

August 2003

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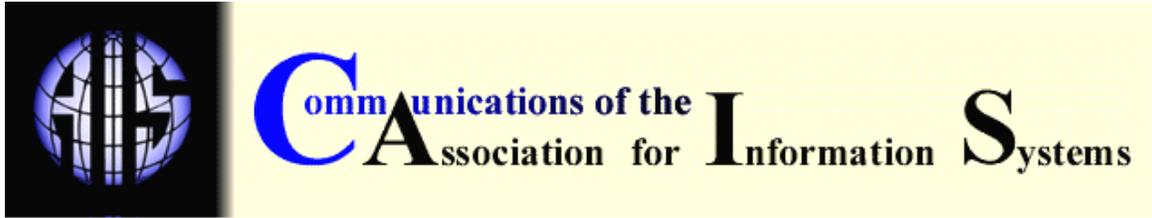
Recommended Citation

Smith, Heather A. and McKeen, James D. (2003) "Developments in Practice XI: Developing IT Professionalism," *Communications of the Association for Information Systems*: Vol. 12 , Article 20.

DOI: 10.17705/1CAIS.01220

Available at: <https://aisel.aisnet.org/cais/vol12/iss1/20>

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DEVELOPMENTS IN PRACTICE XI: DEVELOPING IT PROFESSIONALISM

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ABSTRACT

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 job. Neither schools nor companies teach professionalism. Instead, it remains an unarticulated set of working behaviors, attitudes, and expectations. Yet IT professionalism has never been more important. Teamwork – with users, vendors, consultants and business partners – is the name of the game today, and with it comes an increased dependence on and interaction with others. 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. This paper provides a composite picture of IT professionalism and how to develop it.

Keywords: professionalism, IT professionalism, IT management.

I. INTRODUCTION

"We had visitors from overseas meeting with us. At 4:00 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 job. And older staff is sometimes stuck in a comfort zone, doing a job that was acceptable fifteen years ago and not recognizing that standards of working behavior 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 than now. The days when eccentric IT workers were hidden away in a “glass house” or ivory tower somewhere are long gone (unless you are in a high-tech research shop). For most IT workers in business, teamwork – with users, vendors, consultants and business partners – is the name of the game today, and with it comes an increased dependence on and interaction with others. Professionalism is the glue that keeps teams of diverse individuals working together towards 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 their people up a little!

To explore the nature and scope of IT professionalism in more detail, the authors convened a focus group of senior IT managers from a variety of organizations. We wanted to identify a set of behaviors and attitudes that could be considered generically applicable to IT workers regardless of the organization for which they work or the type of work they do. Participants were given a series of questions to consider in advance to help them identify the behaviors they considered professional or unprofessional, the issues associated with developing IT professionalism, and how IT professionalism differs from that of other occupational groups.

This paper provides a composite picture of IT professionalism and how to develop it. It is derived from focus group members’ comments 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” (Section II). Next, it explores the role of management in creating an environment where professionalism is either encouraged or discouraged (Section III). 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 (Section IV). Finally, it identifies several actions that managers can take to develop professionalism in their IT staff (Section V).

II. PROFESSIONAL VERSUS PROFESSIONALISM

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

Although for a long time IT specialists called themselves “professionals”, 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 [Greenwood, 1965; Caplow, 1966]. These characteristics are clearly met by the well-established professional groups in our society such as accountants, doctors, engineers. While IT workers use a systematic body of theory, they meet none of the other criteria for an established professional group.

In contrast, “professionalism” refers to a person’s attitude to, behavior on, and capabilities in their 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 because there is no generally-accepted norm of what constitutes “professionalism”. Specific behavior or attitudes may be professional in one occupation or organization and not in another. For example, what is considered acceptable dress in IT can vary widely in IT organizations from jeans to suits and ties. In a recent Internet search we found literally thousands of sites containing professional behavior standards for such widely diverse groups as real estate salespeople, audiologists, librarians, and party planners, as well as for 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, both the focus group and these various groups felt it is necessary to write down such expectations as:

- “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 towards an employer (e.g., loyalty, identification with company values), those oriented towards clients (e.g., commitment and enthusiasm, capacity to solve problems) and those oriented towards a peer group (e.g., maintaining skills) [Scott, 1966; 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, the ability to deal with cultural diversity, and the ability to cope with change.

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

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 Virginia Tech Department of Computer Sciences also identifies a number of areas in which IT professionalism can/should be exercised, such as censorship, hacking, fraud, and dishonesty in business, netiquette, privacy, and viruses. (<http://courses.cs.vt.edu/~cs3604/support/FrontEnd/index.html>)

Tom DeMarco describes four key characteristics of IT professionalism in *The Responsible Software Engineer* [Myers et. al., 1996]. These characteristics are:

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.

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

- 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/herself available to support his work in an on-call situation with reasonable reliability and frequency.

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- A professional does not over-commit 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 could easily not apply in many situations. The solution is therefore to identify a set of principles of professionalism, which IT workers and managers can use to identify specific appropriate behaviors for their job and against which they can evaluate their own and other's behaviors in a wide variety of circumstances [Maister, 1993].

III. PRINCIPLES OF PROFESSIONALISM FOR IT MANAGEMENT

While professionalism in the workplace *per se* has not yet been studied by researchers, a great deal of work has been done on organizational citizenship behavior (OCB) which might be considered a surrogate for some forms of professionalism. OCB is defined as an employee's willingness to go above and beyond the roles which he/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 show that such behaviors will only occur if and only if employees are emotionally attached to the organization [(Organ and Ryan, 1995; Podsakoff et al., 2000). These findings therefore 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 will be stifled in others.

The focus group reinforced the importance of both the organization and management in creating a positive environment for IT professionalism, since it is not usually taught specifically but picked up by osmosis through observation and interaction with others, particularly with leaders and managers. Participants also agreed strongly that management is often 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 focus group 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. One manager:

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.

“Human resources can often create programs that discourage professionalism. If you’re treated as a 9-to-5er and not given the benefits of a professional, why should you act like one?”

Another manager:

“If people see their leaders acting without integrity, how can we expect to see it in lower level workers?”

Similarly, too many managers send mixed messages about the behavior 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 (as quoted by Fryer [2001]) 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.”

In other words, companies get the behavior that they model themselves.

The focus group noted that the daily working environment can also stifle professionalism. They observed that outside consultants are frequently perceived to be more professional than internal staff because of the “baggage” with which most IT workers have to deal. Outsiders face fewer distractions, are given better instructions about their work, encounter fewer demands on their time (e.g., meetings, politics), get more support, and receive less e-mail.

“What 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.”

IV. PRINCIPLES OF PROFESSIONALISM FOR IT WORKERS

As noted above, professionalism is actually several different sets of attitudes and behaviors which an IT worker is expected to display at all times. The focus group managers identified five sets of behaviors which they considered to be indicative of IT professionalism.

1. **Comportment.** This old-fashioned word covers appearance and manners on the job. While technically neither should make a difference to job performance, practically, they do. It is unfortunate, but true, that it is much easier to acquire the label “unprofessional” than the reverse. IT workers would therefore 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/her appearance is at odds with that of the rest of the organization, what he/she says may be immediately discounted by others. A good example of this attitude 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, stated one focus group member

“everyone’s definition of ‘casual’ is different,” “and it’s easy to go from casual dress to casual approaches to work.”

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.

Similarly, manners and bearing are often perceived to be surrogates for professionalism. This reasoning explains the emphasis on treating one's colleagues and customers with courtesy and respect in many of the codes of professionalism. Siebel notes,

"Our comportment is always professional, whether we are interacting with each other or with customers, partners, suppliers or others." [Fryer, 2001].

Focus group members pointed out that it is not professional to take disagreements personally. "We should be able to disagree without rancor" said one. IT people are particularly bad at finger-pointing when a problem arises. "Defensiveness is unprofessional," our focus group agreed. "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/her dress and manner towards others.

Tip: When in doubt, an IT worker should model the comportment of the best exemplar in the office and dress as well as his/her immediate supervisor.

2. **Preparation.** No one appears more unprofessional than someone who doesn't know what he/she is doing. Thus, an IT worker, must possess both the technical skills to do a job and a good understanding of the business context in which the work is done. One manager stated:

"The biggest complaint we get is that our people don't understand the business. Far too many people see technology itself as the end product, not a business enabler."

Explained another:

"Business people are always asking, 'How much credence should I place in this IT person?'"

Understanding the big picture is therefore essential to doing a good job both because it helps an IT person make better decisions about his/her 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 particularly important goals:

1. It means that an IT professional's promises can be relied on to be met because they've done enough homework to make educated commitments.
2. It is respectful to the other people whose efforts must be integrated with those of the IT worker. Both help others to have confidence in what the IT worker says and does. 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 these skills).

- 3. Communication.** While “a failure to communicate” can be a catch-all category when things go wrong, it remains true that good communication skills are a fundamental of all professional relationships and therefore contribute strongly to the effectiveness of IT work. Good communication is actually made up of a number of sub-skills. First, IT workers need to know how to write. Misspellings, grammatical errors, and poorly-organized documents are all too common in IT. They not only make the author look unprofessional, they can also fail to get their message across because their communications are so difficult to read. Another common mistake is to dash off e-mails as if they were not “real” documents. However as e-mail increasingly takes the place of traditional office correspondence, the same care must be taken with e-mail as with a business letter.

Beyond writing, a whole host of skills surrounding e-mail and voice communication must be mastered. All IT professionals should follow a routine for managing both media, e.g., updating voice mail messages daily, returning messages within 24 hours (even if it’s just to say they will get back 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/her work and able to manage commitments.

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

[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 paper 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 still need work. IT workers need to cultivate the ability to ask questions, take checkpoints in meetings, and confirm that they 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., spellcheckers, editors.

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. While this behavior may buy an individual IT worker a short period of grace, 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.

As the members of the focus group explained it, 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 point 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. While it is hoped that no IT worker or organization would deliberately contravene these standards, it is often the case that poor decisions occur simply because of ignorance. The 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 that affect their work and their business so that 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: Make 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 attitude that most believe is the distinguishing feature of a true professional. At its most basic, 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 improve their skills constantly, take reasonable risks, and take responsibility and accountability 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.

"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,"

stated another. 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 company. 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 a focus group manager. One manager from a well-known manufacturer described a hot-line the firm set up for employees who heard about problems with the company's products while socializing outside of work. The number enabled them to do something about the problem. This approach reinforced the company's image of professionalism. In smaller communities, IT workers and managers may be expected to represent their company at charitable events. Their attitude may thus be important in building respect for the company in their community.

Focus group managers pointed out that these characteristics are ideals and it is unrealistic to expect everyone to exhibit all of them in practice. Inevitably, the highly skilled, yet eccentric

individual will be given more tolerance in a tight job market than the average IT worker. Said one manager:

“People are built in many ways and have different styles,... We must be able to understand and accommodate them and make the blend work.”

An organization’s culture and individual attitudes often interact. 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 towards 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 demeanour.

V. DEVELOPING PROFESSIONALISM: ADVICE TO IT MANAGERS

While some people appear to be born with professional skills, the focus group agreed that professionalism can be developed in all IT workers. They suggested a number of ways to promote it in their staff:

- **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 help IT workers to make effective judgments, e.g., how much will risk-taking actually be valued?
- **Provide resources to support professionalism.** Ideally, these resources should include training but where training is not possible, make books or speakers who will address this topic available to your staff. Similarly, focus group managers pointed out that providing some administrative support can be useful in helping people to appear professional to those outside of IT. Where support is not possible, ensure that other resources, (e.g., document templates, editors, guidelines for e-mail) are available for staff to use.
- **Grow professionalism in small steps.** People will not develop these skills overnight. Managers should work with individuals in their group on specific areas of professionalism and 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 attention can help them develop professional skills more rapidly.
- **Help people find their niche.** Focus group members cautioned no employee (even those who appear to be unwilling to change) should be sidelined – doing so will only leave them increasingly farther behind in a rapidly evolving workplace. A better strategy is to help them 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 not willing to change, managers must try to get rid of them or at least contain them in the short term. Focus group members noted that a longer-term plan must be put in place for dealing with these types of staff or they could risk poisoning their whole team's effectiveness.

VI. 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 paper has tried to determine what professionalism means for IT workers. By delineating five principles of behavior, it explored 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 equally as important to getting a job done as technical ability. Professionalism is not easy to teach, but it can be *caught*, 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 are therefore well-advised to make professionalism an important value for all IT staff and to recognize and reward it when it is displayed.

Editor’s Note: This article was received on June 18, 2003 and was published on October 29, 2003.

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EDITOR’S NOTE: The following reference list contains the address of World Wide Web pages. Readers who have the ability to access the Web directly from their computer or are reading the paper on the Web, can gain direct access to these references. Readers are warned, however, that

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APPENDIX I. ACM CODE OF ETHICS AND PROFESSIONAL CONDUCT 1992¹

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.

¹ <http://www.acm.org/constitution/code.html>, current as of January 20, 2003

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Communications of the Association for Information Systems

ISSN: 1529-3181

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