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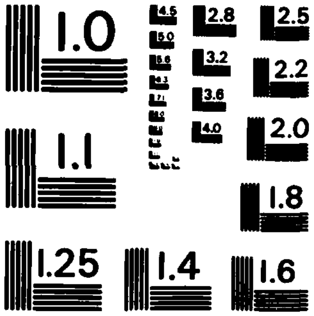
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INCENTIVES FOR CONTROLLING THE PERFORMANCE
of
HIGH TECHNOLOGY AND PROFESSIONAL EMPLOYEES*

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ABSTRACT

Many problems arise from potential incompatibilities between characteristics of high technology and professional employees and traditional organizational authority and control systems. These concompatibilities may lead to dysfunctional conflict between the role expectations of the professional and organizational requirements. Some organizations are attempting to deal with this conflict by designing evaluation and control systems which better reflect the expectations of these highly skilled employees. This paper identifies sources of tension for the high technology professional and attempts to illustrate how this tension may be lessened by aligning the professional's expectations with organizational goals. Recommendations are offered for differential incentives and rewards.

Introduction

The term "professional" has been increasingly bandied about with a growing concern for what it means to be a professional and to belong to a profession. Over ten years ago it was argued that the more advanced a society is industrially, the greater its dependence on professionals and their expertise [22]. This dependency has not lessened during the past decade; today's rapidly changing environment has increased its demand for technical and professional service spanning a large range of skilled occupational activity. Predictions by futurists call for the professional and technical classes to gain steadily in numbers and importance with theoretical knowledge at the power base [3, 20]. This knowledge is challenging traditional hierarchical legitimations of authority and control systems. The purpose of this paper is therefore to focus on the highly skilled professional employed within an organizational setting and to explore the potential incompatibilities surrounding this relationship.

Professionals in Organizations

Durkheim [11] suggests that as societies grow in size, density and urbanization, the division of labor increases considerably, and specialization allows each segment to go about its business with a minimum of conflict. This differentiation and specialization simultaneously attracts and accommodates different individuals, each with different skills, interests and expertise. New skill groups continually arise and are demanding recognition of their qualifications and expertise; this strong desire to control the market for their skills brings professionalization [34]. It is this differentiated knowledge theme that reinforces the thesis that our society is emerging as a professionalized society with professionals and high technology employees preeminent [23, 6].

Contemporary organizations have had a widespread effect on the behaviors of technical and professional employees, expressed through intricate and varied control systems designed to induce compliance. Historically, controlling the performance of all individuals in organizational settings has revolved around the setting of performance standards with the subsequent monitoring of that performance. Professional and/or high technology employees are typically not as amenable as the "organization man" to these conventional bureaucratic control systems which emphasize a management culture concerned with organizational loyalty, financial soundness, hierarchical authority and control, as well as growth in production output, volume and size [39, 21]. Instead, professional employees often attempt to redefine the conditions of organizational participation. Superiors often maintain that they have the right to decide what should be done, whereas these specialists frequently insist that they should have more of that right. This competition may result in one of two outcomes--either the exercise of formal sanctions over the specialist for non-compliance with the organization's authority and control system or "mock" recognition given to line authorities, when in fact a decision has been made by specialists [34: p.78]. An example of this mock recognition, or lip service, is the current management of high-ranking military officials of federal atomic weapons and missile research-- management which has been restricted to the command of an army division, or a ship. Such fictions permit the traditional image of authority to remain unchallenged by the advance of scientific knowledge [34].

Freidson [14] suggests that this "new division of labor may in fact require a shift from managerial to occupational authority." Noting this trend, social forecasters [5, 15] predict and increase in professional activities organized around a colleague group of equals, with ultimate control exercised by the technical group itself. Others suggest a greater government control of our professionalized future [5], which is consistent with the fact that the government has become the largest employer of highly skilled professional employees [4]. Advancements in technology with the aid of federal funding have helped raise the required skill level of the workforce. In addition, governmental legislation affects conditions of employment in areas such as equal employment, safety and labor relations. This enlarged governmental role focuses on the growth of the specialist, which increases the dependency on specialized groups in general, and the ability of the government to create a demand for this specialization.

This view of the age of the specialist suggests that professionals as a whole are becoming increasingly important to and integrated within the fabric of our social framework. Currently, there are over 6 million members of unions which are classified as professional and technical [42], and these do not include professionals or technicians not included in unions. Modern employees are not only better trained and educated, but have increased expectations of what organizational life will bring in the way of satisfactions and rewards. Because entry into most organizations now occurs at a relatively high level for these specialists (who have a great deal invested in their education) these modern employees have often been able to bypass the traditional means of promotion which usually meant starting at the bottom of the organizational hierarchy and working one's way up. If the promotion up the hierarchy is too slow, or if the specialist's corporate visibility seems impaired, these employees are more apt to turn over, or withdraw in more significant ways than their counterparts of several decades ago [43]. Part of the reason for this seemingly increased ability and willingness to leave the organization stems from the specialist's increased educational skills, and less of a stake in the employing organization. Another part stems from the values and attitudes that these individuals have and were inculcated with during the extensive training and socialization process--a process culminating in professional values that predate an individual's organizational or occupational experiences [43].

A variety of meanings have been attributed to the values and attitudes comprising a professional orientation, however, a comprehensive review of the literature concluded that the following characteristics are essential to this orientation [26]: (a) expertise, usually acquired through prolonged specialized training in a body of abstract knowledge; (b) ethics, or the rendering of service to clients without concern for self-interest; (c) collegial maintenance of standards, maintaining performance standards through collegial rather than hierarchical or governmental control, since professionals claim necessary and sufficient expertise to police their specialty; (d) autonomy, the freedom to work on projects they deem important and to work on them in their own way; (e) commitment to calling, where professionals feel commitments to their work, their field and their own careers; and (f) identification with the profession and other professionals. Professionals identify strongly with their profession and use other professionals and professional associations as important referents. They often identify more with their professional subculture than their employing organizations [26, 39, 43].

These highly skilled specialists are, in general, more committed to their occupational specialities than to their employing organizations and as such, pose some rather uncomfortable problems for organizations which, like the government, have become increasingly reliant on these individuals. This discomfort is reinforced by the organization's selection and training costs for these specialists, as well as later attempts to please and satisfactorily motivate and reward the employee (since dissatisfaction often results in searching for a new job or other forms of withdrawal). In addition, the organization must be willing to provide continued training so that the specialist's skills will not atrophy, or become obsolescent. Most organizations also come to realize that it is difficult to satisfy employees whose expectations are so high, particularly when the marketplace reinforces such expectations. The organization may also be unable to obtain from these newer employees the company loyalty that it came to expect of the "organization man". In fact, their allegiance may always be suspect and grounds for ongoing conflicts between these individuals and the organization's authority and control systems [24, 26].

At a time when more and more technical specialists are entering the workforce, the problem of mediating the tensions between the professional's orientation and the organization's control systems appears central in retaining valued organizational employees and increasing their performance.

Sources of Tension

There has been considerable discussion as to the inevitability of conflict between the professional and the organization [7,13,17]. However, professional-organizational conflict may be contingent upon the type of organization and the type of organization policies and practices that exist [43]. Although a certain amount of conflict with clients is characteristic of free agents contracting to perform services, the salaried professional, (e.g. engineer) in a bureaucratic firm is additionally confronted with threats to his/her autonomy, i.e., once hired, the professional implicitly agrees to exchange autonomy for organizational resources [36]. The individual's reaction to the use of authority for control purposes probably constitutes the most critical variable in organizational accommodation. This speculation reflects a widely held position--that the professional and the bureaucracy are antithetical to each other, and conflict arises due to basic differences between the two normative systems [36,40]. This tension may be conceptualized as a conflict over the legitimacy of these two bases of authority and control [34].

> The major source of conflict between bureaucracies and professions ... is in the realm of authority relations. Hierarchical authority permeates bureaucracies, and executives typcially demand from their subordinates compliance to organizational rules and procedures. By contrast, professional authority emanates from superior expertise which requires individual autonomy in decision making and task operations (32).

This conflict produces distinctive climates where members are "expected to be loyal to the organization, to behave consistently and rationally according to technical and professional criteria, and to defer to the authority of the organization's leaders" [34: p.4]. In short, professional standing becomes precarious in organizational settings where power, loyalty and status rather than skill are increasingly the source of influence. Since the organizational professional is part of a pragmatic bureaucratic structure, it is difficult for the professional to exercise discretion in setting his/her goals, deciding how energy will be spent and working in terms of knowledge rather than time.

The alleviation of conflict may be achieved [30,41] by requiring the organization to reaffirm the principles or professionalism. Glaser [16] suggests that the issue is dependent on the firm's ability to synchronize its goals and those of the individual professional. Miller [31] agrees and suggests a loosening of control over the professional by the organization; this position is reinforced by Hall [19] who calls for the lessening of bureaucratization.

Some maintain that professional-organizational conflict, while important, is subordinate to more pressing issues [25,43]: Can the organization alter or modify the attitudes of the professional, or are these values and attitides unalterable and not amenable to organization control? Theorists differ in their responses, some maintaining that conflict is inevitable because the single most important determinant of professional attitudes is formal education and training. Others claim the opposite. Gouldner [18] for example, found that notwithstanding long years of training and marketability, a decision on whether to leave the organization or stay and seek internal rewards is clearly dependent on personal goal fulfillment (internal or external to the organization). This position suggests a tradeoff will be made if the organization offers greater opportunities for advancement than the profession. Brown [8] and Avery [1] support this position--an individual will choose the profession over the organization only if the individual perceives greater chances for goal achievement in the profession.

An alternate view has gained support more recently--the individual can be shaped by the organization's distinctive climate or culture. Dewhirst [10] found that the organization, through its socialization processes influenced professionals' behaviors. Miller [31] found that the extent to which the organization encouraged professionals through supervisory support produced a significant effect on the amount of work alienation that occurred. Riegel [35] and Hower and Orth [21] suggest that the quality of facilities and services are very important to professionals. McCarrey and Edwards [29] suggest that an organization's ability to provide "facilitative support services" and "opportunities for personal and professional self-development" in their sample of government scientists was also important to individual professionals. Barber [2] reports organizational encouragement of individual professionalism by strengthening technical skills and expertise. LaPorte [27], Whyte [47] and Saxberg and Slocum [37] all suggest that organizations can minimize role conflict and tension if individual professionals are not confronted with competing role demands--from either the individual or the employing organization. Further, those organizations which can provide recognition for scientific and technical contributions also have been found to encourage individual professionalism [28, 38]. Consistent with the above are findings by Pelz and Andrews [33] who suggest that the optimal climate for scientists in organizations is one of "controlled freedom"; Engel [12] claims that controlled freedom can be achieved within a moderately bureaucratic setting which provides greater autonomy for the physician than either a highly bureaucratic, or a nonbureaucratic setting.

Thus, organizations have been capable of creating climates in which there is incentive for a specialist to adhere to hierarchical authority and control systems. These climates for integrating professional goals with organizational goals can be enhanced by providing various professional incentives. To the extent that this is made possible by (1) a lessening of the organization's authority and control structures, and (2) a provision of incentives and evaluational criteria which are consistent with the professional orientation, then the ability to synchronize a professional's values and attitudes with the organizational control system appears possible.

Professional Incentives

The creation, distribution, and dissemination of information regarding appropriate incentives are considered critical in controlling the performance of people in organizations [25]. However, review studies have shown that the administration of traditional rewards such as promotion, pay increases, status symbols such as window offices, private parking spaces and keys to the executive washroom are less effective in controlling the performance of professional employees [26,39]. Further, the professional's orientation around collegial maintenance of standards may actually serve as a "substitute" [25] for the organization's control system. Each professional characteristic will be considered separately, with incentives and prescriptions offered to motivate and control the performance of professionals by minimizing professional-organizational tension.

1. Expertise. Organizational incentives should be designed to utilize a key attribute of the professional orientation--expertise. Companies should routinely consider providing for the maintenance and growth of

professional skills over time, to avoid professional obsolescence. For example, the quality of facilities and services--space, privacy, equipment--have been found to be very important to highly skilled professionals [21,29]. For government technocrats, opportunities for personal and professional self-development, as well as facilitative support services are seen as important incentives. In addition, leaves of absence for engineers and other industrial professionals have been successfully used to permit and encourage the strengthening of technical skills and expertise [31].

Specifically, organizations can begin to monitor obsolescence, or the extent to which organizational professionals lack competencies and abilities necessary to maintain their current or future performance. Obsolescence monitoring can be achieved through the organization's actively taking a role in professional development and career counseling. Current careers research indicates that professional development may be successfully achieved through a variety of methods--seminars, management training, tuition refunds, leaves of absence, sabbaticals and planning/evaluating continuing education programs [44]. Such research indicates that career counseling for the technical specialist should concentrate on identifying appropriate career movement to facilitate growth and continued development. Professional incentives may also include the organization's permitting career changes for obsolescent professionals, or high technology employees whose continued expertise requires different and/or additional cross-training.

2. Ethics. Organizations should avoid placing professionals in positions where they will tend to experience role conflict and tension due to their codes of ethics and client orientation. The professional's

code of ethics may conflict with [1] the organization's overt and occasionally deceptive marketing of its products and services; and [2] the firm's claims of ownership of and secrecy toward new products. The control of the professional's performance will largely be contingent on the degree to which the organization can reduce conflicting demands for behavior from self, colleagues and organizational superiors [43]. Professional incentives include allowing information-sharing with professional referents outside the firm, allowing professionals to publish the results of their research, thereby increasing the knowledge base and maintaining standards of quality within the profession, and providing recognition for scientific or technical contributions which add to the knowledge base. This has been accomplished in some firms with the subsequent alleviation of tensions surrounding the professional's perceived obligation to render service to the public. Organizations should also be sensitive to the fact that professionals may have discrepant norms and values, and should therefore not enforce rules and regulations which run counter to these norms.

3. Collegial Maintenance of Standards. Controlling a professional's performance should take into consideration the professional's preference for collegial maintenance of standards [26]. Because professionals "tend to be organized in terms of a 'colleague group of equals' with ultimate control being exercised by the group itself...bureaucratic control violates the professional's traditional mandate of freedom from control by outsiders [31: p. 760]." Thus, organizations should (1) utilize an evaluation/control group which possesses the necessary skills and expertise to accurately determine whether performance is being achieved; and (2) establish appropriate criteria for the evalua-

tion/control of a professional's performance. For example, the effect of a high technology employee's performance on sales or profit may be deemed appropriate by the organization, however, may seem irrelevant to a professional concerned with creating new knowledge.

Organizational reward systems should therefore be designed to reward technical contributions, with incentives provided for technical achievement. Peer evaluations can be designed to augment or substitute for performance appraisals normally conducted by hierarchical superiors [45,46,25]. The organization should consider revising outdated performance appraisal systems, focusing on who will judge the performance of the professional and what dimensions will be appraised.

4. Autonomy. The organization should insulate the professional employee against the network of rules which interferes with their demands for autonomy, through protective structures such as linking pins, or "professional liaisons" [39]. As noted previously, the organization's network of rules could be differentially applied to professional employees, since technical specialists often view the organizational control systems as interfering with their freedom to work on tasks they consider important. Further, organizational requirements of secrecy can conflict with the professional's desire to communicate scientific knowledge to colleagues outside the firm.

Some evidence (suggesting a decrease in alienation from the firm) supports giving incentives such as time and funds to professionals for personal reasons unrelated to organizational goals. Other incentives include the freedom to select tasks or projects, freedom to implement one's own ideas and flexible working hours. It has also been suggested that managers apply "controlled freedom"--or the participation and consultation with professionals concerning assignments and changes--to their high technology employees, in that moderately bureaucratic settings generally offer greater autonomy than either extreme.

Since one's autonomy may be threatened by the organization's measures of performance, requirements for short-term quantifiable results, and the frequent tendency to place professionals on teams (thereby sacrificing individual goals to group goals), organizations in general should not subject professional employees to tight supervisory controls, but allow them more freedon to make decisions. Some organizations are becoming more internally democratic, by delegating more decision-making authority to lower levels in the organization.

5. Commitment to Calling. Since a professional's attitude toward upward advancement is often a function or his/her commitment to calling, the organization should consider designing alternate career paths for professional employees who wish to remain in their technical specialties without forgoing social and organizational indicators of success. Advancement into management is generally easier and more apt to be rewarded than advancement within the technical specialty. Hence, there is substantial pressure for professionals, and in particular high-technology employees to abandon their technical specialty. While this may be appropriate for some, many are reluctant to do this, with the increased likelihood that dissatisfaction, low morale and turnover will occur. Some companies have offered dual ladders, which are alternate paths designed to provide the incentive value and rewards associated with promotion, but without an increase in managerial duties. Dual ladders, however, are not without problems [39], and are often seen as lacking power and equity with managerial ladders.

Therefore, professional incentives should focus on professional criteria in lieu of values and loyalties considered important by the organization. In addition, the organization can focus its energies on the design of a career-oriented human resource system which provides career assessment guidance for its professional and technical employees [44].

6. External Referents and Identification. The organization should be aware that professional employees generally resist bureaucratic rules and supervision, reject bureaucratic standards, and have conditional loyalties to the organization [24,25,26,39]. Professionals typically identify more closely with members of their highly specialized group or profession as important referents.

There is some evidence to suggest that providing time, funds, and encouragement to attend professional meetings and present their research results in lower alienation from the organization [35,29,21]. In addition, other incentives designed to encourage external professional identification include permitting specialists to publish under their own names, not simply the name of the firm, or the group. Some firms allow professionals to take out copyrights and patents in their names; other firms encourage professionals to join professional associations and attend professional meetings, which the organization reimburses. Some organizations offer bonuses for professional papers accepted at national meetings, or for becoming officers of professional associations. Further, some firms have discovered that publicly praising professionals for external (or internal) accomplishments in company newsletters, results in increased organizational commitment and ultimately job satisfaction, involvement, and productivity.

The degree to which the organization encourages interaction with other highly skilled professionals has also been found to correlate strongly with professional orientation. Some research indicates that the amount of organization prestige that professionals have can affect their organizational commitment and loyalty, with high loyalty reported among professionals with high professional prestige and low loyalty reported for professionals low in organizational prestige [28]. Because organizational commitment tends to increase with age, amount of time in present position, and seniority, and although these are not factors amenable to organizational control through professional incentives, it should be noted that professionals can indeed be loyal and committed to the organization goals as well as their own career goals.

In summary, controlling the performance of highly skilled technical and professional employees appears contingent on the degree to which organizations can mediate the tensions between the professional's values, attitudes and beliefs and the organization's bureaucratic authority and hierarchical control systems. The manner in which organizations develop and use their professional talent depends, in part, on the incentives designed to motivate and control a professional's performance with key characteristics of the professional's orientation. This matching focused on alleviating problems inherent in profesional-organizational conflict. The neglect of professional employees through inattention to the evaluation and control system, resulting in either obsolescence, dissatisfaction or turnover, is a risk no organization should willingly assume.

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