A Short Guide to Managing Technology within a Business

An Honors Thesis (HONR 499)

by

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May 2015

Expected Date of Graduation
May 2015
Abstract

Information Technology (IT) is one of the most crucial departments in nearly every successful business. This Thesis outlines the most important aspects of managing IT, in order to keep the IT side of a business running well and strong. Just because a company has the newest and greatest technology does not mean it is being used properly. In order to get the most out of it, the implementations must be properly managed. Configuring and maintaining the technology correctly is only part of the battle—the rest comes down to the IT/Business alignment, overall IT structure, management strategy, and leadership qualities; these are the topics that will be covered in A Short Guide to Managing Technology within a Business.
Acknowledgements

I would like to thank my Thesis advisor, Dr. Hua, for taking time out of his hectic schedule to help me craft this paper.

I would like to thank my sister, Melody, for reading and meticulously editing my entire Thesis.

I would also like to thank my Dad for always being there and giving me the inspiration to succeed in this field.
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I. Introduction

Importance of Information Technology (IT)

IT is becoming more and more of a necessity in today's business world. In order to stay competitive, businesses must keep up with the increasing demands to stay current, fast, and reliable. Technology is what allows everything in a business to work together so seamlessly. Even if the company has nothing to do with technology, technology is most likely what keeps it running. While the exact management of technology differs from one company to the next, the fundamentals are the same—IT is the backbone. Any company can benefit from integrating information technology into their business.

One of the primary uses for technology in a business is communication. Without good communication, a business can be at a serious disadvantage. How do employees interact with each other? Do they prefer to call, email, or instant message? How do customers contact the business? A single phone for each department may work, but would it make more sense to give every employee their own personal phone? Will more features equal better communication? These are the types of questions that a manager in IT will face.

If a company deals with inventory, an electronic system is a must (MacKechnie). Gone are the days where bookkeepers keep track of all of the items in inventory by hand. Especially for bigger companies, it is practically impossible nowadays to keep
track of everything without an inventory management system. What is the best system to use? How much will it cost, and is it right for my business? Will the switchover be quick and easy, or just cause more problems? Managing inventory with inventory management systems is key for knowing what is available where at any given time.

Data management is yet another aspect of IT that keeps a business running (MacKechnie). For businesses that store customers' information, where do they keep all of the data? Ensuring that there is enough space and that the information is accessible and secure are top priorities for this department. A common goal to strive for is 100% availability, reliability, and maintainability. On top of customer records, servers may hold tons of sensitive company data, ranging from employee details to financial information to top-secret business plans.

To really excel in the business world, Management Information Systems (MIS) should be utilized (MacKechnie). MIS is used to maximize relationships between people, technology, and organizations. This typically is done through data storage and analysis in order to increase efficiency ("What is Management Information Systems?"). What good is a bunch of raw data on sales if there is nothing to organize it? Why hire someone to analyze the data, when you can purchase a system that does it instantly, continually, and without error? Management Information Systems can analyze things from simple finances to overall business processes. Depending on the system, it can completely transform a business. In short, Management
Information Systems are like automatic advisors.

For many businesses, the customer is the top priority. What is the best way to keep customers happy? Usually, it is with Customer Relationship Management (CRM). By having a system for customers to check on order statuses, communication logs, and related documents, the customer is never left out of the loop and always knows where things are located (MacKechnie). For example, instead of a customer having to call someone to find out what a charge was for, he or she should be able to log onto a system and find the information faster and easier. There are many different types of CRM systems that can be tailored for any business needs.

IT/Business Alignment

As you can see, Information Technology overlaps greatly with the business side of things. One of the things people do not realize is how important it is to be business-focused instead of technology-centric (Lane). Instead of spending all of your time upgrading equipment to have the fastest computers, first take a step back and see if the upgrade will be worth it in the long run. Will the increase in productivity outweigh the initial costs? If not, a new strategy might be worth considering. The point of IT should be to optimize other business functions (Targowski). If the decision does not impact business functions, then what is the point? As much as we would like to have the best technology, most of the time it is
unrealistic given budget concerns. As long as the quality of the technology in place meets the needs of the organization, then the IT manager need not worry. The goal should be to maintain a healthy balance, and ensure that the technology is benefitting the business.

Often, this viewpoint is difficult to achieve because of the separation of departments. It is common that the IT and the business departments will have different goals—in order to make the best of what you have, the two groups should make a point to align their goals with each other instead of acting independently (Schütze). IT should be sure to update the business managers on new technology that could benefit the company, while the business managers should be sure to be open to new ideas and learning how to embrace technology.

Before deciding on a new strategy, managers should first analyze the current situation. This is known as business process reengineering (BPR), which is the strategy used to analyze and redesign business. To begin, decide where your organization is now, how you would like to improve it, and what it will take to get to that. Many times, the problem might not even lie within technology. For example, if efficiency is lacking, by studying the process you may find that the inefficiency lies within the workers' processes, not the technology. This is why it is important to understand your entire business process before making any big decisions. Focus on what systems or applications will actually improve your business overall, instead of singling
out one step of the process and trying to improve that alone (Lane).

While the remainder of this Thesis will go on to explain how to improve IT management, there are a few core values to remember when achieving IT/Business alignment. First, use IT as an apparatus to help improve the business. While technology may not be the focus of the business, it can definitely help the business reach its goals faster and easier than without technology. Next, make sure customer service is prioritized. If the customers are not happy, then most of your work may be going to waste. Another key to aligning these two functions is to have people learn about the other departments or jobs. Rotate or have employees shadow each other to see what goes into their daily job ("(JPN) Mass Organization Change"). By learning about each other, it is easier to work together.

To have the best outcomes, it is crucial that the employees have well-defined and precise goals. One guideline to stick to when developing goals is S.M.A.R.T.; goals should be specific, measurable, attainable, relevant, and timely (Haughey). Without goals, nobody knows why they are working or what they are working towards. Knowing that they are part of something bigger is a huge motivator for employees and keeps them on track, so make sure their goals are explicitly outlined. On the same note, make sure employees are happy. Company culture can play a huge role in how successful a company is (Kelchner). If the workers are not happy, then they will not put in their best efforts.
II. IT Structure

Centralized vs. Decentralized Management

IT can be a very complex topic, so it is important to break it down and outline the common structure. While organizational structures are tailored specifically for every business, there are a few critical areas that must be perfected in all companies. Typically, organizations either have a centralized or decentralized structure. This may or may not already be established in the business you are managing, but it is important to make sure the business is implementing the strategies correctly and effectively. Centralized management generally looks at the bigger picture and works towards consistency. It may be harder to implement because of cultural differences and varying legal requirements. Decentralized structures are more separated and departmentalized—this can be good or bad, depending on the size and nature of the business (Lane). While separate management may seem easier than unified management, in the grand scheme of things it may be complicating things. Centralized management promotes unity.

The first department structure to analyze is support. If support is consistent throughout the company, then a centralized management system will be easy and effective. Even if the support strategies are the same, though, local support can still be necessary. Knowing what support is needed where will help guide an organization to select the proper support hierarchy.
For example, in a sales organization, users are more likely to need local support for things like Internet access or laptop support. These areas should be emphasized and managed better, since they are needed more often. It is important that the local support groups always report to centralized management in these scenarios, though, so that they do not completely branch off and start doing things their own way. If so, there will inevitably be disagreements later on. A strong operations manager is needed to oversee these processes and make sure the support team is running smoothly (Lane).

**System Administration**

The network and system administrator roles are also important to focus on. Especially since these positions often work remotely, it is crucial that the administrators are trusted. Communication skills are a must. For example, if a remote employee decides to change the Active Directory structure without notifying anybody else, then the results can be disastrous. This is why there must be a global monitoring system paired with strict policies and procedures for administration. Overall, network and system administration should be more globally managed, with local administration and updates being reported to the global management periodically (Lane).

**Telecommunications**

Telecommunication is becoming more and more important nowadays with the introduction of voice over Internet protocol
(VoIP) and the integration with data. It is important that local and global management is involved with the telecommunications department; local for support, and global management focusing on network and infrastructure changes. The local team is responsible for daily operations, while the central management deals with other related changes that may affect telecommunications (Lane).

APPLICATIONS SUPPORT

Applications Support is another department that often needs improvement. Larger systems that may implement more change should be centrally managed. This way, applications throughout the company will always be unified. A strong business process analyst is crucial to handle all of the applications' requests, which will often be contradictory to each other. Relationships between departments are necessary when dealing with application management; the application manager must interact with process owners and operations managers to make sure applications are being utilized correctly and efficiently. If it takes too long to process an application's request, then local management might create its own ways of doing thing. This should be avoided at all costs, because it can create incongruences and confusion. Smaller companies may be able to get by with decentralized application systems. This is because they may not need the full integration, and a centralized structure may slow things down (Lane).
Positions of Importance

Hiring the right employees to support the well-thought-out infrastructure is just as important as the infrastructure itself. Specific positions may be tailored to the company, but these are the general things most businesses need covered; everything from daily operations to projects requires a strong worker and leader.

Operations Director

One of the specific positions that requires a top-notch employee is the Operations Director. Daily operations management requires more than just technical skills—it requires strong diplomacy and soft skills as well. If good standard operating procedures are not set, then employees might be inclined to begin doing things their own way. This eventually causes disconnect within the company. Rapid changes in technology make this position a difficult one (Lane). Since technology is ever-changing, so are most technical positions. Choosing which technology to embrace and which to ignore is a critical part of management. Managers should always be measuring customer satisfaction and touching base with heads of all departments frequently to make sure everything is running smoothly.

Systems Architect

The systems architect is another major, but difficult position to fill. This position is necessary because someone needs to view the projects from a higher level in order to make
sure all of the proper outcomes are reviewed and achieved. The architect is responsible for making sure the new system will work in harmony with the existing environment. There must also be someone to reanalyze the architect’s view, to make sure all flaws are addressed before the project is started. Otherwise, the project will run into errors during production. If the mistakes are serious, then the architect would be to blame. To experience the least bias possible, internal and external resources should be contacted to review the plans. It is important to realize that not everyone is going to be willing to immediately jump on board with new ideas, so the architect must be able to explicitly and persuasively state how a project will benefit the organization (Lane).

**DATABASE ADMINISTRATOR**

The database administrator has a unique role that must be intertwined with business system administrators. Since database administrators deal primarily with data, they must have rules in place that are directly related to the business process. For example, the process of data entry must be clearly defined according to what works best for the business. They also are responsible for making sure data is available, reliable, and maintainable at all times. The database administrator should report to the application manager or the manager of related projects and departments, like customer service, marketing, legal, or web (Lane). Since this position overlaps with other
departments, it is hard to define where exactly the database administrator falls within the hierarchy.

**PROJECT MANAGER**

Last but not least is the project manager—often hated, but extremely necessary. The project manager is typically responsible for enforcing proper execution of projects, more so than devising strategies. Project managers must make sure the project is completed on time and on budget. They must be friendly, likable, and have great analytical skills (among other soft skills). Interpersonal relations must not get in the way of choosing project managers, for it is too often that people choose people they like to promote to a manager (Lane). For example, even though the employee might be extremely tech-savvy, they may be lacking the soft skills necessary to succeed in the position.

**Strategic Planning**

Planning is key to ensuring the best IT infrastructure is executed. Without plans, a company would be inconsistent with how they deal with certain events. There are various areas to focus on in order to keep a business running, like operations, development, and human resources. Priorities differ by organization, but some of the most important planning for IT lies within the operations component. On top of normal configuration management and planning, administrators must be
prepared for anything that comes their way. Proactivity is best practice, but in the event that something does go wrong: be ready. Making sure your organization has the appropriate plans in case of change or failure is necessary to keep business running normal with as little downtime and error as possible.

**Asset Management**

Asset management is one of the first plans a manager should make sure is in place. Asset management deals with how the hardware and software is tracked from date of purchase to disposal. This also involves the vendor relations for licensing and maintenance (Lane). When a new cell phone is purchased for an employee, how will the company keep track of it? Will the usage on the phone be tracked, or does that invade privacy of the employee? How will you know if a device with sensitive information is lost or stolen? Asset management aims to determine key resources and make sure all assets are safe and secure. An inventory system is recommended for this purpose. Common records to keep for devices include physical location, manufacturer, serial number, model number, date, etc.

**Change Management**

Change management is an important plan to have in order to limit service interruptions. A change management committee should be appointed, including someone from every department and the customers/stakeholders that matter most. This group should meet regularly to discuss how previous changes are working out...
and how future changes can be planned and coordinated. When a change is about to be implemented, approval should be obtained from everyone involved. A plan should also be created in the event that the change fails. Before the change goes live, everyone should confirm that they are ready and an extra meeting should be held before the actual implementation. It may be a good idea to implement a new system in phases, with smaller, less crucial departments changing first. This way, errors can be addressed before they affect everyone (Lane). Image 1 shows a typical change request form, which can be applied in almost any scenario:
More planning results in fewer delays, so change management is of utmost importance.
Disaster Recovery

Disaster recovery is one of the most critical plans for a business. If something goes wrong, how will your company continue business? Hardware failure and human error account for 75 percent of major data loss (Lane). The most important aspects of a disaster recovery plan are a highly reliable backup service and recovery capability. Key applications and functions should be identified beforehand, so everyone knows what needs the most protection. If there is nobody in your department who has adequate skills to form a disaster recovery plan, then a manager should contact a consultant to create one for them. The disaster recovery plan is typically under the business continuity plan, which outlines the broader plan for making sure business is continuous (Lane).

The disaster recovery plan typically includes the following topics. First, what constitutes a disaster and who can officially declare one? Then, a disaster alert system must be defined—how will everyone be notified that something is wrong? Next, recovery procedures should be identified. Alternate and backup locations and equipment should be designated, in case the event is very serious. Finally, a restoration plan should be designed (Lane). According to Dean Lane, author of CIO Wisdom, the tragedy on September 11, 2001 was a prime example for lessons regarding disaster recovery:

- Regular testing of backup plans is necessary to ensure correctness
- Available communication is critical, and a chain-of-command
must be clearly stated

- Vital information must always be backed up
- Paper records should be kept to a minimum
- The business continuity plan should match up with the general business requirements

Making sure your business is ready for a disaster will save time in the long run, in the unfortunate event of any catastrophe.

Problem management is less serious than disaster recovery, but necessary for smaller service interruptions. The steps for problem management include identifying the problem, assigning the proper resources to the problem, tracking the resolution, facilitating communication, and preventing the same future issue (short term and long term). The main records to keep include problem logging and tracking, root cause identification, and problem reporting/communication. When a corrective action is performed, it should be posted where others who may run into the same problem will be able to access it. Having a problem management strategy improves quality of service, reduces downtime, prevents system outages, and creates more effective responses (Lane).

SECURITY MANAGEMENT

Arguably the most important strategy to implement in an organization is security management. Security is becoming a bigger and bigger risk, as everything is increasingly being stored electronically. According to IBM’s 2014 Cost of Data Breach Study: Global Analysis, the average data breach costs an
organization up to $6 million (2014 Cost of Data Breach Study). This does not account for the cost of lost business or any preventative measures that may have been taken. Any business with sensitive information should have a security officer or committee. A risk assessment should be conducted to identify current vulnerabilities, and a plan of action should be devised to address the issues. Humans are the weakest link of any system, so it is important that employees are educated on the security policy. The security policy should include at minimum the following: intrusion detection systems, firewalls, backup and recovery plan, update and patch plans, strong authentication (biometrics where necessary), encryption, virtual private networks, antivirus software, and regular security audits (Lane).

Multi-tiered design is imperative to strong security. It is wise to separate as many aspects as possible, like the web-server, application, and database aspects of a data center. This way, an attacker that gains access to one would be separated from the rest, and ideally not be able to gain access to all of them (“Data Center”). The separation tip also goes for the company’s network: they should have an intranet specifically for their company, in which traffic will be safe and sound within the organization itself. In addition, multi-factor authentication should always be used. Instead of requiring just one password to access something, use at least two different types of authentication. The best guideline for different types of authentication is to use something you know, something you
Implementing Change

As mentioned in the introduction, analyzing your current IT strategy is the first step to improving it. If there is something lacking in your organization, the first step to creating a solution is assessing the current damage. The SWOT Model is a common tool used to identify factors that affect success. SWOT stands for strengths, weaknesses, opportunities, and threats. By identifying these aspects, you will be able to recognize what should be modified in your business plan. If your goal is to improve your current situation, then the weaknesses are where you will want to be begin. Opportunities should also be considered, in case the timing is right to make a specific change. At the same time, though, threats should be kept in mind. If you want to improve but the threats are threatening your plan for improvement, then you will have to reconsider your plans.

Image 2 shows a five-step process to develop a new strategic plan:
The most important step in this approach is the final step: specifying the alternative and how it will help achieve the goals of the business. Presenting this information to higher management will be the deciding factor of whether or not your change will be implemented. The most critical part of the presentation is putting the change into business terms, and stressing how it will help improve the business. Common goals include increasing revenue, productivity, or satisfaction. In order to be accepted, your plan will have to include financial information, necessary resources, and time constraints. Usually, it is best to pitch an idea before the work is completed, in case the proposal is impossible based on the current business situation (Lane).
III. Successful Management Strategies: What Sets Businesses Apart

Core Ideologies

What is the difference between a company that is just getting by and one that can last long-term? Strong mission statements and values are the beginning steps to greatness. It is easy for an organization to get caught up in the current state of things and begin to focus all of their energy on those issues instead of the core missions. That is why it is important to always remember and stick to their ideologies. IBM and Proctor & Gamble are two organizations that have their priorities set straight when it comes to this topic. Everything they do is tied back to their roots. The founder of IBM exposes three secrets of his business: listen to the employee, keep the customers happy, and do everything possible to complete a task right (Holden). Proctor & Gamble has similar missions: make products exceptional, always improve, stay honest and fair, and respect everyone (Hisrich). Many strong mission statements will involve themes like these, and as long as the organization runs their business with these missions in mind, then they are on the right track to being a great company.

What else impacts a company's success? According to Targowski’s article on IT management, extroverted strategies often yield better results. By using supply chain management (SCM) and CRM strategies, a company can communicate better and
thus be better. Better customer service also leads to more revenue, so reaching out to the customer more often can impact the company's success. Finally, application integration can improve productivity, assuming it is implemented correctly. Introverted companies may focus more on traditional IT goals, which can cause them to miss out on new opportunities. By viewing and using technology differently, an organization can easily and positively set themselves apart for the better. Extroverted strategies increase productivity, improve communication between the CEO and CIO, and broaden the use of IT as a key function of business (Targowski).

Jim Collins wrote a book entitled "Good to Great," that suggests many ideas to transform a good company into a great company. One tip Collins mentioned was to think differently about technology—think about how your competition looks at technology, and then make sure to change perspectives. By having different perspectives, you can come up with new ideas that might benefit the company in ways you never thought of before. Can you implement technology somewhere or somehow you did not think possible? Little additions can go a long way, especially when you make things easier for employees. By adding technology in an area that did not use it before, you may be revolutionizing a process (Collins).

One last core strategy that organizations should use is the idea of quality over quantity. An approach to proper problem solving can be broken down into three steps. First, "evaluate the size and scope of the problem." Second, develop a solution
that will either fix the problem or eliminate the root cause. Third, determine how successful the solution was. When following these steps, managers must consider how they are measuring success. It is important not to get tied up in numbers. Instead of counting how many problems were fixed, think instead about how difficult the problems were. Quality trumps quantity, so instead of worrying about how many cases were closed in a day, focus more on how good the solutions were and how hard or easy they were to come to (Lane).

Constant Improvement

One of the best tips to improve an organization is to always be improving people, processes, and the organization overall. Rather than implementing a few big changes every so often, focus on continually improving the little things. By perfecting the process while it is occurring, you can save the time and hassle of massive overhauls later on. Correcting more often will help in the long run too, for it will require less work to do the same job. This is one of the biggest keys to saving time and energy: spend less time dealing with symptoms and instead stomp out the root causes (Lane).

A new trend (specifically for software development but relevant to overall management) is the idea of Agile development. Agile development focuses on assessing the direction of a project throughout its lifecycle in order to shape it as you go. This ties into the idea of always improving,
for Agile takes an "inspect-and-adapt" approach. The Agile methodology helps businesses react to the unpredictable. This way, they are always prepared to change course if something were to happen to the initial plans. Change is something that is always occurring, so managers must always be on their toes to make sure they are handling situations in the best way possible, even if it means changing the way they are used to doing things ("Agile Methodology").

Common Issues

Most of the common problems managers face deal with the structure and staff of the organization. Oftentimes, organizations have poor structures with ambiguous roles. When people do not know what they are supposed to be doing, not much will get accomplished appropriately. This relates back to the previous section on having strong departmental managers, so that the employees know of and stick to their expectations. Similarly, ineffective team members can be a constant problem within an organization (Lane). If you suspect that someone is not pulling his weight, do not be afraid to take the proper disciplinary actions to hopefully make him boost his productivity. Every employee should be a positive asset to the organization in one way or another.

Since communication in an organization is so important, managers must make a point to embrace diversity and avoid stereotypes. This is true when working with both employees and
clients. Those who work with others should be aware of potential cultural differences or knowledge gaps, and work to communicate effectively despite the differences. An example of this is when describing a technical product to a non-technical customer; make sure to be patient, limit the technical jargon, and use analogies to help them understand better. On the other hand, realize that diversity can greatly improve functions as well. Different people have different perspectives and new things they can bring to the table. Never assume someone is incapable.

Like communication, teamwork is necessary for successful projects. In order to make the most out of everyone’s talents, employees must work together to utilize everyone’s strong points. By working in teams, you can get double the work completed with a fraction of the effort. Poor teamwork will greatly inhibit an organization’s success and productivity. In general, the more you work together, the better results you can have. Stressing the importance of teamwork can go a long way, and if employees are incompatible, then it may be time to address the situation head on. This is also why company culture is important—the better everyone gets along, the more likely they are to work together.

Also mentioned in the previous section but worth mentioning again is “rogue” IT organizations. If employees are not satisfied with the management in place, then they may decide to develop their own solutions. According to Computerworld, 58% of companies have policies in place that require departmental approval for any new projects. Unfortunately, 86% of
professionals also say that there are rogue projects occurring without their approval (Anthes). If employees do not communicate their new solutions with their managers, then the managers are left out of the loop. This can cause problems when it comes to time being spent where it should not, as well as finances being distributed to the wrong projects. While there are some situations where rogue projects may be successful, it is always best to check with a manager who can designate the appropriate resources and confirm the necessity of the project. If as a manager you discover a rogue project, think about why it is happening and if it is a result of a poor managerial practice in place.

When it comes to projects failing, there are a few main flaws that often occur. Usually, the technical aspects are not at fault; instead, the blame falls on the people and process. The most common problems when it comes to planning projects and meeting the goals are as follows: “unreasonable requirements, the project scope crept, the timeline was too compressed, [and] IT was not given enough money or resources” (Lane). These factors are important to keep in mind for project managers and resource management. The best way to fix these problems is to get rid of unnecessary projects, put the necessary effort into the important projects, and require constant updates on the project instead of incremental updates. This way, the manager always knows what is going on and if anything needs to be changed in the process of the project (Lane).
Recommended Standards

One of the most widely used and well known frameworks in the realm of IT management is the Information Technology Infrastructure Library, also known as ITIL. ITIL is "a cohesive set of best practices, drawn from the public and private sectors internationally" (ITIL). Their focus is on IT service management, and how it can help individuals and organizations grow and improve. The main publications include ITIL Service Strategy, ITIL Service Design, ITIL Service Transition, ITIL Service Operation, and ITIL Continual Service Improvement. These volumes all outline the best practices and how they can be applied to nearly any organization. Thousands of organizations, from technology companies to retailers to financial organizations, have adopted ITIL ideologies, including NASA, Microsoft, Proctor & Gamble, Shell, IBM, and more (ITIL).

ITIL aims to promote the usage of a holistic approach to management. Instead of focusing on individual aspects of the technology infrastructure, organizations should look at everything as one unit. By looking at the infrastructure in a cohesive manner first, managers can get the full picture of what needs to be achieved. Then, they can zero in on specific parts, and how they can be changed and improved. The service lifecycle is the focus of ITIL. This begins with service strategy, which is determining the goal of the organization. Specifically, this refers to who the customers are, what services are needed to satisfy the customers, and how to reach those goals. Service design is next, which refers to how the services are designed to
meet the customers' needs. Then, service transition is used to implement change—how the organization goes from the build to testing to production. Once a new service is implemented, service operation goes on to describe how to manage the ongoing service. This includes topics previously discussed, like problem reporting and root cause identification. Finally, continual service improvement (CSI) is used to constantly measure and improve the organization's efficiency and effectiveness (ITIL). These are the fundamentals of the ITIL framework.

ITIL has many resources available on their website (and in print) that help managers organize their business. One noteworthy introductory PDF is titled "The Key Benefits of ITIL". Here, they describe the key benefits in depth. Image 3 summarizes the benefits that they address:
Their benefits include:

- reduced costs
- improved IT services through the use of proven best practice processes
- improved customer satisfaction through a more professional approach to service delivery
- standards and guidance
- improved productivity
- improved use of skills and experience
- improved delivery of third party services through the specification of ITIL or ISO 20000 as the
standard for service delivery in services procurements. (ITIL)

ITIL is a growing community with a plethora of resources for everyone, available any time.

If you are interested in taking things a step further, ITIL offers many training and certification programs. The levels of qualifications include the following: Foundation Level, Practitioner Level, Intermediate Level, Expert Level, and Master Level. Each level goes more in depth and signifies a greater understanding of the meaning and implementation of ITIL strategies (ITIL). They also offer other solutions aside from ITIL - IT Service Management, like PRINCE2 - Project Management and M_o_R - Risk Management (among others) (ITIL). In addition, they emphasize and promote the use of other standards in conjunction with ITIL, such as:

- COBIT (a framework for IT Governance and Controls)
- Six Sigma (a quality methodology)
- TOGAF (a framework for IT architecture)
- ISO 27000 (a standard for IT security)
- ISO/IEC 20000 (a standard for IT service management) (ITIL).

After a thorough look at ITIL's practices and benefits, you will see that they are a great set of guidelines that can help improve your business. Their community makes it easy to find new resources and address any questions you may have pertaining to improving your organization. More and more organizations are adopting ITIL every day, and the results are priceless.
IV. Final Thoughts

IT is transforming the world we know. In order for everything to run smoothly, managers must take the time to learn the fundamentals of both management and technology. Aligning business needs with IT will make business processes easier and more effective. Planning ahead saves managers and administrators hassle in the future. Defining your business with admirable visions and missions will set you apart; this not only makes you more appealing to customers, but gives you a better competitive edge, as well.

Grace Hopper, pioneer of computer science and inventor of the compiler, once said, "You manage things, you lead people" (Schieber). Not everyone has what it takes to be a manager. Almost more important than your knowledge (technical and administrative) is your ability to lead others. The combination of managing and leading is what distinguishes the poor managers from the best. While the majority of this paper has described techniques to manage the things in your business, the remaining few paragraphs will provide advice for leading your most important asset: the people.

Values direct your company, so it is imperative that you begin with the right core. Before all else, you must be passionate. Strive for excellence, follow through with your promises, and work with urgency; this applies to both your own work and the overall work of the company. The more sincere and professional you are, the more respect people will have for you.
Also, be willing to learn from others (Lane). Everybody knows something that you do not, so always be open to learning new things. These traits not only make your work better, but can make the job easier, too.

Appreciate your employees. When it comes down to it, your employees are your team. The more you value them, the more you can achieve. Your goal should be to help the company while helping the employees reach their goals. Motivation and training are two of your most important jobs as a manager. Feedback from your employees should always be welcomed and considered, in order to help everybody improve. Lane suggests some of the best things you can do to become a better leader include the following:

- Earn your trust
- Facilitate open communication
- Have a positive, infectious attitude/influence
- Be honorable and take accountability
- Double check your facts
- Provide reason for your decisions
- Do not micromanage

The more of these traits you possess and practice, the better off you will be. Your employees will thank and admire you, and your positive influence will show in the work they provide.

When you combine the traits of a leader with the skills of a manager, the outcome will be very promising. General management is one thing, but when technology is involved work becomes especially complicated. Once you understand the basics
of managing IT, you can then go on to gain experience and learn what works best in which scenario. Although different fields require different management specifics, the ideas in this paper are the fundamentals to good technical management practices. The positions or plans may need to be tweaked to fit your needs, but they offer a good base from which to develop other practices. As long as you are dedicated and willing to put the work in to achieve success, then the rest will come with time and experience. Remember your goals, stick to your values, and never stop learning.
Works Cited


