63

Performance Evaluation/Assessment for IS Professionals

63.1 Overview

In the world of Moore’s law, the rate of growth of computing equipment, software, and digital content inspires an ever-changing and expanding set of business and consumer activities in cyberspace. Though many are not necessarily conscious of it when experiencing flow and interacting directly with technology, it is clear that generations of laborers have created the building blocks and applications that have become pervasive. In many cases, these workers have dedicated themselves without a profit motive contributing to open source projects and communities, have built technologies “on speculation” hoping with the help of venture capital to make it the next “killer app”, or have been employees creating new features and capabilities as part of an IS workforce. For employers of these IS workers, it is important to provide the materials and environment under which the best computing products will emerge—“best” being a convergence of trade-offs between quality, costs, and scope. From that perspective, it is often viewed to be important in managing to assess their performance for purposes of workers in general and IS in particular to provide feedback, to form a basis for compensation decisions, bonuses, and retention, and to aid in matching assignments and promotions to individual workers. For these reasons, many firms have programs for performance evaluation of all workers including IS professionals. From the inception of IS as a part of the business landscape and, therefore, with the hiring and development of the initial crop of IS workers, concern for applying human resource management practices to IS workers has been expressed. For example, in 1962, the first conference on computer personnel research was undertaken in Los Angeles sponsored by the U.S. Navy and organized by the Rand Corporation. From the very
beginning of this group, issues about how to define the tasks of computing professionals, measure the performance of these tasks, and organize human resource activities pertaining to these workers were investigated. It is clearly of significant interest to be able to manage IS employees and, as a major part of that, to be able to evaluate and assess performance. However, this is not necessarily as clear and straightforward a task as it might seem on the surface to be.

Performance evaluation* of the productivity of information systems (IS) professionals is a complex and multifaceted topic. It is complex because (1) evaluation of the performance of any employee has multiple aspects and effects; (2) IS is a broad field suggesting many varied tasks, the active and passive application of many skills, and job titles that tend to be vague and nonstandard from firm to firm and even department to department; (3) in many cases, the tasks of IS professionals require the creation of technologies or applications that have never existed before in that particular or even in any form; (4) the work of the IS individual often cannot be treated as completely separate from other individuals; (5) both the inputs and outputs of the work are frequently not well specified—as we know requirements are difficult to ascertain and users are often unclear about what a preferred outcome is as they will “know it when they see it”; and (6) the benefits to high-quality performance evaluation may be largely intangible (e.g., higher moral and motivation, more targeted future behaviors, and retention of desirable staff members) but the costs tend to be tangible (e.g., the cost of a consultant sponsored program) or at least quantifiable (e.g., the amount of time spent in various related activities translated into estimates of the value of that time).

Addressing this topic is also difficult due to the hierarchical nature of examining IS professionals as a group of workers with the larger class of all knowledge workers or even all workers in general. Some human resource interventions may affect all workers in similar ways. For example, increases in benefits, direct compensation, or advancement opportunities may be viewed as precursors to more satisfaction or organizational commitment for the bulk of workers of all sorts. However, some interventions may affect knowledge workers or more specifically IS professionals to a qualitative or quantitatively different degree. Prior research (e.g., Couger, 1988) has tended to show IS professionals more strongly motivated by challenge and less motivated by working with other people than workers in other job categories. In this chapter, research specific to IS professionals will be emphasized with additional background information regarding findings pertaining to all workers briefly presented as a thorough examination of all knowledge about performance evaluation is outside the scope of this chapter.

63.2 Configuration of IS Personnel Literature on Performance Evaluation

A scan of the ACM Digital Library shows fewer than a dozen papers on performance evaluation with only one of these, Jiang et al. (2001), published since 1990. This is in contrast to literally hundreds of papers on various measures of technical performance of hardware, networks, and software. It is, of course, entirely appropriate to have much attention on performance of technology (note that some of these papers address tasks that involve the interaction of humans and technology, but the emphasis is on measures of the systems, not on the worker as a member of the staff per se—in other words system variance is measured, not the quality of human input). But the vast disproportion of interest is a bit surprising.

The volume of papers on this topic is not much more exhaustive when examining the “basket of 8” leading IS journals (see Table 63.1). Although the search term “performance evaluation” retrieved more than 100 papers, the majority of these did not address personnel evaluation but rather the evaluation of the IS departmental function and its value, particular systems especially virtual teams and decision support, and a wide range of other IS-related artifacts and programs that can be assessed. One paper

* In the IS literature, the phenomenon of interest is generally termed “performance evaluation” but the same general concept in the management literature is called “performance appraisal.” The two terms are both intended to refer to the same phenomenon of evaluating and communicating individual worker performance.
Performance Evaluation/Assessment for IS Professionals

illustrates an effort to develop fundamental data about the development task opening the door to a basis for performance evaluation. Rasch and Tosi (1992) used a survey method to examine a host of factors that might influence the performance of software developers. These factors included effort, ability, personality factors, and the like. Performance was self-reported on a 1–9 scale based on a single question. The two most influential factors on performance were ability and need for achievement. The goal of the paper is very laudable in that valid precursors to performance outcomes would form a strong basis for the development of performance evaluation criteria. However, it does not resolve questions such as how do you motivate people you need but have lesser ability (or keep people with more ability motivated if those with lesser ability or outcomes are also rewarded). The use of a single self-reported question regarding performance may have been necessary in the research context, but it also does not shed much light on the nuances of what constitutes the differences in performance that may have been reported. The responses to the questionnaire may have been as much about confidence or relative performance (e.g., an average developer may look great in a poor group but poor in a great group) as about performance per se.

Of the 10 papers identified, several used performance evaluation as an independent variable. Several papers by Igbaria and colleagues (Igbaria and Baroudi, 1995; Igbaria and Guimaraes, 1999; Igbaria et al., 1995; Igbaria and Wormley, 1992), for example, used the presence or absence of performance evaluation as a precursor to several dependent variables including career satisfaction and intention to turnover (or leave current employment). At most, this sort of study can provide evidence for the importance of performance evaluation in a nomological net of constructs. Unfortunately it does not help much to explain variance (why it works better in some cases than others) nor to provide help for managers considering ways to implement this sort of program. One notable paper (George, 1996) considered the effects of computer-collected data for the evaluation of people doing other jobs, for example, telephone help line staff.

What accounts for the relatively small number of publications on performance evaluation of IS personnel? Logically, we can speculate about a number of reasons. These include (1) the problem is so simple that the solution is obvious; (2) the problem is so difficult that no solution is possible; (3) the problem does not require a precise answer so relatively simple solutions that address part of the problem are sufficient; and (4) the problem is viewed not as a computer-oriented problem but rather as a management problem and, thus, outside the scope of ACM research or concern.

<table>
<thead>
<tr>
<th>Journal</th>
<th>Raw Returns</th>
<th>Number Pertaining to IS Personnel</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>JMIS</td>
<td>49</td>
<td>5</td>
<td>Webmasters, as independent variable antecedent on turnover, job satisfaction, and intention to telecommute; passing reference in career inventory instrument development</td>
</tr>
<tr>
<td>MISQ</td>
<td>43</td>
<td>4</td>
<td>Performance measures for differentiating contract and full-time employees; computer-based monitoring, using computers for general HR assessment; effect of performance evaluation on promotion, by gender; measure job performance as a dependent variable (DV)</td>
</tr>
<tr>
<td>ISR</td>
<td>29</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>JAIS</td>
<td>11</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>EJIS</td>
<td>12</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>JIT</td>
<td>19</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>ISIS</td>
<td>20</td>
<td>1</td>
<td>Career outcomes</td>
</tr>
<tr>
<td>ISJ</td>
<td>5</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

* A note on method. For each journal, I searched in either ABI Informs or Science Direct on personnel evaluation and the journal title. The number of resulting papers is listed in the second column. I then manually went through each paper reading abstracts to ascertain whether the paper pertained to personnel or the evaluation of some other IS artifact or program.

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Without discounting the first three explanations, the last one is strongly supported by a quick search of ABI Informs. Such a search shows more than 3000 retrievals on “performance appraisal” when limited to scholarly journals. Clearly, performance appraisal remains a strong managerial topic. It is possible that many IS managers view such evaluation as a purely managerial problem amenable to management solutions without, necessarily, much adjustment for the particulars of IS work per se. Human resource management scholars take up personnel appraisal generally in search of universal precepts that could be applicable across job types and titles. This makes sense from a pragmatic perspective. Imagine the cost of designing different evaluation systems for each distinguishable type of job from doctors to firefighters to actuaries to scuba instructors.

Following such a view, a firm might be inclined to set up a standardized general program across the firm, but vary some details for each division, department, or perhaps even by individual job title. In such a system, a questionnaire might include items pertaining to attitude and skills (e.g., communication) that are common for all employees, but additionally include other items that relate to measures specific to particular jobs (e.g., ability to manipulate HTML, XML, and a UNIX environment by webmasters) (Wade and Parent, 2001/2002).

This approach, however, leaves open questions. How should IS managers adjust such programs for application to employees in the IS function? Is the search for a standard way to fill in the details for IS functions reasonable? Because there can be so much variance between individual jobs and organizational IS tasks, some may consider there to be no substitute for individuals or workgroups assessing their own work environments.

Is the problem of devising a performance appraisal system for IS employees simple or difficult? It is definitely simple if a firm is happy with the default—not doing any performance evaluation. Ultimately, we know of no legal or regulatory requirement that firms provide performance evaluation to their IS personnel so the default value of simply not doing it is pretty simple and straightforward. It also has the advantage of minimizing cost and avoiding some of the conflicts and difficulties that come with performance evaluation programs trying to balance standards for fairness with recognition of individual preferences for another kind of fairness. As pointed out in 1976, however, this strategy has some risks:

Every time he [the IS manager] is faced with a choice of assignments, promotions, raises, or offices, he ranks his eligible employees. Unfortunately if his subordinates do not know the evaluation criteria, they may not be able to improve. More than likely, they will assume the criteria by observing who gets the rewards, in such cases, the manager runs two immediate risks—employees may misinterpret both the rewards and/or the required behavior (Ledet, 1976).

In some cases, these risks are insufficient to motivate performance assessment that is calibrated to provide the feedback that does move a workforce into directions of mutual benefit to the organization and employee. A poorly designed or executed performance evaluation program can be run with relatively low cost and generates minimal paperwork, but fails to provide much insight or to generate positive employee behaviors and learning. At an extreme, it may push the most productive to experience frustration, diminished job satisfaction, and, eventually, an intention to leave employment. A poorly designed and administered program can cause more problems than it solves. On the other hand, informal signals that no one will take it seriously anyway can sometimes mitigate some of the problems. There is, of course, the concern in such circumstances that some employees, in particular those who take things literally and/or who care a lot about achievement, will think it is serious and become disaffected upon learning that it is not.

When viewed as a task where the firm wants to achieve benefits above costs and is willing to make significant investment to that end, the “simple” problem becomes significantly more difficult. As mentioned, managers may have to choose between treating everyone identically (to the benefit of some and detriment of others) or differentiating treatment based on individual’s preferences (and risking some being treated better rather all being equivalent). Other sources of difficulty stem from the need for a number of factors to be present in the organizational setting such as a trustworthy management and workforce willing to trust in the fairness and thoroughness of the process to spur integrity in the process and participation. Where there are difficulties with design of the program, there are also difficulties with its implementation. If the implementation is done in spotty, intermittent, ambiguous, or coercive
manner, it may generate a particularly large number of severe unintended consequences as well as, or perhaps instead of, those that are desired. Whatever the purpose and execution of the program, its existence, its content details, and the quality of its implementation will affect each employee sometimes in unanticipated and possibly negative ways; this may offset the benefits of the intended effects.

Somewhat surprisingly, a significant number of studies in human resource management pertaining to performance evaluation take a relatively contrarian perspective expressing concerns regarding performance evaluation as a management tool. Ikramullah et al. (2012), for example, provide a detailed literature review listing many of the issues and difficulties that make performance assessment unpopular in many quarters. “Poorly managed [performance assessments] can cause various problems for organization, like, disputes among employees and management, anger in staff” (p. 144).

One CIO in an informal and personal e-mail put the same idea this way:

The performance evaluation for IS/IT personnel is probably the single worst thing that can be done in an organization of knowledge workers. There is no upside and the results are generally disastrous.

Calculating scores is insanity disguised as rationality—the weighting factors are just BS.

In spite of this sentiment, it is likely that there are situations where performance assessment of IS personnel can be helpful when programmatically applied in organizational settings. Potential benefits would include providing some relief for individuals from arbitrary and incompetent managers and, when done well, with some legitimate guidance regarding organizational priorities and preferences. It is also important to note that in litigious societies performance appraisals can be used to produce a record supporting (or refuting) claims of unjustified employment termination (Malos et al., 2003). It is likely that some organizations undertake performance evaluation primarily, if not solely, for purposes of record keeping and creation of documents for potential dispute resolution. In light of this attitude, a reasonable research question would be: given the necessity of such record keeping (and the costs entailed), how does one get the most possible benefit from it while reducing its risk of harm to the greatest extent? It is also of note that the tendency toward formal performance appraisal and record keeping expands rapidly as firms grow in size and particularly in number of employees (Kotey and Slade, 2005).

From a research perspective, the problem is difficult to shape into a relatively simple formula or theory for a variety of reasons: (1) the purpose of performance evaluation can vary between and within firms and over time; (2) regardless of stated purpose, the actual activities will generate perceived purposes among the personnel involved; (3) standardized programs have trouble-adjusting techniques given that activities that are motivating to some may be equally demotivating to others; (4) implementing programs that are tailored to different groups have the potential to be viewed as unequal and showing favoritism (whether or not such is intended); (5) rating systems have much room for varied interpretation based on either cognitive or interest conflicts; (6) supervisors and workers are in dynamic relationships with some mutual dependencies (that vary with particular situations) and, as game theory may predict, will derive greater benefits from mutual admiration than from frank constructive feedback; and (7) attempting to gather enough detail to fit all standards and differentiate among all variations may create massive overhead that drains away potential benefits.

63.3 Approaches to Performance Assessment for IS Personnel

63.3.1 Rating Based on Outcomes, Characteristics, and/or Abilities

Much of the performance assessment approach revolves around an analysis of jobs and tasks with subsequent rating of performance for each individual for each atomic identified task or characteristic. In the IS literature, early research suggested that an order of magnitude discrepancy existed between high- and low-performing IS workers (programmers in particular, Dickmann, 1964, but with some nod to debugging and other tasks, Woodruff, 1980a,b). Dickmann (1964) led and discussed a detailed study conducted under the auspices of ACM’s Special Interest Group on Computer Personnel Research (see Table 63.2 for criteria and sample questions). Four criteria clusters were proposed (professional
preparation and activity, programmer competence, dealing with people, and adapting to job). Additionally, a 42-item questionnaire was produced and validated.

Woodruff (1980a,b) points out that some prior research suggested an order of magnitude difference between higher- and lower-performing IS workers. It was proposed that if the lower performers could be identified "scientifically" and dismissed, then overall performance would be better served. Of course, this can be a self-fulfilling prophesy as dropping the low performers would immediately shift the statistics, but might constrain the total amount of work accomplished. Of course when Woodruff conducted these studies, the range of IS tasks was much narrower. These days the range of needed abilities may be large enough to accommodate clever managers assigning those best suited to different tasks—super programmers may be writing code to integrate systems where better communicators are writing up application requirements or interviewing users to assign security codes. It is noteworthy that Woodruff’s findings did not show such dramatic results but in fact showed a rather small standard deviation implying a tight clustering around the average with few high and low performers among his sample.

Woodruff (1980a,b) also proposed a set of criteria for evaluation of IS worker performance (see Table 63.3 for full descriptions). These criteria are quantity of work, quality of work, job knowledge and skills, judgmental ability, job initiative, adaptability, cooperation, and innovativeness. It is interesting to note in a close reading of the descriptions that two of the eight criteria refer to outputs, three refer to characteristics, and another three to abilities of the employee. Presumably one could directly measure outputs, particularly quantity, by counting them rather than necessarily resorting to subjective rating.

### Table 63.2 Dickmann (1964) Measures and Description for Original Computer Personnel Research Group Performance Appraisal Instrument (Full Instrument Available through ACM Digital Library)

<table>
<thead>
<tr>
<th>Sample Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional preparation and activity</td>
</tr>
<tr>
<td>Programmer competence</td>
</tr>
<tr>
<td>Dealing with people</td>
</tr>
<tr>
<td>Adapting to job</td>
</tr>
</tbody>
</table>

### Table 63.3 Woodruff (1980a,b) Measures and Descriptions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of work</td>
<td>Refers to the volume of useful output associated with the ratee's job assignment; output is of sufficient quality as to satisfy requirements of the ratee's job assignment over which he has direct control.</td>
</tr>
<tr>
<td>Quality of work</td>
<td>Refers to those characteristics of the output that enhance its usefulness to the recipient; the ratee has direct control over the output quality, and there is a minimum of subsequent rework of the output.</td>
</tr>
<tr>
<td>Job knowledge and skills</td>
<td>Refers to those characteristics of the ratee that enable the ratee to sufficiently solve problems, technical, conceptual, structurally oriented, etc. that are normally encountered in the job assignment.</td>
</tr>
<tr>
<td>Judgmental ability</td>
<td>Refers to the ability of the ratee to exercise discretionary behavior to arrive at a wise decision when confronted with problem situations, often unstructured and at short notice.</td>
</tr>
<tr>
<td>Job initiative</td>
<td>Refers to those displayed characteristics of the ratee to undertake on his own, without specific instructions, actions, and activities deemed to be desirable in the performance of the job assignment.</td>
</tr>
<tr>
<td>Adaptability</td>
<td>Refers to the ability of the ratee to adjust properly and expeditiously to changing and unstructured situations and problems encountered in the job environment.</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Refers to those displayed characteristics of the ratee to act or operate jointly with facility users and fellow workers.</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>Refers to the demonstrated ability of the ratee to introduce something new or novel to effect a desired change to alleviate or solve problems that are generally characterized by their uniqueness or complexity.</td>
</tr>
</tbody>
</table>
In 1980, when the range of tasks performed by an IS department were much narrower than they are now in the 2010s, a narrower set of abilities might be reasonable. It would seem now, however, that a wide range of abilities could be matched to different jobs, some emphasizing technical and abstraction, others planning, decision-making support, auditing, and the like. Characteristics form an interesting set. If someone has a “bad attitude” why were they hired? If such developed in the course of work, might it not be worth investigating why this happened? Cooperation, as a characteristic of the employee, is also interesting. Doesn’t this depend in large measure on the others who might be involved? Is this likely to change from one reporting period to the next?

In another study of performance appraisal of IS personnel, Meyer and Stalnaker (1968) (see Tables 63.4 and Table 63.5) make the stunning observation that managers based performance criteria on the top 10 choices in a wide survey, but based hiring and selection decisions on the bottom 10 choices. Even today, more than a few IS faculty scratch their heads when told by IS managers what they look for in IS workers compared to what they see in advertisements for openings and results of applications of their various students.

Jiang et al. (2001) present a detailed alternative schema for performance evaluation. This paper sketches a relatively formal approach to providing a broad but detailed assessment of IS personnel presumably at the level of the entire IS function rather than separately for each individual. Based on

### Table 63.4

<table>
<thead>
<tr>
<th>Item</th>
<th>Index Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checking Out Programs K/C</td>
<td>74</td>
</tr>
<tr>
<td>Planning Programs K/C</td>
<td>73</td>
</tr>
<tr>
<td>Defining Problems K/C</td>
<td>72</td>
</tr>
<tr>
<td>Understanding Assignments K/C</td>
<td>70</td>
</tr>
<tr>
<td>Works Independently W/S</td>
<td>69</td>
</tr>
<tr>
<td>Finds Appropriate Programming Methods W/S</td>
<td>68</td>
</tr>
<tr>
<td>Diligent TT</td>
<td>67</td>
</tr>
<tr>
<td>Can Handle Complexity K/C</td>
<td>66</td>
</tr>
<tr>
<td>Able To Work Under Pressure TT</td>
<td>65</td>
</tr>
<tr>
<td>Masters Assignments Speedily W/S</td>
<td>65</td>
</tr>
</tbody>
</table>

K/C, programming knowledge/capability; W/S, working style; TT, temperament traits.

### Table 63.5

<table>
<thead>
<tr>
<th>Item</th>
<th>Index Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Formal Classes P/P</td>
<td>10</td>
</tr>
<tr>
<td>Age P/P</td>
<td>16</td>
</tr>
<tr>
<td>Number of Professional Societies Belongs To P/P</td>
<td>17</td>
</tr>
<tr>
<td>Number of Publications, Talks Given P/P</td>
<td>17</td>
</tr>
<tr>
<td>Uses Mathematical Analysis Methods K/C</td>
<td>29</td>
</tr>
<tr>
<td>Gives On-The-Job Training W/S</td>
<td>30</td>
</tr>
<tr>
<td>Number of Machines Can Handle K/C</td>
<td>32</td>
</tr>
<tr>
<td>Personal Appearance P/P</td>
<td>33</td>
</tr>
<tr>
<td>Initiates Investigations In Math Analysis K/C</td>
<td>34</td>
</tr>
<tr>
<td>Evaluates New Hardware K/C</td>
<td>34</td>
</tr>
</tbody>
</table>

K/C, programming knowledge/capability; W/S, working style; P/P, personal/professional item.
personal and local experience with firms, this approach is at the top end of formality, but somewhat approximates what local employers do with a couple of exceptions that will be noted.

This chapter is based on a rather extensive survey of IS employees and other stakeholders at a particular organization. It outlines a procedure for formal performance assessment with the ultimate goal of aligning corporate and IS goals to assure IS behaviors that reflect these goals and priorities. This chapter notes a number of communication links assessed by different stakeholders. When the stakeholders were in agreement based on similarity of observation, this indicated concurrence. When the stakeholders differed in their level of agreement, these defined gaps of varying size based on the deviation in agreement. What to do about such gaps is not addressed. One assumes that the knowledge of such gaps represents an important step allowing managers the opportunity to intervene (or not to intervene) and to consider the sort of intervention they might want to take. This chapter tends to suggest that such intervention might focus on IS employee training but equally might focus on informing users about the actualities of work in an IS department.

Careful reading of this chapter shows some precursors are necessary for effective implementation of this system including detailed knowledge, agreement, and communication on corporate goals and a management structure in place to implement the described program. Such may have been the case for this particular studied organization, but the creation of these two precursors, realistically, may present significant challenge for the IS department managers.

The approach described by Jiang et al. (2001) is based on the measurement of seven criteria (see Table 63.6 for full description of each). These are quality, project work, general tasks, personal qualities, dependability, teamwork and leadership, and career-related training. At a more detailed level, these criteria pertain to following standards, using procedures and tools, implementing new systems, pursuing effectiveness, participating in project planning, control and communications, addressing user concerns, negotiating, being politically astute, solving problems, having a strong work ethic, completing tasks, securing cooperation, handling multiple tasks, interruptions, and diverse assignments.

The implementation of the actual evaluation process is not presented in much detail in this chapter, but seems to involve the comparison on these various specific points of ratings by the employees in contrast to the rating by managers and other stakeholders. It is in this implementation of data collection and analysis that the process differs most from my observation of local companies. Local companies tend to measure against similar criteria but are more inclined to produce goals as a negotiation between supervisor and worker and periodically measure progress against those goals. We will discuss goal setting and performance assessment in the next section.

Regarding Jiang et al. (2001), it is not difficult to raise additional questions and concerns based on the brief summary of this study that really raises as many questions as it answers. For example, it is not completely clear if this survey process is intended as a one-time analysis to identify gaps and provide a basis for selecting among potential ameliorating activities, or if it is intended to be repeated periodically as a way of assessing the effectiveness of interventions as well as getting snapshot pictures at a time. It is also not fully clear if each stakeholder is assessing each individual or the IS function as a whole. Should, for example, the “having a strong work ethic” criterion show a great difference between perceptions of the user community and the IS employee community, it is not clear how this would reflect on any given individual. It is equally unclear how users not knowing how long it takes to optimize an SQL query be able to assess whether an individual IS employee spent weeks of overtime or whipped the problem out in an hour or two. Assuming, however, that assessment of work ethic is a major differentiator in user and employee attitudes, the path for designing the appropriate intervention is not clear.

A number of other issues are skirted somewhat by the methodology of gathering data through surveys and analysis through gap comparisons. For example, the IS department is measured based on its use of standards, but may be frequently asked to bend standards for purposes of getting work done more quickly or at lower cost. Not only might such decisions be outside the IS department’s control, but their realization may involve a natural trade-off such that it would be difficult or impossible to optimize both.
In a scenario illustrating a difficult problem, an IS organization is excellent on enforcing standards, but viewed as poor on providing immediate service to clients. As an intervention, service delivery times are strictly measured, bonuses, perhaps even pay or tenure are adjusted based on this. As a result, IS personnel simply stop bothering with standards, respond immediately to customer demands, and end up with a sloppy, poorly performing, and high maintenance cost platform or portfolio. On the next round of surveys, the rating of customer service rises to excellent but rating of standards falls to poor. On a 5-point scale, the IS department will never gather more than 6 or 7 points (out of 10 possible when the two scores are combined), thus building into the process the assurance that it will never be excellent across the board! Even if not drawn out explicitly, it is hard to imagine in such a scenario performance evaluation will ever be highly motivating. On the other hand, one can imagine a courageous management will be unequivocal regarding objectives. For example, they could specify that user response time is paramount and that extra maintenance costs will be tolerated if they will bring down the response time. Such could easily be visualized for a customer-oriented service such as providing financial or legal advice; however, actual brokers will likely also need flawless transaction processing. In such a system, perhaps standard keeping is not measured or is measured for reference but not included in a performance index.
It is also notable how few of the criteria for this approach are unique to IS employees, though their weighting or specification may vary. Surely, many other jobs require attention to detail, finishing tasks, communicating well, and other attributes. I am actually hard pressed to see anything that is unique to the IS function in the listing specified by Jiang et al. (2001), which may be a good thing if it is to be applied across a firm. This raises the question of whether the IS staff will also be rating the users. What is the quality of user work on stating their information requirements and providing quick and accurate feedback on prototypes? How reliable is their commitment on minimizing funding versus maximizing technical quality? It seems if one is going to look at the performance of the IS department, it should be in context of the other departments and their contribution to the management of information for the benefit of the overall firm. We fear some firms assume that the user is always right and any difficulties, by definition, the responsibility of the IS department. Of course, top management may assume all divisions are wrong or culpable, but that is outside the scope of our discussion.

All of this said, in some circumstances this procedure as an exercise in identifying areas of need or potential growth could be helpful to a firm. Such a list of criteria, while perhaps not distinctly customized for IS work, could serve as a basis for discussions about desired results or outcome of IS work and, in turn, the appropriate criteria for the IS department in a particular setting.

Where such programs are compulsory for IS departments, some portions of the HR literature pertain to general principles for various details of the performance appraisal process. In a recent example, Aguinis, et al. (2012) detail the value of addressing employee strengths rather than weaknesses in the communication of feedback to the employee. This chapter illustrates this technique with a variety of scenarios and dialogues. It is interesting to frame papers such as this in the context of research per se. That there is potential value for a manager to read and be aware of these many techniques (all of which on their face value have potentially positive consequences under some conditions) seems self-evident.

### 63.4 Critical Incident Technique (A Variation of Rating/Ranking)

The idea of the critical incident technique is to add an element of concreteness to the generalization and impressions of rating systems by noting particular incidents or events as part of the rating. As Dickmann (1964) points out, however, even this system has its complexities:

By way of illustration, there is a professor at American University who states that he can reliably give you the performance rating of any Civil Service worker by merely having him pass by his desk; 99.8 times out of 100 he can tell you the exact rating for the federal worker. As you may know, the rating system for most federal employees has only three levels. They are outstanding, satisfactory, and unsatisfactory. The professor’s mystical ability is diluted when you realize that only 0.2% of federal workers are ever rated in the outstanding or unsatisfactory category. It is therefore apparent that a major drawback to a critical incidents type approach is that if it turns out to be too much work, then all the rates become average.

### 63.5 Goal Setting

Another general approach to individual performance appraisal that can be applied to IS workers is based on goal setting. At time period one, goals are set that specify outcomes at a future time period. When that future time period arrives, the actual outcomes are compared to those specified in the goals. Some or all of the goals may have been exceeded, others reached precisely, and still others may remain unfulfilled. Many variations on implementation can exist in terms of who sets the goals and measures the results, whether or not movement toward the goals is observable, and what the consequences are of meeting or failing to meet the goals. Communication about goals can also vary from individuals setting their own personal goals without revealing these to anyone through public listing and display of goals.
(e.g., fund raising goals for organizations like United Way that display movement toward a goal as actual funds are pledged). For example, goals may be the result solely of the employee, of the supervisor, or the result of discussion among them. In practice, one would expect the creation of goals to themselves be complex and the quality of their construction to have much influence on their ultimate effect on both performance and net organizational outcomes.

It is reported (Latham and Locke, 2006) that hundreds of studies consistently show that performance on cognitive and physical tasks is enhanced when goals are difficult and clear. It is further reported that there are some explanations for these findings—goals may prompt the exertion of greater effort, help focus on activities toward these goals to the exclusion of other activities, direct the individual to skill formation toward goal achievement or prompt the use of existing knowledge, and encourage persistence as nearness to the goal achievement is reached. When properly administered, each of these can be positive for the mutual benefit of worker and organization. We would caution that too narrow a focus on activities leading toward particular goals can logically cause a tendency to miss opportunities not specific to those goals. For example, measurement of an extraordinary amount of technical outcomes may discourage an individual worker from taking useful time to help a user client or mentor a colleague. Similarly, focus on efficient production of a number of reports may obscure the disappearance of the need for reports at all (or the inefficient restructuring of the report making it provide greater usability).

The goal setter has to be careful about creating goals only for those tasks with concrete outcomes that can be counted and checked off when what is important may involve cultivating future transactions or enriching relationships. As noted by Latham (2004, p. 127), one cannot extrapolate directly on the effect of goal setting on “simple” relative to complex tasks:

When working smarter rather than harder, when one’s knowledge rather than one’s effort (motivation) is required, participation in decision-making leads to higher performance if it increases the probability of finding an appropriate strategy for performing the task, and if it increases the confidence of people that the strategy can be implemented effectively.

Other cautions and limitations of goal setting are hinted at by Latham and Locke (2006), “So long as a person is committed to the goal, has the requisite ability to attain it, and does not have conflicting goals, there is a positive, linear relationship between goal difficulty and task performance.” In this context setting statement, we can infer three requirements or precursors for observation of the positive effects of goal setting. Latham and Locke (2002) report that some research studies indicate that goals set by supervisors or workers did not seem to affect the growth of productivity. This seems reasonable when the overall process of goal setting is used with motivated staff who commit to the goals in either case. A strong test would be contrasting these types of goal setting in a workplace that was reluctant, suspicious, and untrustworthy. In education, one sees students committed to finishing a program, but not equally committed to studying for each examination or excelling at each paper or project as it comes along. The skill with which goals are designed so that individuals may apply both overall and component-based commitment would also seem likely to affect productivity. Along similar lines, it is clear that the ability to perform the requisite tasks to fulfill the goal is critical. In some circumstances, self-knowledge of abilities would also seem important for calibrating goals that are difficult but still obtainable.

On the other hand, it seems reasonable that in the process of goal seeking, individuals might become aware of lack of abilities that can be affected by training, practice, or absorption of explicit knowledge, thus providing something of a positive feedback loop that would have positive effects whether or not it was sufficient for full goal achievement. Locke and Latham (2002) address conflicting goals in terms of hierarchies of goals where individuals may have goals pertaining to departments that are not fully in accord with the larger goals of divisions, for example. Following the logic of agency theory, their own personal goals may not be in full accord with organizational goals. In moving from the individual level concept of difficult but clear goals stimulating higher levels of performance, addressing these potential conflicts would be critical.

Some additional questions pertaining to applicability of these theories in the actual workplace include (1) how the goal program is managed over repeated time periods; (2) how the program addresses those
who have the opportunity to surpass the set goals; and (3) how variance in results (in contrast to the comparison of average performances) is understood. It is not clear how the achievement of a difficult goal changes the abilities and expectations over time. It is not difficult to recall scenarios where IS personnel respond to a dramatic challenge with incredible productivity but end up exhausted, depleted, and burned out. This is a classic situation in the IS literature pertaining to the “forced march.” After a few of these, retention may be difficult and productivity may return to lower levels. One might argue, following that productivity is likely to regress to the mean after an exceptional instance anyway. This would suggest the goal setting as a “jolt” strategy applied periodically during crisis but used sparingly at other times. It would seem to depend on the size of the gap between performance before and after goal setting and whether there was slack that needed tightening, or whether such productivity is the result of “selling off inventory.”

Similarly, how does the firm address those who have the opportunity to perform above their stated goal? Setting higher goals for the next year, to the extent this is not successfully kept as a secret, can well have a chilling effect on anyone working an iota beyond the stated goal. It could also stimulate “game playing” such as hording successful actions above the goal for application to goals in subsequent periods. Interpretation of results in the setting of rewards for individuals based on different scenarios can also be tricky. How do you reward two people each with a productivity of “75 units” where one’s goal was 50 and the other 100? Do you provide the same reward or differentiate based on goal achievement? In one case, having a high goal may have inspired greater effort and higher levels of achievement than without the goal; in the other may have had an inhibiting effect once the goal was met. It would be ironic if setting a higher goal (100 units) pushed that individual to create an extra 15 or so units, but the person were “punished” for having failed to achieve the goal. How likely is that person to set a new goal at all?*

What this boils down to is the lack of knowledge of what accounts for variance among both those setting and those not setting goals. Rather than try to add more precursor variables to the nomological net, perhaps it would be equally worthwhile to examine whether the population is heterogeneous and that different people react differently to the same opportunity? One of the reported streams of goal setting relates to “individual” differences, but I am not convinced that another generic characteristic accounts for this difference. Rather, there may be an interaction between individual work preferences and the details of the goal setting program. For example, in a trustworthy environment one individual might profit greatly from such a program but in an untrustworthy one there will be no cooperation; in contrast, some individuals might always or never respond in either trustworthy or untrustworthy environments.

Schweitzer et al. (2004) warn of another potential danger in the use of goal setting. Their experiment involving a production task with self-reporting of results showed a higher level of exaggerated reporting in difficult goal setting than in “do your best” conditions. Interestingly, their results did not show significantly better task performance for those enjoined to difficult goals rather than to the “do your best” condition. They concluded

… people with unmet goals were more likely to engage in unethical behavior than people attempting to do their best. This relationship held for goals both with and without economic incentives. We also found that the relationship between goal setting and unethical behavior was particularly strong when people fell just short of reaching their goals.

Under a variety of circumstances, goal setting at an individual, group, or organizational level can result in higher levels of productivity. This approach does, however, require a significant understanding of the necessary and helpful prerequisites for its success. For example, is there a threshold of seriousness and follow-through by management that is required to make it work? We recall the “quality circles” of the 1980s and 1990s that were reputed to achieve such great things in a Japanese context but were hard to

* Academics, of course, have this dilemma in grading students—do you reward learning or change from initial to final knowledge and ability level (assuming we know where anyone starts) or do you measure results and reward someone taking courses that are below their entry level?
replicate in an American context because a variety of tangential elements were important to its success. At a minimum, we would expect some level of trust and trustworthiness, some ability to define and set well-constructed goals, some flexibility for moving among goals, and for opportunistically responding to new circumstances as critical for a balanced program.

### 63.6 Ranking and Forced Ranking

Another approach to performance appraisal consists of requiring supervisors to rank all of their employees from best to worst. Interestingly, this method is discussed in a rather humorous, though these days perhaps politically incorrect, manner by Dickmann (1964, p. 46). It is said that in some organizations the bottom set, say the bottom 10%, was automatically fired, or given a year to get out of the bottom 10%, which is interesting because they would only do so if either new people were not as good, someone else declined, or others improved at a significantly slower rate (or, to be cynical, others simply became less popular). In a time of general reduction of staff, this is one way to decide where to slim down. If there is an expectation that untrained newcomers will do better than existing staff, in a Machiavellian way this might also work.*

The obvious drawbacks to such a system are (1) if the hiring department did anything like a good job, all of the employees may be functioning at an acceptable level; (2) one supervisor’s worst 10% may be better than half of the workers for another supervisor; (3) the tasks and assignments for each group are not the same; (4) it creates incentives to prosper oneself at the expense of colleagues whether or not this achieves best overall results; and (5) depending on how the ranking is achieved (which may not be standardized supervisor to supervisor), individuals may have incentives to work only on easy small tasks (if the key is number of completed tasks) or only on difficult long-term ones (if the key is having important pending tasks such that the supervisor cannot afford to lose one).

On the other hand, it can be an immense drain on a work group to have an employee dragging along the bottom of the performance totem pole barely achieving enough to satisfy the letter of the minimum job requirements. A ranking system with forced removal of bottom performers may be a very blunt instrument, but may have some benefits if it is the only way managers have the courage to remove those who really cannot keep up.

### 63.7 Weekly Conferences

Ledet (1976) describes a relatively straightforward approach to personnel evaluation. In essence, this technique posits a weekly meeting between supervisor and each individual staff member where the staff members present a list of the goals they have prepared for the next week. These goals should mostly come from the staff member modified by the supervisor to account for longer-term priorities. Naturally, this is a difficult technique to administer if the supervisor has a dozen or more people reporting or if staff members are working on projects where their simultaneous presence is needed. As a result, variations of biweekly or monthly meetings and/or meeting with multiple staff members at the same time might be employed. This should be particularly effective where the supervisor has technical expertise or skills and where the staff member has not yet developed sufficient skills for independent planning and execution of tasks on a short-term basis.

* In the IS arena, this is not an unknown tactic where the expectation is that new college graduates will bring innovation and the latest in technical capabilities to the workforce. An alternative is to hire a relatively small core of permanent employees in whom one invests heavily and supplement this core with numerous contract workers to fulfill specific and well-defined functions. It is then relatively easy to shift training costs to the contract workers who, in principle, would shift between work and skill retooling. This strategy puts a significant responsibility on IS management to divide work between the segments of the workforce, maintain the core, and integrate the results.
I personally experienced this type of weekly conference as a trainer during an intense short-term process for preparing teachers of English as a Second Language in West Africa. Rather than discuss goals, however, each staff member presented a walkthrough of all lessons and activities planned for the following week and received feedback from all other staff members. Each individual was free to use or ignore the feedback, but, in general, the trainers clarified, added, took out, or otherwise improved presentations, and the exercise was viewed as enabling greater performance based on existing high levels of motivation. I cannot attest to whether this would work elsewhere if the same preconditions were not in place, but when reward is not an issue, only learning and improvement, it worked like a charm.

63.8 Conclusion

Performance evaluation is a tricky business in practice, particularly when it comes to knowledge workers and IS workers in particular. Clearly there are cases where such performance evaluation is helpful, but these may rely more heavily on a set of organizational characteristics being solidly in place rather than the details of the program itself.

The IS personnel literature has not focused on the mechanics of performance evaluation since the 1980s. Perhaps this is because the problem is so simple it is solved, so difficult we have given up, so generic we have accepted whatever management literature comes up with, or reconciled to firms either doing nothing (to customize to IS) or bringing in consultants to help them and, thus, do not perceive much need for knowledge creation in this area. In contrast, the human resource management body of scholarship is filled with many studies of precursors of success in performance evaluation programs, specific tactics such as better ways to focus or deliver feedback, and the like. While such knowledge may be helpful for crafting the framework of general programs, there is little help for IS managers in customizing these specifically for IS workers.

Returning to the CIO referenced at the beginning of this chapter, rather than suggesting an entirely skeptical outlook, his eight prescriptions for managing his IS employees sound pretty good. They are as follows:

1. Make sure all employees have the hardware, software, tools, training, and other resources they need to do the job.
2. Ensure a cultural environment that values them.
3. Be clear on the job and insure proper direction and quick management decisions.
5. Make sure you have the right people on the bus and the wrong people off the bus.
6. If you have to do reviews have them do their own, make sure they are not too different from your mental model, but do not deal with any variance at the time.
7. Give everyone not under a formal HR remediation plan the same raise.
8. Tell your HR department to take their heads out of their books and get real.

To be fair, we can argue or debate about each of these, what they mean, how they might be implemented, and whether they work in all circumstances. Additionally, the CIO as a rule may not be involved in prevention of litigation on a day-to-day basis. In addition, this particular individual does not work for a gigantic corporation where the dampening effect of performance evaluation on strong managers may be compensated by shielding other employees from relatively too weak managers.

But notice that these admonitions are largely about the responsibilities of the manager creating the setting for work rather than the details of productivity of the individual worker. It is perhaps more about accepting the responsibilities of management rather than looking for formulaic procedures and quick fixes that look scientific but can introduce overhead, unfairness, and a distancing rather than integration of a workforce.
References


