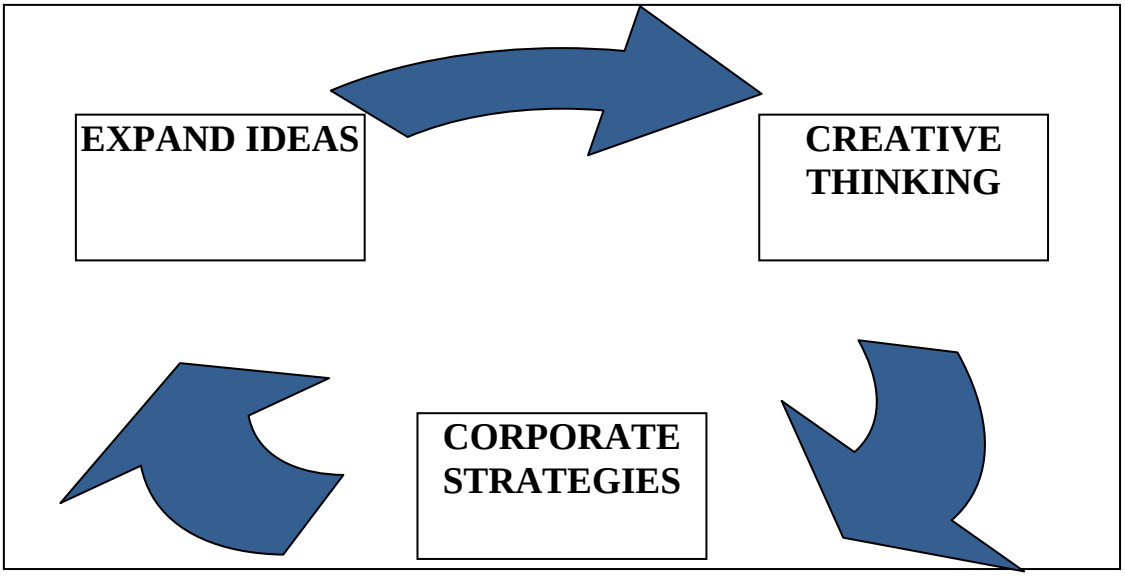
- "Track records prevent surprises, unrushed purchases by making better use of available resources, increase capacity, or increased control of resources." [Bon, Kemmerling, Pondman, 2002]

- Approval for intangible value projects should reference parallel projects.

BUY-IN of BUSINESS UNIT MANAGER Date completed:

The manager should own the process of selecting projects with vision, technical abilities, and initiative to build a business. Responsibilities include: revenue, profit margins, strategies, product and technology planning and staffing. How business unit managers relate to intangible values:

- Research technology, trends and customer needs.
- Work with sales and customers to predict forecast.
- Coordinate department to support resources.
- Involve customers on personal level.
- Track products and resolve problems to stay on schedule.
- Create ideas and strategies for competition.



Tie Intangibles to Corporate Strategy **Date completed:**

- Convince upper management to approve a project that has intangible values involves creative thinking.
- Tie intangibles to corporate strategies to reflect highly important values.
- Keep expanding project ideas and become more diverse, despite generalizations and assumptions surrounding negativity of the project.

Evaluate Completed Project **Date completed:**

- All companies need to evaluate a project at intervals and especially after completion to help identify problems, trends, changes, and consequences of failure or success.
- Past project information can help IT professionals justify project benefits for a similar project in the future.
- Documentation of a completed project will not only help justify intangible benefits for future projects, but will help improve project success rates.

Appendix E.

Interview Summaries

Interview A.

1. **Tell me some about what you enjoy about your job.**

   Coding, creativity, and problem solving.

2. **How long have you been at _____?**

   7 yrs?

3. **What are some your current projects that you are working on?**

   _____ to look at software development process to make recommendations.

4. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Had to make a presentation to _____ and contractual steps.

5. **Describe the levels of approval necessary to approve projects.**

6. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Time and hourly rate. Make sense to do the project and the type of work.

7. **How do you justify project benefits and revenue?**

   Income. How does it benefit my career and jobs that are on the cutting edge? Work with people that know what they want to do.

   Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

8. **Currently how does your organization measure these intangibles?**

   Development process is hard to calculate a ROI on that process. Productive environment to work in. Writing good, concise, and efficient code. Lowering the cost to own.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **How does your organization evaluate intangibles for project approval?**

   Proposal. Reasonable to do the project.

10. **Do your employees at your organization find it challenging to evaluate intangible values?**

11. Give me some examples of some of your intangibles.

Project that migrated a working product from ASP to ASP.NET. More of a scalable solution. Easier and faster to be able to bring on customers.

12. What methods have you used in the past to prove these intangible values?

Method of using Extreme programming and spike release and show efficiency to the project. Less abstract to the customer. Proving what you can do.

13. What would you do differently?

14. Are you required to go back and measure after the project done?

Yes, by phone call or e-mail.

15. Have you ever had a project approved that only had intangible values?

No.

16. Do you go back and measure after the project is done?

17. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

Batch process project that did run for 9 hours to run. Now the batch process runs in 5 minutes.

18. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Yes, helpful for ideas for people how better to communicate intangible benefits to the customer and how good you are selling that to the customer. Better communication.

Interview B.

1. **Please give a brief synopsis of your career to date?**

   _____

2. **Tell me some about what you enjoy about your job.**

   He enjoys working with projects for the company.

3. **How long have you been at _____?**

   15 years

4. **What are some your current projects that you are working on?**

   Peer group that discusses thing between the four _____. Working on software for _____. They have to meet software documentation. Upgrading the procedures for the process of the _____.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Project authorization forms are used to get projects approved for funding. Tell why the project will help the company.

6. **Describe the levels of approval necessary to approve projects.**

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Easy analysis is used to evaluate project approval. Corporate documents are used to evaluate project. Projects have to pay for itself in three years or less or mandated by management.

8. **How do you justify project benefits and revenue?**

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Intangibles generally get thrown out because they cannot be used in the three phase approval. You have to tie to a tangible value. Make the project a tangible benefit.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes, it is hard to find tangible values. Many things are driven by process improvement.

12. **Give me some examples of some of your intangibles.**

Engineering trending project allowed engineers to be able to see data immediately. Better equipment reliability.

13. **What methods have you used in the past to prove these intangible values?**

    Benchmarking tools to measure other plants so that you can compare. Perform self-assessment on projects.

14. **What would you do differently?**

15. **Are you required to go back and measure after the project is done?**

    A form is required after you finish a project. But the form is absolutely required.

16. **Have you ever had a project approved that only had intangible values?**

    If a project is approved with only intangible values it is normally approved or sponsored by top management.

17. **Do you go back and measure after the project is done?**

18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    Yes, would use informally as a benchmark. Feed into a process.

Interview C.

1. **Please give a brief synopsis of your career to date?**

   _____

2. **Tell me some about what you enjoy about your job.**

   Constantly changing. Managing people and technology keeping a balance.

3. **How long have you been at _____?**

   15 months

4. **What are some your current projects that you are working on?**

   Software deployment. CRN Application. Migrate voice over Internet protocol to a different vender. Mobile work force.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Enterprise level. Show an ROI or an improvement to Cash flow.

6. **Describe the levels of approval necessary to approve projects.**

   Depends on the level of capital expenses required for the project. Do an ROI and need to meet requirements.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

8. **How do you justify project benefits and revenue?**

   ROI and Cash flow. Or maybe a necessity.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   No set of guidelines. Being able to approve intangible value will be depends on being savvy. Trying to convince people to do the project. Would try to tie back to cash value. Customer satisfaction surveys.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes.

12. **Give me some examples of some of your intangibles.**

    Customer satisfaction or improvement in employee workflow. Employee perks in the building like wireless Internet.

13. **What methods have you used in the past to prove these intangible values?**

Tie back to a tangible value. Try to persuade and be politically savvy. Plant a seed about an idea and go back and revisit over time and convince people over time.

14. **What would you do differently?**
15. **Are you required to go back and measure after the project is done?**

    Yes, if you are good at measuring after it can help you later with projects that have intangibles.

16. **Have you ever had a project approved that only had intangible values?**

    Remolded the break room with video systems. Employee benefit.

17. **Do you go back and measure after the project is done?**
18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

    Call center voice technology and agent application because they are costly to deploy and are banking on improving the customer's experience.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    Yes, would use any tool to help. You choose a good topic.

Interview D.

1. **Please give a brief synopsis of your career to date?**

   _____

2. **Tell me some about what you enjoy about your job.**

   Like starting businesses from scratch and working with newer technology. Lack of structure.

3. **How long have you been at _____?**

   3 years

4. **What are some your current projects that you are working on?**

   Ongoing work for clients that is IT outsourced service for _____offices. Software development. Working on _____ software equipment.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   In the past Talking Nets helped raise 22 million dollars. No fundraising in this business. Have a service business.

6. **Describe the levels of approval necessary to approve projects.**

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Hard to quantify the benefits of _____office. No _____offices do ROI. Most technology for _____ offices is driven by requirements. New _____ will need to measure the ROI for a new software system.

8. **How do you justify project benefits and revenue?**

   Try to convey the technology and represent a set of benefits that are directly related for the operations within the _____. More _____ being seen and efficiency.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   No. Try to sell intangibles in the sells process.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Less involved. In software development in the complexity in the project.

12. **Give me some examples of some of your intangibles.**

Customer service to the customers and the service provided to the customer. Rely on regular contact to make sure that they are having a good experience. Rely heavily on referrals for business.

13. What methods have you used in the past to prove these intangible values?

In the past worked on a quality system. Resource analyzes perception, and Quality of Service. Doing surveys.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Time tracking system that keeps track of the time to get the job done.

16. Have you ever had a project approved that only had intangible values?

In the past _____ was our customer and we did a project that we were not going to make money but they were the biggest account. Did for goodwill.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

Most of our clients have e-mail set up outside their business. When they buy small business server Microsoft exchange comes with it and can move e-mail in house.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Maybe. Not if it was going to be a burden. Ease of use. Some numeric way of tracking.

Interview E.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   The variety in local government and different project going on.

3. **How long have you been at _____?**

   4 years

4. **What are some your current projects that you are working on?**

   VOIP project and once done will start looking at more options for that system. Work order system that is _____wide. Taking the place of five different work order systems that did not communicate with the financial system. E communities, which are wireless grant project. Reducing the digital divide and public safety.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Yes, through the budget process that starts in November. Still not approved until June. Requires that IT submit project proposals and normally another department supports the project. Goes through the budget office, _____ manager, and _____ council.

6. **Describe the levels of approval necessary to approve projects.**

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Sometimes we use ROI but for _____ it is more for the service that a project will provide. Not always trying to make money or save money. A lot comes back to non-financial metrics and service level that a project may provide. Staying within the budget is the main goal with project financials.

8. **How do you justify project benefits and revenue?**

   Community and service base for project justification. Saving resources for example the work order systems integrating can save time and money. Only need to support one centrally. _____ does surveys to measure customer satisfaction.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Strategic Business Plan with measures tied to them. Customer service based.

10. **How does your organization evaluate intangibles for project approval?**

What the percentage of strategic _____ wide goals that the department is apart. Enabling departments to meet their goals.

11. Do your employees at your organization find it challenging to evaluate intangible values?

Monthly report due to the manager that shows what all everyone is doing.

12. Give me some examples of some of your intangibles.

13. What methods have you used in the past to prove these intangible values?

By the narratives or strategic business plans. Sometimes project related.

14. What would you do differently?

Tie projects together or give more than one benefit.

15. Are you required to go back and measure after the project is done?

Have some request that come back especially capital projects. Budget office might ask for some data. Projects details that other organizations need to know.

16. Have you ever had a project approved that only had intangible values?

Most of the time we will find some type of tangible benefit to prove benefits.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

Streaming video to get council meeting online live and archives. Can pull up a single item. I really pushed this project and tie things together. Might be used internally and the public to look at the _____ meetings.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

If we had something to go by that was standardized by other IT departments. It is nice to have someone from the outside to develop. Start benchmarking against each other.

Interview F.

1. **Please give a brief synopsis of your career to date?**

   _____

2. **Tell me some about what you enjoy about your job**.

   Keeping staff motivated and providing great leadership.

3. **How long have you been at _____?**

   9 years

4. **What are some your current projects that you are working on?**

   Headquarters move been working on for over a year.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Find the next operating system, currently on windows 2000. Trying to decide if want to move to XP or Vista. Testing applications to see if they are compatible. In the process of doing a proposal

6. **Describe the levels of approval necessary to approve projects.**

   Senior management and executive level staff.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Don't have access at my level. They use the budget figure. Budget vs. expenses.

8. **How do you justify project benefits and revenue?**

   The formal proposal and then approved through the IT steering committee.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   No.

10. **How does your organization evaluate intangibles for project approval?**

    Operating System or software upgrades. Productivity and customer satisfaction.

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    No. More difficult to find the cost.

12. **Give me some examples of some of your intangibles.**

    Operating systems and software upgrades.

13. **What methods have you used in the past to prove these intangible values?**

Annual survey through the IT department with 10 to 12 questions about customer satisfaction. Some survey is about training or e-mail. New tracking system through the help desk that will be sent at random.

14. **What would you do differently?**
15. **Are you required to go back and measure after the project is done?**

    Informal manner. Depends on the size of project.

16. **Have you ever had a project approved that only had intangible values?**

    Smaller software upgrades.

17. **Do you go back and measure after the project is done?**
18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

    Created a service window for employees that are staffed with IT staff.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    Yes.

Interview G.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   No two days are ever the same. Have the ability to work with about thirty different departments that carry out different missions.

3. **How long have you been at _____?**

   3 years

4. **What are some your current projects that you are working on?**

   Financial and the _____department new systems that are going to use client server applications. Customer Management Relationship software that we will hire a vendor to help us. _____ is a collaborative website project for the _____and us. Virtualization of the servers to make them more resilient for disaster recovery. Replaced the telephone system within the past year with VOIP. Everyone is one the same telephone system.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Many departments get their own budgets approved for IT projects. Smaller projects will go through IT. Start a budget process in the fall and through January. Do not use a very formal metric system. Telephone system we used ROI and went through the Board of directors. She writes up a narrative for the budget office. _____ had requested two units for self-service and did not get approved because they did not calculate savings.

6. **Describe the levels of approval necessary to approve projects.**

   Any IT project has to come through the department for approval. If the project has a broader use for the entire _____, then goes to the budget office. If it is under 90,000 then the project is approved. If over 90,000 then have to get approved by the board members.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Starting to get a three-year cost analysis. Right now employees show the anticipated cost of the system and offset it with any benefits or savings. Like a cost/benefit analysis. People have trouble quantifying benefits. Customer service is an intangible benefit that we often use.

8. **How do you justify project benefits and revenue?**

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

Normally we do not a lot of measurement. More staff time benefits, or making the staff more efficient. Another benefit might not have to hire more employees.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    They find it difficult to measure intangible value. For example the _____ project failed to be approved because they could not prove the intangible. A lot of service is customer satisfaction.

12. **Give me some examples of some of your intangibles.**

    _____ system and agenda management system.

13. **What methods have you used in the past to prove these intangible values?**

    Describe narrative examples and being about to describe to the budget office.

14. **What would you do differently?**

15. **Are you required to go back and measure after the project is done?**

    Not required to go back and measure. Do have some metrics to go back and measure a year later.

16. **Have you ever had a project approved that only had intangible values?**

    A lot of our software only has intangibles. _____ 2000 is a project that the _____ wants an update and the benefit is people being able to respond to their _____.

17. **Do you go back and measure after the project is done?**

18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

    The financial system replacement. Risk of running on outdated software and without vendor support. People did not want to change. But the new software has made the employees more efficient in their job. Processes improvements, efficiency, and new services available.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    Yes, we are looking to formalize the process. In the process of developing a project Figureer to measure the benefits and include some measure of benefits.

Interview H.

1. **Please give a brief synopsis of your career to date?**

   _____

2. **Tell me some about what you enjoy about your job.**

   It changes everyday.

3. **How long have you been at _____?**

   6 years.

4. **What are some your current projects that you are working on?**

   _____ phone product for businesses that will be launched in August.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Corporate project. Sell fiber optic to _____and we look at the revenue and the benefits. If it meets our capital requirement then it is approved.

6. **Describe the levels of approval necessary to approve projects.**

   Starts at a director level, regional, finance, and finally the executive regional manger.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   ROI and Cash flow.

8. **How do you justify project benefits and revenue?**

   Met the rate of return and political concerns.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Not directly.

10. **How does your organization evaluate intangibles for project approval?**

    Based on providing a good justification.

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes. Proving upgrading software.

12. **Give me some examples of some of your intangibles.**

    Saving time by a faster PC. The effects of training employees.

13. **What methods have you used in the past to prove these intangible values?**

    Help desk to track how long employees helped customers.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Not formalized. I measure on projects that I would like to know.

16. Have you ever had a project approved that only had intangible values?

No.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

In 1995 and was the technical support manager and wanted to get an e-mail system installed. Set up a network to send E-mail.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Yes, if there was a formalized process.

Interview I.

1. **Please give a brief synopsis of your career to date?**

   _____

2. **Tell me some about what you enjoy about your job.**

   Delivering computing solution that have a visible value impact on the business and accomplish what it was designed to do.

3. **How long have you been at _____?**

4. **What are some your current projects that you are working on?**

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Projects were justified on some false assumptions. In the 70's deliver a naming semi project container and design an inventory system for the containers so people know where they were. Relationships, creditability, business objectives, and bottom-line.

6. **Describe the levels of approval necessary to approve projects.**

   Process orientated. Executive leadership reviews and then to the Board of Directors.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   ROI. Impact on the business. Increase market share. Will infrastructure handle the capacity?

8. **How do you justify project benefits and revenue?**

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Relationship with managers. Impact on customer service. Up time. Costing money.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes, invoke the business side. Discuss metrics. Service level agreements resources.

12. **Give me some examples of some of your intangibles.**

    Project networking on a _____. Delivering fiber optic solutions. Accomplished with copper but fiber would add longer solutions.

13. **What methods have you used in the past to prove these intangible values?**

14. **What would you do differently?**
15. **Are you required to go back and measure after the project is done?**

    Part of good project management. Delivering the benefits.

16. **Have you ever had a project approved that only had intangible values?**

    Convert an intangible to a tangible value.

17. **Do you go back and measure after the project is done?**
18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

    Fiber optic after the network was in place it became a source of pride for the university.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    References the industry.

    Process.

    Technology to prove advantages has to know impact.

Interview J.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   Solving problems is what I enjoy most about my job. Meeting the product goals is also something that I enjoy about my job.

3. **How long have you been at _____?**

   28 years

4. **What are some your current projects that you are working on?**

   Hardware development, system management solutions, and technical support are some of the projects that I have worked on in the past.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Justified the process, accounting team, and help customers justify IT projects.

6. **Describe the levels of approval necessary to approve projects.**

   Customers and projects depend on the amount of money spent on a project. Certain managers have different levels of spending that they can approve before having to consult someone.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   ROI is used in almost every project evaluation. The biggest question is "what do I get out of it?" Cost avoidance, risk assessment, and products that distribute software are all metrics to follow.

8. **How do you justify project benefits and revenue?**

   Using metrics and dollar comparisons. Most managers want to know the baseline for the ROI of a project. For example, what is the baseline for servers that go down and the time it takes for recovery? The CIO typically ignores the intangible dollar figure and wants hard proof for the investment.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Yes, we identify them.

10. **How does your organization evaluate intangibles for project approval?**

    We help customers identify benefits for the project. The higher management chain the more they care about the bottom line.

11. Do your employees at your organization find it challenging to evaluate intangible values?

Yes, it is an ongoing battle. How do you evaluate? Product line uses the ROI to evaluate benefits.

12. Give me some examples of some of your intangibles.

Customer satisfaction, company prestige, image, and market advantage are all examples of intangible values.

13. What methods have you used in the past to prove these intangible values?

In the past I have used some type of formula and use ROI to tie back to a tangible value to help prove intangible values.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Almost never. Cost justify up front because the project normally changes from the original design. In IT the help desk has the most metrics that they can measure.

16. Have you ever had a project approved that only had intangible values?

Yes, in Asia the labor is cheap. Some companies only get software to keep up with American counterparts.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

Super market firm had different software systems in all stores that were different. _____ proposed some software for operating systems. No one could justify. People were now able to download price updates and found more advantages for the software.

Tangible example:

_____ and _____ have a travel agreement. Now employees have to make their own reservations online which takes longer for the employee instead of the _____ travel agent. No customer satisfaction, they did not take in account intangible benefit of the travel agent.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

Interest. Things to consider.

Interview K.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   Changes everyday.

3. **How long have you been at _____?**

   7 years

4. **What are some your current projects that you are working on?**

   Rebuilding the data center infrastructure, network upgrade, AC, and new _____ system are some of the current projects that I am working on.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   I was involved in getting the funding for all of the projects. We are a revenue generating business. The process is writing a business case and showing some type of ROI and infrastructure. Some are customer driven like the _____ system and customer satisfaction.

6. **Describe the levels of approval necessary to approve projects.**

   Start with 5,000 we go out to bid. Written quotes are 10,000. 25,000 we go to ITS. Formal bid process. Levels of approval within the State Port 10,000 = CFO, 100,000 = CEO Anything over 100,000 goes to the BOD.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   ROI and Cash flow.

8. **How do you justify project benefits and revenue?**

   Based on necessity and affordability. We have an IT _____ committee that evaluate the projects based on biggest impact, and ROI.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Not a formalized process. We identify for ROI calculations.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes.

12. **Give me some examples of some of your intangibles.**

Cost to replace. An example would be the AC for in the server room.

13. **What methods have you used in the past to prove these intangible values?**

    Risk type analysis. Risk associated with not doing the project.

14. **What would you do differently?**

15. **Are you required to go back and measure after the project is done?**

    Not formalized. Not required.

16. **Have you ever had a project approved that only had intangible values?**

    No.

17. **Do you go back and measure after the project is done?**

18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

    Servers are an ongoing project.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    Reference them.

Interview L.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   Play a big role in the business strategy. Developing people and how do we grow new employees.

3. **How long have you been at _____?**

   2 ½ years

4. **What are some your current projects that you are working on?**

   Enterprise Research planning project that uses Oracle. Global financial. Engineering projects that are collaboration. High performance computing. Infrastructure projects updating equipment. Cyber security for the business.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   ERP. Cost of the business. Six Sigma. Process mapping. 3 years growth. How to respond to detail planning. Cost benefit forecasting tie to benefits.

6. **Describe the levels of approval necessary to approve projects.**

   Budget. CIO, CFO, CEO, _____ CEO for the business. Levels of cost for each manager. 1 million for CIO.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   ROI, Cash flow and NPV are the financial metrics. Three-year period for project evaluation. Look at product and ROI.

8. **How do you justify project benefits and revenue?**

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Non-financial: Change process. Training acceptance and compliance.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes, does not come natural. Use to measuring money. Teams struggles and the management team struggles.

12. **Give me some examples of some of your intangibles.**

    Compliance, cycle time, down time, and risk are some examples of intangibles.

13. What methods have you used in the past to prove these intangible values?

Billing customers had several different billing types. We wanted to help with problems by only having one billing statement.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Yes, in the control phase.

16. Have you ever had a project approved that only had intangible values?

Yes, compliance forms global taxes in foreign countries.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

Service Turban engineers and take less time by using some type of wearable computers. Convincing the company that wireless could be implemented so that we could service more customers. Being the first in the industry to do something like this.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

YES.

Interview M.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   Working to delight the end user. Drive change in the organization.

3. **How long have you been at _____?**

   15 years

4. **What are some your current projects that you are working on?**

   _____ Simplification ERP in Oracle. Go live on July 9th. 2,500 users and replace 23 legacy systems.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Planning sessions and three-year project projections. Product growth. IT strategic growth plan and is it going to result in simplification. What are the various programs that can be done in the future?

6. **Describe the levels of approval necessary to approve projects.**

   Employee to CIO, and CEO.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Hurtle rate of cost benefit to ratio, NPV, IRR, Total cost to ownership.

8. **How do you justify project benefits and revenue?**

   New Product Innovation. Internal system and tools projects. Productivity saving to employees, reductions in cost, and total cost of ownership.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Yes.

10. **How does your organization evaluate intangibles for project approval?**

    Usually based on capturing intangibles and for example productivity. Look at a process end to end and look at the various processes.

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes, new project manager. Strategic thinking.

12. **Give me some examples of some of your intangibles.**

Time, productivity, impact on the cost of quality, and improve scalability are examples of intangibles.

13. What methods have you used in the past to prove these intangible values?

Remove the number of mouse clicks that it would save the user this amount of time. Hard to measure results.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Yes, project management methodology.

16. Have you ever had a project approved that only had intangible values?

Yes, today it is becoming a blend and has an impact on both.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

User does not want change. 2 years and the project was 80% done. The benefits were intangible. Quality system and when the system was done it increased productivity and visibility to data and provided additional functionality.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Take into consideration.

Interview N.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   Love working with the _____ and going to _____.

3. **How long have you been at _____?**

   6 months

4. **What are some your current projects that you are working on?**

   Trying to stabilize our ERP operation we had a product for 20 years. We are 18 month in the project. President desired for were the _____ is headed. Process management improvement. Research resources for _____ on _____ and operational improvements on campus.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

6. **Describe the levels of approval necessary to approve projects.**

   Depends on funding and divisional funds can fund the process. Do a needs assessment, product evaluation and analysis, impact on operations, personal needs, and functional requirements look at best practices in the market, and product analysis all the data is conversed and need executive approval? Needs assessment looks at ROI and impact on _____. If it were a _____ priority then we would find funding and approval through the cabinet. _____ project then I find the funding within the budget. Look at change management, product, and workload analysis of staff for project approval.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   ROI, Cash flow, workload analysis. No project will be approved if it does not meet the strategic goals of the _____.

8. **How do you justify project benefits and revenue?**

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Yes.

10. **How does your organization evaluate intangibles for project approval?**

    Meet with _____. _____ has had a lot of emotional baggage. Cost benefit for the _____ if _____ do not use the program. Lots of benefits for the _____ and _____.

11. Do your employees at your organization find it challenging to evaluate intangible values?

Struggle with the process. Communication is key issue with IT. We do surveys and collect lots of information. Look at what other institutions are currently doing.

12. Give me some examples of some of your intangibles.

Cable TV in dormitory for _____. How to charge the _____. Will the _____ use the TV for entertainment? _____ wanted more channel options.

13. What methods have you used in the past to prove these intangible values?

Communication with everyone.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Evaluate on what could have done better with product delivery and implementation. Starting to develop measuring with our new project management program. At the end of the year with the milestone we discover what we need to do better.

16. Have you ever had a project approved that only had intangible values?

Yes, approval we granted using non-_____ dollars.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

Process management. What do we do after our ERP system? People had reservations. As we move lots of people need to be better informed. Keeping everyone on the same page.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Evaluate the guidelines and see if they made sense for the _____.

Interview O.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   Extremely dynamic. We have several different products and services that use IT.

3. **How long have you been at _____?**

   4years

4. **What are some your current projects that you are working on?**

   Internal propriety project that we designed and developed and is hosted in house. Have a new element to the websites that allows students to get _____.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Board members decide the time invested and priorities. For every project we get we present to the board and they decide which provides the most benefit to the company.

6. **Describe the levels of approval necessary to approve projects.**

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   The majority of the thing that we are working on is based on customer satisfaction. Every project we do has some benefit.

8. **How do you justify project benefits and revenue?**

   Every department has board members and every project has to be approved by the respective board member and goes through the approval process.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Most of our projects come from customer-based request.

10. **How does your organization evaluate intangibles for project approval?**

    Give the project a priority of 1-10.

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    We only present things that are projects. The rest of the process improvements we put in a system called web collaboration. Time, board members, and if they will save time.

12. Give me some examples of some of your intangibles.

Saving time.

13. What methods have you used in the past to prove these intangible values?

Track complaints and time to fix we make the decision to fix the problem. Internal improvement we use time of hourly person vs. salary to do the work.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Not currently.

16. Have you ever had a project approved that only had intangible values?

No.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

_____ _____ website was applicable funded. New project and did not have a particular market. Originally did nothing for months. Then the nursing colleges passed a bill that required that all nursing students have background checks before doing clinical. Now is one of the top financial.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Yes, because we do not have any metrics.

Interview P.

1. **Please give a brief synopsis of your career to date?**

_____

2. **Tell me some about what you enjoy about your job.**

   People, political, and leadership are what I enjoy about my job. Having others develop as employees.

3. **How long have you been at _____?**

   3yrs

4. **What are some your current projects that you are working on?**

   Five to six year quest to take this organization to paperless process. Creating electronic _____ _____that are paperless. Electronic systems for registration. Sixty different projects to make the paperless process happen.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   First you determine where the company strategy is going. To allow employees and _____ to do their best jobs. Every department in the _____ has to look at the goals and decided how to make things happen. Make the IT business plan to support the paperless process. Find a strategy out of the business plan. Prioritization to look at the resources need such as capital and people available. Make sure that all vendors comply together. Reduce cost and complexity. Projects are weighted against other projects called a project portfolio.

6. **Describe the levels of approval necessary to approve projects.**

   A project group is presented to the steering group through the IT demand system. Documented in the system as a planning request. Presented to a team with _____ the Systems Information Management Team and provide the necessary research for the project to develop. Next step we take to the executive vice presidents steering groups. Once that group agrees it is a good project we transition to a candidate project and more information. Once research is completed it goes back to steering group. Then is decided if the project becomes a project.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   We use a combination of all financial metrics. ROI and payback period are used the most.

8. **How do you justify project benefits and revenue?**

   It is more art than science and get involved with people and get them to help figure out what are the key performance indicators that measure benefit. IT project does not produce value on its own but by impact on the process.

Determine key performance indicators and measure before and after. The right way to measure benefit is the value it produces.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Use the balance scorecard. Operational improvement, customer service, and future growth potential.

10. **How does your organization evaluate intangibles for project approval?**

    Scoring system that lies on top of the balance scorecard and based on a score it is prioritized.

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Toughest part of an IT evaluation. Measuring time and time benefit instead of money benefit.

12. **Give me some examples of some of your intangibles.**

    Bar coding ____ armband system. _____ has a bar coded drug and wand armband and wand the ____and prevents you from the getting the wrong ____. _____ safety.

13. **What methods have you used in the past to prove these intangible values?**

    Imagining the project visualizing the future that you want for the company and compare that to where you are. Make a plan to get to the future.

14. **What would you do differently?**

15. **Are you required to go back and measure after the project is done?**

    Yes.

16. **Have you ever had a project approved that only had intangible values?**

    Yes, e-mail, barcode, phone, cell phones, and fax machines.

17. **Do you go back and measure after the project is done?**

18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

    Electronic _____ _____ moving to paperless. Would not go back. Free up 4,000 square feet of space where we used to store files.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    Yes, always looking for better ways.

Interview Q.

1. **Please give a brief synopsis of your career to date?**

   _____

2. **Tell me some about what you enjoy about your job.**

   Get the perspective of all business and all the manufacturing processes. Apply IT technology to various manufacturing problems.

3. **How long have you been at _____?**

   20 years

4. **What are some your current projects that you are working on?**

   Implement a standardized manufacturing information system data collection take tracks data and process monitoring.

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Yes, horizontal business because _____ has six businesses. After establish analysis we separate cost for the project in each factoring.

6. **Describe the levels of approval necessary to approve projects.**

   Size of the project and money involved. Each level has a different amount that can be approved at each plant. Over 5 million-dollar projects have to go to the Board of Directors.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   Separate into two categories; maintenance of business and cost reduction. Use ROI in the cost reduction categories. Maintenance of business we use effectiveness or improvements.

8. **How do you justify project benefits and revenue?**

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Yes.

10. **How does your organization evaluate intangibles for project approval?**

    Depends because IT is looked as an enabling advantage. Efficiency in being able to run with less people. Effectiveness made the process run better.

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Yes. Some of the projects are approved on faith, reputation, and track record.

12. Give me some examples of some of your intangibles.

Concepts and applied somewhere else. People reduction and market shares are also some examples of intangibles.

13. What methods have you used in the past to prove these intangible values?

Break it down by category and component cost. Not get caught up on new technology. Upgrades for the business benefits.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Yes, always. Ongoing measuring the evolution; slow robust, is it revolving, and driven by capital.

16. Have you ever had a project approved that only had intangible values?

Yes, line share. Maintenance of business and cost reduction IT request.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

If you look at the architecture there are five components tracking, process monitoring and control. We needed a real time data-monitoring tool. Found a commercial product and applied to several pieces of tools in Wilmington. Pilot process to demo the software tool.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

Might. Methodologies develop and convince mangers.

Interview R.

1. **Please give a brief synopsis of your career to date?**

   Programmer for IS Application and Systems. Sales systems. Professionals Services Management. Web designer applications.

2. **Tell me some about what you enjoy about your job.**

   Technology changes and client changes. Problem solving.

3. **How long have you been at _____?**

4. **What are some your current projects that you are working on?**

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Yes. Competing with clients and justification. Internal steering committee.

6. **Describe the levels of approval necessary to approve projects.**

   Large projects require a sponsor with the CIO. The VP would need to be involved if the project was over a million dollars.

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   NPV, and used spreadsheet template.

8. **How do you justify project benefits and revenue?**

   Proposals and presentations that use information from the clients.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Yes, critical success factor. Look for deliverables.

10. **How does your organization evaluate intangibles for project approval?**

    Statement of work. Promise the measure of success and use milestones for internal measurement.

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    Most MIS people were interested in tangibles and identified problems but could not translate.

12. **Give me some examples of some of your intangibles.**

    Customer relation management, improve customer satisfaction, and data mining decision support systems.

13. What methods have you used in the past to prove these intangible values?

Pilot system in one market and was typical support DSS. Bench marking and original problem.

14. What would you do differently?

15. Are you required to go back and measure after the project is done?

Lessons learned.

16. Have you ever had a project approved that only had intangible values?

Yes, system solution, upgrades, telemarketing, and operational.

17. Do you go back and measure after the project is done?

18. Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.

Customer had built in experiment. Mass advertisement and wanted to know which advertisement was successful.

19. If there was a set of guidelines suggested for measuring intangible values would your organization use them?

If the guidelines were for the business side of IT.

Interview S.

1. **Please give a brief synopsis of your career to date?**

   Worked on Wall Street.

2. **Tell me some about what you enjoy about your job.**

   Building external systems.

3. **How long have you been at _____?**

4. **What are some your current projects that you are working on?**

5. **Were you involved in process for getting projects approved for funding and could you describe some examples?**

   Was on the consulting side of IT. Arrangement letter that listed the benefits for the customer.

6. **Describe the levels of approval necessary to approve projects.**

7. **What financial metrics do you currently evaluate projects (i.e. ROI, Cash flow)?**

   ROI. Responses between the different departments.

8. **How do you justify project benefits and revenue?**

   Arrangement letter that was short but loaded with information.

Some projects are extremely difficult to measure. I have been researching how intangible benefits are measured. My project will have a set of guidelines that can be followed to better measure intangible values for IT projects.

9. **Currently how does your organization measure these intangibles?**

   Start out with dollars cost time one employees and list advantages.

10. **How does your organization evaluate intangibles for project approval?**

11. **Do your employees at your organization find it challenging to evaluate intangible values?**

    They try to please their supervisors.

12. **Give me some examples of some of your intangibles.**

    Service customers and fewer turnovers with employees.

13. **What methods have you used in the past to prove these intangible values?**

    After the project is completed checking the system and how well the employees are accepting the new system. Talking to the person in charge.

14. **What would you do differently?**

15. **Are you required to go back and measure after the project is done?**

    No.

16. **Have you ever had a project approved that only had intangible values?**

    No, generally the corporate mentality is competitive for dollars.

17. **Do you go back and measure after the project is done?**

18. **Tell about IT projects that have been questionable in the beginning because of intangible value, but later really improved an organization.**

    Trucking industry. Buy a book and look up the price of a product to shop. Wanted a system so they would no longer have to use a book.

19. **If there was a set of guidelines suggested for measuring intangible values would your organization use them?**

    Referencing tool and would look at the possibilities.