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(WORKING PAPER SERIES - 124)

NETWORKS FOR EVALUATION:
ON REPUTATION IN ECONOMIC LIFE,

by

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Draft: May 1987

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NETWORKS FOR EVALUATION: ON REPUTATION IN ECONOMIC LIFE

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ON NETWORKS FOR EVALUATION: REPUTATION IN ECONOMIC LIFE

I. THE PROBLEM

Evaluation of individual or team performance occurs more efficiently and effectively in networks than inside the "classic" organization under most conditions. There are a number of reasons why this is so. First, in networks the act of evaluation is at least partially separated from the act of sanctioning: evaluation becomes pure information, transmitted through the network to the organization, and the sanctions are delivered at the organizational level. This separation reduces the effects of self-interest. Divorcing the evaluation from self-interest both legitimates the evaluator as a neutral source of information and minimizes incentives to distort information to one's own benefit. Second, networks may be much more rapidly and completely institutionalized than organization-based evaluation systems. To the extent that the network is richly interconnected and relatively difficult to enter, it will be highly stable and resistant to change. Under these conditions, individuals believe the network will persist as a locus for evaluation, and hence are willing to invest in their reputation in the net.

This view differs from received theory in a number of respects. First, evaluation of worker performance is commonly thought to occur only within the firm/organization in which the worker is located. In economics, this translates into means for maximizing individual effort, metering productivity and metering rewards in order to reduce incentives for workers to "shirk". In sociology, this translates into concern with authority rights and modes of surveillance and sanctioning. Second, modern network theory focuses on ties between individuals (or other units) that have no evaluative content.[1] Some minor exceptions aside, research assumes

that support or help is given - in job search, for example - regardless of whether the person is evaluated positively or negatively. But it is self-evident that ties involving support or help giving will be empirically related to the evaluation of the receiving person - if you don't think highly of someone, you won't recommend him/her for a good position, and perhaps not for a job of any type.

We can think of networks as markets for evaluation.[2] Markets for evaluation emerge when organizations fail to provide adequate evaluation of performance - in other words, organizational failure leads to the development of markets, reversing the commonly understood process (Williamson, 1975). Conditions under which networks for evaluation emerge include: difficulties in measuring the link between performance and outcomes in tasks (e.g., perhaps the surgery was performed perfectly, but the patient died), specialization so that no other individual in the firm has the skills necessary to conduct evaluation, and resolution of evaluation difficulties between status equals, where no one has clear authority to evaluate.

Individuals are motivated to invest in these markets because they are coupled to organizational systems for delivering rewards and penalties and because the networks are seen as a permanent location for evaluation. Investments consist of monetary resources to some degree, but are more commonly investments of time and energy in activities to be evaluated by those in the net. Information is of high value, and reputations can be shaped and reshaped overnight. Professionals in organizations provide the prototypical example. However, skilled trades and the craft unions similarly rely on network evaluation, and have since at least the 1700s (Cumbler, 1979).

As the argument is developed, it will also become clear that the same general line of reasoning applies at the organizational as well as the individual level. For

firms, the most important evaluative market is the stock market; information is at a premium, systems are structured to minimize self-interest of brokers and others acting as evaluators in the transaction, and rules limit use of insider information and require timely release of information critical to stock pricing. Internal criteria for judging firm performance have largely been abandoned. Among economists and industrial relations researchers, firm-specific performance measures have given way to market-related measures (e.g., Armour and Teece, 1978; Palmer, 1973). For nonprofit organizations, such as hospitals, the comparable system entails evaluation by state and federal regulators and general investment in those aspects that are evaluated by the surrounding community, such as the newest technological advance in medicine.

If networks dominate, then what forces generate individual commitment necessary to maintain organizations? Certainly, delivering sanctions based on network evaluation should not suffice. If organizations have "failed" to provide useful evaluation for some types of tasks, then at least for those activities alternative, more efficient, forms should replace organizations.[3] But the organization has persisted, perhaps because of the resources organizations provide and the strong effects of organizational context on the productivity, visibility, and career success of individuals, thoroughly documented in the sociology of science research. Organizations, then, represent separable "value added".

Since a network approach to evaluation of performance differs so radically from received theory in sociology and economics, the argument needs substantial justification. First, the conditions under which evaluation will be retained within the organization or contained in external networks will be considered. Second, the greater tendency of network evaluation processes to become institutionalized, as compared to evaluation processes within organizations, is shown to rest on network

properties and on lack of direct self-interest. Third, main characteristics of networks for evaluation are outlined, including monitoring processes. Fourth, the continuing value of organizations when networks take over the major evaluative functions is shown to rest on added visibility, prestige, and resources, constructing a modern organization-based entrepreneur. Finally, three extensions of ideas concerning networks for evaluation are discussed, including positive effects of turnover, less concern for maintenance of the technical core of the organization, and high permeability of organizational boundaries, such that job satisfaction more often relates to the network than to the organization. The paper concludes with a brief summary of basic properties of networks for evaluation.

II. EVALUATION: ORGANIZATIONS AND NETS

Organizational structure is often defined in terms of the arrangements by which the firm motivates, coordinates, appraises, and rewards its employees (Caves, 1980:66, footnote 8). This prevailing view is reflected in the first section, reviewing the theories built on the assumption that the organization is the locus for evaluation. In the next section, the role of networks in evaluation is outlined, along with the implications for evaluation and sanctioning within organizations. Then, these general ideas are extended to organizations as units.

The traditional view

Theoretical treatment of task evaluation in both sociology and economics deals exclusively with processes inside organizations, in the context of on-going monitoring of work output by organizational members. Evaluation and sanctioning are universally linked, though the sociological view asserts the strongest connection: the same person who has the rights to evaluate also has the rights to sanction (Scott,

Dornbusch, Busching, and Laing, 1967). Within this general framework, sociologists have focused on authority rights, on types of evaluation, and on the interaction of these with the type of task (see especially Dornbusch and Scott, 1975). Economists have investigated the problems of metering productivity and metering rewards so as to increase productivity, and the role of the manager especially under conditions of team production where individual contribution to the task cannot be readily determined (see Alchian and Demsetz, 1972; Leibenstein, 1976: Ch. 6-10).[4]

In the economic approaches, it is assumed that workers will act to maximize individual utility and not some goal of the firm (Mirrlees, 1976), and hence will tend to "shirk" if their performance is not monitored (Alchian and Demsetz, 1972). In the sociological approaches, it is assumed that all monitoring is done by authorized agents of the organization, with attention being given to incompatible evaluations, below the individual worker expectations, and the resulting instability of authority systems and likely higher turnover; predictions about effectiveness or efficiency are explicitly outside the scope of the theory (Scott, Dornbusch, Busching, and Laing, 1967: footnote 17).

Left out of the more theoretical approaches to evaluation in organizations, however, are the substantial barriers to effective internal performance evaluation. First, managers are often required to evaluate and sanction those persons most likely to succeed them. Assuming, with Alchian and Demsetz (1972), that managers will receive higher rewards within the organization, and often become residual claimants on firm profits, then the self-interest of workers under them would predict attempts to displace the managers. It is therefore in the managers' self-interest to systematically misstate evaluations, such that workers who are best able to succeed them don't displace them.[5] Second, managers are seldom taught how to appraise performance effectively (Lawler, 1986:3): "As a result, at best, pay increases and bonuses

are based upon hastily done assessments of performance, and, at worst, are based upon biased, ill-informed judgements by untrained supervisors." Internally, little credence is given to performance evaluations, so that employees often use the size of their salary increase as a proxy for evaluation. Third, internal systems are ineffective in producing either improvement in performance or discharge of the nonproductive worker. Great hesitancy in firing workers, especially in larger firms that dread lengthy court suits, mean that the only effective negative sanction is a very low pay increase. Reductions in salary are seldom used. The most common method of discharging ineffective employees is to lay them off when firm profits dictate reductions; this is so common that workers laid off in non-union firms are often suspected to be the low performers. These barriers to knowledge of low employee performance or to effective sanction of low performance decrease the likelihood that internal firm evaluation of worker performance will be effective or efficient, especially in the short run.

When barriers to evaluation can successfully be overcome (e.g., in IBM), there are still substantial problems in evaluating some types of tasks. Internal organizational evaluation seems to work best for tasks that are readily decomposable; though teams may be involved in production, individual contribution can be disentangled. Further, tasks that have clear links between process and outcome (inert tasks), such as typing or posting bills in a ledger, can be evaluated and sanctioned by managers in a direct way. When tasks contributions are decomposable and tasks are inert, then organizations with effective internal evaluation systems, designed to overcome the barriers to evaluation, have a high degree of control over the performance of employees. In the next section, decomposable, inert tasks are contrasted to those that are non-separable, active, and highly specialized. In so doing, conditions can

be specified under which organizations fail as sites for evaluation and networks for evaluation come to be located outside of organizations.

A network approach

Economists and sociologists have already noted two cases where evaluation of performance is especially difficult within organizations: mutual and nonprofit firms because of lack of incentives tied to performance (Alchian and Demsetz, 1972:789-790), and professionals because of lack of clear evaluation criteria (e.g., Freidson and Rhea, 1963; Scott, 1972). In both cases, evaluation of individual performance tends to move outside of the organization, and become located in diffuse networks.

While these cases are important, they don't define the set of general conditions under which networks for evaluation will develop outside of organizations.[6] Three major conditions are necessary for evaluation to move outside the organization: (1) tasks are very difficult for other organizational members to evaluate, while others outside the organization have the requisite skills; (2) agreement about criteria used to evaluate task performance is rooted in structures located outside the organization, to which the evaluated members have strong feelings of affiliation; and (3) status differentiation within the organization is low, and hence there are few strong, legitimate authority rights.

Turning to the first major condition, what makes task performance more difficult to evaluate within the organization? As discussed above, inert tasks are relatively easy to evaluate, because process and output are directly linked. So are tasks that involve separable inputs, so that individual effort can be measured. In contrast, performance on team tasks and on active tasks is very difficult to evaluate, because

process and output are not directly linked. Table 1 outlines the expected interrelationships. This is not simply a problem of team production, but a joint function of nature of task (ACTIVE/INERT) and nature of organization of work (TEAM/INDIVIDUAL). Active/Team leads to the most substantial evaluation problems, and Inert/Individual the least. While Active/Individual and Team/Inert are both intermediate forms, it is expected that evaluation of active tasks is more difficult, hence Active/Individual more difficult to evaluate and more likely to involve network evaluation.

If roles were completely defined, and could be understood fully by others within the organization, then evaluation could be located there. As roles become more ambiguous (e.g., creativity is expected), more specialized, and interrelations with other roles more loosely defined, then problems of evaluation within the organization increase. In the external network, it is more likely that others can be found who can judge role content more accurately. Note that, once again, evaluation and sanctioning are carefully separated: evaluation involves an assessment of a worker's contribution to task performance, and while sanctioning is based on that evaluation, evaluation and sanctioning are separable processes. Most important, different individuals in different locations (e.g., inside or outside the organization) may have the roles of monitor (meterer) and sanctioner.

In active tasks, resistance encountered in performing the task is variable, so that the quality of the work performed cannot be reliably judged by the output. Only if the nature of this resistance is understood and controlled for will the evaluation of output be reasonable. This requires knowledgeable evaluators, often with highly specialized information about the particular task and about the relevant group of others performing similar tasks to which the employee should be compared. Alternatively, probabilistic assessment can be made or, more commonly, direct

measures can be made of quality of performance. For example, quality of a professor's research may be judged by the number of publications, comparing against the output of others given information about publication rate typical in his/her field. Or the informed opinions of colleagues can be used to directly judge the quality; these colleagues are typically located outside the organization. As the degree of task specialization increases, it becomes increasingly unlikely that an expert can be found within the organization.

Networks involve agreement about what criteria should be used in evaluation, though not always agreement about specific application of criteria in any given case. For example, job search procedures for occupations for which it is difficult to judge a high quality applicant tend to rest on networks, rather than more "objectively efficient" mechanisms such as direct application. These involve evaluation of performance of active tasks that can't be measured in terms of number of words typed per minute, for example. Specific criteria for evaluation of task performance will be widely shared, such as a "reasonable" amount of publication for promotion to tenure in universities in referred journals, and specific abilities expected for a computer programmer to work on the "kernel", that is, the core of the computer operating system. Questions can be devised that directly test knowledge - by those who are also experts in the same operating system. Though there is general agreement about criteria, and the closer to background technical knowledge, the higher the consensus, this should not be taken to imply consensus on all aspects among all members of the network. The agreement is far from complete: "scientific taste" involved in selection of problems interesting for further study in sociology among graduates of the University of Chicago graduate program is not the same as that among graduates of Stanford.

There is a very real problem about monitoring among status equals - they are potential competitors and thus do not wield legitimate authority (Freidson and Rhea, 1963). If such monitoring is conducted within the organization, the risk of biased evaluation is increased enormously. By locating evaluation primarily outside the organization, the evaluator role can be reconstructed to create a disinterested "third-party", with self-interest not so directly involved in the immediate evaluation. For example, in appraisals of professors, letters of reference are typically from those in the network, not in the local organization. For these network appraisals to be seen as legitimate by the person being evaluated, it is critical that the person see him/herself as a member of the network. Because of the importance of the feeling of membership in the larger group, periods of intensive socialization are typical. The socialization is not primarily to ensure self-monitoring, but to create a sense of membership in the wider group, leading to anticipation and acceptance of evaluation of task performance by members of that group. Within the network, discussions of individual professional characteristics, such as ability or quality of ideas, are taken not as rumour, but as information about that person.[7]

When extensive networks for evaluation exist, the organization no longer engages in meaningful evaluation, but continues to distribute the most important sanctions to its employees. This separation reduces barriers to evaluation normally present in the organization. Managers are reluctant to fire those that they evaluate, because they have to justify their opinions based on observation of the employee, but they are much less reluctant when they can refer to an outside appraisal to justify their actions. Resting on basic attribution processes (see Kelley, 1972), the manager is able to escape personal responsibility of his/her actions by attributing the cause to external forces. Hence, a basic prediction is that organization-based sanctioning

will be more frequent when networks for evaluation provide detailed information about the employees that is used to determine and justify internal organizational decisions about sanctions.

While network-based evaluation may increase the likelihood of effective sanctioning within organizations, it also limits surveillance rights of organizational members, and reduces control of the organization over its own members. Though the organization is allocating resources, to the extent that it is constrained to allocate resources according to the external criteria it loses control of the process. For example, in one study of Stanford Research Institute (SRI) it was shown that internal evaluation and distribution of rewards (salary increases, ability to charge time to overhead) were determined in large part by the evaluation of individual staff members by the external granting agencies (Zucker, 1969). Evaluations of the abilities of professional staff were made within the organization, but these evaluations were not used in determining the distribution of rewards.

How can organizations operating in systems dominated by networks for evaluation recapture the evaluation process? One method is to create networks for evaluation internal to the organization. This can be done completely, by creating internal labor markets that involve idiosyncratic skills, not readily evaluated nor marketable outside the firm, so that workers become dependent on the firm for future employment, though this also makes the firm more dependent on the employee (on idiosyncratic exchange, see Williamson, Wachter, and Harris, 1975). Also, "clans" are essentially evaluation networks located inside the organization (Ouchi, 1980). In this type of governance system, the evaluation of all the participants, not just the supervisor, count. In fact, the supervisor's evaluation depends on the evaluation of the others. The plethora of detailed, local information reduces the importance of diffuse networks for evaluation. Most common, though, are partial mechanisms for recapturing

the network process: the use of review boards and committees, made up of those with the necessary skills and credentials for evaluation, allows the organization to gain direct control over specified aspects of performance. These review boards and committees are built self-consciously on the network model, with membership often an internal reflection of likely outside evaluators. For example, nosocomial (hospital induced) infection boards, consisting usually of doctors and nurses involved in direct patient care, review procedures and evaluate performance of all professional personnel in terms of compliance with infection control regulations; personnel action review boards in universities are newly formed for each review, and consist of scholars drawn from relevant areas to review independently the departmental/school evaluation and the evaluation of outside scholars; grievance review boards in f often consisting of both management and union representatives, act to interna. review grievances, rather than delegating action to the union.

Networks, then, far from being simple measures of relation, serve as powerful means of evaluation (compare to the view of networks typical in sociology in Burt, 1980). Though recaptured to some extent by organizations, for the most part networks for evaluation compete with internal organizational evaluation. Under conditions outlined above, networks emerge as the primary source of evaluation of task performance. Employees have more incentives, then, to invest in their evaluations in the network than they do to invest in local organizational evaluation; their network reputation will affect their rewards, even those delivered by the organization, more than their organizational reputation. Later, the effects of these differential incentives will be investigated, using the case of university professors. Now, however, the evaluation of organizations in networks needs to be considered.

Networks for evaluation of organizations

As Alchian and Demsetz put it (1972:789-790), in mutual and nonprofit organizations "The future consequences of improved management are not capitalized into present wealth of stockholders....One should, therefore, find greater shirking in nonprofit, mutually owned enterprises." Thus, they point to the incentive problem. Equally troubling, however, is the problem of measuring output, especially when there are diverse goals. As Clarkson (1972:366 and 369) points out, the reasons for becoming a nonprofit organization, rather than private for-profit, are varied, leading to more variability overall (including rates of return) and thus to greater difficulty in explaining nonprofit organizational behavior.

There is a large and growing empirical literature that supports these basic profit/nonprofit differences, and identifies a number of other more specific differences, such as reduced likelihood of adopting cost-saving innovations in public sector organizations, which lead generally to less efficiency in the public sector (see DeAlessi, 1982, for an excellent review). This lower performance is attributed to the lack of profit motive, and the consequent increase in shirking behavior; however, this chain of argument is untested. The high, often moral, commitment of personnel in public organizations, and the mission-like quality of nonprofit organizational goals, make shirking an unlikely explanation. Why, then, the lower performance?

Just as with individual performance, organizational performance is often difficult to evaluate.[8] Specifically, service activities cannot be evaluated on output, since "profits" are not easily measured. There is a large body of research attesting to the difficulty of measuring service "outputs" other than the simplest kind, e.g. garbage collection (Savas, 1977). Though this may in part be a matter of

cultural definition (see DiMaggio & Powell, 1983; Dornbusch and Scott, 1975), it still leads to difficulties in measurement. The organizational goals themselves are diffuse, and the means to reach them are often unclear. The main tasks of most nonprofit organizations are active, in the sense that the process is uncertainly linked to the outcome: the nonprofit runs an excellent job training program, but the hiring environment provides unpredictable resistance to enrollees, hence few enrollees may arrive at the desired outcome of a permanent job.

Those in the best position to evaluate the performance of the nonprofit are other similar organizations in its environment. This stimulates formation of networks for evaluation, much as on the individual level. Accreditation boards are typically made up of representatives of other similar organizations; boards of service deliverers are composed of representatives of related organizations, even those who subcontract; supra-organizations of nonprofits are common, taking the form of associations. In general, nonprofits and governmental organizations have extensive interorganizational ties, many of which involve sharing information (fewer of which involve sharing resources or joint programs). These interorganizational relations have spawned an entire subfield of study in the sociology of organizations, but economists seldom mention them.

Since network information exchange is critical to the evaluation process, interorganizational relations may be seen as a form of investment in reputation. In interorganizational theory, such transactions are resources or benefits, in sharp contrast to the Williamsonian idea of transaction costs. If we bring these two ideas - of transaction benefit and transaction cost - together, then we may have a better explanation of the lower profitability of nonprofit organizations. Assuming that for nonprofits and governmental organizations, transactions are costly in terms of use of internal resources, but necessary as investments in network reputation, then the gap

between the performance of profit and nonprofit organizations will be explained by the heavier investment of nonprofits in network reputation. All else equal, nonprofits should engage in many more transactions with other organizations than profit-maximizing firms. While this reduces the efficiency of service provision, it should increase the reputation of the nonprofit. This would show up on the balance sheets of the nonprofit if reputation were quantified.[9]

In brief, when profit motives do not exist, and goals are generally diffuse and require active tasks for their realization, then organizations are motivated to invest in their reputations in wider organizational networks. Networks for evaluation tend to form, and these networks often require extensive interaction/transaction across organizational boundaries. These interactions/transactions are simultaneously costly to the organization and represent an investment by the organization in its reputation. When these networks become sufficiently powerful, as is the case with hospitals, then even profit-making firms may be induced to invest heavily in them; under these conditions, the efficiency advantages of the profit-making firm should disappear. The evaluative character of these networks can be seen most clearly when they become competitive: hospitals acquiring the newest equipment regardless of patient need because the equipment sends signals to other hospitals (as well as potential patients) concerning the quality of the hospital. Even more explicitly, the use of voucher systems in school districts permits the reputational network to produce direct "returns" in the form of higher enrollments in schools with higher reputation.

This general process applies, but with less force, to profit-seeking enterprises. As capital markets increasingly become reputational markets, with alternative sources of capital eclipsed by the stock market, then firms are also motivated to invest in evaluation in the network. Stock market prices reflect

problems of information that the firm itself can and does effect: high visibility of product announcements, for example, can alter the stock price significantly. For example, IBM has a scheduled product announcement day - the first Tuesday of each month - at which it informs the press about its latest developments. The resulting effects on the price of IBM stock can be charted. This investment in network evaluation will not necessarily reduce the profitability of the firm, however, since prices of its stock directly affect its cost of capital; high reputation, then, translates into lower cost of capital, and higher profits.

Note that there is general agreement about the set of criteria that should be used to evaluate performance for both firms and nonprofit organizations. Ratings of stocks and bonds, and the various charting systems, imply an underlying agreement about what aspects are important, including the price to earnings ratio and fluctuations in the stock price over time. As the recent Fortune surveys indicate, officers of other firms also have broad agreement about the performance of other firms: some firms are consistently rated high across a wide range of criteria, others are consistently rated low. Much the same is true in the nonprofit realm. In a recent survey of college presidents, there was widespread agreement about performance of colleges and universities, with Stanford emerging as the most frequent choice. This agreement is important, because, as with evaluation of individual performance in networks, these organizations do not have authority rights over each other.[10]

III. NETWORKS AND INSTITUTIONALIZATION

If evaluation of performance is of temporary significance, then workers (and whole organizations) can afford to act opportunistically. There are two important sets of conditions. First, if each evaluation is separable, and never accumulates to a reputation, then much less is lost if any one performance declines in quality. The

same general principle applies if information transmission is restricted, since only a limited set of others will alter their global assessment of the worker's performance capabilities (read "reputation"). Second, if the ending point in the evaluation process is known, there will be increasing incentives to stop investing in reputation as the end of the process approaches. The last semester effect for high school students before entering college is well known; in product markets, cheating and fraud are predicted to increase in a last period (Darby and Lott, 1984); in public choice, prisoners dilemma, and social choice experiments, the end game or "last trial" problem is a taken-for-granted part of experimental design.

Evaluation of performance in organizations, then, may have limited effects if there is little communication internally about that evaluation or if turnover is very high. In either case, employees can afford to minimize their investment in reputation, since the probability of long term, global effects are small. Not only is there little utility for such investment looking within the firm, there is little utility looking at the job market. It is well known that new employers seldom contact prior references; hence, evaluation effects tend to be temporary and primarily wage-related. Therefore, when evaluation takes place within organizations, the primarily output is not reputation, but salary. In contrast, evaluations in networks are in general not directly connected to rewards. Hence, if the networks are temporary, or the evaluation of limited importance within the organization, thus not impacting rewards, then there will be little incentive to invest in evaluation in the network. For those workers, no effective outside network for evaluation exists.

Network permanence

To be worth investing in, networks for evaluation must be seen as permanent and as influential in determining resource allocation within the organization (earlier

work has considered the effects of such network "inertia" as primarily negative, Powell, 1986, and Marsden, 1983). Conditions under which networks become influential in determining resource allocation have already been discussed; under what conditions will networks become permanent?

Institutional theorists have typically talked about the stability and resistance to change as characteristics associated with high degrees of institutionalization (see Zucker, 1977, for a review). What happens, though, if a social system for reasons of its structural configuration, is highly stable and resistant to change? It seems that under those conditions, the structure and associated activities may come to be institutionalized, that is, the causality of the institutionalization process may be reversed.

Weber (1947) noted such an effect, though rather indirectly, when he discussed "traditional authority". Traditional authority often rests on a base that is very stable and resists change, namely inherited position. There are a limited set of persons who are eligible to occupy such positions - generally blood relatives of the current incumbent - and often very detailed rules about who among those relatives is eligible to succeed the incumbent. Similarly, in more modern theorizing, networks have been identified as relatively stable and resistant to change (the classic and best statement is in Nadel, 1953). Network interdependencies make change in one part of the network difficult to accomplish because change will affect other parts of the network. For example, college grading practices have remained the same, despite considerable attempts to change them. In the early 60s, several high prestige colleges abandoned the practice of grading, arguing that grading simply interfered with deep understanding of material and provided incentives for memorization and cramming, neither of which furthered the goals of education. However, graduate schools and professional programs refused to accept written evaluations of student work in lieu

of grades; as students had increasing difficulties entering the top graduate and professional programs, grading was reinstituted.[11]

Obviously, not all networks equally lead to institutionalization, and thus to the permanence and stability that make investment in them worthwhile. There are three major conditions, of which only the first two are necessary:

1. The network must be "richly interconnected", so that a change in one part affects many other parts. To the degree that one part of the net is "isolated" that part will not be subject to the same institutionalization processes. This is not quite the same as the more commonly described network characteristic, density, because it is not a simple measure of proportion of possible ties. For most cases, ties in one direction suffice, though ties may be weighted according to importance, and the pattern of ties may be important. For example, while training institutes draw on many of the same resources as colleges, including student loan programs and non-profit tax advantages, they are isolated from most other aspects, including graduate training, research programs, and most associations of educational organizations. In other words, if the network can be partitioned into blocks, then it is by definition not richly interconnected as a whole (DiMaggio, 1986). However, the blocks may themselves be richly interconnected and tend to be institutionalized. Stability, then, is supported by coherence defined in terms of networks of interconnected elements, where changes in any one element threatens the connectedness as a whole (Zucker, 1986b).

2. The network must be relatively "closed", so that entry is difficult and requires meeting very specific standards. Otherwise, the content of the network-based evaluation will not be valued. For example, entry may require credentialling of some kind (the prestige of the institution doing the credentialling will have an independent

effect), such as with teachers or hospitals, or entry may require large amounts of capital coupled with particular expertise (founding high technology companies). This condition does not imply that only small networks can be institutionalized, only that entry must be restricted in some systematic way (e.g., citizenship).

3. The network is often hierarchical, so that change in one level automatically causes change in those below (e.g., governmental systems; changes in university entry requirements may cause changes in high school curriculum). While this is not a necessary condition, institutionalization will be produced more readily.[12]

As discussed above, professionals are the prototypical example. Professionals often orient themselves more toward the network than the organization in which their work is "temporarily" located. Entry into the network requires some kind of certification process, and in addition may require personal ties - e.g., ties to the right faculty within their graduate school, ties to "key" scholars in the field, and so on. In other words, the network is always closed, sometimes with very high entry barriers.

Though most nonprofit organizations do not operate in networks as richly interconnected or closed as professionals, most are involved in extensive networks of interorganizational relations. Status differentiation is common, but does not give rise to authority rights of one organization over another; there is less direct evaluation than in the professional networks. Profit-making firms are also typically interconnected, e.g. through interlocking boards of directors and exchange of top personnel, but only for a small subset of top firms are these networks both richly interconnected and closed (see Pfeffer, 1972 and 1986; Roy, 1981; Pennings, 1980; Burt, 1983; Domhoff, 1975). Further, if these ties are accidentally broken, there is

a very low reconstitution frequency, indicating that specific interconnections are not seen as critical by the firm (Palmer, 1983; Keonig, Gogel, and Sonquist, 1979).

Some firms by their very character involve extensive networks. Banks, for example, are generally engaged in exchanges with very large numbers of individuals and organizations, including firms, nonprofit organizations, and governmental bodies. These ties, however, seldom become richly interconnected, because these individuals and organizations do not tend to be come involved in exchange with each other. Defense contracting exhibits a similar pattern (Stinchcombe, 1983), as does public television (Powell, 1986). But some firms do exhibit the rich interconnection as described here, most notably book publishing (Powell, 1985). Scholarly book publishing takes place within the context of an effective and very influential network for evaluation: the suppliers (writers), consumers (professionals and libraries), and gatekeepers (professionals whose referrals provide the manuscripts, and whose reviews evaluation them), are all richly interconnected with each other through professional associations, communication nets or "invisible colleges", and frequently previous personal contact.

Impersonal quality

When evaluation and sanctioning both occur within a traditional authority structure in an organization, self-interest is often clearly involved. If someone else receives a promotion, your own career may be blocked; if your manager is discredited, then you might be promoted to that position; if raises cannot be greater than 10 percent of current salaries if distributed equally, it is to your advantage to disparage another's work if in so doing his/her raise will be lower than 10 percent, thereby enhancing your chances of obtaining greater than a 10 percent raise.

When evaluation takes place in the network, but sanctioning is largely retained within the organization, then the role of self-interest in determining the evaluation is greatly reduced. If you evaluate someone positively, it does not directly affect your own chances of receiving a promotion or raise within your own organization. Further, in professional networks the tendency is to place persons who are beyond the career-building stage in key positions within the network, assuming that they will act less in terms of self-interest. Those with high centrality in the network (less total distance between them and all others in the net; greater number of persons they can reach directly) will be the "grey-beards" of the profession, unselfishly providing a brokerage service linking other professionals together (on network centrality, see Freeman, 1979). This serves to increase the institutionalization of the network as a whole (see Zucker, 1977, on impersonal, objective qualities producing institutionalization).

IV. EVALUATION AND REPUTATION

The cost of each evaluation that is made of any individual is relatively high. There are two kinds of cost: the cost incurred by the individual (organization) to be evaluated in terms of time, energy, and other resources necessary for the performance, and the cost incurred by those who engage in the evaluation. Both the performer and the evaluator are foregoing other activities; since the roles are interchangeable, the evaluator may be assuming that the performer will later evaluate his/her performance, but this implicit exchange is neither necessary nor sufficient for the process to take place. For example, if very marginal performances are evaluated, it is unlikely that the marginal performer would ever occupy an evaluator role. Also, position in the network strongly affects the likelihood of occupying key

evaluator roles. These roles are often of high prestige, but are simultaneously defined as "service" roles - ones to be taken on only in moderation.

While the performer's investment of time and other resources can be explained in economic terms, as a rational exchange for reputation, the investment of the evaluator is more difficult to explain. For example, to evaluate an paper submitted for publication takes approximately five days of time from three reviewers and an editor of a journal. Grant applications take even larger amounts of time to evaluate, especially if outside reviewers and a separate panel structure is utilized, perhaps six or seven days of effort. On the organizational level, a week or two of site visit by a group of evaluators is necessary to review accreditation for a school or a hospital. Thus, networks for evaluation involve investments not only by the person or organizations who wish to be evaluated, but also by the members of the network who do the evaluation. Since the effects on the evaluator's reputation are modest [13], reaffirmation of centrality in the network seems a more reasonable explanation.

Because of the time involved and the necessity of interrelating different opinions to arrive at a global decision, the number of persons involved in direct evaluation of the person's or organization's performance is necessarily small. For reasons of conservation of effort, then, others not directly involved in the evaluation process often use more global information in arriving at an assessment of another person (organization). As news of these individual evaluations of performance travel through the net, sometimes in the form of personal comment but more commonly in the form of published, visible results of the process, they are cumulated into a global assessment of the person or organization. This global assessment constitutes a reputation, and it has separable information quality; it is seldom simply a sum of the evaluations, since it is seldom that anyone has sufficient infor-

mation to actually construct a sum. Hence, the process is fundamentally one of labeling or "branding"[14], though the reputation is never static, but is being continually revised as new information concerning more recent evaluations is transmitted within the network. After some time passes, if no new evaluations are made, then the reputation tends to decline; in other words, continued investment in the reputation is necessary for its maintenance, though the decline is slow.

The process of cumulating evaluations across different evaluators to form a global reputation implies certain characteristics for markets built on reputation. First, reputation-based markets are not competitive, at least not fully competitive (contrast to the traditional view, as in Stigler, 1966). Selection by quality is the central feature of reputation-based markets; one good, objectively the "same", is not substitutable for another. These judgments of quality are often very subjective.[15] Second, markets built on reputation change slowly when independent assessments of quality are not possible. For example, Harvard has long had a strong academic reputation. Faced with substantial declines in quality in some of its major academic departments, measured for example by the number of top scholars who have declined offers from Harvard in the past five years, it has nevertheless been able to retain high rankings in national evaluations - a reflection of its past glory. As discussed in the section on institutionalization, the network character of evaluation, when nets are richly interconnected, is an obstacle to rapid change, since one part of the network can't change without affecting all other parts. Also, each choice or selection depends on prior information, for example, choice of physician is rooted in the past experiences of others, so that there is a time lag in any choice process based on networks for evaluation.

Third, reputational markets are driven by the consumers and the network of "evaluators", not the producers (Powell, 1985). Decisions about what products to

emphasize, which authors to publish, whose work to highlight, are made in response to the network for evaluation, not some internal organizational decision. For example, Stanford Research Institute doesn't decide internally what kinds of research to invest in, but rather reflects decisions made by individual professionals on its staff and by agencies providing resources for research. When there is a match between staff interests and funding interests, the research direction of SRI is determined. If a new cuisine becomes preferred by a substantial proportion of people willing to spend substantial sums for an excellent meal, then more restaurants that count on reputation for customers will prepare food that way. In general, then, power is more diffuse and control tends to be taken away from the organization itself.

Fourth, markets based on reputation directly involve trust: we must trust others in the network to state their true evaluation of us, independent of self-interest. Though this condition does not fully hold (and is the subject of more complaints than any other "professional breach of ethics"), we "act on faith" that it does. Competition is probably inversely related to how much we can trust network-based systems of evaluation. In order to monitor the trustworthiness of those in the network, third party nodes are constructed in network in order to ensure that some actors in the system can act with total disregard for personal interest and rules are constructed to govern competition so that there are fewer incentives to misstate evaluation. Thus, markets for reputation tend to be regulated: (1) self-regulated by limiting the gain that anyone can achieve through "cheating" (e.g., college recruiting of students; definition and use of grading system "A", "B", small number of cases of faculty misconduct brought before the Academic Senate), (2) regulated by associations (e.g., sports associations rules for recruiting of athletes and rather harsh penalties for rule violation; associations of colleges certify educational programs;

professional associations certify training programs), and (3) governmentally regulated (loan programs, grant restrictions, including affirmative action). The normative system also operates to reduce monetary incentives, substituting incentives that rely on how one is viewed by others in the system (honor or fame, not wealth); as these incentives increase in value, the negative value of being discredited in the network for not being trustworthy increases.

Finally, information travels very rapidly, as in the Travers and Milgram (1969) study of networks, called the small world phenomenon. Reputations can be reshaped almost overnight, though need to keep in mind basic network "resistance to change". Hence, networks are very effective surveillance systems, and prevent a "poor producer" or "shirking" individual from obtaining rewards elsewhere in the system. Direct evaluation, while perhaps having an edge in surveillance, seldom effects the person's chances of obtaining another good position. Comparing networks for evaluation versus organizations raises a question of short term versus long term perspective: in the short run, direct organizational evaluation may be more effective in preventing shirking, but in the long run, networks of reputation are more effective.

V. PROFESSIONALS AS ENTREPRENEURS IN NETWORKS OF REPUTATION

Entrepreneurs have notoriously suffered from very high risks of failure. Professionals shelter their entrepreneurial activities in organizations, where they are protected from the full consequences of failure. They are the modern invisible entrepreneurs, embedded in organizational layers. I will use universities as the prime example, but similar kinds of entrepreneurial behavior can be found in other organizations: individuals in large firms have recently been able to use firm resources to engage in entrepreneurial activities (see Gevirtz, 1984). Universities can be

considered the extreme in network-based entrepreneurial professional systems, where the members of the organization and the organization itself rely on network evaluations of reputation for future "success", including resources.

Reputation-maximizing behavior

If professors in universities can be considered entrepreneurial, then they must engage in some kinds of behaviors that are self-interested. In fact, there is strong emphasis on individual contribution, and on individual evaluations.

(1) Emphasis is on sole authored publications, being able to separate out a single individual from a team effort. This is especially true where connection to others in net is critical; it is not so critical in medical schools, because doctors tend to be less mobile because the nature of their practices makes them more tied to geographic area.

(2) Mobility to other universities occurs at self-determined points (once the person has tenure), and this mobility often involves dramatic gains in personal income. The internal labor market can generate advancement too, but not so dramatically. There are supernormal returns for those who can move, or at least generate such offers, hence the greatest payoff is in network rather than local organization.

The university as value-added

Most generally, the organizational actor is seen as more legitimate and is presumed to be more efficient (Coleman, 1974; Zucker, 1983). Other organizations, such as the National Science Foundation, would prefer to transact business with the university rather than with an individual scholar; most granting agencies actually require an institutional sponsor. At UCLA, even some internal grants require formal sponsorship by UCLA itself before the application can be considered.

At the same time, professors are not anxious to become involved in local activities. There is often a stated reluctance to serve in administrative positions, on committees, and so on. These same professors are more likely to be willing to accept external positions, on professionally relevant committees and editorial boards to which much more prestige attaches, and also the potential for some strong ties in the network for evaluation. This is not evaluated, except at the extremes (perhaps!), as shirking by the university, but as a legitimate allocation of effort. Note that local rewards for responsible good work on committees is often more of same (or even chairing a committee), all of which interferes with network related performance and evaluation. Similarly, the role of teaching evaluations is minimized - it will not be taken as the decisive factor, and in fact is generally viewed as unreliable. Thus, even on the core organizational task, "shirking" is ambiguously defined.

Most important, though, reputation of the university has an effect on the outcomes for the individual professor, independent of his or her reputation. In other words, there is a strong interaction effect, such that the prestige of the university enhances the reputation of the individual faculty member, and the converse. This is not a team effect or some kind of strategic synergy: organizations with the highest prestige have fewer teams and more individual entrepreneurial professors. There are two important effects:

(1) Organizations provide independent "marketing power" in the network for evaluation, power that enhances the individual professor's chances of obtaining grants, serving on important editorial boards, and so on. A proposal from the University of Michigan will be treated differently than one from Antioch, and one from Antioch differently than one from Chico State. The granting agencies presume

that the institutional resources (including other scholars) serve as resources for the investigator. This process occurs independent of the individual talent of applicant. Further, if the university has a good reputation, it can "hold up" the individual professor by offering a lower salary. In other words, professors are willing to "purchase" this additional prestige by foregoing rewards at UCLA that they could receive at University of South Carolina.

(2) The research in the sociology of science provides strong support for the role of the university in stimulating scientific output - there is an independent effect of organizational context on output. In fact, more scientific output of higher quality comes from scholars situated in the best universities. Longitudinal studies of scientists productivity support the importance of the prestige of institutional affiliation (see Long and McGinnis, 1981). Numerous studies have provided support for this relationship. For example, in a study of close to 500 chemists, all receiving their doctorates within the same time period, it was found that the strongest predictor of productivity a decade out of graduate school was location in a university (in a tenure track position, for women). There were strong interactions between location in a university and the other predictors; interestingly, the interaction term of early citations and location in a university had a negative effect on decade productivity (Reskin, 1978: Table 2). One possible interpretation, not mentioned by the author, is that the main effect of university position rests on the higher visibility the scientist receives in the net (read, scientific community), and that early citations are simply an alternative means of generating high visibility.

Cultural communities as resources for professorial entrepreneurs

Professionals have cultural communities, with cultural resources, much as immigrants do (Light, 1971, on small ethnic business, which tends to disappear after

the first generation, see Light, 1972; see also Wilson and Martin, 1982, and Portes and Wilson, 1985). However, while immigrants engage in "outsider" entrepreneurship (Wilken, 1979), professionals are fully integrated into the general society - they simply possess access, depending on the evaluation of their individual contribution, to resources generally denied to other members of the society. The distribution of these resources among members of the cultural community, however, is rather precisely tied into to the evaluation of individual contribution.

(1) Scientific review panels are commonly "peer review", using members of the same community to evaluate a professional's work and to reward it according to that evaluation

(2) Members of the community at other institutions reward those they believe are doing "interesting" work by inviting them to lecture, paying for all expenses. This has an unintended consequence of improving the person's ties in the network at the same time.

(3) Professional associations act as guardians for the community, quasi-unions, issuing sanctions to organizations that do not abide by the rules of the game as established by the association.

Universities as venture capital sources

Professionals reduce the need for capital to nearly zero, because the university provides the capital, as in the division within a firm that is given entrepreneurial roles (Gevirtz, 1984). The university provides funds for travel on the professor's personal business, with only very loose designation about purposes and plans of the trip. Free access is provided to libraries, research laboratories, and often to computers. Finally, the tasks within the university are kept light (e.g., light

teaching loads), with days of each week free to allocate to research; often, these university policies explicitly take into account the network roles of the professors.

Professors have a clear entrepreneurial role: to start new lines of research, because this creates new "products". In the best universities, the creation of new lines of work is explicitly considered in granting promotions; productivity alone does not suffice. In collections on organizational theory, there is a need for a "population ecology" person, an "institutional" theorist, etc. These new lines of research create a market for books, for Ph.D. students trained (because courses must be taught in it), and so on. "Failed" entrepreneurs in this system are those who do not publish much, are not very visible, and thus do not get outside offers. Over time they may lose access to the university's capital. They may be given heavier teaching loads and committee assignments.

Hence, universities continue to exist even if networks suffice to evaluate behavior, because they add value to the professor's reputation, they increase his/her productivity, they provide ready access to needed capital, and they shelter the professor from the negative consequences of failure by providing a permanent job and some limited access to resources even for "failed entrepreneurs", the non-performing members.

VI. INSIGHTS GENERATED BY A NETWORK APPROACH TO EVALUATION

Three major insights follow from the argument outlined so far. First, turnover within an organization may have a positive effect on performance in networks for evaluation, because turnover creates greater interconnections into that network. Second, in network-based systems, the technological core of an organization may not be of critical importance, since the core is generally shielded from the network

itself. Third, the boundaries of organizations in network-based systems may be highly permeable, and boundary maintenance may not be of central concern. Each of these insights differs sharply from current sociological thinking about organizations.

Turnover and performance

If the evaluation system is based on networks, then steady, relatively high turnover of personnel means greater interconnection into the relevant networks. Placement into other parts of the network should increase the influence of organization - the placement rate is important, the prestige of other organizations to whom graduates are sent, and the sheer number of former members (e.g., graduates of Ph.D. programs, the sales force of IBM). High turnover, then, should increase performance, since performance depends on these links into the network system as a whole. Therefore, performance of universities should increase as the proportion of retirements/deaths and new positions goes up (any expansion of the set of positions should work the same way). Turnover in marketing and sales should benefit performance too, when network connections are important (IBM computer sales), but negative when they are not (International Harvester), as long as the same set of organizations/individuals are engaging in transactions with the organization again and again. The effect may be intermediate in the drug industry and electronics.

Temporary exchange of personnel probably performs a similar function, hence the traditional role of "visiting professor" and the traditional sabbatical at some other institution. These ideas have been borrowed by the government, and formalized as intergovernmental transfers.

Besides these direct effects, there are several other effects of relatively high rates of turnover:

(1) May increase the concentration of new members from a particular organization or at least an organization of comparable prestige, such that former members of Orgx may well support hiring current members of Orgx, and members of Orgx may be more likely to consider going to Orgz if they know former members of Orgx are happy working at Orgz. This general process has been observed for electronics firms.

(2) May increase evaluation, at least in the sense that, say, Harvard graduates will use more similar criteria for evaluation, but at least somewhat different from Stanford graduates - e.g., deciding which type of graduate program is most effective, what kind of research/theory most important (scientific "taste").

In contrast, if the organization does its own task-specific evaluation, then low turnover is most effective because otherwise skills will be lost. The network connection is not so important. This is the approach economists explicitly take - skill investment - and hence treat turnover as a serious problem (Nash, 1985): "Retaining Productive Employees and Reducing Turnover".

Technological core and organizational boundaries

Network-based evaluation systems lead to much less emphasis on the "core" and its stability, as that is not what is critical in maintaining the most important relationships and performance elements. Therefore internal "managers" are largely irrelevant to reputation in a university, except as they affect recruitment. Also, it is not surprising that the technical core in universities - teaching of undergraduate/graduate students - is not rigorously evaluated and used as a basis for internal promotion. It is the external ties that are important, obtained through publishing, professional activities, and letters from outside referees. It is not solely the result of difficulties in measurement, but also that not much effort/energy is put into the measurement, and then no one relies on it. After all,

scientific importance of research is rather difficult to evaluate, yet one never hears the same litany of complaints about evaluating research output!

When evaluation of task performance takes place within the organization, then there tend to be definite boundaries with low turnover; when evaluation takes places in external networks, then the boundaries tend to be blurred and turnover more common. This structural difference has a number of implications. First, it leads to a reassessment of the cosmopolitan-local difference. In network-based systems, "locals" don't really fit it: they are anomalous. In non-network systems, "cosmopolitans" are anomalous. In both cases, the anomalous cases should receive lower evaluation overall, or the basis for evaluation and who is doing the primary evaluation should shift. For example, a professor with lots of service activity, but little publication activity may have high value to the local institution, but low professional visibility. His/her evaluation may rest specifically on service activity, and this is often explicitly an exception to the rule, and the evaluation for promotion will involve local decision rather than appealing to the evaluation in the wider professional network. Note, though, that the information flows in one direction: the local evaluation seldom affects the network reputation, though the reverse is common.

Second, the different definitions of boundary imply different locations for job-related social psychological dimensions. For example, if the organization is the primary site for evaluation, then job satisfaction probably refers to tasks done in the organization and directly relevant to the organization's goals. However, if a network for evaluation exists, then it may be difficult to locate the primary job satisfaction. Certainly, some job satisfaction will involve purely local tasks, though the limited rewards that these tasks offer would lead to low job satisfaction

for many workers. The most important work occurs in the context of the network, and that's where the most important aspects of job satisfaction are also located.

VII. CONCLUSIONS

At this point, the best conclusion seems to be a simple recapitulation of central properties of networks for evaluation:

- o Separate evaluation and the consequent sanctions, so that the evaluation itself has largely information content
- o Networks for evaluation tend to rapidly institutionalize, so that incentives to invest in reputation exist
- o Evaluation in networks tends to be divorced from self-interest of the evaluator; trust is both assumed and constructed via rules
- o Evaluative networks are often the consequence of organizational failure, when task performance is difficult to evaluate within the organization
- o Important transaction benefits exist for organizations operating in networks for evaluation
- o Markets for reputation, made up of individual evaluations, tend to be driven by the consumers and the network of evaluators rather than the firm or organization
- o Organizations, at least in part, exist as resources for individuals who operate in networks

Much of what has been outlined in this paper is part of common knowledge and well understood. However, the way in which the ideas are connected leads to some

different understandings of how evaluation takes place, and the roles of persons and organizations both in the evaluation and in relation to each other.

NOTES

[1] In a recent chapter on entrepreneur's use of social networks, Aldrich and Zimmer (1985) define possible network relations as involving communication, exchange of resources, or normative expectations. Evaluation is nowhere mentioned, though one would imagine that if others did not evaluate the entrepreneur's abilities and business ideas highly, that they would not choose to facilitate his business plans.

[2] At this point, "markets for reputation" might substitute. However, there are some important differences between the economic formulation of "reputation" and the concept developed here, as will become clearer below. Reputation is the outcome of numerous evaluations, and may be thought of as the output of markets for evaluation.

[3] This is not a case of "permanently failing organizations", as described in Meyer and Zucker, 1986. The performance of these organizations may be superior; it's simply that they don't evaluate the performance of some of their employees. As argued above, they still deliver sanctions based on the network assessment of performance.

[4] Basic to much economic reasoning is the assumption that economic structures exist in the present form because that form is most efficient. Because it is tautological, it is not directly testable. Just as organizations are not the most efficient structures for organizing all types of collective activity (Zucker, 1983), so it is that organizations are not the most efficient structures for evaluating all types of collective activity. Economists do note that separable tasks, ones that do not involve team production, are reasonably organized outside the firm via a spot contracting system. But they fail to deal with the plethora of activities that at one point in time are organized via spot contracting, but at a later point of time are organized as firms, for example, coal mining activities. What explains this shift? The best explanation seems to lie in the increasing legitimacy of the firm as a separable actor - as a reliable, customary means of conducting business (Macaulay, 1968, and Coleman, 1972; for a general discussion of the process, see Tolbert and Zucker, 1973).

[5] Professionalization of managers moderates the effect of self-interest, especially as careers generally occur across rather than within organizations.

[6] Under these same conditions, networks for evaluation may also be formed within the organization. These networks are not as readily institutionalized, since self-interest problems remain. See discussion in the text below.

[7] It might be argued that internalization suffices as an explanation, but length of socialization can be controlled, and compared to characteristics of network, in so far as each predicts deviance. The more that "reputation" is important for determining personal success, and the larger the network that determines "reputation", the smaller the rates of deviance. There should only be a small effect for length of training.

[8] Individual professionals evaluate other individuals in their area of expertise; organizations evaluate other organizations in same "domain" as consensually defined. Institutional "fields" (DiMaggio and Powell, 1983) are defined by non-overlapping sets of interested parties who affect policy, design regulations, and so on.

[9] It is also more difficult for nonprofits to fail, as a consequence of their greater embeddedness in external networks. As the number of other organizations dependent on the nonprofit increases, so does the size of the pressure group that could be mobilized if the nonprofit were threatened with failure. This "power of dependency" is a general predictor of organizational survival, and can be used as a unifying explanatory principle for the slow rate of decline in many industries such as railroads. As the number of people or organizations dependent on the organization increase, assuming some basis for political or economic influence, the rate of decline of the organization/industry decreases.

[10] There are cases where organizations have legitimate authority rights to evaluate the internal performance of other organizations, based on the nature of the network relations between them. This is obvious for regulatory agencies. Also, if one organization contracts with another, then it may gain surveillance rights over it: it may be able to test the product (at predefined stages or at end of process), be able to reject it until standard is met, or even not consummate the contract if quality is too low.

[11] I am indebted to Morris Zelditch, Jr., who first brought the Nadel work to my attention and who used the example of grading practices to help make Nadel interpretable.

[12] Paradoxically, networks are also very susceptible to sudden redefinition, because if there is a change it will echo through the network rather rapidly. This is especially true if the network is richly interconnected and hierarchical.

[13] They are often negative, because in reviewing papers or grant proposals, the great majority are rejected. The reviewer is often held responsible for both the positive and negative evaluations of performance; since the negative greatly outweigh the positive, the evaluator suffers from some net loss of reputation.

[14] Great caution has to be exercised at this point in the argument. The concept of branding implies reputation produced by advertising or trade marks (see Nelson, 1972; Shapiro, 1982; Darby and Lott, 1984).

[15] This is even true in classic product markets, as the case of "new" Coke indicates. Though "new" Coke was strongly preferred in blind taste tests over "old" Coke, the consumers staged a revolt when the formula for Coke was changed. The "classic" Coke formula was brought back in response, and is currently out-selling the "preferred" formula.

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Table 1: Task characteristics and evaluation difficulty:
Evaluation in the organization or in external networks*

	Team	Individual
Active	High Difficulty Network	Intermediate Difficulty Network/Organization
Inert	Intermediate Difficulty Organization	Low Difficulty Organization

* Unless the task contributions are totally nonseparable, organizational evaluation will predominate in team production. Active tasks pose problems of probabilistic evaluation, often based on specialized skills, hence network evaluation will predominate.