

Brief Table of Contents

Preface xxix

Part One: The Business of Being an IT Manager 1

1 The Role of an IT Manager 3

2 Managing Your IT Team 19

3 Staffing Your IT Team 43

4 Project Management 95

5 Changing Companies 139

6 Budgeting 161

7 Managing Vendors 179

8 IT Compliance and Controls 201

Part Two: The Technology of Being an
IT Manager 229

**9 Getting Started with the Technical
Environment 231**

10 Operations 255

11 Physical Plant 283

12 Networking 311

13 Security 349

14	Software and Operating Systems	383
15	Enterprise Applications	411
16	Storage and Backup	433
17	User Support Services	451
18	Web Sites	469
19	User Equipment	499
20	Disaster Recovery	515

The Role of an IT Manager

The buck stops here.

—HARRY TRUMAN

CHAPTER TABLE OF CONTENTS

1. Just What Does an IT Manager Do?	4
2. Managers in General	5
3. The Strategic Value of the IT Department	11
4. Develop an IT Strategy.....	14
5. Additional Resources	16

What does an IT Manager actually do? Are you glad you got the job? Or do you eventually want to become one yourself? Before we help you answer those questions, we discuss the definition and the pros and cons of being a manager. Clearly management as a career path is well suited for some people, but not for everyone. Is it right for you?

IT Managers need to wear a lot of hats. Different parts of the organization will have different expectations of this position, and you'll have to address them all. Finance expects you to manage costs; Sales and Marketing will want to see IT help to generate revenue; your staff is looking

CHAPTER ONE

for guidance, career development, and a work-life balance; and the administrative assistant down the hall just wants her printer to stop smudging. In this chapter, we will examine the roles and responsibilities of an IT Manager.

1.1 **Just What Does an IT Manager Do?**

IT Managers now have many responsibilities (data centers, staff management, telecommunications, servers, workstations, Web sites, user support, regulatory compliance, disaster recovery, etc.) and connect with almost all the departments (Accounting, Marketing, Sales, Distribution, etc.) within a company or organization.

This is both the good and the bad news. At some companies, an IT Manager can have direct influence on the strategic direction of the company, suggesting and helping implement e-commerce initiatives, for example. In other companies, an IT Manager is really a technician, a software developer, or network installer. And to complicate things even further, those definitions change quickly over time. Yesterday's network installer is today's e-commerce consultant.

By the way, at this point, "IT" (Information Technology) and "IS" (Information Systems) have now become synonymous terms. While they are often used interchangeably, "IT" is becoming much more widely used. Some people may use "IS" to refer to activity related to business software applications, but this use has waned considerably.

Why All That Change and Flexibility Is Good

The position of IT Manager can be very challenging. It is extremely varied in scope, allows you to come in contact with a large portion of your company, provides you with opportunities to directly affect the overall direction of your organization, and is excellent professional experience to acquire. In addition, you get to increase your range of experience; you are forced to (and get to) keep up with the latest changes in technology (so your skill set will always be in demand); and your network of contacts gets large.

As important as all that is, there is an added bonus: In recent years, IT has taken on a strategic value in the roles companies play in the new economy. Information Technology is now a critical component of many companies and the U.S. economy: "IT is the fastest growing sector in the economy with a 68% increase in output growth rate expected between 2002 and 2012 (*U.S. Bureau of Labor Statistics*)."

Not only is your job interesting and rewarding, it is also very

important. Dependence on technology is only growing, and issues like security and compliance are making IT more visible throughout the organization. What more could you ask for?

Why All That Change and Flexibility Is Bad

On the other hand, being an IT Manager is a difficult, often thankless, task. Like many service jobs, if you do it superbly, most people don't notice. In addition, the responsibilities differ radically from company to company. Some companies actually have many IT Managers and several layers of management. At others (and this number is shrinking), an IT Manager is a part-time role someone fills while doing their "real" job.

In addition, the role of an IT Manager can often vary widely within an organization, depending on who is making the decisions at the time. While the techniques might vary, the "Western Region Sales Manager" knows what his or her role is — get more sales as soon as possible — and that isn't going to vary much from company to company. An IT Manager, on the other hand, can mean many things to many people, and the job changes as technology and needs advance and evolve. Addressing all these needs and people can mean that time for "extras" like sleep and meals have to be sacrificed.

As a manager, everyone else's crises become yours. People (your users, your staff, etc.) are demanding quick resolutions to problems, and are looking to you to fix them.

In this book, we will discuss in detail the positive and negative elements of the key components of being an IT Manager. If a process is littered with political landmines ("budgeting," for example), we'll warn you about it; if a process has hidden perks (being an unofficial project manager for a project can put you in contact with many different people at many different layers of the organization), we'll tell you that, too. But before you decide if you should be an *IT Manager*, read the next section to determine if you want to be a *manager* at all.

1.2 Managers in General

Before you decide whether or not you want to become an IT Manager, you should decide whether or not you want to become a manager at all. One method of evaluating a potential career is to read books or take introductory classes about how to do it; sometimes, reading a book about a subject will make you realize you *do not* want to pursue that particular career (see Table 1.1).

Like most topics in this book, we present you with both the positive and the negative aspects of being a manager. We'd like to share our experiences and those of other managers we know; managers with over 100 years of combined experience contributed ideas to the following section.

Of course, the comments in this section are extremely subjective. Both positive and negative comments about such a broad topic ("management") are bound to be generalizations that easily can be counter-argued. So take each comment/idea/suggestion as something to be considered, evaluated, and adapted; perhaps it applies to your experience and perhaps not. But remember, everything here has been written by professionals who have been out in the front lines of the corporate world for a long time.

General Definition of a Manager

Management has been defined as "assembling the resources to achieve a mutually agreed upon objective" (G. Puziak, 2005). Or it can be defined as "getting things done through other people" (AMA President, 1980). A more mundane view is the answers.com definition: "authoritative control over the affairs of others." All three views are commonly held beliefs.

Note the radical difference between the definitions: the first two talk about collaboration ("mutually agreed upon" and "through"); the last one defines management as "control." As always, flexibility is key.

Styles of Management

These definitions reflect the two typical management structures American companies now employ: "Command and Control," or "Collaboration." (These styles have many different names: "Authoritarian" and "Participative," or "Military" and "Worker Responsibility.") Few companies, or individuals, are either purely one type or another, of course, but most are *generally* one kind or another. To succeed as a manager, it's best if you determine which type of management your company uses. And determine which type of manager you want to become. But as always, flexibility is key. While one type of style may work well in one situation, a different situation could call for an entirely different approach.

Command and Control

Based on classic military structure, this style was popular for most of American corporate history. You direct your employees and your boss directs you. In its extreme, this style doesn't allow for disagreement or input from subordinates.

It emphasizes clear commands, and rewards staff that follow these commands virtually without question.

This style has lost popularity. While some environments still operate under this style, many corporations are revisiting their commitment to such a rigid method of management. While execution of tasks under command and control systems is often faster and costs less, it is (among other reasons) also often wrong and ends up costing more to implement in the long term. In addition, employees under this system are often unhappy because they exercise little control in their jobs. It is also hard to know what value is lost in an environment where collaboration and teamwork is absent.

Collaboration

This style of management is more modern. All levels of the corporate ladder are actively involved in the execution of a business. It doesn't mean dock workers make decisions on plant relocations (although auto workers are now much more involved in decisions that affect them than they ever have been). But it does mean that many workers who are affected or who can contribute to decisions are now asked to be involved — regardless of where they stand in the company hierarchy.

The benefits of collaboration are increased personal satisfaction for workers and often better and more cost-effective decisions (because the people affected by those decisions are involved). The negatives are summarized by that old adage “paralysis by analysis.” Often, too many people involved in a decision don't make the decision or the process better; oftentimes it bogs it down.

Within the collaboration mode, there are also two extremes: managers who micro-manage — they are involved in every decision, consult as many people as possible on even the smallest of issues — and managers who are so distant they provide no guidance or feedback to their team, and ignore even the most pressing of issues.

What Kind of Manager Will You Be?

It's hard to predict, but study the two types of management styles above. Which kind have you experienced as a staff member? Which kind did you like? What kind of style is common in your company? “Management style shock” is not uncommon; a manager comes from another company and, bringing her management toolbox with her, quickly discovers that her “style” and that of the new company radically conflict. She is used to a collaborative approach and this company has no patience for discussion; her bosses dictate what she should do and they expect her to do the same. Or she starts commanding her staff around and they, used to group meetings to make important decisions, are shocked.

Pros and Cons of Being a Manager: Reasons To Become A Manager, and Reasons Not to Become One

Table 1.1 Pros and cons of being a manager

PRO	May have more control over your life. You manage others instead of only managing yourself. Of course, you will also have a manager above you.	CON	May have less control over your life (since the problems of others now become your problems).
	Typically make more money than those in non-management roles. Although this, too, is changing. There are technical tracks in many companies that are almost as lucrative as management. But not every company has this option.		Typically (but not always) a manager has more responsibility than a non-manager. There is more credit if things go right and a bigger price to pay if things go wrong.
	Do work on a larger scale. A simplistic example might be: one non-management worker may generate \$1000 a day in revenue for the company, but a manager may manage six such workers, generating \$6000 daily for the company.		Management looks and sounds a lot easier than it is. Often, managers are seen attending endless meetings or just having casual conversations all the time — not doing “real work.” In fact, they carry a great deal of responsibility and have to routinely make difficult decisions.
	Have greater potential to “make a difference.”		There are numerous headaches that come with managing people: meeting your project’s budget and schedule projections, dealing with challenging employees, and administrative annoyances (“those 200 new PCs arrived, where do we store them until we’re ready to work on them?”).

(Cont.)

Table 1.1 Pros and cons of being a manager (continued)

PRO	Get the credit for all the good work that your team does on your watch...whether it happened because of you, your staff, or by random chance.	CON	You get the blame for all the bad stuff that happens on your watch...whether it happened because of you, your staff, or by random chance.
	Get the opportunity to develop non-IT skills, working with other departments, vendors, partners, etc.		There are tough decisions to make: budget cuts, employee performance, having to choose between Jenine and Peter for the promotion.
	Have the opportunity to determine strategy and to set direction for both a department and the company as a whole.		
	Acquire the ability to add more value to a department and a company.		
	Have the opportunity to develop, coach, and mentor other people.		

The Hidden Work of Management

One aspect of management is that the work is often less apparent and less tangible than the work being done by subordinates.

Management is Sometimes Hard to See

There are, of course, examples of useless and lazy managers. You may be even a victim of one. But management is not, in and of itself, easy. Nor are all of its components visible. A worker may see a manager go out every day for lunch and think: “That guy just eats out every day on company time and money.” But the manager may be having “working lunches” with fellow managers and performing some of the tasks discussed in this book: finding resources, hiring personnel, writing a budget, setting objectives and strategies, fighting with Human Resources (HR) and Finance about planned layoffs, or planning a system

overhaul. In that scenario, a hard-working manager and a slouch look exactly the same to an outside observer.

Good and Bad Management Often Look Alike — For a While

In addition, because great — or even good — management is often hard to see, the effects of good management are often clear only in retrospect. Consequently, bad management and good management can often look the same. A manager that has a critical meeting with a subordinate that gets that subordinate back on track looks, to the outside observer, exactly like a manager having an intense conversation with a co-worker about weekend party plans. That worker's new attitude may take weeks, or months, to show itself concretely. A key decision not to pursue opening a new plant overseas happens in meeting rooms far from the general employee population; it may cost hundreds of jobs in the short term, but save thousands in long term. Those results will show up in the financial results years after the decision was made.

Resentment Toward Management

If you become a manager, you can assume there may be some resentment toward you in that role. This resentment could be because others in the department had hoped that they would get the job, or some may think that you're not qualified. There are also challenges when you are promoted and now have to manage a group of people that used to be your peers. There can be a tendency for tension between non-managerial staff and managers: the role of one is to direct, steer, or manage the other. Most of the time, that relationship works well and each person knows his/her own role and understands the other's role to some degree. Occasionally, however, that tension needs time and attention by both sides before it disappears.

The key to dealing with this problem is to communicate. Talk with your staff. Build a relationship with each member of your team. Let each person know you recognize their talents and their contributions.

Babysitting versus Managing

There is a portion of any manager's job that is "just babysitting." People are unpredictable, but you can predict they aren't always going to act in ways that will help you and your department. Sometimes their actions will cause you a great deal of stress; anyone who has faced a wrongful termination suit will attest to the pain of delivering a pink slip. Other times employees will drive you crazy with items so mundane you'll scarcely believe you are talking about the issue; many managers know of the enormous "turf wars" that erupt over inches



of desk size, who gets the larger monitor, or who is allowed to go to which training classes. Hence the name “babysitting.”

Politics

Unlike non-managerial workers, many managers spend a large amount of time dealing with the political elements of the company. While some people dislike any form of politics at work, many others thrive on it. “Politics at work” can mean anything from jockeying for a larger role in an upcoming project to turf wars about who manages which department.

Some politics is necessary: the network support team needs someone to run it, and either a new person has to be hired (see Chapter 3 on Staffing Your Team, page 43) or a current employee needs to be appointed. Some non-objective considerations will eventually come into play, since humans are involved. Does John in Accounting have the right personality for the job? If Mary is given that promotion, will she eventually merge the department with her old one? If Tom is hired, will he want to bring along his friend Chris that he always seems to have working for him?

1.3 The Strategic Value of the IT Department

IT management has become one of the most critical positions in the new economy. As corporations have embraced the efficiencies and excitement of the new digital economy, IT — and IT professionals — have grown dramatically in value. IT is no longer “just” a department, no longer an isolated island like the

The CEO’s Role in IT

“First, the CEO must be sure to regard information technology as a strategic resource to help the business get more out of its people. Second, the CEO must learn enough about technology to be able to ask good, hard questions of the CIO and be able to tell whether good answers are coming back. Third, the CEO needs to bring the CIO into management’s deliberations and strategizing. It’s impossible to align IT strategy with business strategy if the CIO is out of the business loop.”

—Bill Gates
Business @ the Speed of Thought, p. 318



MIS departments of old corporations where requests for data would flow in and emerge, weeks or months later, in some kind of long, unreadable report. Many companies now make IT an integral part of their company, of their mission statements, and of their spending. Your role is more critical than ever before.

Applications Development versus Technical Operations

Most IT organizations have two primary functional areas: Development and Operations.

Applications Development

Companies often see the real value of IT as only the applications that serve the company's core business. Applications are what allow one business to become innovative, more efficient, and more productive and set itself apart from its competitors. Careers within applications development include analysts, programmers, database administrators, interface designers, testers, etc.

Many people within IT like working in applications development because it allows them to really learn how the business operates. As a result, it may often provide opportunities for increased involvement with people in other departments outside of IT. However, many programmers find the job is too isolating because their daily interactions may only be with the program logic displayed on their screen and the keyboard. Of course, some programmers welcome the isolation and embrace the opportunity to work in the field.

Technical Operations

The technical support function is the oft-forgotten area of IT. The technical operations organization is responsible for making sure that the computers are up and running and operating as they should. Their jobs go well beyond the computer hardware and often include the network (routers, switches, telecommunication facilities, etc.), database administration, operations, security, backups, operating systems, and so on. The Help Desk may be the most visible portion of the Technical Operations group. Within the industry, this infrastructure side of IT is often referred to as the "plumbing." Like most important and underappreciated jobs, when operations is doing their job well you don't even know they exist.

However, those in operations may find the time demands stressful. Some system maintenance can only be done during weekends and evenings when users won't be affected. Similarly, it will be the operations staff that is roused by a mid-REM-sleep phone call when the system crashes in the middle of the night.



(See Chapter 2, Managing Your IT Team, page 19, for a discussion of methods of preventing burnout.)

IT Department Goals

One of your goals as an involved and caring manager is to make sure that your department's aims are in line with those of your organization. It doesn't matter if you're an IT Manager for a non-profit citizen's group or midlevel manager for General Motors; you need to discover what the organization's goals are and make them your own.

If you work for a corporate organization, your IT goals may be measured in the same terms as the business units that you support — reduce per-unit costs of the division's products and increase the capacity and throughput of the business and manufacturing processes. Your tactics must clearly satisfy these goals. If you work in a non-profit or educational organization, your goals — and the way you are measured — will be different.

Your boss should be clear about communicating those goals to you. But they shouldn't be a secret anyway. If your company makes widgets, make sure the company's strategy includes an appropriate use of IT throughout the company. Is the widgets factory truly automated? Can the Accounting Department's systems talk to the HR systems?

The Value of IT Managers

IT is a brave new world to many of today's corporations. Many executives now know how to use Word, Excel, e-mail, and their handheld Blackberry, but some have little or no understanding of the deeper, more complex issues involved in IT. They imagine IT to be a powerful but complex world where rewards can be magically great and risks are frighteningly terrible. These executives, and their corporations, need professionals to both explain and execute in this new world. This is where you come in.

You can leverage your technical knowledge, experience, and interests with your company's direct profit and loss requirements. *Together*, you and your company can provide a powerful business combination. *Alone*, your individual skills and passions can wither into arcane interests, and your business expertise can build models relevant to an economic world decades in the past.

Will your technical expertise and recommendations occasionally clash with the company's needs and vision? Absolutely.

Will your ideas about technical directions sometimes be in direct opposition to their perceptions of "market forces"? Absolutely.

Will you "win some and lose some"? Absolutely.



The purpose of this book, however, is to help you win — and to help your company win as often as it can be done. We want you, your IT department, *and* your company to work together as successfully as possible.

1.4 Develop an IT Strategy

The cosmic question “Why are we here?” applies to corporate departments as well. It is entirely possible that many, if not all, of your staff don’t have the full understanding of how the IT department serves the entire organization. When it comes to their job, they may understand what’s critical for today. But, while today is important, it’s also vital to know about tomorrow and beyond. If they’re looking at the trees, you have to be the one to let them know about the forest. The strategy should include feedback from your employees and should be cleared by your boss, but you should drive its formulation.

Without an IT strategy, you won’t be able to align your long-term goals with your short-term responsibilities. You need to have these items decided and written down, so that when your boss tells you to do X, and your employee needs Y, and the other manager down the hall that helped you last week needs Z, you have a clear idea of which task should be addressed in which order.

Some companies have huge IT departments, with layers and layers of managers. Organizations of this size have formal IT strategies and sub-strategies. But many smaller companies don’t have formal IT departments with managers, budgets, and expectations. Wherever you are on the size and formal structure spectrum, you should have a strategy. And you should write it down.

Your strategy should include the following:

- ◆ Who are your team members? And what can they do?
- ◆ Why/how is technology important to your organization?
- ◆ What are your assets?
- ◆ Who are your customers?
- ◆ What are your customers’ needs?
- ◆ How do you plan to satisfy these needs?

While this all sounds simple, it’s definitely not. Your customers may not even know what their IT needs are, for example. However, the very act of getting this all down on one or two sheets of paper can be of great value. For more information on the benefits of documentation, see Chapter 8 on IT Compliance and Controls (page 201).

Determine Who Your Team Members Are

This seems like a simple task — just list the people in your department. In fact, your team members may or may not be all the people on your staff. You may have someone on your staff who has part-time responsibilities to another department. This person is on your team, but you can't count on them 100% of the time.

Or, people from other departments, who aren't on your payroll and report to some other remote branch of the organizational chart, could be very useful to your department. They might call you when they hear about certain problems on the system, for example, or help you when someone in your department is out sick. These people aren't on your payroll, and they aren't in your department, but they are on your team.

In addition to determining who the team members are, find out their skill sets and backgrounds. You may know a team member as a cable installer but he may have rudimentary Java skills that the Applications Development team could use. She may be a sales manager who has some project management experience that could help you with the new phone system rollout.

Determine How Important Technology Is to Your Organization

The technology in use can vary tremendously from organization to organization. In a law firm, technology might be used simply for word processing, or it might be used to accurately track client billings. Additionally, it could be used to scan and archive documents, so that every single piece of paper related to a case is online where it can be indexed, cross-referenced, and immediately retrieved. In a retail organization, technology can be used for all the traditional back office activities (billing, purchasing, etc.) but probably serves its most vital function by helping the store managers to know what products are generating the most sales and profits, and which should be dropped from inventory. The store might also use it for space planning so that the shelves are stocked in a way that maximizes space usage, as well as profitability.

Determine Who Your Customers Are and What Their Needs Are

Whether your customers are other employees, suppliers, consumers, or other businesses, they are the ones you need to serve. Find out who your customers are. Figure out what their needs are. Then spend your time addressing those needs.

Issues to consider include:

- ◆ **Your customers are not necessarily *retail* customers (although they could be).** More likely, your customers are other internal departments

in the company and your boss. Different jobs have different customers, and there are departments (like Sales and Marketing) who should spend all day figuring out what their external customers need. IT, on the other hand, commonly serves other departments in the company like Sales, Marketing, Accounting, and Management.

- ◆ **Figure out what your customers' needs are.** Are they products or services? Data and information? Reduced costs? Improved efficiency or productivity?
- ◆ **Ask your customers directly about their needs.** Set up meetings with representatives from different departments, ask questions, note the answers, and change the way you're doing business to reflect customer needs and concerns.

Keep Your Department Central to the Company's Operations

Make sure the strategy mentioned in the above section is carefully aligned with the goals of the entire organization. This is critical. If the needs of your immediate boss are out of alignment with what the entire company is doing, you have a serious problem.

Let the rest of the organization know what you're doing in IT. To many of the other department managers, IT may not mean much more than "the people at the Help Desk that can reset passwords." Periodically, have a meeting with the other department heads. Let them know what you're doing in IT, what you've accomplished, and what you plan to do. With a little luck, light bulbs will start going off. They may see uses for the technology that you hadn't thought of. Get some good discussion going and you may learn a way to deliver a lot more value by slightly modifying your plans.

The reality is that in today's corporate world, IT departments are, for the most part, by default in the middle of action. Everyone is becoming aware of the values that computerization can bring to an enterprise. Wineries, toy shops, bookstores, and sandwich places — supposed havens for the non-technical — now have sophisticated computerized inventory systems, customer service mechanisms, online ordering counterparts, and — gasp — even fax machines to take preorders. Information technology is everywhere.

1.5 **Additional Resources**

Web Sites

- ◆ itmanagement.earthweb.com (IT management site)
- ◆ www.amanet.org/index.htm (industry organization for managers)

- ◆ [www.informatics.indiana.edu/news/news.asp?id = 131&careers = true](http://www.informatics.indiana.edu/news/news.asp?id=131&careers=true) (IT Career Growth News)
- ◆ www.ita.org/business/it (IT Industry association)
- ◆ www.managementhelp.org (library of resources for managers)

Books and Articles

- ◆ Bossidy, Larry, and Charan, Ram, *Execution: The Discipline of Getting Things Done*, Crown Business, 2002.
- ◆ Hill, Linda, “Becoming a Manager: How New Managers Master the Challenges of Leadership,” *Harvard Business School Press*, 2003.
- ◆ Levinson, Meredith, “Inside an IT Marketing Campaign,” *CIO Magazine*, February 1, 2006, p. 47.
- ◆ Margulius, David L., “Breaking Away: When IT Puts Business In the Lead,” *Infoworld*, December 5, 2005, p. 28.
- ◆ Neff, Thomas, and Citrin, James, *You’re in Charge — Now What?: The 8 Point Plan*, Crown Business, 2005.
- ◆ Robinson, William, *Your First 90 Days In A New Job (How To Make An Impact)*, Lulu, Inc., 2004.
- ◆ Stettner, Morey, *Skills for New Manager*, McGraw-Hill, 2000.
- ◆ Watkins, Michael, “The First 90 Days: Critical Success Strategies for New Leaders at All Levels,” *Harvard Business School Press*, 2003.