Chapter 5

Developing IT Professionalism[1]

"We had visitors from overseas meeting with us. At four o'clock p.m., Jack, our senior technician, just got up and left and didn't come back. We were all left floundering. The next day, when I asked him where he'd gone, he said he'd had to catch his regular train home!"

"So many of our people are in a 'what can you do for me?' mode. They don't want to wear a pager. They are arrogant. They don't take the time to understand the impact of their work on the business. They don't seem to care."

"Some IT people simply don't understand organizational dynamics. I've seen them send blistering e-mails to people with cc's to the whole world. How can they do that?"

These anecdotes from recent conversations with IT managers suggest that IT professionalism is a growing problem for them and for their organizations. Managers are frustrated that many of their newer employees simply don't understand what it means to "be professional" in their jobs. And older staff are sometimes stuck in a comfort zone, doing a job that was acceptable fifteen years ago and not recognizing that standards of working behavior have been ratcheted up since then.

"Our colleges and universities don't teach professionalism," remarked one IT manager. Neither do companies, other managers pointed out. Instead, professionalism remains an unarticulated set of working behaviors, attitudes, and expectations. Yet IT professionalism has never been more important. The days when eccentric IT workers were hidden away in a "glass house" or ivory tower somewhere are long gone. Teamwork—with users, vendors, consultants, and business partners—is the name of the game today, and with it comes an increased dependency on and interaction with others. And professionalism is the glue that keeps teams of diverse individuals working together toward the same goal. Today IT workers are being held accountable to this new, unwritten set of standards that governs not only their work and how they, themselves, are perceived, but also how the whole of IT is perceived by the rest of the organization and others outside it. No wonder IT managers want to polish up their people a little!

[1]Smith, H. A., and J. D. McKeen, "Developing IT Professionalism," *Communications of the Association for Information Systems* 12, article 20 (October 2003): 312–325. Reproduced by permission of the Association for Information Systems.

This chapter provides a composite picture of IT professionalism and how to develop it and is derived from personal interviews with IT managers and research about professionalism in several occupational groups. It first defines what is meant by *professionalism* and distinguishes it from the traditional meaning of *professional.* Next it explores the role of management in creating an environment where professionalism is either encouraged or discouraged. Then it looks at the specific ways an IT worker is expected to demonstrate professionalism and contrasts these with behaviors that are deemed to be unprofessional. Finally, it identifies several actions that managers can take to develop professionalism in their IT staff.

PROFESSIONAL VERSUS PROFESSIONALISM

Although IT specialists have called themselves "professionals" for a long time, it is clear that IT work does not meet most of the traditional standards for this classification. A classic profession is characterized by a systematic body of theory; recognized professional authority; community sanctions; a regulative code of ethics; and a culture of norms, values, and symbols (Caplow 1966; Greenwood 1965). These characteristics are clearly met by the well-established professional groups in U.S. society (e.g., accountants, doctors, engineers). In fact, IT workers have a systematic body of theory, but they meet none of the other criteria for an established professional group.

> Professionalism is a description you hope others will apply to you, not a set of degrees of job qualifications (Maister 1993).

In contrast, *professionalism* refers to a person's attitude to, behavior on, and capabilities in the job. Many occupational groups and businesses use the term *professional* to refer to this aspect of their work, rather than to its more traditional meaning. The terminology is further confused by the fact that no generally accepted norm constitutes *professionalism.* Specific behavior or attitudes may be professional in one occupation or organization and not in another. A recent Internet search yielded literally thousands of relevant sites containing professional behavior standards for such widely diverse groups as real estate salespeople, audiologists, librarians, and party planners, as well as lawyers, doctors, and other traditional professionals. Clearly, professionalism is on people's minds.

A general list of professional behaviors in many occupational groups can read like an endorsement of motherhood. And yet these various groups have felt it is necessary to write down such expectations as the following:

- *"Treat your peers with respect and consideration"* (Belilos 1998).
- *"Behave with integrity at all times"* (Belilos 1998).
- *"A professional does not make hateful or threatening statements about others"* (Boushka 1998).
- *"A professional does not behave in a bizarre manner"* (Boushka 1998).
- *"A professional shows up on time and is prepared"* (Chial 1998).

On further analysis, it is clear that professionalism actually involves several different *sets* of behaviors, such as those oriented toward an employer (e.g., loyalty, identification with company values), those oriented toward clients (e.g., commitment and enthusiasm, capacity to solve problems), and those oriented toward a peer group (e.g.,

maintaining skills) (Scott 1967; Texas State Library 2002). In addition, professionalism also involves adherence to certain ethical standards—of an employer, the state, and one's occupational group. More recently, the term *professionalism* is also being widely used in business to refer to a broad set of job capabilities such as ability to manage commitments, ability to deal with cultural diversity, and ability to cope with change.

Several different approaches have been taken toward delineating what is meant by IT professionalism in recent years. For example, the Association for Computing Machinery (ACM) established a Code of Ethics and Professional Conduct in 1992, which outlines three main sets of imperatives (for the complete list, see Appendix A):

- ***General moral imperatives*** (e.g., I will give proper credit for intellectual property and honor confidentiality.)
- ***Specific professional responsibilities*** (e.g., I will acquire and maintain professional competence; I will accept and provide appropriate professional review.)
- ***Organizational leadership imperatives*** (e.g., I will manage personnel and resources to design and build information systems that enhance the quality of working life; I will ensure that users and those who will be affected by a system have their needs clearly articulated during the assessment and design of requirements.).

The University of Virginia's Department of Computer Sciences has also identified a number of areas in which IT professionalism could/should be exercised, such as censorship, hacking, fraud and dishonesty in business, netiquette, privacy, and computer viruses. (For a complete list, see Appendix B.) Tom DeMarco describes four key characteristics of IT professionalism in *The Responsible Software Engineer* (Myers et al. 1997):

1. ***Proficient.*** IT work is done with deftness, agility, and skill.
2. ***Permanent.*** IT professionals are permanently dedicated to IT work.
3. ***Professing.*** IT workers declare themselves to be part of the IT profession.
4. ***Promise keeping.*** IT workers make and keep promises to themselves about what they will and won't do.

Although it is clearly desirable for IT workers to ascribe to all these standards, they do not fully address the areas of attitude and behavior that most IT managers want to see from their IT workers. Therefore, other writers have documented some very specific tactical behaviors that they feel constitute IT professionalism:

- A professional makes a reasonable investment in the tools of the trade, such as a PC or laptop with current technology.
- A professional makes himself available to support his work in an on-call situation with reasonable reliability and frequency.
- A professional does not overcommit his personal time in a manner that conflicts with his responsibilities.
- A professional should not criticize his employer or his employer's industry (Boushka 1998).

The problem with these types of statements is that they are too specific and fail to apply in many situations. The solution is, therefore, to identify a set of principles of

professionalism that IT workers and managers can use to identify specific appropriate behaviors for their jobs and against which they can evaluate their own and others' behaviors in a wide variety of circumstances (Maister 1993).

PRINCIPLES OF PROFESSIONALISM FOR IT MANAGEMENT

Principles of Managing for Professionalism

- Corporate values and behavior can promote or discourage professionalism.
- Much professional behavior is "caught," not taught.
- Expectations of professionalism should be consistent from the top down and through all parts of the organization.
- Companies get the behavior they actually expect, not the behavior they say they want.

Professionalism in the workplace per se has not been studied by researchers, although a great deal of work has been done on organizational citizenship behavior (OCB), which is a surrogate for some forms of professionalism. OCB is defined as an employee's willingness to go above and beyond the roles that he or she has been assigned (Organ 1990) and includes such behaviors as helping others, enhancing the social and psychological context that supports task performance, peacemaking, courtesy, and taking steps to avoid problems for others (Organ 1990; Podsakoff et al. 2000). Two meta-analysis studies have shown that such behaviors will occur if and only if employees are emotionally attached to the organization (Organ and Ryan 1995; Podsakoff et al. 2000). These findings underline the importance of an organization's leadership in establishing an environment in which people *want* to behave professionally. Thus, IT professionalism will flourish in some environments and be stifled in others.

It is important that a positive environment for IT professionalism be created and nurtured within the organization because professionalism is not usually taught but is, rather, picked up by osmosis through observation and interaction with others, particularly with leaders and managers. Anecdotal evidence suggests that management is responsible for much unprofessional behavior at work. "We've turfed people out and brought in outside contractors. How can we blame them for disloyalty?" asked one manager. Another noted, "We've slashed funding for all the training in 'soft skills.' It's easy to get money for Java training but not for anything to do with emotional intelligence." One company was trying to do something about management's influence in this area. "We are working with HR to develop our senior management, from the CIO down, to change their behaviors, which will, in turn, send a message through our teams that we are changing," stated the manager.

Other parts of an organization can also drive out professionalism in IT workers. "Human resources can often create programs that discourage professionalism," stated one manager. "If you're treated as a nine-to-fiver and not given the benefits of a professional, why should you act like one?" "If people see their leaders acting without integrity, how can we expect to see it in lower-level workers?" said another. Similarly, too many managers send mixed messages about the behaviors they value. For example, they may *say* they want innovation and "out-of-the-box thinking," but they make it clear that mistakes and risks will not be tolerated. Tom Siebel of Siebel Systems believes

that professionalism should be one of a company's core values. "Too many companies . . . have an arrogant self-image. . . . I want to be absolutely certain that our values drive our behavior and not vice versa" (Fryer 2001). In other words, companies get the behavior that they model themselves.

The daily working environment can also stifle professionalism. Outside consultants are frequently perceived to be more professional than internal staff. This is often because of the "baggage" with which most IT workers have to deal. Outsiders have fewer distractions, are given better instructions about their work, have fewer demands on their time (e.g., meetings, politics), get more support, and receive less e-mail. "What has happened to our own people that we can't see professionalism in them?" asked one manager. Another answered, "They've had to endure bad management."

Tips for IT Managers

- Identify your corporate values and *live them.*
- Measure and reward what you value.
- Model professionalism for your staff.
- Seek out and eliminate inconsistencies between espoused company values and actual HR and management practices.
- Provide mentoring and training (if possible) in professional attitudes and behavior.

PRINCIPLES OF PROFESSIONALISM FOR IT WORKERS

As noted above, professionalism is actually several different sets of attitudes and behaviors that an IT worker is expected to display at all times. Five sets of behaviors can be considered indicative of IT professionalism:

1. ***Comportment.*** This old-fashioned word covers one's appearance and manners on the job. Although *technically* neither attribute should make a difference to one's job performance, *practically* they do. It is unfortunate but true that it is much easier to acquire the label "unprofessional" than to reverse it. IT workers would be wise to be aware that perceptions of professionalism are sometimes equally as important as actual behavior on the job. Thus, if an IT worker does not appear to fit the image of a professional, particularly if his or her appearance is at odds with that of the rest of the organization, what he or she has to say may be immediately discounted by others. A good example of this is casual dress, which is often misinterpreted by those outside IT. As Tom Siebel explains it, "Dressing in jeans and a T-shirt to greet the CEO of a major financial institution, who just got off the plane from Munich, is not acceptable" (Fryer 2001). Furthermore, "Everyone's definition of casual is different," stated one participant, "and it's easy to go from casual dress to casual approaches to work."

   Similarly, manners and bearing are often perceived to be surrogates for professionalism. This explains the emphasis on treating one's colleagues and customers with courtesy and respect in many of the codes of professionalism described above. Siebel notes, "Our comportment is always professional, whether we are interacting with each other or with customers, partners, suppliers, or others" (Fryer 2001). In addition, it is not professional to take disagreements personally. "We should be able

to disagree without rancor," said one manager. "IT people are particularly bad at finger-pointing when a problem arises. Defensiveness is unprofessional. It's better to just help solve the problem and get on with the job."

Principle 1: *An IT worker's professionalism is often judged by his or her dress and manner toward others.*

Tip: When in doubt, an IT worker should model the comportment of the *best* exemplar in the office and dress as well as one's immediate supervisor.

2. ***Preparation.*** No one appears more unprofessional than someone who doesn't know what he or she is doing. For an IT worker, this means having not only the technical skills to do a job but also a good understanding of the business context in which the work is taking place. "The biggest complaint we get is that our people don't understand the business," remarked one manager. "Far too many people see technology itself as the end product, instead of as a business enabler." "Businesspeople are always asking, 'How much credence should I place in this IT person?'" explained another. Understanding the big picture is essential to doing a good job both because it helps IT people make better decisions about their work for the organization *and* because it gives users confidence that the person working on their problem will do a good job.

   Preparation is important in an IT worker's daily interactions with others as well. People are perceived as more professional if they are well organized and proactive. Good organization skills involve anticipating problems and dealing with them before they become bigger, careful planning of meetings and schedules (e.g., using an agenda), and a disciplined approach to work (e.g., a methodology, root-cause analysis). Preparation *for* work accomplishes two very important goals. First, it means that an IT professional's promises can be relied on to be met because enough homework has been done to make educated commitments. Second, it is respectful of the other people whose efforts must be integrated with those of the IT worker. The achievement of both goals helps others to have confidence in what the IT worker says and does, and this is the very essence of professionalism.

Principle 2: *Professionalism means that others can trust what an IT worker says and does. This comes from being prepared and organized.*

Tips: Take time to interact informally with users and "pick their brains" about how the business operates.

When starting a new job or project, take time to get to know the business.

Seek out and make use of any resources that will help better organize your work (e.g., project offices, methodologies, online training, or others who have organizational skills).

3. ***Communication.*** Although "a failure to communicate" can be a catch-all category when things go wrong, it remains true that good communication skills are a fundamental aspect of all professional relationships and, therefore, contribute strongly to the effectiveness of IT work. Good communication is actually made up of a number of subskills. First, IT workers need to know how to write. Misspellings, grammatical errors, and poorly organized documents are all too common in the IT field. Such sloppiness not only makes the author look unprofessional but can also fail to get the

message across because it is difficult to read. Another common mistake is to dash off e-mails as if they were not "real" documents. However, as e-mail is increasingly taking the place of traditional office correspondence, the same care must be taken with it as with a business letter.

Beyond writing, a whole host of skills must be mastered surrounding e-mail and voice communication. All IT professionals should have a routine for managing such media (e.g., updating voice-mail messages daily, returning messages within twenty-four hours, even if it's just to respond that you'll reply shortly). Responsiveness is a much-desired trait in an IT professional, and living up to a reasonable standard in this area ensures that the IT worker is perceived as being in control of his or her work and able to manage commitments.

Communication concerning commitments is especially important. IT workers should document important commitments in writing and include any caveats that might change what they have promised (e.g., a schedule or a budget). Paperwork should not languish on a desk week after week. And when situations change or problems arise, IT professionals must be willing to communicate the bad news and deal with the consequences. The following true story illustrates how an IT professional should do this:

> [When] Richard realized that the extra work was going to cost considerably more than had been planned, [he] decided . . . it was best to bring the extra costs forward to the Project Committee. "It was a brutal meeting," he remembered. "The senior guys beat us up. We had to sell like crazy." But eventually the committee agreed it was the best direction to go and gave them the money they needed to hire consultants . . . to help them do the job. (Smith 1999)

In addition, IT workers must understand how and when to communicate appropriately. Many people receive hundreds of unnecessary e-mails daily because someone hits the "Reply All" button for no good reason. Others copy large numbers of people when only one or two need to know the information. Still others, as the story at the beginning of this chapter illustrates, try to handle sensitive issues in an e-mail, rather than in person or by phone. Finally, it is unfortunate but true that most people's listening skills need improvement. IT workers need to cultivate the ability to ask questions, take checkpoints in meetings, and confirm that they have indeed understood what is being said.

Principle 3: *Good communication skills are essential to building professional relationships.*

Tips: Seek advice from others who are viewed as being highly professional about how they communicate (e.g., standards of responsiveness, addressing a problem on the job).

Find out about and use resources that are available to assist with written communication (e.g., spell-checkers, editors, etc.).

Adopt communication routines and standards even if none are expected.

Document any commitments and promises, and make sure they are met.

4. ***Judgment.*** IT workers often have difficult decisions to make, and it is very easy to get caught in a professionalism paradox. That is, people who are agreeable and who don't make waves are often *perceived* as being more professional than those who speak out

and say "no" when they are asked to do something unreasonable. As a result, it is not uncommon to see IT people and others give a lip-service commitment to a decision when they don't agree with it and don't plan to make it work. This may buy an individual IT worker a short period of grace, but it is not professional and doesn't work in the longer term. "We often wimp out, bow to pressure, and undertake something that is highly unlikely to be realized. We do this again and again" (Gack 2002). As a result, IT workers are often perceived as making bad decisions.

IT workers need to know how to make the right choices for the organization as a whole, which means being able to take a strategic view of what they are being asked to do. For example, they must know when they *must* do something, such as fixing a serious problem for the business, even if it means taking time away from another job. In short, they must know where they can add true business value. In making such difficult judgment calls, it is important for an IT worker to maintain a service orientation while not being servile. "Inflexibility is seen as being unprofessional," one manager noted. Thus, good judgment involves being honest about the full implications of a decision, stating concerns and objections, listening to the other points of view, negotiating a direction forward that everyone can live with, and documenting what was agreed.

Good judgment also includes making sure that decisions are in keeping with the organization's ethical guidelines (e.g., privacy) and that they follow all legal and moral standards. Although it is hoped that no IT worker or organization would deliberately contravene these, it is often the case that poor decisions occur simply because of ignorance. A recent furor over a company database that was outsourced to a third-party service provider, thus contravening privacy laws, is a good example. Laws and standards in computing are changing rapidly. Therefore, it is essential that IT workers maintain currency on those rules that affect their work and their business so they may advise others appropriately.

Principle 4: *Professionalism means making the right choices for the organization as a whole, not just a specific area.*

Tips: Be sure of all the facts before making a decision. Don't get pressured into it.

Always maintain a service orientation.

Become familiar with corporate standards and changing laws regarding computing.

Don't be inflexible; try to find a negotiated way forward that everyone can accept.

5. ***Attitude.*** Attitude is such an important part of professionalism that some feel that "firms should hire for attitude and train for skill" (Maister 1993). People often believe that their skills qualify them as professionals when it is actually attitude that most believe is the distinguishing feature of a true professional. Basically, professionalism is about *caring*—about doing a job to the best of one's ability and about doing the right thing for the company. People who care have a "can do" approach to their work, seek to constantly improve their skills, take reasonable risks, and are responsible and accountable for their work. They are willing to invest their time and energy in helping others and "go the extra mile." "We are looking for passion without arrogance or cockiness," said one IT manager. Stated another, "The best people are those who have an 'I can do it' attitude and

who are looking for challenges, rather than those who just have particular skills. These can always be developed or supplemented." A professional is also willing to accept criticism and coaching for personal growth and works well in a team, sharing the credit and not blaming others when problems arise.

Other characteristics of a positive attitude include calmness, stability, and self-control. Professionals do not lose their temper easily, display an erratic temperament, or make highly critical remarks, especially of others or of their companies. This attitude should extend beyond daily work into the public arena as well. "People often forget that they represent our company even when they aren't at work," stated one participant. One manager from a well-known manufacturer explained how his company had set up a hotline for employees who heard about problems with the company's products while socializing outside work. The phone number enabled them to learn and do something about the problem, and this reinforced the company's image of professionalism. In smaller communities IT workers and managers may be expected to represent their companies at charitable events. Their attitude may be important in building respect for the company in their communities.

It should be pointed out that these characteristics are ideals, and it is unrealistic to expect everyone to exhibit all of them in practice. "People are built in many ways and have different styles," said one manager. "We must be able to understand and accommodate them and make the blend work."

There is often a great deal of interaction between an organization's culture and individual attitudes. A stifling or highly politicized work environment, lack of appreciation and support, and poor communication about organization or team goals can destroy or dampen an IT worker's positive attitude. One manager noted that many "underperforming" staff simply need better support and education to work more effectively, and providing these can lead to dramatic differences in both attitude and productivity.

Principle 5: *Professionalism means a positive attitude toward work, other people, and one's employer.*

Tips: Seek opportunities for personal growth—courses, coaching, or new experiences.

Save highly critical remarks for private communication.

Recognize that you, your department and your employer will be judged by your attitude and demeanor.

DEVELOPING PROFESSIONALISM: ADVICE TO IT MANAGERS

Some people appear to have been born with professional skills, although it is widely agreed that professionalism can be developed in all IT workers. The following list provides a good start to the promotion of professionalism:

- ***Get consensus on the meaning of professionalism.*** Because it is a "soft" skill, *professionalism* means different things in different organizations. A team meeting to identify the key elements of professionalism in a particular company can help clarify expectations and develop group values around these behaviors.

- ***Articulate values.*** It is pointless to preach one set of values and reward others. Ideally, corporate values should be consistently upheld throughout the company. However, where they are not, try to articulate where they differ and then help IT workers to make effective judgments (e.g., How much will risk taking actually be valued?)
- ***Provide resources to support professionalism.*** Ideally, these should include training, but where this is not possible, provide books or speakers who will address this topic to your staff. Similarly, making some administrative support available can be very useful in helping people to appear professional to those outside IT. At a minimum, ensure that resources such as document templates, editors, and guidelines for e-mail are made available for staff to use.
- ***Grow professionalism in small steps.*** People will not develop these skills overnight. Managers should work with individuals in their groups on specific areas of professionalism, then provide them with the coaching and support they need.
- ***Offer intensive mentoring for staff who are willing to change.*** Employees who appear to be more malleable and willing to listen should be given attention from a manager. This can help them develop professional skills more rapidly.
- ***Help people find their niche.*** No employee (even those who appear to be unwilling to change) should be sidelined; doing so will only leave the employee increasingly further behind in a rapidly evolving workplace. A better strategy is to help employees identify where they feel they can best make a contribution and to help them develop the particular professional skills they will need.
- ***Weed out people whose attitudes are destructive.*** If people are consistently negative about change, managers must try to get rid of them or at least contain them in the short term. A longer-term plan must be put in place for dealing with such individuals because they could risk poisoning their whole team's effectiveness.

Conclusion

Professional is a label that many in IT seek but few earn. Unlike the traditional definition of the term, today's professional is a member of any occupational group who behaves in a professional manner. Professionalism can mean different things to different groups and organizations, but there is general agreement that it constitutes a set of behaviors that are expected over and above the technical skills of the job. This chapter has explored what professionalism means for IT workers. By delineating five principles of behavior, it has presented some of the areas in which IT managers should expect to see professionalism displayed. Comportment, preparation, communication, judgment, and attitude are "soft" skills but are often as important as technical ability for getting a job done. Professionalism is difficult to teach but easy to *catch* through exposure to exemplars, corporate and team culture, values and standards, and an environment that appreciates and rewards this behavior. As IT work becomes increasingly interconnected with that of the rest of the organization, the professionalism of IT staff will make a big difference in the effectiveness of the IT department as a whole. IT managers would, therefore, be well advised to make professionalism an important value for all IT staff and to recognize and reward it when it is displayed.

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APPENDIX A

ACM Code of Ethics and Professional Conduct 1992

1. **General Moral Imperatives**
   I will . . .
   - **1.1.** Contribute to society and human well-being.
   - **1.2.** Avoid harm to others.
   - **1.3.** Be honest and trustworthy.
   - **1.4.** Be fair and take action not to discriminate.
   - **1.5.** Honor property rights including copyrights and patents.
   - **1.6.** Give proper credit for intellectual property.
   - **1.7.** Respect the privacy of others.
   - **1.8.** Honor confidentiality.

2. **Personal Responsibilities**
   I will . . .
   - **2.1.** Strive to achieve the highest quality, effectiveness, and dignity in both the process and products of professional work.
   - **2.2.** Acquire and maintain professional competence.
   - **2.3.** Know and respect existing laws pertaining to professional work.
   - **2.4.** Accept and provide appropriate professional review.
   - **2.5.** Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.
   - **2.6.** Honor contracts, agreements, and assigned responsibilities.
   - **2.7.** Improve public understanding of computing and its consequences.
   - **2.8.** Access computing and communication resources only when authorized to do so.

3. **Organizational Leadership Imperatives**
   I will . . .
   - **3.1.** Articulate social responsibilities of members of an organizational unit and encourage full acceptance of those responsibilities.
   - **3.2.** Manage personnel and resources to design and build information systems that enhance the quality of working life.
   - **3.3.** Acknowledge and support proper and authorized uses of an organization's computing and communications resources.
   - **3.4.** Ensure that users and those who will be affected by a system have their needs clearly articulated during the assessment and design of requirements; later the system must be validated to meet requirements.
   - **3.5.** Articulate and support policies that protect the dignity of users and others affected by a computing system.
   - **3.6.** Create opportunities for members of the organization to learn the principles and limitations of computer systems.

Source: Excerpted from ACM Code of Ethics and Professional Conduct, adopted October 16, 1992, Association for Computing Machinery. www.acm.org/constitution/code.html (accessed March 4, 2011).

APPENDIX B

IT Professional Standards and Professionalism

Professionalism and standards should be exercised in the following areas:

- Censorship
- Community values
- Computer ethics and social impact in schools
- Copyrights, patents, trademarks, intellectual property
- Crime
- Disabilities
- Discrimination and harassment
- Ethics
- Fraud and dishonesty in business
- Freedom of speech
- "Green" machines
- Hacking
- History of computing
- Impact
- Liabilities
- Netiquette
- Privacy
- Relationships
- Responsibilities
- Safety critical systems
- Viruses
- World codes

Source: Department of Computer Science, University of Virginia.

MINI CASE

Delivering Business Value with IT at Hefty Hardware[2]

"IT is a pain in the neck," groused Cheryl O'Shea, VP of retail marketing, as she slipped into a seat at the table in the Hefty Hardware executive dining room, next to her colleagues. "It's all technical mumbo-jumbo when they talk to you and I still don't know if they have any idea about what we're trying to accomplish with our Savvy Store program. I keep explaining that we have to improve the customer experience and that we need IT's help to do this, but they keep talking about infrastructure and bandwidth and technical architecture, which is all their internal stuff and doesn't relate to what we're trying to do at all! They have so many processes and reviews that I'm not sure we'll ever get this project off the ground unless we go outside the company."

"You've got that right," agreed Glen Vogel, the COO. "I really like my IT account manager, Jenny Henderson. She sits in on all our strategy meetings and seems to really understand our business, but that's about as far as it goes. By the time we get a project going, my staff are all complaining that the IT people don't even know some of our basic business functions, like how our warehouses operate. It takes so long to deliver any sort of technology to the field, and when it doesn't work the way we want it to, they just shrug and tell us to add it to the list for the next release! Are we really getting value for all of the millions that we pour into IT?"

"Well, I don't think it's as bad as you both seem to believe," added Michelle Wright, the CFO. "My EA sings the praises of the help desk and the new ERP system we put in last year. We can now close the books at month-end in 24 hours. Before that, it took days. And I've seen the benchmarking reports on our computer operations. We are in the top quartile for reliability and cost-effectiveness for all our hardware and systems. I don't think we could get IT any cheaper outside the company."

"You are talking 'apples and oranges' here," said Glen. "On one hand, you're saying that we're getting good, cheap, reliable computer operations and value for the money we're spending here. On the other hand, we don't feel IT is contributing to creating new business value for Hefty. They're really two different things."

"Yes, they are," agreed Cheryl. "I'd even agree with you that they do a pretty good job of keeping our systems functioning and preventing viruses and things. At least we've never lost any data like some of our competitors. But I don't see how they're contributing to executing our business strategy. And surely in this day and age with increased competition, new technologies coming out all over the place, and so many changes in our economy, we should be able to get them to help us be more flexible, not less, and deliver new products and services to our customers quickly!"

The conversation moved on then, but Glen was thoughtful as he walked back to his office after lunch. Truthfully, he only ever thought about IT when it affected him and his area. Like his other colleagues, he found most of his communication with the department, Jenny excepted, to be unintelligible, so he delegated it to his subordinates, unless it absolutely couldn't be avoided. But Cheryl was right. IT was becoming increasingly important to how the company did its business. Although Hefty's success was built on its excellent supply chain logistics and the assortment of products in its stores, IT played a huge role in this. And to implement Hefty's new Savvy Store strategy, IT

[2]Smith, H. A., and J. D. McKeen. "Delivering Business Value with IT at Hefty Hardware," #1-L10-1-001, Queen's School of Business, May 2010. Reproduced by permission of Queen's University, School of Business, Kingston, Ontario, Canada.

would be critical for ensuring that the products were there when a customer wanted them and that every store associate had the proper information to answer customers' questions.

In Europe, he knew from his travels, IT was front and center in most cutting-edge retail stores. It provided extensive self-service to improve checkout; multichannel access to information inside stores to enable customers to browse an extended product base and better support sales associates assisting customers; and multimedia to engage customers with extended product knowledge. Part of Hefty's new Savvy Store business strategy was to copy some of these initiatives, hoping to become the first retailer in North America to completely integrate multimedia and digital information into each of its 1,000 stores. They'd spent months at the executive committee meetings working out this new strategic thrust—using information and multimedia to improve the customer experience in a variety of ways and to make it consistent in each of their stores. Now, they had to figure out exactly how to execute it, and IT was a key player. The question in Glen's mind now was how could the business and IT work together to deliver on this vision, when IT was essentially operating in its own technical world, which bore very little relationship to the world of business?

Entering his office, with its panoramic view of the downtown core, Glen had an idea. "Hefty's stores operate in a different world than we do at our head office. Wouldn't it be great to take some of our best IT folks out on the road so they could see what it's really like in the field? What seems like a good idea here at corporate doesn't always work out there, and we need to balance our corporate needs with those of our store operations." He remembered going to one of Hefty's smaller stores in Moose River and seeing how its managers had circumvented the company's stringent security protocols by writing their passwords on Post-it notes stuck to the store's only computer terminal.

So, on his next trip to the field he decided he would take Jenny, along with Cheryl and the Marketing IT Relationship Manager, Paul Gutierez, and maybe even invite the CIO, Farzad Mohammed, and a couple of the IT architects. "It would be good for them to see what's actually happening in the stores," he reasoned. "Maybe once they do, it will help them understand what we're trying to accomplish."

A few days later, Glen's e-mailed invitation had Farzad in a quandary. "He wants to take me and some of my top people—including you—on the road two weeks from now," he complained to his chief architect, Sergei Grozny. "Maybe I could spare Jenny to go, since she's Glen's main contact, but we're up to our wazoos in alligators trying to put together our strategic IT architecture so we can support their Savvy Stores initiative and half a dozen more 'top priority' projects. We're supposed to present our IT strategy to the steering committee in three weeks!"

"And I need Paul to work with the architecture team over the next couple of weeks to review our plans and then to work with the master data team to help them outline their information strategy," said Sergei. "If we don't have the infrastructure and integrated information in place there aren't going to be any 'Savvy Stores'! You can't send Paul and my core architects off on some boondoggle for a whole week! They've all seen a Hefty store. It's not like they're going to see anything different."

"You're right," agreed Farzad. "Glen's just going to have to understand that I can't send five of our top people into the field right now. Maybe in six months after we've finished this planning and budget cycle. We've got too much work to do now. I'll send Jenny and maybe that new intern, Joyce Li, who we're thinking of hiring. She could use some exposure to the business, and she's not working on anything critical. I'll e-mail Jenny and get her to set it up with Glen. She's so great with these business guys. I don't know how she does it, but she seems to really get them onside."

Three hours later, Jenny Henderson arrived back from a refreshing noontime workout to find Farzad's request in her priority in-box. "Oh #*!#*@!" she swore. She had a more finely nuanced understanding of the politics involved in this situation, and she was standing on a land mine for sure. Her business contacts had all known about the invitation, and she knew it was more than a simple request. However, Farzad, having been with the company for only eighteen months, might not recognize the olive branch that it represented, nor the problems that it would cause if he turned down the trip or if he sent a very junior staff member in his place. "I have to speak with him about this before I do anything," she concluded, reaching for her jacket.

But just as she swiveled around to go see Farzad, Paul Gutierez appeared in her doorway, looking furious. "Got a moment?" he asked and, not waiting for her answer, plunked himself down in her visitor's chair. Jenny could almost see the steam coming out of his ears, and his face was beet red. Paul was a great colleague, so mentally putting the "pause" button on her own problems, Jenny replied, "Sure, what's up?"

"Well, I just got back from the new technology meeting between marketing and our R&D guys, and it was just terrible!" he moaned. I've been trying to get Cheryl and her group to consider doing some experimentation with cell phone promotions—you know, using that new Japanese bar coding system. There are a million things you can do with mobile these days. So, she asked me to set up a demonstration of the technology and to have the R&D guys explain what it might do. At first, everyone was really excited. They'd read about these things in magazines and wanted to know more. But our guys kept droning on about 3G and 4G technology and different types of connectivity and security and how the data move around and how we have to model and architect everything so it all fits together. They had the business guys so confused we never actually got talking about how the technology might be used for marketing and whether it was a good business idea. After about half an hour, everyone just tuned out. I tried to bring it back to the applications we could develop if we just invested a little in the mobile connectivity infrastructure, but by then we were dead in the water. They wouldn't fund the project because they couldn't see why customers would want to use mobile in our stores when we had perfectly good cash registers and in-store kiosks!"

"I despair!" he said dramatically. "And you know what's going to happen don't you? In a year or so, when everyone else has got mobile apps, they're going to want us to do something for them yesterday, and we're going to have to throw some sort of stopgap technology in place to deal with it, and everyone's going to be complaining that IT isn't helping the business with what it needs!"

Jenny was sympathetic. "Been there, done that, and got the T-shirt," she laughed wryly. "These tech guys are so brilliant, but they can't ever seem to connect what they know to what the business thinks it needs. Sometimes, they're too farsighted and need to just paint the next couple of steps of what could be done, not the 'flying around in jetpacks vision.' And sometimes I think they truly don't understand why the business can't see how these bits and bytes they're talking about translate into something that it can use to make money." She looked at her watch, and Paul got the hint. He stood up. "Thanks for letting me vent," he said. "You're a good listener."

"I hope Farzad is," she thought grimly as she headed down the hall. "Or he's going to be out of here by Thanksgiving." It was a sad truth that CIOs seemed to turn over every two years or so at Hefty. It was almost predictable. A new CEO would come in, and the next thing you knew the CIO would be history. Or the user satisfaction rate would plummet, or there would be a major application crash, or the executives would complain about how much IT cost, or there would be an expensive new system failure. Whatever it was, IT would always get blamed, and the CIO would be gone. "We have some world-class people in IT," she thought, "but everywhere we go in the business, we get a bad rap. And it's not always our fault."

She remembered the recent CIM project to produce a single customer database for all of Hefty's divisions: hardware, clothing, sporting goods, and credit. It had seemed to be a straightforward project with lots of ROI, but the infighting between the client divisions had dragged the project (and the costs) out. No one could agree about whose version of the truth they should use, and the divisions had assigned their most junior people to it and insisted on numerous exceptions, workarounds, and enhancements, all of which had rendered the original business case useless. On top of that, the company had undergone a major restructuring in the middle of it, and a lot of the major players had changed. "It would be a lot easier for us in IT if the business would get its act together about what it wants from IT," she thought. But just as quickly, she recognized that this was probably an unrealistic goal. A more practical one would be to find ways for business and IT to work collaboratively at all levels. "We each hold pieces of the future picture of the business," she mused. "We need to figure out a better way to put them together than simply trying to force them to fit."

Knocking on Farzad's door, she peeked into the window beside it. He seemed lost in thought but

smiled when he saw her. "Jenny!" he exclaimed. "I was just thinking about you and the e-mail I sent you. Have you done anything about it yet?" When she shook her head, he gave a sigh of relief. "I was just rethinking my decision about this trip, and I'd like your advice." Jenny gave her own mental sigh and stepped into the office. "I think we have a problem with the business and we need to fix it—fast," she said. "I've got some ideas, and what to do about the trip is just part of them. Can we talk?" Farzad nodded encouragingly and invited her to sit down. "I agree with you, and I'd like to hear what you have to say. We need to do things differently around here, and I think with your help we can. What did you have in mind?"

Discussion Questions

1. Overall, how effective is the partnership between IT and the business at Hefty Hardware? Identify the shortcomings of both IT and the business.
2. Create a plan for how IT and the business can work collaboratively to deliver the Savvy Store program successfully.

MINI CASE

Investing in TUFS[3]

"Why do I keep this around?" Martin Drysdale wondered. "It infuriates me every time I see all that satisfaction over something that is now the bane of my existence."

He looked gloomily at the offending photo, which showed the project team happily "clinking" pop cans and coffee cups in a toast: "Here's to TUFS!" The Technical Underwriting Financial System (TUFS) was the largest single investment in IT ever made by Northern Insurance, and it was going to transform Northern by streamlining the underwriting processes and providing strategic e-business capabilities. The TUFS team had brought the project in on time and on budget, so the party was a thank-you for all of the team's dedicated, hard work. But it was two years ago when the camera captured the happy moment for posterity, and Martin, CIO for Northern, had celebrated with the rest.

"Yeah, right," Martin grimaced as he turned from the photo to the e-mail message on his computer screen, summoning him to a meeting with his boss that morning to discuss TUFS. The system had turned into a nightmare in its first few months of operation. Now his job was on the line. What was supposed to have brought efficiency to the underwriting process and new opportunities for top-line growth had become a major corporate money pit. TUFS was still eating up the vast majority of Northern's IT budget and resources to fix the underwriting errors that kept appearing, and resistance to the system had grown from sniping and grumbling into calls for Martin's head. "No wonder we're not saving any money, though, with senior underwriting managers still insisting on receiving some of their old reports, even though TUFS lets them look up the same information online anytime they want," Martin fumed. The meeting with the CFO was to discuss TUFS and the company's "very significant investment in this system." Feeling like a condemned prisoner on his way to the gallows, Martin grabbed his suit jacket, straightened his tie, and headed up to the seventh-floor executive suite.

An hour later Martin was feeling very well grilled as he was confronted with a long list of the problems with TUFS. The CFO, Melissa Freeman, had done her homework. Before her was a binder full of TUFS documentation, stretching back almost three years from when the project had been first identified. "According to my calculations, Northern has spent almost $4 million on this system, if you include all of the resources dedicated to fixing the problems identified *after* implementation," she noted. "And I have yet to see any cost savings in the underwriting department. Why?"

"It's true that there have been some unanticipated changes to the system that have cost us, but the underwriters have never bought into the system," Martin conceded. "They insist on following their old procedures and then using the system at the last possible moment as a double-check. What can we do if they won't use the system the way it was designed?"

"Could there *possibly* be a reason why they don't like the system?" Freeman asked. "It seems to me from looking at these change reports that the system hasn't been meeting our basic underwriting needs."

Martin acknowledged that there had been some problems. "But my guys are technicians, not underwriters. They didn't get much participation from the underwriters in the first place. The underwriting department wouldn't take the time to bring my people up to speed on what they needed and why. As well, we were facing a very tight deadline, which meant that we had to defer some of the functionality we had originally intended to include. That was senior management's decision, and everyone was informed about it when it was

[3]Smith, H. A., and J. D. McKeen. "Investing in TUFS," #9-L05-1-003, Queen's School of Business, February 2005. Reproduced by permission of Queen's University, School of Business, Kingston, Ontario, Canada.

made." He added that they were now asking for a TUFS training program and a help desk to handle questions that underwriters might face while using the system!

"A help desk and training program weren't in our original plan," Martin reminded Freeman. "These extras are eating away at the system's benefits." According to the business case prepared by the users, TUFS was supposed to pay for itself over its first two years of operations from savings realized from the underwriting process. The system's problems certainly accounted for some of the extra costs, but the users hadn't made any of the process changes that would help those savings be realized. "They think we can just plug in the system and cost savings will appear like magic. And other parts of the system are going to take time to deliver benefits."

The "other parts" he was referring to were the e-business capabilities that TUFS provided. "If you will recall, this system was approved in the days when we *had* to have e-business or we were going to be dinosaurs. In retrospect, we could have cut back on this functionality more easily and left some of the underwriting functionality in, but who knew?"

"Well, as you know, our financial resources are very limited at present." Freeman leaned forward. "I've been asked to make some recommendations to the executive committee about whether or not we should put more money into this system. TUFS has been our number-one priority for two years now, and quite a few people are saying that enough is enough—that we need to make some major changes around here."

Martin took a deep breath, waiting for the ax to fall. Freeman continued, "What I need to know now from you is this: What went wrong with our TUFS investment, and what can we do to prevent these problems in the future? What do we need to do to realize the benefits that were projected for TUFS? How can we measure these benefits? And how can we best decide how to apportion our IT budget between TUFS and these other projects?"

As he slowly exhaled and felt his pulse resume, Martin nodded. "I've got some ideas. Can I get them to you in writing by the end of the week?"

Discussion Questions

1. What went wrong with the TUFS investment, and what can be done to prevent these problems in the future?
2. What does Northern need to do to realize the benefits that were projected for TUFS?
3. How can Northern measure these benefits?

MINI CASE

IT Planning at ModMeters[4]

Brian Smith, CIO of ModMeters, groaned inwardly as he listened to CEO John Johnson wrapping up his remarks. "So our executive team thinks there are real business opportunities for us in developing these two new strategic thrusts. But before I go to the board for final approval next month, I need to know that our IT, marketing, and sales plans will support us all the way," Johnson concluded.

Brian mentally calculated the impact these new initiatives would have on his organization. He had heard rumors from his boss, the COO, that something big was coming down. He had even been asked his opinion about whether these strategies were technically doable, *theoretically.* But *both* at once? Resources—people, time, and money—were tight, as usual. ModMeters was making a reasonable profit, but the CFO, Stan Abrams, had always kept the lid screwed down tightly on IT spending. Brian had to fight for every dime. How he was going to find the wherewithal to support not one but *two* new strategic initiatives, he didn't know.

The other VPs at this strategy presentation were smiling. Taking ModMeters global from a North American operation seemed to be a logical next step for the company. Its products, metering components of all types, were highly specialized and in great demand from such diverse customers as utility companies, manufacturers, and a host of other industries. Originally founded as Modern Meters, the firm had grown steadily as demand for its metering expertise and components had grown over the past century or so. Today ModMeters was the largest producer of metering components in the world with a full range of both mechanical and, now, digital products. Expanding into meter assembly with plants in Asia and Eastern Europe was a good plan, thought Brian, but he wasn't exactly sure how he was going to get the infrastructure in place to support it. "Many of these countries simply don't have the telecommunications and equipment we are going to need, and the training and new systems we have to put in place are going to be substantial," he said.

But it was the second strategic thrust that was going to give him nightmares, he predicted. How on earth did they expect him to put direct-to-customer sales in place so they could sell "green" electric meters to individual users? His attention was jerked back to the present by a flashy new logo on an easel that the CEO had just unveiled.

"In keeping with our updated strategy, may I present our new name—MM!" Johnson announced portentously.

"Oh, this is just great," thought Brian. "Now I have to go into every single application and every single document this company produces and change our name!"

Because of its age and scientific orientation, ModMeters (as he still preferred to call it) had been in the IT business a long time. Starting back in the early 1960s, the company had gradually automated almost every aspect of its business from finance and accounting to supply- chain management. About the only thing it didn't have was a fancy Web site for consumers, although even *that* was about to change. ModMeters currently had systems reflecting just about every era of computers from punch cards to PCs. Unfortunately, the company never seemed to have the resources to invest in reengineering its existing systems. It just layered more systems on top of the others. A diagram of all the interactions among systems looked like a plate of spaghetti. There was *no way* they were going to be able to support two new strategic thrusts with their current budget levels, he thought as he applauded the new design along with the others. "Next week's IT budget meeting is going to be a doozy!"

Sure enough, the following week found them all, except for the CEO, back in the same meeting

[4]Smith, H. A., and McKeen, J. D. "IT Planning at ModMeters," #1-L05-1-008, Queen's School of Business, September 2005. Reproduced by permission of Queen's University, School of Business, Kingston, Ontario, Canada.

room, ready to do battle. Holding his fire, Brian waited until all the VPs had presented their essential IT initiatives. In addition to what needed to be done to support the new business strategies, each division had a full laundry list of essentials for maintaining the *current* business of the firm. Even Abrams had gotten into the act this year because of new legislation that gave the firm's outside auditors immense scope to peer into the inner workings of every financial and governance process the organization had.

After listening carefully to each speaker in turn, Brian stood up. "As many of you know, we have always been cautious about how we spend our IT budget. We have been given a budget that is equal to 2 percent of revenues, which seriously limits what we in IT have been able to do for the company. Every year we spend a lot of time paring our project list down to bare bones, and every year we make do with a patchwork of infrastructure investments. We are now at the point where 80 percent of our budget in IT is fixed. Here's how we spend our money." Brian clicked on a PowerPoint presentation showing a multicolored pie chart.

"This large chunk in blue is just about half our budget," he stated. "This is simply the cost of keeping the lights on—running our systems and replacing a bare minimum of equipment. The red chunk is about 30 percent of the pie. This is the stuff we *have* to do—fixing errors, dealing with changes mandated by government and our own industry, and providing essential services like the help desk. How we divide up the remainder of the pie is what this meeting is all about."

Brian clicked to a second slide showing a second pie chart. "As you know, we have typically divided up the remaining IT budget proportionately, according to who has the biggest overall operating budget. This large pink chunk is you, Fred." Brian gestured at Fred Tompkins, head of manufacturing and the most powerful executive in the room. It was his division that made the firm's profit. The pink chunk easily took up more than half of the pie. Tompkins smiled. Brian went on, pointing out the slice that each part of the firm had been allotted in the previous year. "Finally, we come to Harriet and Brenda," he said with a smile. Harriet Simpson and Brenda Barnes were the VPs of human resources and marketing, respectively. Their tiny slivers were barely visible—just a few percent of the total budget.

"This approach to divvying up our IT budget may have served us well over the years"—Brian didn't think it had, but he wasn't going to fight past battles—"however, we all heard what John said last week, and this approach to budgeting doesn't give us *any* room to develop our new strategies *or* cover our new infrastructure or staffing needs. Although we might get a little more money to obtain some new applications and buy some more computers"—Abrams nodded slightly—"it won't get us where we need to go in the future."

A third graph went up on the screen, showing the next five years. "If we don't do something *now* to address our IT challenges, within five years our entire IT budget will be eaten up by just operations and maintenance. In the past we have paid minimal attention to our infrastructure or our information and technology architecture or to reengineering our existing systems and processes." A diagram of the "spaghetti" flashed on. "This is what you're asking me to manage in a cost-effective manner. It isn't pretty. We need a better plan for making our systems more robust and flexible. If we are going to be moving in new directions with this firm, the foundation just isn't there. Stan, you *should* be worried that we won't be able to give our auditors what they ask for. But you should also be worried about our risk exposure if one of these systems fails and about how we are going to integrate two new business ventures into this mess."

Tompkins looked up from his papers. It was clear he wasn't pleased with where this presentation was headed. "Well, I, for one, *need* everything I've asked for on my list," he stated flatly. "You can't expect me to be the cash cow of the organization and not enable me to make the money we need to invest elsewhere."

Brian was conciliatory. "I'm not saying that you don't, Fred. I'm just saying that we've been given a new strategic direction from the top and that some things are going to have to change to enable IT to support the whole enterprise better. For example, until now, we have always prioritized divisional IT projects on the basis of ROI. How should we prioritize these new strategic initiatives? Furthermore, these new ventures will require a *lot* of additional infrastructure, so we need to figure out a way to afford this. And right now our systems don't 'talk' to the ones running in other divisions because they don't use the same terminology. But in

the future, if we're going to have systems that won't cost increasing amounts of our budget, we are going to have to simplify and integrate them better.

Tompkins clearly hadn't considered the enterprise's needs at all. He scowled but said nothing. Brian continued, "We are being asked to do some new things in the company. Obviously, John hopes there's going to be a payback, but it may take a while. New strategies don't always bear fruit right away." Now looking at Abrams, he said pointedly, "There's more to IT value than short-term profit. Part of our business strategy is to *make* new markets for our company. That requires investment, not only in equipment and product but also in the underlying processes and information we need to manage and monitor that investment."

Harriet Simpson spoke for the first time. "It's like when we hire someone new in R&D. We hire for quality because we want their ideas and innovation, not just a warm body. I think we need to better understand how we are going to translate our five key corporate objectives into IT projects. Yes, we need to make a profit, but Stan needs to satisfy regulators and Brenda's going to be on the hot seat when we start marketing to individuals. And we haven't even spoken about Ted's needs." As the VP of R&D, Ted Kwok was tasked with keeping one or more steps ahead of the competition. New types of products and customer needs would mean expansion in his area as well.

Abrams cleared his throat. "*All* of you are right. As I see it, we are going to have to keep the cash flowing from Fred's area while we expand. But Brian's got a point. We may be being penny wise and pound foolish if we don't think things through more carefully. We've put a lot of effort into developing this new strategy, and there *will* be some extra money for IT but not enough to do that plus everything all of you want. We need to retrench and regroup *and* move forward at the same time."

There was silence in the room. Abrams had an annoying way of stating the obvious without really helping to move the ball forward. Brian spoke again. "The way I see it, we have to understand two things before we can really make a new budget. First, we need to figure out how each of the IT projects we've got on the table contributes to one of our key corporate objectives. Second, we need to figure out a way to determine the *value* of each to ModMeters so that we can prioritize it. Then I need to incorporate a reasonable amount of IT regeneration so that we can continue to do new projects at all."

Everyone was nodding now. Brian breathed a small sigh of relief. That was step one accomplished. But step two was going to be harder. "We have a month to get back to the board with our assurances that the IT plan can incorporate the new strategies and what we're going to need in terms of extra funds to do this. As I said earlier, this is *not* just a matter of throwing money at the problem. What we need is a *process* for IT planning and budgeting that will serve us well over the next few years. This process will need to accomplish a number of things: It will need to take an *enterprise* perspective on IT. We're all in these new strategies together. It will have to incorporate all types of IT initiatives—our new strategies, the needs of Fred and others for the new IT to operate and improve our existing business, Stan's new auditing needs, and our operations and maintenance needs. In addition, we *must* find some way of allocating some of the budget to fixing the mess we have in IT right now. It must provide a better way to connect new IT work with our corporate objectives. It must help us prioritize projects with different types of value. Finally, it must ensure we have the business *and* IT resources in place to deliver that value."

Looking at each of his colleagues in turn, he asked, "Now how are we going to do this?"

Discussion Question

Develop an IT planning process for ModMeters to accomplish the demands as set out above.

Chapter 10

IT Sourcing

Outsourcing is now a widely accepted part of doing business. In IT, companies are outsourcing everything from operations and help desks to maintenance and development. What started as a mechanism largely to lower costs has become an integral part of a much larger IT strategy. IT departments are finding that outsourcing gives them access to a wider range of skilled resources, helps them focus on their core strengths, and speeds the time to market of products and services. Lower operational costs, reduced up-front investment, and the ability to convert fixed to variable costs also make outsourcing an attractive option for some IT services.

As IT organizations have gained experience with outsourcing, they have learned to do it more effectively—to better manage the relationships, risks, benefits, and outcomes involved. As a result, interest in outsourcing is growing, although a 2002 study found there is still considerable reluctance to use it (Mackie 2002). Clearly, outsourcing has found a place in the IT executive's toolkit.

The danger now is complacency. Thinking that they have a handle on outsourcing, IT managers could fail to consider newer forms of outsourcing, different options, different strategies, and/or changing economies. Certainly, there are new players on the horizon and new approaches to sourcing that will change yet again how IT sourcing decisions are made. Some of these include strategic sourcing practices; offshore contracting; and nearshore sourcing using companies based in India, Ireland, Asia, and Eastern Europe. Better connectivity, the availability of high-quality staff, and much lower costs are changing sourcing markets and expanding sourcing possibilities for companies.

In previous research, we examined outsourcing through application service providers (ASPs) and concluded the following:

> *The emerging external IT services marketplace offers rich opportunities and many possibilities for IT organizations to become more cost effective. . . . Strategic business applications development and management for mission-critical applications will [continue to] be in-house, but delivery for standard and meta-industry applications, processes and technology will be off-site. Thus . . . it is likely that external IT providers will form part of [a] future service delivery package. . . . However, as is so often the case in the IT industry, today's reality falls far short of what the industry promises. Companies wishing to take advantage now of what the external IT services marketplace can offer must evaluate [it] carefully and . . .*

proceed in full awareness of the risks involved. It is recommended that organizations articulate a sourcing strategy which balances internal versus external capabilities. (McKeen and Smith 2003)

This chapter first explores how sourcing strategy is evolving in organizations. Then it looks at emerging sourcing models, with particular emphasis on offshore/nearshore outsourcing. Next it discusses some new critical success factors for effective sourcing. Finally, it looks at how the role of IT itself is changing as a result.

THE EVOLUTION OF SOURCING

The concept of outsourcing IT services—that is, transferring some or all of a company's IT activities to a third party that performs them on behalf of the enterprise—has been a significant factor in IT decision making since the early 1990s (Lacity and Willcocks 2001). Globally, the outsourcing industry was estimated to be more than $1 trillion in 2000 (Kern et al. 2002). It is growing steadily as companies explore new possible sourcing models and outsourcing companies become better at what they do and expand the range of their services. At first, sourcing decisions were driven largely by economics, with outsourcers promising to remove millions of dollars from a firm's IT budget. However, today they reflect a significant shift in business strategy from diversification to a focus on core competencies. In turn, evolving sourcing models are transforming the underlying economics of IT (Lacity and Willcocks 2001).

As our understanding of sourcing has developed, three distinct yet complementary approaches have emerged:

1. ***Outsourcing for operational efficiency.*** This is the most well-established approach to sourcing, dating from the early 1990s, and is still by far the most common one, according to researchers (Lacity and Willcocks 2001). Here the "utility" functions of IT (e.g., computer operations, communications, infrastructure, and help desk) are transferred to an outsourcer, often along with company staff. The objective is to save money by sharing staff and resources with other companies in areas that do not make the company distinct and that have become routinized (Carr 2003). Outsourcing companies are typically autonomous entities that use their extensive experience in these areas, economies of scale, and the discipline of a contractual relationship to reduce the overall cost to a company while generating a profit for themselves. Many organizations have found that outsourcing to businesses that specialize in these services allows them to offer the same or better service at a reduced cost. Over time, this form of sourcing has become increasingly successful as companies have learned how to negotiate and manage contracts to make outsourcing work.
2. ***Outsourcing for tactical support.*** In the late 1990s, companies recognized that outsourcing could be used to help free up their own IT staff to perform selected support and development work and eliminate some of the peaks and valleys of the IT staffing cycle. "We are always under continual pressure to reduce the cost of our existing applications," stated one manager. "We spend 85 percent of our development budget on maintenance and support." Facing the dual challenges of Y2K and the dot-com bubble, and the resulting staff shortages they caused, many businesses began to use outsourcing in new ways. They offloaded their mature IT to an

outsourcer who could "keep the lights on" while company staff introduced new applications. They also used outsourcers as a way to introduce new technologies quickly (e.g., e-business) through such practices as managed hosting of a Web site and using outsourced staff to transfer their experience and skills to in-house staff. With this approach to sourcing, IT managers seek to rapidly add to their capacity to deliver applications and new technology to their organizations (Lacity and Willcocks 2001). Although cost is still important, the primary driver for using tactical outsourcing is to achieve flexibility and responsiveness. As tactical outsourcing has developed, contracts have become more flexible and outsourcers have come to be viewed increasingly as partners who can add other forms of value rather than simply reducing cost.

3. ***Outsourcing for strategic impact.*** Over the last decade, sourcing has been increasingly recognized as a tool for achieving an organization's strategic objectives as well as driving costs down and adding capacity. As companies have become more focused on their core competencies, new possibilities for sourcing have opened up. With greater connectivity, it is now possible to outsource whole business processes that are not considered business critical. Noncore applications (e.g., accounting) can languish in-house because they cannot justify the same business value as other projects. By outsourcing these processes, companies can get full functionality without having to develop the applications themselves. Some organizations are using outsourcing to drive organizational change. "Today we consider outsourcing at a higher level," explained a manager. "We look at sourcing holistically. While you still need to outsource routine activities, you also need to look at it from the top down. Sourcing shouldn't be an ad hoc process." Companies are seeing that outsourcing can give them access to world-class capabilities, disciplines, quality, and innovation. To this end, some have established strategic alliances with a few vendors to take advantage of what they can offer. These preferred relationships are typically broad in scope and complex in nature and are designed to deliver significant business value (Smith and McKeen 2003). "Our supplier alliances are now part of getting any project approved," said another manager. "We must present the full continuum of sourcing options in any business case." Finally, organizations are learning that "right-sourcing" (i.e., choosing the right sourcing option for a given activity) can change with time. Certain functions that have been outsourced can become business critical, and others that were deemed core can now be outsourced. One manager explained, "In our company we are constantly testing what should be outsourced. The business has to be fully engaged in the process so they understand the implications." Strategic sourcing is a very recent trend, and companies have very little experience doing it. The focus group suggested moving carefully into this area until more is known about how to accomplish it successfully. Members also cautioned that customers should watch for hidden costs at this level (e.g., the need for integration by the customer) that can be quite expensive and could kill a business case for this type of sourcing.

Each of these three approaches to sourcing represents an increase in the size, scope, and impact of what is sourced. Table 10.1 summarizes these approaches. It should be stressed that one does not preclude the other. Companies tend to begin outsourcing for operational efficiency and move toward tactical and strategic approaches as they gain experience and confidence at each level.

TABLE 10.1 Three Complementary Approaches to IT Sourcing

Approach	Driver	Mode	Activities	Relationship
Operational Effectiveness	Cost reduction	Utility	Infrastructure, operations, support	Fee-for-service
Tactical Support	Capacity, flexibility	Service delivery	Mature technology, new technology	Partnership
Strategic Impact	Focus, business value	Toolkit	Processes, transformation, innovation	Strategic alliance

Companies have become quite good at basic utility, fee-for-service sourcing. In fact, by far the majority of sourcing is of this type (Lacity and Willcocks 2001). All of the companies in the focus group had some sourcing initiatives to improve operational efficiency, although none had completely outsourced their services, even at this level. Overall, studies show that about 38 percent of IT functions have now been outsourced to vendors (Barthelemy 2001).

Research has also identified five factors that are critical to the success of *current* outsourcing initiatives:

1. ***Use selective sourcing.*** Careful selection of what to outsource and what to retain in-house is a demonstrably more effective approach than total outsourcing or total insourcing. Companies find it more controllable and satisfactory as well as considerably less risky (Chen et al. 2002).
2. ***Have joint business–IT sponsorship.*** When both the business and IT executives are involved in making outsourcing decisions, the results are far more likely to meet expectations than when either group acts alone (Lacity and Willcocks 2001).
3. ***Ensure a thorough comparison with internal operations.*** Too often companies don't get expected savings because they forget to include or identify the hidden costs involved in outsourcing when problems such as extra maintenance or consulting fees arise (Overby 2003b).
4. ***Develop a detailed contract.*** Tighter contracts with carefully thought-out flexibility, evolution, and reversibility clauses lead to more successful sourcing (Barthelemy 2001).
5. ***Limit the length of the contract.*** Short-term contracts (one to three years) are more likely to be successful than mid- or long-term contracts. This is because they involve less uncertainty, motivate supplier performance, help ensure a fair market price for services, and enable recovery from mistakes more quickly (Lacity and Willcocks 2001).

In spite of all that has been learned, between 14 and 78 percent of outsourcing functions are deemed failures (Barthelemy 2001; Overby 2003b), and repatriating functions are becoming more and more common (Overby 2003b). A major reason for this huge discrepancy in success rates is that companies are experimenting with increasingly more radical options to extend outsourcing models, thereby moving into areas of higher risk.

OFFSHORE AND NEARSHORE OUTSOURCING: EMERGING SOURCING MODELS

In addition to outsourcing larger and more complex chunks of work (e.g., innovation, business processes) and developing more complex relationships with vendors (i.e., strategic outsourcing), companies are also working with vendors at increasingly greater distances, typically in other countries. Known as *offshore outsourcing* (or simply *offshoring*), the primary driver for this sourcing model and its many variations is economic (Aron 2003; Kripalani and Engardio 2003). The increasing globalization of large companies and the need for global processes is also a factor (Chen et al. 2002). Vendors located in other countries, such as India, can charge a fraction of what it costs to provide the same service in the United States. Facilitated by ever-greater connectivity; ubiquitous, cheap bandwidth; and Web technologies, companies can afford to knit together people, processes, and platforms in different ways than have been possible previously (Aron 2003). Forrester Research has found that 44 percent of Fortune 1000 companies are offshoring some activities (cited in Blackwell 2003).

According to Chen et al. (2002), IT organizations are unclear about how offshoring fits into a company's overall sourcing strategy and are even less clear about how to make it successful. Undoubtedly, global outsourcing represents a significant shift in how organizations manage their IT activities (Elmuti and Kathawala 2000). Therefore, today's IT managers are approaching offshoring cautiously and building on what they have learned about other forms of outsourcing. "There is certainly a lot of hype about offshore outsourcing," said one, "but we're still skeptical about its benefits. We had a bad experience ten years ago. The level of professionalism and understanding just wasn't there, so it didn't work." Nevertheless, the cost differentials and the "hype" are forcing everyone to look seriously at offshoring as part of their sourcing strategy.

Offshore Outsourcing Benefits

It is cheaper to do IT work outside the United States. Even doing work in Canada can reduce costs for many United States–based firms. However the big savings come from sending work to Third World countries, where salaries are 40 to 60 percent lower than in North America. Most Third World countries have significant numbers of well-trained professionals and offer considerable tax breaks.[1] As a result, even with additional travel and connectivity charges, companies are expecting to save 20 to 40 percent on costs such as managing infrastructure or operating a help desk (Bhandari 2003). The differentials are so significant that the increased competition is also driving down the rates of traditional North American outsourcing vendors (Blackwell 2003). These vendors are also setting up centers in India so they can compete more effectively (Kripalani and Engardio 2003).

Typical activities that are being sourced offshore include help desk, personal computer repair, disaster recovery, back office processes, application maintenance, network management and operations, application and IT support, and problem resolution (Chordas 2003). These are relatively routine and straightforward utility types of functions

[1]There are more IT engineers in Bangalore, India, alone than there are in Silicon Valley, California (Kripalani and Engardio, 2003).

that many companies feel very comfortable in outsourcing. Thus, in moving these functions offshore, they are limiting risk while taking advantage of the resulting cost benefits. However, many offshore outsourcers, especially in India, are also seeking to scale up the types of activities in which they are involved. Quality standards in India, for example, are often higher than in North America (Blackwell 2003). In many cases Indian companies have better software and risk management processes and have been among the first in the world to achieve the highest SEI CMM rating of five (Satyam 2003). These firms are seeking a larger presence in the high-end software development and consulting areas of the market (i.e., tactical and strategic outsourcing). Big vendors, such as Oracle, Accenture, and Microsoft, are also establishing partnerships and software development centers in India to take advantage not only of the cost savings involved but also the skills available (Blackwell 2003).

Offshore Outsourcing Locations

Although 85 percent of offshore outsourcing work currently goes to India, several other countries are looking to increase their share of this work. China, Russia, and the Philippines are the most serious competition, although they are far behind India at present (Overby 2003a). Canada is also involved in this market because of its proximity to the United States, even though it is more expensive than other offshore vendors. Ireland, Israel, Mexico, and South Africa are also positioning themselves in this market. Forrester Research predicts that by 2015, about 3.3 million jobs will have moved offshore—70 percent to India, 20 percent to the Philippines, and 10 percent to China (cited in Chordas 2003).

All of these countries offer reduced or substantially lower costs, but they are not considered equal in other important characteristics, which should be considered before a company makes a significant outsourcing decision. These factors include language, cultural similarities, time differentials, political stability, quality, project management skills, education, and infrastructure. Table 10.2 summarizes these for the five main countries involved in offshore sourcing with the United States.

TABLE 10.2 A Comparison of Offshore Outsourcing Nations

Country	Language	Cultural Similarities	Time Differential	Political Stability	Project Management Skills	Education	Infrastructure
Canada	English	Many	None	Excellent	Very good	Excellent	Excellent
India	Good English	Some	Large	Good	Excellent	Excellent	Improving
China	Limited English	Few	Large	Good	Unknown	Good	Good
Philippines	Good English	Some	Large	Good	Unknown	Good	Very good
Russia	Limited English	Few	Large	Fair	Poor	Good	Unknown

Source: Based on Chordas 2003; Damsell 2003; Gallagher 2002; Overby 2003a.

Offshore Outsourcing Risks

As Table 10.2 shows, offshoring involves considering a number of factors, such as language and political stability, which have not traditionally been part of outsourcing decision making. Comments from practicing IT managers clearly illustrate some of the risks involved.

> *"We outsourced a call center to India and then brought it back. There were problems with the time to transfer calls, language, and spelling. The accents weren't bad, but there was often poor understanding on the phone."*
>
> *"We outsourced project management and then lost all their interfaces with the users when they left. Now we have 100 percent internal project management."*
>
> *"We outsourced our help desk. It was brutal. We had the mix wrong. We needed more decomposition of activities and a more granular understanding of what we were doing."*

A number of additional risks must also be addressed as part of the offshore outsourcing decision-making process:

- ***Hidden costs.*** These include the cost of finding a vendor, drafting the contract, and managing the effort, as well as the cost of transitioning to a new vendor if the first doesn't work out. Monitoring, bargaining, and negotiating needed changes to a contract typically add up to about 8 percent of the yearly contract amount (Barthelemy 2001). Travel and visa costs are also often substantial (Blackwell 2003). As a result, many companies are finding they are not achieving the savings they anticipated (Elmuti and Kathawala 2000).
- ***Reduced control.*** Although outsourcing in general reduces an organization's control over how its services are delivered, offshore sourcing can greatly increase these risks because the vendors operate in substantially different business environments. A company may, therefore, have greater liability exposure and face problems with such issues as confidentiality, security, and time schedules (Elmuti and Kathawala 2000).
- ***Legal and political uncertainties.*** Working in other countries means dealing with a wide variety of unfamiliar government regulations and restrictions, legal systems that may be unable to cope with the types of disputes that may arise between companies or between companies and the government, and weak intellectual property rights (Overby 2003b). Furthermore, governments in Third World countries may be considerably less secure than in North America or Europe. India has lost work recently due to the instabilities in that part of the world following the attacks of September 11, 2001.
- ***Cultural differences.*** Different cultural backgrounds can cause numerous difficulties. In addition to language problems, such matters as the pace of daily life, employees' relationship to authority, attitudes to security, and adherence to socialist principles can lead to misunderstandings that can be daunting (Overby 2003b).
- ***Social justice.*** Practicing IT managers were also very aware of the "optics" of offshore outsourcing. "Public perceptions are important to us," stated one. Another manager noted that his company has a labor code of conduct and a risk rating for different countries that assesses their labor practices and other dimensions of risk. Government organizations in particular are especially sensitive to the issues of moving jobs out of the country. For example, a recent public outcry forced the state of Indiana to cancel a $15 million contract with a firm in India (Kripalani and Engardio 2003).

Variations in Offshore Outsourcing Models

Some of the risks and concerns cited above are forcing vendors and companies to rethink the basic offshore outsourcing model. Some are distinguishing between offshore and nearshore sourcing. Not only are some U.S. vendors setting up sourcing centers in Canada, but some Indian firms are doing so as well. For example, Satyam Computer Services has recently opened a development center in Toronto to ensure that North American clients can "deal with a company that's always close to home, close to their unique needs" (Satyam 2003). Although much work actually can be completed in India, having relationship managers and business analysis in closer proximity to their customers provides additional security and mitigates many of these risks.

Other companies are looking at nearshore opportunities in lower-cost areas of their own countries. One Canadian firm is using nearshore sourcing to move development work to New Brunswick—a province with cheaper labor. Several Native American reservations have gone into the sourcing business as well. They argue that they can offer the same low-cost, high-value work that is done offshore but without the headaches of language barriers, remote management, or security concerns (Field 2001). These options are particularly attractive for sensitive legal and government work that should not be sent overseas.

Other firms are finding that they can get many of the benefits of offshore sourcing by working with a major vendor who will undertake to manage the offshore work and relationships. "You can have global options if you pick your vendor carefully," said one. "We triage our projects with our partner to find the best sourcing choice possible."

Sourcing today is actually a continuum of practices that can be "sliced and diced many different ways," depending on the needs of the company and the particular activity involved. Partnerships with key vendors are especially important in these situations so they can optimize the blend of internal and external staff appropriately. "You shouldn't go with a one-off project offshore," one manager explained, but rather with a carefully designed strategy that enables experimentation with different sourcing models and includes the ability to reverse a sourcing decision if it doesn't work out.

SUCCESSFUL SOURCING

As experience with sourcing increases, organizations are learning more about what it takes to manage sourcing successfully. However, although some critical success factors are well established (see above), as new models of sourcing emerge and as sourcing takes on a more central part of IT and organizational strategy, understanding what is involved in successful sourcing is still evolving. The focus group identified several factors that are essential in its effective management.

Sample Sourcing Criteria

- What are our industry dynamics, and where are we in the food chain?
- What are we good at?
- What do we want to be good at?
- What should we be good at?
- Do we want to invest in this function/activity?
- How many vendors do we want to deal with?

Sourcing Strategy

Whether a company uses sourcing strategically or not, every organization should have an overall sourcing strategy. This helps it determine what to source, where to source, and to whom to source. Experts have suggested many different ways of determining what to source—what's core and what's not, contribution to business value, maturity of technology, activities that are routine and less knowledge intensive, and entry-level functions (Aron 2003; Barthelemy 2001; Lacity and Willcocks 2001). In practice, however, numerous approaches to "right-sourcing" are possible. What is right for one organization is not necessarily right for another. Companies should consider the following:

1. First develop an in-depth understanding of business drivers and strategy before developing a sourcing strategy.
2. Then IT managers should develop a detailed understanding of the IT functions, processes, and overall portfolio. Without this, it is possible that too much or too little could be outsourced, leading to significant problems.
3. Then they should apply their particular sourcing criteria to IT activities (see "Sample Sourcing Criteria") to determine which parts of IT can be successfully sourced.
4. Finally, the sourcing strategy must be continually tested and reevaluated as the industry, business strategy, and sourcing possibilities change frequently.

Risk Management/Mitigation

"War stories" abound. Every firm can cite examples of activities that had to be resourced to a different vendor, tasks that needed to be reinsourced, or contracts that were renegotiated because of problems. The fact is sourcing introduces new levels of risk to the organization. Loss of control, security and privacy problems, poor-quality work, hidden costs, lack of standards, unmet expectations, and bad publicity are just some of the problems that have been experienced. When moving into new forms of sourcing, it is important to incorporate risk management and mitigation into every aspect of sourcing.

- Detailed planning is essential. Precise definitions of roles, responsibilities, and expectations must be developed. Specialists in outsourcing are now available to provide advice on how to select a vendor and plan the work involved. The specialists can assist—but not replace—the IT sourcing team in understanding how to assess and engage a vendor. This is especially important when considering offshore sourcing because of the additional complexities involved.
- Monitoring and an audit trail must be incorporated into the contract to both encourage self-correction and ensure all parties live up to their commitments.
- All potential risks should be rated as to both the likelihood of occurrence and their impact if they do occur (Aubert et al. 2001). Appropriate steps should be explicitly taken to reduce and/or manage these risks.
- An exit strategy must be devised. "Any well-designed sourcing strategy must retain alternatives to pull activities back in-house," explained one manager.
- Finally, exercise caution when moving into new avenues of sourcing. The hype in the popular press, often originating from vendors, greatly inflates the benefits that

can be achieved while minimizing the risks. It is recommended that managers experiment with a "simple, substantial pilot" before committing the company to a significant new outsourcing initiative.

Governance

"With any sourcing initiative, governance must be super-good," said a manager. Most IT functions now recognize the importance of relationship management at all levels (i.e., the frontline, middle, and senior management) in delivering value. Nevertheless, it cannot be underestimated. "When the relationship between the client and its vendor is adversarial, the vendor will take advantage of gaps in the agreement. When there is mutual trust, vendors often work hard to deal fairly with the gaps" (Barthelemy 2001). "Layers of governance are critical to successful sourcing relationships," said one manager. Others also suggested retaining strong internal project management and ensuring that vendors also have these skills. "You can't outsource project management or the relationship with the customer," they agreed. Governance problems are exacerbated when offshore sourcing is undertaken because of the difficulties of managing relationships at a distance (Chordas 2003). This is one reason the larger offshore vendors are setting up local development centers. At minimum, an offshore outsourcer should name an internal manager who will act as the organization's champion and be responsible for quality assurance. Ideally, an outsourcing relationship should be structured to ensure shared risk so both parties are incented to make it work (Garr 2001).

Cost Structures

One of the most important elements of successful sourcing is a complete understanding of the cost structures involved. Previously, vendors have profited from their ability to squeeze value from outsourced activities because they had a better and more detailed appreciation of their costs. Furthermore, they were able to apply disciplines and service-level agreements to their work, which IT organizations were often prohibited from doing (Lacity and Willcocks 2001). Today this is changing. Companies are applying the same standards to their own work, enabling them to make more appropriate comparisons between the costs of doing an activity in-house and outsourcing it. They also have a better understanding of the true costs of outsourcing, including relationship management and contract management, which have frequently been underestimated in the past. "We need to thoroughly understand our economic model," said one participant. "Vendors have the advantage of knowing best practices and economies of scale, but they are at a disadvantage from a profit and knowledge point of view. If we can't compete in-house, we should outsource." Interestingly, many companies believe they can compare favorably in many areas with outsourcing vendors. Ongoing cost comparisons are ideal, according to researchers, because they motivate both parties to do their best and most cost-effective work (Lacity and Willcocks 2001). The reduced cost of labor is simply one element of the outsourcing value proposition. "We must learn to understand and track *every* cost involved," said an IT manager. "There are new governance costs; privacy, legal, and regulatory costs; and other hidden costs that have to be articulated and monitored." The need to better understand the total cost of ownership of each IT activity is forcing managers to become considerably more aware of the financial implications of their decisions and develop a whole new set of skills as a result.

THE CHANGING ROLE OF IT

New IT Roles and Responsibilities

- Solution delivery
- Task decomposition
- Task costing analysis
- Right-sourcing decision making
- Designing for collaboration and connectivity
- Supplier relationship management
- Contract management and monitoring
- Sourcing marketplace analysis

The growth of sourcing over the past decade has led to a number of new roles for IT managers and has changed the relative importance of key IT skills. As lower-level IT activities are outsourced, what is increasingly left behind is the high-value-added work that only knowledgeable, in-house IT practitioners can provide. "The development skills we need these days are not coding, but integration, business analysis, and project management. We need to hone these skills to do the jobs that are difficult to outsource," explained one manager. Although important pieces of development can be done offsite, it is still IT's job to put all the pieces together and make technology work for the enterprise. In short, organizations need to improve their solution delivery skills, which is by no means a straightforward or simple task.

Systems thinking skills are becoming increasingly critical as well. They are fundamental to the detailed decomposition of tasks, which is the first step in better understanding both cost structures and the relative strategic importance of each task. IT organizations also need more formal processes and decision-making frameworks within which to tackle the key sourcing questions of what to outsource and how it should be done. These should include the parts of the business that will be affected by outsourcing and involve both tactical and strategic discussions with business management.

Emerging sourcing models will also need to be incorporated into the organization's technology plans as well as its business strategies. IT architectures must be designed for greater connectivity and collaboration across organizational boundaries. Companies should anticipate a wide variety of possible options in how their processes and transactions will be undertaken.

Finally, IT organizations are recognizing that they need new management skills, governance structures, and organizational processes to make outsourcing work effectively. Several companies now have a "supplier relationship management" function, at a mid to senior management level, responsible for ensuring that outsourcing arrangements are working well. Similarly, some companies are learning how to develop effective sourcing contracts and monitor them, both for supplier compliance and for internal satisfaction (Smith and McKeen 2003). In the future, companies will also need skills to better analyze the external sourcing marketplace and their industry to select the most appropriate options for their organizations.

Conclusion

Sourcing has become an integral part of almost all IT organizations today. Originally a straightforward mechanism for reducing operational costs, sourcing is rapidly evolving into a strategically important means of delivering optimal IT value. At present, companies

and vendors are experimenting with new models of sourcing, only some of which will be sustainable. Increasingly, it is IT's job to guide the organization in making the best sourcing decisions possible and to ensure that the anticipated value is obtained from vendor relationships. This involves developing new IT skills that incorporate an understanding of technology with strong business knowledge and analytic capabilities. As a result, despite the fact that sourcing is changing the nature of the work that is done internally in IT, it is unlikely that sourcing will eliminate internal functions altogether or reduce their value to that of a utility, as has been suggested by some (e.g., Carr 2003). To the contrary, more and more organizations will need the systems thinking, architectural understanding, and strategic awareness embodied in a modern IT department in order to ensure that they don't end up with a hollow shell of an organization that provides limited added value.

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