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ENTREPRENEURIAL NETWORKING AT THE MIT ENTERPRISE FORUM: ANALYSIS OF PARADOXES*

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I. Introduction

People are linked to each other strongly or weakly. People are embedded in a social nexus, even at the moment of seeking seemingly lonely activities of a creative sort. Creative activities are not necessarily done alone. For instance, all scientists are not mavericks. They are in the big pool, an invisible college (Price, 1963; Watson, 1968). Entrepreneurs have their own counterpart. It is somewhat vaguely called an "entrepreneurial network" (OTA, 1984; Rogers & Larsen, 1984).

Individuals are separate entities, or so it seems, especially when they are trying to be independent and creative. It is tempting to idealize (or stereotype, or maybe stigmatize) those creative fellows like scientists or entrepreneurs as bohemians and self-chosen social misfits. The truth of the matter, however, is that scientists are embedded in a scientific community with specific social norms (Kuhn, 1962); and entrepreneurs are best nurtured in the midst of the situational support (Vesper, 1983) of an entrepreneurial community.

Having a vague sense of community, however, does not

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automatically provide benefits of the community. People have to commit themselves to it, in order to get something out of it. Social commitment is necessary. Sarason (1974) colorfully illustrates the critical role of the "psychological sense of community" in the field of human services, and proposes social action as a vehicle for learning — action which inevitably includes social networking to get necessary resources in addition to a sense of community (Sarason et al., 1977; Sarason & Lorentz, 1979). With the ebb of such tightly knit primary groups as kinship networks or neighborhood organizations (cf., Simmel, 1966), how could one achieve one's interest in associating with others? Granovetter (1973; 1974; 1982), bearing this question in mind, provides the paradoxical notion of "strength of weak ties." This refers to his finding in the context of job searches in a high tech community. The finding, in short, is that people who are connected to a person very "weakly" exchange novel information and produce unexpected access to broader resources, as compared with those who are connected "strongly." In other words, remote acquaintances are more likely to be "better" informational sources than close friends, relatives, and neighbors. It suggests that weak ties, in addition to strong ties, are important in networking; weak ties appear to be even more important than strong ties for certain objectives of networking, especially that of gaining broader access to diverse resources in a community.

"Networking is not new, it is simply improved," claims Maguire (1983), who defines networking as "a purposeful process of linking three or more people together and of establishing connections and chain reactions among them" (p.23, p.13). Self-help movements that contribute to linking the relevant people are found in various areas, ranging from religious, or political, to health-conscious associations. There are a couple of reasons which make entrepreneurial networking particularly intriguing. First, a potential entrepreneur who still works for someone else might choose to start up his or her own company because of the preference for self-reliance. Yet, paradoxically, an entrepreneur creates an environment in which he or she has to rely on others for critical resources (Kets de Vries, 1977) — venture capitalists for financing, lawyers for legal advice, and so on. Second,

the benefits reaped from networking are most commonly associated with contacts that help a person in emerging networks combine ideas, information, and resources in a novel way. This is true of science and industrial R & D and engineering (Price, 1963; Allen, 1977; Von Hippel, 1986); this also applies to cultural industries such as music, fashion, and academic publishing (Peterson & Berger, 1971; Piore & Sabel, 1984; Powell, 1985). Vignetts of those studies are as shown in table 1. A "new combination" characterizes all of these diverse areas; and, interestingly enough, it is a generic function of entrepreneurs in the Schumpeterian tradition (Hartmann, 1959). Third, one of the dominant paradigms in the studies of social movement is the resource mobilization model (McCarthy & Zald, 1977; Obershall, 1978; Jenkins, 1983). In this body of literature, social movement is initiated and maintained by "entrepreneurial" agents. This metaphoric use of the term, "entrepreneurial," is indicative of resource mobilization as another function of entrepreneurs. In the previous studies, however, entrepreneurs are broader than our daily use of the term. In the case of entrepreneurial networking in communities like the Silicon Valley (Rogers & Larsen, 1984) and Route 128, by contrast, movement is done by "entrepreneurs" and resources are mobilized and exchanged through multiple networks in these areas.

This paper deals with issues related to the paradox of the strength of weak ties, focusing upon the MIT Enterprise Forum of Cambridge, Massachusetts, as a case in point.

II. Research Site and Methods

The MIT Enterprise Forum of Cambridge was established in 1978 as a voluntary association run by MIT alumni and their friends who were concerned about stimulating entrepreneurship in the Greater Boston area. The year, 1978, was a time "when there were very few startups, and when the legendary 128 was at the low ebb,"[1] as one of my interviewees recalls. Albeit headquartered at and supported by the

1. The quotes in the text without any reference are drawn from my interview transcripts.

Table 1
Beyond-the-boundary Networking in Diverse Contexts

Author (year)	Context	Networker Role	Features of Social Network
Price (1961)	Scientific community	Scientist	−Existence of "invisible college" beyond physical boundary
Peterson and Berger (1971)	Popular music industry	Producer or A & R man	−Finding right singers and players and right tunes by making rounds of club, coffee house, and campus −Recording studio characterized as a meeting place with "club" atmosphere
Allen (1977)	R & D Personnel in Labs	Gatekeeper	−Better connected to the world outside of labs −Become a node in communication inside the labs
Moore (1979) Alba and Moore (1978)	Political arena	National elite	−Existence of a large inner core which links diverse subcommunities −Social club membership
Piore and Sabel (1984)	High fashion garment industry	Designer (not clear)	−An example of "flexible specialization" −Regional conglomeration in a small area −Ethnicity as a community tie plays a role in creating network
Powell (1985)	Academic Press	Editor	−Have broad contacts with scholars, reviewers of journals, and editors in other houses −When editors move from one house to another, they transfer their editorial network −Editorial network ages
Von Hippel (1986)	Manufacturing industries (esp. steel minimills)	Process engineers	−Informal information on process technology −Game theoretical implication for process information sharing

MIT Alumni Association, it is open to anyone, whether he or she is affiliated with MIT or not. There are about two thousand people who are on the mailing list of the *Forum Reporter*, a monthly newsletter of the MIT Enterprise Forum. Among them, only 32.3 percent are MIT alumni or students.[2]

Although the MIT Enterprise Forum has successfully diversified into various kinds of programs, the core (and the origin) of its activities is the monthly case presentation meeting. About two hundred people or more attend the monthly session. Its mission is to "help that poor devil trying to make things happen, the CEO [of a small business], ... the lonely ones ... who have high egos" as one of the founders describes. Its formally stated function is to operate as "an analytic and objective clinic [to offer] businesses at a critical stage of development an opportunity to obtain expert counsel and advice which might not normally be available to them because of their modest size and limited resources."[3] Each month, two cases are presented, and, depending on the specific problems defined by presenters, outside experts are recruited for a session on a voluntary basis. A Forum meeting is sometimes referred to as a "one night board," which is valuable to technology-based small companies because they usually do not have boards of directors – or even if they have one, there may be no outside directors. Hence, the emphasis is on "analytic and objective" advice. Recently, the *Wall Street Journal* headlined an article on the Forum: "At MIT, Small Firms Recruit Board of Directors For a Night" (March 10, 1986).

Networking is not a part of the Forum's formal objectives; yet, without doubt, the Forum also serves as a place for contact from insiders' viewpoints. For one thing, presenters typically want to find sources of financing. For another, professionals and service providers want to locate potential customers, while they are still young companies.

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2. The number is based on my mailed survey (N = 165). The percentage may overrepresent the MIT affiliated, if they respond more to the MIT based study.
3. *A Resource for Growing Technology-Based Organization,* November 1984, p. 2, prepared by National Director of the Forum based on the Parthé & Schaufeld (1984).

The above is a brief description of the object or the research site[4] of the present study.[5] This is part of a larger research project – a comparative analysis of different types of entrepreneurial networking organizations. The present study relies on multiple sources of data. From September 1985 to March 1986, I was a participant observer of the monthly case presentation sessions, and attended the Annual Workshops of the Forum in 1985 and 1986 and the New Venture Clinic (a private session) in June 1987 (The New Venture Clinic is specifically geared to very young startups whose presentation should be kept confidential in a much more protected environment). There are several factors conducive to making field observation unobtrusive: I belonged to the MIT community at that time; the monthly session is large enough so that my attendance went unnoticed; because of the nature of the meeting – analytical case discussions presented by CEO's –, it was very natural to open a notebook and record field observations on a real-time basis.

Interviews to learn about insiders' views on the Forum activities were conducted with members of the Executive Committee of the Forum (N=17) in January and February of 1986. The interviews were semi-structured, open-ended, and guided by questions about the natives' views of Forum activities. Before and after this, I had less structured interviews with the National Director of the Forum for an overall view. Before gaining access to the site, the Forum conducted a survey of the presenters for the monthly meetings (N=22) and for the New Venture Clinic (N=24). I was also allowed access to all of the internal documents of the Forum that include the back numbers of the *Forum Reporter*.

In addition, questionnaire studies were conducted. One was field-administered at a monthly session to see who participated and with

4. The use of the term, the "research site," needs some qualifications. Unlike the studies of formal organizations such as corporations and hospitals, the Forum refers to a program rather than an entity with a clearer boundary. In terms of sites of fieldworks, they include companies of members of the executive commitee in considering the on-site field interviews. They are physically dispersed multiple sites. The monthly session and the New Venture Clinic are held at an MIT classroom and the MIT faculty club, respectively. The research site here refers to the collectivity of all of the fields relevant to the MIT Enterprise Forum.
5. For the more detailed account, see Kanai (1986).

what objectives (N=64). Another was mailed to those on the mailing list of the *Forum Reporter* (N=165) and was conducted primarily for comparison (which is beyond the present objective of this paper).

Both qualitative and quantitative methods are combined, because there have been very few empirical studies in entrepreneurial networking except for a light journalistic investigation (cf., Kahn, 1985). The lack of studies in the area requires an exploratory qualitative study. At the same time, a quantitative study must be implemented to test some of the hypotheses derived from qualitative insights. The idea of "entrepreneurial networks" has been proposed by a study of the high tech culture of the Silicon Valley (Rogers & Larsen, 1984) and the government report on regional high tech development (OTA, 1984); yet the idea presented is too general, or a nice metaphor, at best. This is probably because they do not focus on any concrete networks like the MIT Enterprise Forum. The qualitative data are necessary to produce the "thick" descriptive account of the origin, evolution, and current functions of the Forum, as insiders see it (Geertz, 1983). They, in turn, provide the basis of hypothesis formulation and of the construction of an interpretive framework.

Instead of going into the details of descriptive data (cf., Kanai, 1986), this paper will focus on the field-administered questionnaire survey. The variables measured by the questionnaire are participant characteristics, involvement in the program, benefits drawn from it, multiple membership in various other organizations, and general demographic variables.

III. Research Premises and Hypotheses

III. 1. Research premises of the study

There are several premises or assumptions (or, potentially, my biases) which must be addressed in conjunction with a brief review of the relevant literature.

First, two of the dominant streams of entrepreneurial studies in the behavioral sciences focus on individual characteristics. The psychological ones shed light on personality traits of entrepreneurs.

McClelland (1961; 1962) is a prominent example. The sociological ones call attention to family backgrounds and the upbringing of entrepreneurs. The Michigan State University studies (Collins et al., 1964; Collins & Moore, 1970) are equally prominent examples. The studies that follow these traditions have added different personality dimensions and other individual characteristics one by one on a very ad hoc basis. They have done so without any coherent theoretical underpinnings, and therefore have produced at best fragmented results or, in some cases, mutually contradictory results (Webster, 1977; Carland et al., 1984). Even well-accepted attributes, such as "risk-taking propensity," become problematic under systematic empirical scrutiny (Brockhaus, 1980).

If entrepreneurship were captured exclusively by personality and family background, this kind of approach could not explain the agglomeration of high tech startups in areas like the Silicon Valley and Route 128. The entrepreneurial traits approach, like other personality theories (Snyder & Ickes, 1985), simply ignores situational variety. Entrepreneurial behavior is a situated behavior, not just a reflection of personality.

Premise 1. (a) Entrepreneurs and aspriring entrepreneurs are likely to rely on situational supports – various sorts of outside resources – in the process of entrepreneuring. (b) Networking organizations as meeting places for them are one of the crucial elements of situational supports or vehicles for resource exchanges.

This approach is best represented by Vesper (1980; 1983). However, he has failed to empirically describe situational supports in detail; thus, the approach ends with a list of the potential situational supports.[6] The flavor of Vesper's approach can be grasped as follows:

> The successful entrepreneur will find himself or herself encountering other successful people not only at business meeting and conferences but also in community activities such as Rotary and Young Presidents Organizations; these can be great sources of stimulation and inspiration as well as of information regarding further opportunities (Vesper, 1980, p.18).

The upshot is that entrepreneurs do need *objet d'heart*. A networking

6. This is also true of the vague concept of "agglomeration economy" of a high tech region. The concept provides a similar list (Dorfman, 1982; 1983).

organization like the Forum, however, is not just a source of community, stimulation, inspiration, and even commiseration (Boyd & Gumpert, 1984), but also is an instrumental vehicle for mobilization of resources (Jenkins, 1983). It functions as a melting pot for diverse resources, if people who embody different resources attend.

The entrepreneurial community is not comprised only of entrepreneurs and potential entrepreneurs. Company employees of large corporations in this geographical area (such as DEC) also attend entrepreneurial social gatherings like the Forum, because technology-based small companies are believed to be a "window on technology." In addition, professionals (lawyers and CPA's), consultants, and other service providers (these constituencies, hereinafter, will be called "outside resource" people, for convenience) also participate to contact young companies otherwise very difficult to locate. Typically, a technology-based company needs advice in non-technological areas. As one of my interviewees comments, "I don't need help from my competitors of my technology. He doesn't need help from me. ... But we probably both do the lousy job for sales, lousy jobs for developing employees." Even technological hubris would not preclude outside help in those "blind spots" for technical entrepreneurs. Entrepreneurs need outside resources in financing, writing a business plan, marketing/sales, human resources, governance (composition of the board), organizing a management team, and so on. Hence, consultants and other service providers run the whole gamut. A rare example is the expert specialized in forming user groups for client companies.

Premise 2. An entrepreneurial community is comprised of different subcommunities or subpopulations that represent different types of resources.

This study is not intended to be a study of Route 128 as an entrepreneurial community.[7] Instead of studying community itself, the study focuses on a networking organization that provides the people in the community with an opportunity to meet. If the organization does not reflect a real diversity of broader resources in the community,

7. Even an anthropologist cannot study the community per se, as is succinctly pointed out by Geertz (1973): "Anthropologists don't study villages (tribes, towns, neighborhoods...); they study *in* villages" (p.22, emphasis in the original).

its participants may not enjoy the strength of weak ties. These first two premises pertain to the *resource* dependence paradigm in interorganization theory (Aldrich & Pfeffer, 1976) and the *resource* mobilization approach to social movement (McCarthy & Zald, 1977; Obershall, 1978; Jenkins, 1983). The Forum claims to be "a resource for growing technology based organizations." In the interview study, resources are frequently heard in discussing Forum activities.

Premise 3. An entrepreneurial networking organization is a mechanism for coping with the dilemma of resource dependency and the challenge of mobilizing critical resources in the community through self-help and mutual aid.

The basic entrepreneurial paradox, according to Kets de Vries (1977), is the dilemma of creating a work environment of high dependency, while seeking self-reliance as the thrust to launch new ventures. Kets de Vries (1985) later concluded: "Many of the entrepreneurs [he interviewed] are preoccupied with the threat of subjections to some external control of infringement of their will" (p.162). This may be the key for understanding the recent fads of entrepreneurial self-help networks and peer groups (Boyd & Gumpert, 1984; Kahn, 1985). The negative sense of dependence is perhaps attenuated, if resources are drawn through collective self help and mutual aid (Katz, 1981), or through help one can get from others who have gone through similar problems. The apparent tension is the one between self-help and professional help through inclusion of outside experts (Antze, 1976; Katz, 1981; Maguire, 1983), which in itself deserves another paper.

Self-help networks, evolutionary and naturally occurring, (not the one planned and imposed by the state or the federal agency), especially at the early stages, are built upon voluntary efforts. Its operating costs are low. The Forum has been maintained by volunteer MIT alumni and their friends. As one of the founders recalls:

> If you find the way to mobilize the willingness of the people to volunteer their time, then you have a national resource that is under- or simply not-being utilized. And it turns out that professional people are most complimented when you ask them for advice. They want to share it for you. Free. ... That is a discovery which can be very important to a country. It requires a willingness of the people.

The phenomenal growth of this kind of voluntary association, however, hinges on whether it is supported (but hopefully not constrained) by resource-rich outside organizations which have interests in resource exchange and social action as vehicles for mutual learning (Sarason, 1974). Big eight accounting firms are one such instance. As of the date of this study, the Forum organized twenty-one sponsors, each of which was willing to pay $ 2,500 per year, a very modest amount relative to the size of sponsoring organizations.

Stimulating, and, at the same time, very irritating are big concepts such as agglomeration economy (Dorfman, 1982; 1983) and technological infrastructure (OTA, 1984). Let us consider some of the elements that Dorfman has considered responsible for the Route 128 high tech boom: research universities, other educational institutions, job shops, venture capitalists, and so forth. Agglomeration means nothing, if these elements are not combined; the critical mass could not achieve its thrust unless each player in the critical mass ceased to remain separate to each other. This suggests the importance of multiple, overlapping networks in the community. They provide an arena in which the otherwise separate elements can be combined. Multiple membership in various networking organizations in the same region offers a larger chance for "new combinations" based on more far-reaching searches. Multiplicity also provides entrepreneurs with leeway to choose the combination of networking organizations they attend, even if they rely on others in each organization. In OTA's report, technological infrastructure is equated with "entrepreneurial network." Yet, the report is not explicit about the issue of multiplicity – people can join various networks, some of which overlap.

Premise 4. The existence of multiple, overlapping networking organizations in the same area enhances the probability of resource exchanges. This is a necessary condition for agglomeration economy and technological infrastructure.

The interview study has revealed that, as people who run the Forum almost unanimously point out, "Ours is one of many." The MIT Enterprise Forum is one of the most visible associations, but there are other organizations, such as SBANE (Smaller Business Associ-

ation of New England), BCS (Boston Computer Society), the 128 Venture Group, RMA (Research Management Association), MSBDC (Massachusetts Small Business Development Center), MHTC (Massachusetts High Technology Council), NEWBO (New England Women Business Owners) and so on.

These are the premises of the present study. They are presented so that my biases – the focus of this study, or conversely, what it might ignore because of the focus – are made explicit. Most of the premises are valid, in light of the qualitative interview data; yet none of them were systematically tested. Therefore, these premises must be regarded as assumptions. However, they summarize my approach and lay the groundwork for formulation of the hypotheses.

III. 2. Hypotheses and their rationale

Contrasted with an exclusive club with strict membership qualifications, the MIT Enterprise Forum is a forum open to all kinds of people. Accordingly, the Forum has functions that attract people from different entrepreneurial subcommunities. One obvious function is an educational one. Participants can learn new knowledge about an industry and technology through cases. They can also vicariously learn entrepreneurship, because the Forum is based on "real" cases presented by the CEO of the company, discussed by panelists who represent different backgrounds, and hence different resources. Albeit not stated formally, networking is still another function that is inevitable to the Forum. These three functions epitomize the types of benefits participants might get from monthly sessions.[8]

Hypothesis 1. People from different subpopulations in an entrepreneurial community focus on different types of benefits of a networking organization.

Some people are more deeply embedded in the community because

8. These benefits for participants are taken from the interview data; and the relevant items are then included in the questionnaire field-administered in the monthly sessions. One of the generic benefits reaped from networking organization that was not included in this questionnaire is "expressive benefit." The issue of the contrast between instrumental and expressive benefit is beyond the scope of the present paper; but it is the central issue in the comparative analysis (Kanai, forthcoming).

they have lived longer in that area than others. To use the provocative term of Provan et al. (1980), "establishment in domain," operationally measured by the length of years in a certain geographical area, is a factor that may explain how active one could be in an interorganizational field.[9] In addition, people in different entrepreneurial subcommunities differ in the extent to which they are savvy and enthusiastic about resource exchanges and mobilization through networking organizations. Regions like Route 128 are distinctive, not just because of the existence of one prominent networking organization, but because there are many other networking organizations located in the area. One may attend as many organizations as one wishes. Establishment in domain and types of entrepreneurial subcommunities are hypothesized to be determinants of multiple membership in similar organizations other than the Forum, the focal case in point.

Hypothesis 2. (a) People with stronger establishment in domain and (b) people who belong to entrepreneurial subcommunities that are more interested in resource exchange and mobilization tend to participate in a larger number of different networking organizations in the area.

This kind of multiplicity in the form of attending similar organizations in the same regional area is ostensibly extravagant in the use of time, a valuable resource for entrepreneurs, or even redundant. However, as Landau (1969) argues in applying the principle of natural system to an artificial system that needs to be highly reliable (such as airplanes), redundancy, overlapping, multiplicity, and equifinality are crucial for enhancing the reliability of the system. Why is an organism adaptive? Landau argues it is because a natural system has overlapping, equifinal, redundant circuits, as the theory of natural automata suggests. Networking organizations in a community, as long as they are naturally occurring, grass-roots type of movements in contrast to planned organizational facades, may incorporate redundancy. The apparent redundancy observed in multiple membership enhances the probability of seeing a person again in a similar, but

9. Provan, et al. (1980) used establishment in domain to explain power relationship in interorganizational field.

different networking organization.

Moreover, multiple, overlapping membership is not necessarily redundant, because even very similar organizations have subtle differences in focus: there is no such thing as perfect overlap in functions, benefits, and actual membership. Overlapping is partial. In other words, each networking organization for entrepreneurs, even if it shares the overarching goal of "helping entrepreneurs," has slightly different functions, or differing weight of importance attached to a set of functions. Hence it attracts a partially different composition of people as participants.

To take a few examples from the organizations mentioned earlier, SBANE has its origin in the political movement to enhance and integrate the voices of small business owners in 1938 during the FDR administration. It is one of the oldest associations for small businesses. It is still powerful in legislative efforts, while the MIT Enterprise Forum, in accordance with the Institute rule that prohibits the use of the MIT name for political activities, does not lobby. Unlike the Forum, SBANE draws its members from the whole gamut of small businesses, not just from the high tech community. SBANE runs various kinds of educational seminars. Among them is the entrepreneurial peer group that meets monthly at each member's company. It is called the Executive Dialog Program, based on the groundrules of qualified membership, confidentiality, and the exclusion of competitors in the same group.[10]

BCS attracts a broader range of people who have some interest in specific types of computers (e.g., Macintosh, IBM/PC, Amiga, etc.) and/or in specific applications (e.g., data base, AI, telecommunication, etc). It is not just for hackers. There are meeting for novices as well as for the experienced. There are more than twenty computer hardware companies in the Greater Boston area, such as DEC, DG, Prime, and Apollo Computer, and many software companies that include prominent ones like Lotus Development in Boston/Cambridge

10. It should be noted that all these attributes of the Dialog Program of SBANE are very different from the Forum. In the larger study to which this paper belong, the Dialog is used as a comparison (cf., Kanai, forthcoming).

area. Quite naturally, the group of people who has an interest in starting up businesses and doing some consulting has formed a special interest group called "Consultants and Entrepreneurs." This group has joint meetings with the MIT Enterprise Forum. It also has a specific session called "Business Resource Exchange" that is intended to create a resource exchange network. BCS provides a calendar of activities of each group, and it occasionally invites distinguished persons in the industry such as Steven Jobs as guest speakers to the overall meeting. It provides opportunities to learn about hardware and software and allows access to user-written programs.

The 128 Venture Group is a relatively new organization. It was created in 1983 when the venture capital was abundant. The group meets monthly at a hotel located near Route 128 very early in the morning (known as "entrepreneurial time" because it is hard for them to find free time). The participants have breakfast in a large dining hall, while listening to what the guest speaker of the month has to say. The 128 Venture Group invites very prominent persons as speakers; but there is a tacit understanding that the speech is only a pretext to gather. People need some reason to gather. After the speech by the guest speaker is over, every participant is expected to introduce himself or herself by referring to what kinds of skills, ideas, or resources he or she has and what and whom he or she is looking for in the meeting. This is called the "one-minute speech." Attendants are more likely to have very specific reasons to be there. They exchange cards madly. A lot of contacts are made based on "classified" name tags[11] as well as the roster of participants prepared in advance. The place is a nice "dating" game for business; and the turnover rate is reported to be high (Kahn, 1985).

As these examples illustrate, a closer examination of apparently similar organizations reveals interesting differences in basic missions, membership qualifications, and formats. Mutiple membership is,

11. Participants have a name tag which has a different color, depending on the needs and skills. Red is for those who have business or technological ideas; blue for management candidates, green for a source of money; and yellow for professionals, consultants, and other service providers.

therefore, by no means redundant – it implies the symbiosis of similar but different networks embedded in the same area. In other words, the area characterized by this kind of symbiosis of various networking organizations is "interorganizationally rich" (Turk, 1970) in terms of active resource exchanges. This enables individuals in the community to enjoy overlapping, multiple memberships in some of them.

Hypothesis 3. In an interorganizationally rich field for entrepreneurs ("rich" in the sense of availability of various networking organizations in the community), people in the area choose a set of those organizations to join, depending on the perceived benefits for attending each organization.

All of the above hypotheses center around the most paradoxical proposition of "strength of weak ties" (Granovetter, 1973; 1974; 1982), in one way or another. In his study of the job searches of professionals, engineers, and managers, Granovetter (1974) found that most (83%) of the novel, useful information was acquired through a remote "acquaintance" they met rarely or occasionally rather than from a "close friend" they kept in touch with and met much more frequently. The theoretical contribution of Granovetter (1973) is that instead of leaving this as a puzzling finding he provides a graph-theoretical interpretation that explains why this paradox happens. A friend (a person connected through a *strong tie*) might be more strongly motivated to help job candidates than an acquaintance (a person loosely linked by a *weak tie*). Yet, the latter, in terms of the structural position in a social network, albeit less motivated to help, is more likely to bring novel information and access to broader range of resources. The underlying proposition is that a weak tie can be a bridge that links different cliques that would otherwise remain separated, whereas a strong tie cannot, because it breeds local cohesiveness.[12] This paradox applies to various social settings and is not

12. This can be broken down into two basis hypothesis: (1) no strong tie is a bridge; and (2) all bridges are weak ties (although all weak ties are certainly not necessarily bridges). Here the bridge is defined as "a line in a network which provides the only path between two points" in a graph theoretic sense, and the strength of a tie is conceptualized as "a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie" (Granovetter, 1973, p.1364, p.1361).

constrained to the context of job search, as Granovetter (1982) himself reviews other studies that support the paradox of strength of weak ties.

The paradox has interesting research implications for the present study of entrepreneurial networking. For one thing, if the same members meet all the time discussing the old same issue, the meeting would not be conducive to a novel combination of ideas, information, expertise, and other resources. That kind of meeting would be perfectly functional to the creation of a cohesive, closed club for the selected. What makes an association like the MIT Enterprise Forum so valuable for entrepreneurship is that it is the arena in which people from different subcommunities embodying different types of resources meet, focusing on different benefits (cf., hypothesis 1). For another, the overlapping, multiple memberships in diverse networking bodies also help avoid the pitfall of meeting the same old buddies in the same club. This pitfall is what Granovetter (1973) calls the trap of "*local* cohesiveness." It creates a strong "clubby" feeling inside at the risk of entailing overall fragmentation. If a person attends more than two organizations based on weaker ties, this kind of macro fragmentation in a community is attenuated. Therefore, multiplicity is also related to the paradox of the strength of weak ties (cf., hypotheses 2 and 3).

Not only does the Granovetter's paradox offer a unifying perspective for networking organizations and the meaning of symbiotic coexistence of similar organizations, but it also provides the basis for a set of new hypotheses. Weak ties, as compared with strong ties, might be responsible for explaining three facets of networking behavior and attitudes: membership in multiple networking organizations; the intensity of an involvement in a focal networking organization; and the salience of networking objectives in attending these kinds of organizations.

Hypothesis 4. Those people who locate a networking organization through weak ties rather than strong ties tend to (a) participate in a larger number of networking organizations; (b) participate in a certain organization more actively; and (c) put more emphasis on the networking benefits of that participation;

These are the premises and the hypotheses of the study. It should be noted, however, that the overall research project has been a combination of the inductive, qualitative analysis of insiders' views (which is more appropriately presented in the form of descriptive account[13]) and the quantitative analysis of the interpretive framework derived from insiders' views in conjunction with the previous studies. The present paper does not present qualitative details; these are fully described elsewhere (Kanai, 1986).

III. Analysis of Results and Findings

III. 1. Dimensions of benefits and entrepreneurial subcommunities

First, let us consider the benefits and the categories of entrepreneurial subcommunities that are close to the natives' view. As briefly described earlier, there are three instrumental benefits one can reap from networking organizations like the Forum. By definition, the first benefit, albeit not necessarily stated as a formal goal, is the networking benefit, which is measured by three items: "creating broader contacts with new people," "exploring alternative career opportunities," and "meeting with friends and acquaintances." The second benefit is the *knowledge* learning. This dimension includes two items: "keeping track of directions in technology development" and "learning about a specific industry." The third benefit is the *vicarious* learning and is comprised of a single item, "learning about entrepreneurial experiences." The case presentation at the Forum can be a vehicle to enhance the knowledge about a certain industry or technology (knowledge learning) and, at the same time, to learn through a role model (a presenting CEO) based on real experiences that he or she has gone through.

These three benefits are identified by principal component analysis. They also fit the insiders' views.[14] For one thing, education is

13. The method applied to qualitative data collection was just partially based on ethnographic interviews to conduct domain analysis (Spradley, 1979) in that I did not talk to the same persons over and over again except for two informants at the two major research sites.

emphasized by the executive committee of the Forum, since they believe in the educational value of cases for both presenters and the general audience and they use the space at the MIT, an educational institute that has an entrepreneurial flair. As such, two dimensions in the domain of learning come as no surprise. The clear distinction between learning to know something and learning to share experiences is worthy of note (cf., Bandura, 1977). The executive committee is keenly aware of the fact that the Forum serves as a "contact point." Networking functions of this sort are inevitable if the open membership is preserved and diversity is preferred. Consider the following quotes:

- Since I knew many people, and small-technology-based companies, I was also intrigued that it just served as a sort of a meeting place for people I know.
- [As a former presenter] the Forum was presented as one of the means by which you could get exposure and opportunity to meet with various people in the community.

As for the categories of entrepreneurial subcommunities, a native classification scheme is first drawn from the interview data. Then, for the sake of Ns in each category and the appropriate level of parsimony, four categories are used in the following analysis. They include entrepreneurs (25.0%), potential entrepreneurs (who are still working for someone else, but identify themselves as future entrepreneurs; 20.3%), company employees (who do not state that they are aspiring to be entrepreneurs; 20.3%), and outside resource people (comprised of financial sources, lawyers, CPA's and consultants; 25.0%).[15]

14. The missing benefit is the expressive benefit, as I alluded to earlier. Especially, at the early stage of the Forum activities, it was reported: "Entrepreneuring is lonely. Especially when we started the Forum, it was lonely process because it wasn't this popular as it is today." Presumably, expressing one's feelings, emotions, worries and anxieties might have been one of the latent functions of the Forum back in the late seventies. As of today, my comparative analysis reveals that the weight of expressive benefit relative to instrumental benefit is very low in the current MIT Enterprise Forum.
15. The number does not add up to 100%, because there is a residual category (9.4%). Respondents in that category could not be classified into these four categories.

III. 2. Results

(1) Benefits Table 2 shows the importance attached to three dimensions of benefits by people in different entrepreneurial sub-communities. The importance is measured by a seven point Likert scale. Vicarious learning is regarded as most important across the board. This is consistent with the Forum's mission of promoting entrepreneurship per se. Vicarious learning or sharing of entrepreneurial experiences still remains the most prominent goal of the Forum, as it has been in the past. In other words, the MIT Enterprise Forum attracts people who would like to share that kind of experience, even if they are not entrepreneurs themselves.

There are some interesting differences in the weight placed on two other dimensions, although they are not statistically significant. On the one hand, potential entrepreneurs ascribe a higher score to networking benefits than people in other categories do. An item-level analysis reveals that potential entrepreneurs are very keen on "creation of contacts" (5.17) and "pursuit of alternative career" (5.58); and those who are already entrepreneurs seem to enjoy meeting with fellow entrepreneurs and other friends and acquaintances at the Forum (3.38). However, the potential entrepreneurs put less emphasis on meeting somebody they already know.[16] On the other hand, outside resource people are more strongly interested in knowledge learning than others are. Outside resource people are in a paradoxical position in a self-help/mutual aid network. They have resources for someone who is in a specific industry with a certain technology. They are not in that industry. Yet, in order to find the "right" company to which to allocate their resources, they have to know the features of the industry and the potentiality of the technology as much as people in that industry do – consider venture capitalist and big eight companies that are trying to locate the promising potential clients. Knowledge

16. This suggests that in a purer entrepreneurs' peer group, entrepreneurs may be more inclined to see old buddies to strengthen a psychological sense of belonging. In the comparative analysis, it is found that in the Executive Dialog Group of SABNE, which is designed to be a peer group, expressive needs are much more salient than in the Forum.

Table 2
Perceived Importance of Benefits (Summarized Dimensions)
by Participant Categories (Entrepreneurial Subcommunities)

		Participant Categories				
Benefit Dimensions	Total Sample (N=53)	Company Employee (N=12)	Poten'l Entre (N=12)	Entre-preneurs (N=13)	Outside Resource (N=16)	F value (3.49)
Networking	3.81	3.72	4.53	3.33	3.73	1.71
Knowledge learning	4.08	3.67	3.96	4.12	4.44	1.43
Vicarious learning	5.53	5.67	5.67	5.23	5.56	.42

Notes F values are derived from one way analysis of variance.

learning is essential for this purpose, because they have to be knowledgeable enough to evaluate the company in early stages, even in its "zero stage" so to speak.

Hypothesis 1 is not fully supported in ANOVA result; yet it is safe to assert that there are intriguing differences observed in the networking and knowledge learning dimensions.

(2) Multiple membership Multiple membership in other networking organizations are measured as follows. In the interview study, my interviewees were asked to nominate other organizations worth mentioning which have functions somewhat similar to the Forum. The list of the networking organizations was generated in this way. The eight with the largest number of references in conjunction with the trade and professional associations were listed in the questionnaire. The number of the organizations of which respondents are currently active participants indicates multiple membership.

About half of the participants of the Forum (45.0%) also attend other organizations. Among them, there are three organizations to which more than 10% of the Forum participants belong: Smaller Business Association of New England (18.0%), Boston Computer Society (14.8%), and the 128 Venture Group (11.5%). The features of these organizations have already been described very briefly.

Table 3
Multiple Membership In Other Networking Organizations
And Establishment in the Domain (Years in Boston)

Membership	Years Living in Boston		Total
	Shorter	Longer	
Single membership (The Forum only)	23 (72%)	7 (30%)	30 [55%]
Multiple membership (Other org's also)	9 (28%)	16 (70%)	25 [45%]
Total	32 [58%]	23 [42%]	55

Notes 1. Column percentages are presented in regular parentheses. The numbers in [ ] show marginal distributions.
2. Shorter/longer years are divided at median (15 years or less is "shorter" and 16 years and more is "longer").
3. $\chi^2 = 7.67$ (after Yates correction), $p < .01$; Kendall's $\tau = .176$, $p < .10$

Table 4
Single and Multiple Membership
by Different Enterpreneurial Subcommunities
(Participant Categories)

Membership	Entrepreneurial Subcommunities (Participant Categories)					Total
	Company Employees	Potential Entre's	Entre-preneurs	Outside Resources	Others	
Single membership (The Forum only)	10 (83%)	8 (62%)	6 (43%)	6 (38%)	5 (83%)	35 [57%]
Multiple membership (Other org's also)	2 (17%)	5 (39%)	8 (57%)	10 (63%)	1 (17%)	25 [43%]
Total	12 [20%]	13 [21%]	14 [23%]	16 [26%]	6 [10%]	61

Note Column percentages are presented in regular parentheses. They do not necessarily add up to 100 percent because of rounding errors. The numbers in [ ] show marginal distributions.

Tables 3 and 4 provide the results regarding the relationships between the membership in other organizations, on the one hand, and establishment in domain and types of entrepreneurial subcommunities, on the other.

As shown in table 3, those who have stronger establishment in the domain in terms of years living in the Greater Boston area tend to become active in a larger number of networking organizations. In other words, they are more likely to enjoy multiple membership rather than single membership. The result supports hypothesis 2a.

Entrepreneurs must become aware of critical use of outside resources, because by becoming entrepreneurs they create an environment of (resource) dependence as explained earlier. They may rely on other entrepreneurs who have gone through similar experiences or they may use professionals and other service providers. The upshot is that entrepreneurs have to find them out. Outside resource people, by definition, can be assumed to be fairly sensitive about the opportunity for resource exchanges, although they have to do it for business, not as a part of self-help movement by entrepreneurs for entrepreneurs. In other words, they have to identify their potential accounts. As presented in hypothesis 2b, people in these two categories who are more savvy in the resource exchange network are more likely to attend other networking organizations in addition to the Forum than those who are in the categories of company employees interested in entrepreneurship and potential entrepreneurs still dreaming of entrepreneurship (table 4). There is a finding related to hypothesis 3b. Those people in the former two categories not only attend more associations, but also participate in that kind of networking organization for a longer period, as shown in table 5. It should be noted, however, that entrepreneurs are polarized in terms of length of involvement – they either stay for longer periods or experiment just once.

Next, hypothesis 4 is examined prior to the hypothesis 3, because the regression analyses used for testing hypothesis 4c include dummy variables of membership in each of three other organizations, the variables used for discussing the validity of hypothesis 3.

Hypothesis 4 deals with some additional perspectives to the weak-tie paradox. First, it is hypothesized that weak-tie seekers[17] are more prone to participate in diverse organizations. Empirically, the question is whether the use of weak ties in locating in the Forum is related to more extensive multiple membership. Among variables that are conceived to be correlates of multiple membership, the weak tie dummy has a positive effect upon it, and its statistical impact is marginally significant. The direction of the impact of weak-tie usage supports hypothesis 4a, although the strength of its impact is not strong enough to be significant at five percent level. The weak tie dummy is operationalized in such a way that its value is one when an individual heard about the Forum through "acquaintances" and "advice from professionals" and zero otherwise. It means that those

Table 5
Length of Involvement
by Different Entrepreneurial Subcommunities
(Participant Categories)

Length of Involvement	Entrepreneurial subcommunities (Participant categories)					
	Company Employees	Potential Entre's	Entre-preneurs	Outside Resources	Others	Total
First appearance	6 (46%)	5 (45%)	5 (42%)	2 (14%)	3 (60%)	21 [38%]
Short period	4 (31%)	3 (27%)	1 (8%)	6 (43%)	2 (40%)	16 [29%]
Long period	3 (23%)	3 (27%)	6 (50%)	6 (43%)	0	18 [33%]
Total	13 [24%]	11 [20%]	12 [22%]	14 [26%]	5 [9%]	55

Note 1. Column percentages are presented in regular parentheses. They do not necessarily add up to 100 percent because of rounding errors. The numbers in [ ] show marginal distributions.
2. 15 months of involvement is the cutting point for short and long involvement (the period of 16 or more months is long involvement and the period of 15 or less is short involvement).

17. The term, "weak-tie seekers," does not refer to stable personal attributes. It is used, for convenience, in referring to those who locate the Forum through weak ties.

who locate the Forum through weak ties rather than strong ties and other sources[18] tend to be involved with other similar organizations in the area. There are three other independent variables that are major determinants of multiple membership (for the details, see Appendix 1). They are age, gender, and importance attached to vicarious learning, as shown in figure 1.

Age of a respondent is highly associated with the years living in Boston, the indicator of establishment in the domain ($r=.465$, $p<.001$). The fact that the older people attend more networking organizations in terms of multiplicity is another indirect support for the hypothesis 2a. Among three dimension of benefits, only vicarious learning is statistically significant. It suggests that the primary motive to attend various kinds of networking organizations is to be exposed to the whole variety of entrepreneurial experiences rather than the acquisition of knowledge. Another interesting finding in this analysis is the effect of gender on multiple membership.[19]

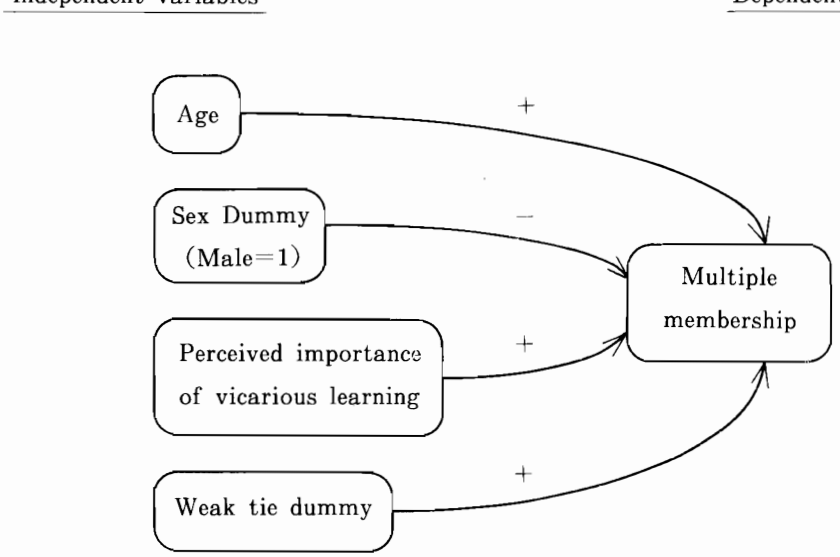
Finding 1. Female entrepreneurs and females who are concerned about new ventures in one way or another attend a larger number of networking organizations than their male counterparts do.

We tend to think of the primacy of old *boy* networks. However, women try to enter those areas that have been dominated by males or create their own networks (Harrison ed., 1986). Both *Inc. Magazine* and *Venture* had a cover story related to women entrepreneurs in the same month (July, 1986). A theoretical interpretation of this finding is that those who have been limited in terms of the access to broader resources must be more vocal in various associations.

The result regarding hypothesis 4b is shown in table 6. Participants have become aware of the existence of the MIT Enterprise Forum either through personal communications (strong and weak ties) or

18. In addition to strong and weak ties, there is the institutional PR of the Forum to attract new participants through its pamphlet and the annual Entrepreneurial Workshop.
19. This finding, however, is not replicated by the analysis of data from the mailed survey. One explanation for this is that there are more women who actually participate in the Forum's session beyond being listed on its mailing list who attend other organizations quite actively.

Figure 1.
Correlates of Multiple Membership
(Summary of Regression Analyses)



Note For the details of results, see Appendix 1.

through what would be called institutional PR (a Forum pamphlet or the Annual Workshop). First and second rows deal with strong and weak ties and are relevant to the hypothesis. The pattern of the relationship between the strength of the ties and the intensity of involvement to the networking organization is congruent with the hypothesis 4b, although χ^2 is not significant at five percent level. The observed pattern is that those who located the Forum through weak ties attend its monthly sessions more frequently than those who did so through strong ties. Most of the weak-tie seekers (73%) attend the sessions in higher frequency (which exceeds the median intensity of involvement), whereas only the one third (33%) of strong-tie seekers indicate that level of frequency. Those people who first learned about the Forum through the pamphlet and the workshop are almost equally distributed in high and low intensity of involvement, suggesting

Table 6
Strength of Ties and Intensity of Involvement

Informational Source	Involvement		N
	Low	High	
Strong ties	8 (67%)	4 (33%)	12
Weak ties	3 (27%)	8 (73%)	11
Institutional PR	7 (58%)	5 (42%)	12
Others	3 (60%)	2 (40%)	5
Total	21 (53%)	19 (48%)	40

Notes 1. Row percentages are presented. Each row does not necessarily add up to 100% because of rounding error.
2. $\chi^2 = 4.05$, n.s.
3. Respondents are divided by high/low involvement at median of times of attendance per year.

that institutional PR may be useful in letting people know about the Forum, but may not make a big difference in the level of intensity of involvement after they know about it.

The relationships between benefits and involvement and those between benefits and individual characteristics are shown in table 7. A strong negative correlation between the length of involvement and vicarious learning is found ($r = -.508$, $p < .001$). Age is negatively associated with the networking benefit ($r = -.382$, $p < .01$). Therefore, these two variables are added as independent variables (with other variables of theoretical interest drawn from hypothesis 4c) in regression analyses to explain the importance attached to each benefit. Even after controlling other variables that are hypothesized to be determinants of each benefit, the negative impacts of these two variables – length of involvement and age – upon vicarious learning and networking benefit, respectively, remain strong. They are discussed and interpreted later, as findings worth mentioning separately.

The results are summarized in table 8 (for the details, see Appendix 2). Weak-tie dummy has a positive effect on the perception of networking benefit; and its effect is statistically significant.[20] As hypothesized,

Table 7
Correlations between Perceived Importance of Benefits (Three Summarized Dimensions) and Participants' Involvement and Attributes

	Dimensions of Benefits		
	Networking Benefit	Knowledge Learning	Vicarious Learning
Involvement			
−Frequencies (Times a year)	.101	.141	.245
−Length of involvement (Total months)	−.132	−.012	−.508**
−Multiple membership	−.064	.091	.156
Attributes			
−Age	−.382*	.084	−.058
−Years in Boston	−.073	−.020	−.167

Notes 1. Missing values are processed pairwise. Ns range from 40 to 61.
2. $*p < .01$, $** p < .001$

those people who utilized weak ties rather than strong ties and institutional PR in finding out about the Forum value its networking benefits more strongly. In other words, those people who began to attend the Forum based on information they got from rather remote acquaintances or professionals are more keenly aware of the networking benefit than those people who did so only because their close friends were also there or because they knew about it through impersonal communications like a pamphlet. Hypothesis 4c is supported.

Hypothesis 4 provides three new additions to the original formulation of Granovetter's (1973) propositions of the strength of weak ties. All of these three specific hypotheses 4a, b, and c are paradoxical as is Granovetter's original formulation.

20. Weak-tie dummy also has a marginally significant ($p < .10$) positive impact on the dimension of knowledge learning. However, it is negatively related to the dimension of vicarious learning; but its impact on that dimension is weak and trivial ($t = -.67$, *NS*).

Table 8
Determinants of Perceived Importance
of Each Benefit Dimension
(Summary of Signs of Regression Coefficients)

Independent Variables	Dependent Variables: Networking benefits	Knowledge learning	Vicarious learning
Participant Categories			
−Potential entrepreneurship dummy	+	NI	+
−Other resource dummy	NI	+ **	NI
Informational Source			
−Weak ties dummy	+ **	+ *	−
Demographics			
−Age	− ***	+	+
Length of Involvement			
−Total months	NI	NI	− ***
Membership of Other Org's			
−SBANE	− *	+	+
−BCS	+ *	+	+
−128 Venture Group	+	− *	−

Notes 1. As for details of regression analyses, see Appendix 2.
2. $*p < .10$, $**p < .05$, $***p < .01$
3. NI cells mean that they are not included as independent variables because of their low explanatory power (probability inclusion criterion, PIN as loose as .20 does not allow those variables to be included).

Among the independent variables used in regression analyses summarized in table 8 are three membership dummy variables to denote whether respondents are also active in SBANE (Smaller Business Association of New England), BCS (Boston Computer Society), and the 128 Venture Group.[21] The result related to the effect of multiple membership in other networking organizations upon the perception of salient benefit dimension is already included in table 8. For the sake

21. If a person is also an active participant of SBANE for instance, SBANE membership dummy takes a value of 1, otherwise it equals 0.

of closer examination, table 9 focuses on the last three columns in the earlier table. It provides an interesting result regarding hypothesis 3.

First, the patterns of signs in the three different benefit dimensions are completely opposite, if one compares the impact of SBANE membership dummy and that of the 128 VG membership dummy. The people who are also members SBANE pay more attention to the learning aspects of the Forum and less attention to the networking benefit. SBANE has another important function in the domain of legislative activities, which is not measured in the present study. In addition to legislative activities, SBANE has been very active in providing a whole variety of educational programs, seminars, and conferences. There is an interesting program called the Executive Dialog Program under SBANE, as briefly described earlier. It can be used for networking. The emphasis, however, is not on creating broader contacts with new people (instrumental use of network) but on providing the opportunity of real dialogues among entrepreneurial peers (expressive use of network). Since the three items used to measure the networking benefit in this study focus on the former aspect. Therefore, the result related to additional membership in SBANE is very sensible.

Table 9
Multiple Membership in Other Three
Major Networking Organizations And
Perceived Importance of Benefits of the Forum

Benefit dimensions of the Forum	Sings of membership dummy		
	also a member of SBANE	also a member of BCS	also a participant of 128 VG
Networking	− *	+ *	+
Knowledge learning	+	+	− *
Vicarious learning	+	+	−

Notes 1. Bases on regression analyses with membership dummy variables. Overall result is summarized in table 8. For the details, see Appendix 2.
2. $*p < .10$

In stark contrast, those people who attend the 128 VG in addition to the Forum are more sensitized about the networking benefits of the Forum, while putting less emphasis on learning benefits, whether vicarious or knowledge learning. As stated earlier, the 128 VG does have a guest speaker who talks about some specific topic of interest; yet the speech is rather a vehicle to let people have some ostensible reason to be at the meeting that starts as early as seven o'clock in the morning. The primary purpose of attendants resides in instrumental exchange of resources and information, which is most visibly evidenced by the one-minute self-introduction and craze for exchanging business cards after breakfast is over. The higher score ascribed to the networking benefit by the people in this category comes as no surprise. It is also understandable that they are not so deeply concerned about the educational benefits in attending the Forum.

Second, BCS seems to be very much closer to the Forum. BCS highlights all of the three benefits that one may get at the Forum, probably because BCS also provides all of them, albeit in a slightly different way. First, BCS has prominent programs for networking such as "Business Resource Exchange." At the same time, there are a variety of events, seminars, and other meetings that focus on specific hardware and applications. As such, it is definitely a place where one can enhance one's knowledge. BCS also frequently invites successful entrepreneurs so that one can learn from their experiences. It is no wonder, then, that those participants of the Forum who are also members of BCS are more enthusiastic about all three benefits of the Forum than those who are not BCS members.

The signs of the dummy variables of multiple membership in three other organizations are congruent with my observation of these organizations. Although the three organizations plus the MIT Enterprise Forum might be just the tip of the iceberg, the overall results shown in table 9 indicate that people in a region like Route 128 enjoy the combinations of different organizations they may attend, depending on the different types of benefits. This is a rather indirect test of hypothesis 3 in that the data were not collected from all of these organizations, but from the focal organization only. However, it is quite suggestive of the validity of hypothesis 3.

(3) Saturation of learning and aging of networks As touched on earlier, the length of involvement in the same networking organization and the age of a participant are negatively associated with the benefit of vicarious learning and with networking benefit respectively. These relationships are two additional major findings that are not hypothesized in advance, as is true of the gender as a determinant of multiple membership (finding 1).

With regard to the effect of staying for a long time in the same organization, it should be noted that the negative effect is observed only upon vicarious learning; the length of involvement does not affect other two dimensions of benefit. The phenomenon is recapitulated as:

Finding 2. The decrease of benefits reaped from attending a certain networking organization for a longer period is limited to the dimension of vicarious learning. The decreasing returns over time are not existent or trivial for both networking benefit and the benefit of knowledge learning.

The finding has implications for design and location of a networking organization like the MIT Enterprise Forum. First, probably because of the open membership (a design parameter for a networking organization) that facilitates the incessant inflow of new people, a participant is not satiated with the networking benefit, even when he or she stays longer in the MIT Enterprise Forum. Second, consider the very characteristics of the area in which the Forum is located. Knowledge learning through a networking organization would eventually suffer from the law of diminishing returns relative to the time one invests in it, if the organization were aimed at learning about the classic literature, for instance. The Forum, however, has been targeted primarily to high tech companies that characterize the Route 128 area. For people in an entrepreneurial community like this area that embraces MIT, Harvard, and more than sixty other universities and numerous high tech companies,[22] the value of frontier knowledge would not be diminished because there are always some advancement in science, technology, and its application to industry.[23] Hence, there

22. See Dorfman (1982; 1983) for relevant descriptive statistics about the 128 high tech boom.

is no ceiling for knowledge-learning benefit.

Another finding is the strong negative correlation between age and the networking benefit (table 7). Its negative effect becomes even more salient when other variables are controlled (table 8). That simply indicates that if one becomes older, networking becomes less important. This, however, is a crude interpretation of the finding, because item-level analysis reveals the following interesting patterns. The networking benefit is the composite indicator comprised of three original items. Age is negatively associated with all three items; but the correlations are stronger with two of them, "creation of broader contacts with new people" ($r=-.337$, $p<.01$) and "exploring alternative career opportunities" ($r=-.268$, $p<.05$). In contrast, the correlation between age and "meeting with friends and acquaintances" is fairly low ($r=-.115$, *NS*). The first two items refer to meeting "unknown" people or exploring "unknown" career. They are more likely to be realized through weak ties. The last item, by contrast, sheds light on another aspect of networking – e.g., keeping in touch with old buddies. This aspect may be positioned closer to strong-tie seeking behavior rather than weak-tie seeking behavior. The more fine-grained presentation of the finding, therefore, is as follows:

Finding 3. The expectation for (or the importance attached to) the networking benefits, especially those benefits that are unexpected, novel ones actualized through weak ties, decreases as one becomes older.

The interpretation of this finding from the perspective of resource dependence and resource mobilization is that elder persons are more likely to establish their routes to necessary resources. Moreover, even in the entrepreneurial community, as one becomes older, one's career is more stabilized and one must be less sensitive about alternative careers.

Related to the findings 2 and 3, Powell (1985), in his ethnographic study of decision making in academic publishers, warns that as a networker (an editor in chief) ages – so does his or her editorial networks which include the same old professors, reviewers in academic

23. The statement is almost perfectly reminiscent of the founding mission of MIT itself.

journals, and editors in other houses (see table 1). Our findings in conjunction with this suggest that without utilizing the strength of weak ties, a social network can be a "club" where the old buddies meet and discuss the same old story over and over again.[24]

IV. Conclusion and Discussion

As an outsider to American culture, it is always temping to describe "entrepreneurship" as a uniquely American phenomenon. Or at least, it is more attuned to the American context. The interview study supports this naïveté. The members of the executive committee of the Forum who have also been exposed to the European business environment emphasize the particular cultural fit, especially when they refer to the tolerance for failure in an area like Route 128.

Entrepreneurship in the context of social associations such as the MIT Enterprise Forum, however, makes me sensitive to the interesting cultural contradiction. Let us think of an alien observer from France of American culture in the past. In mid-nineteenth century, Alexis de Tocqueville was intrigued by the fact that "American of all ages, all stations in life, and all types of dispositions are forever forming associations" (Tocqueville, 1969, p.513). This observation of American life is often set against the equally American penchant for individualism.

Things have not changed much. In the latest attempt to decipher the cultural milieu of the American middle class, Bellah et al. (1985) focus on the cultural contradiction in society between individualism and social commitment. The classic case of ambivalence inherent in American individualism, according to Bellah et al., is depicted as follows:

> We strongly assert the value of our self-reliance and autonomy. We deeply feel the emptiness of a life without sustaining social commitments. Yet we are hesitant to articulate our sense that we need one another as much we need to stand alone, for fear that if we did we would lose out independence altogether (p.151).

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24. There is nothing wrong with this kind of "club" type of organization. It is simply different from organizations like the Forum. More positively, the "club" type has its own function to provide a cozy, protected space to talk about common concerns at a deeper level (cf., Kanai, forthcoming).

To the outsider, the question of how one can be connected to the collective without jeopardizing felt autonomy is a very captivating one.[25] An entrepreneur is an intriguing case which highlights this dilemma. On the one hand, an entrepreneur is a man or a woman of self-reliance, or at least we tend to assume so. On the other hand, as emphasized before, becoming an entrepreneur often means the dependence on others for some critical resources.

On the most general level, arguments about multiple membership that exploits the power of weak ties to exchange and/or mobilize resources are related to this conflict between individualism and social commitment. Consider a passage in the classic work by Georg Simmel (1955):

> [The] number [of circles] is sufficient in the sense that they give an individual of many gifts the opportunity to pursue each of his interests in association with others. Such multiplicity of circles implies that the ideas of collectivism and individualism are approximated to the same extent. An advanced culture broadens more and more the social circles to which we belong with our whole personality; but at the same time the individual is made to rely on his own resources to a greater extent and he is deprived of many supporters and advantages associated with the tightly knit primary group (pp. 162-163).[26]

Lipnack & Stamps, advocates of networking in various areas, have gone so far as to coin a term, "wholepart" – the equivalent of the notion of "holon" by Arthur Koestler – to denote that "networks are composed of self-reliant and autonomous participants – people and organizations who simultaneously function as independent 'wholes' and as interdependent 'parts'" (Lipnack & Stamp, 1982, p. 7; cf., Stamps, 1980).

The MIT Enterprise Forum is a thought-provoking attempt to meet this challenge, because it is designed as an open arena constructed on

25. Interestingly, the very concept of "self-help" is not the Japanese vernacular; nor is the term, "networking," although Japanese culture typically is characterized as groupy (cf., Rohlen, 1974). Because of the lack of a very clear concept of self (De Vos, 1985), this kind of cultural contradiction might be less salient in Japanese society.
26. Kadushin (1966) draws attention to the fact that English translation by Reinhard Bendix systematically translated Simmel's use of the term, "circle," into "group." This quote follows Kadushin's caveat, and is Kadushin's quote.

the principle of entrepreneurs-helping-entreprenurs. The inclusion of outside professionals in modern self-help networks (Steinman & Traunstein, 1976; Maguire, 1983) is inevitable, but can be productive if it does not undermine the principle of self-help.

In this paper, I deliberately focus on the instrumental use of networks that enables one to get access to broader range of resources. One of the reasons why networks are associated with innovation hinges on this aspect of networking benefits in addition to vicarious and knowledge learning. Networking in this sense helps create a really novel "new combination," the heart of innovative action. The networking vehicle for entrepreneurs of the Forum sort meets this objective, probably because of open membership, the size of the group (a meeting place for a critical mass of the people concerned about entrepreneurship), and preference for diversity. All of these factors contribute to the productive use of weak ties.

There are two aspects of networking that are not fully addressed in this paper. One is the expressive use of the network, which is a theoretical contrast to the instrumental use (in Parsonian sociology, for instance). The expressive benefit of networking refers to the psychological sense of relaxation to express one's worries and anxieties in front of peers. The realization that others are also having the same kinds of problems makes one feel better about one's endeavor to accomplish something new. Consider how confession plays an important role in the terrain of closed peer group in which a member realizes that "I am not the only one." Expressive as well as instrumental benefits have been an important source of mutual encouragement that promotes the development of self-help movement (Back & Taylor, 1976).

Another aspect of networking lies in the function of strong ties. One can easily be excited about the paradoxical importance of weak ties, and one may ignore, or at best pay cursory attention to, the evident importance of strong ties. Granovetter's (1973; 1982) original arguments are very careful on this point. He asserts that strong ties create internal cohesion, whereas weak ties provide macro integration. Local cohesion may entail macro fragmentation, if one does solely seek strong ties only. But we can pursue both strong ties and weak

ties, because each has a different function. Moreover, some level of solidarity is required for resource mobilization (Oberschall, 1982).

These two points in essence deal with the same problem. They shed light on one promising research direction. The MIT Enterprise Forum is a prototypic example of networking organizations. Yet, there is a different type of networking principle that focuses on expressive actions – actions which can be more safely conducted in a peer group where people are linked by strong ties rather than weak ties. The future direction of the study, therefore, is a comparative analysis of networking organizations that are based on two contrasting principles (Kanai, forthcoming). Another interesting extension of this study is the comparison of networking organizations in different cultures that have different assumptions about the use of strong and weak ties and the instrumental and expressive use of human network. The U.S.–Japan comparison, bearing this theoretical underpinning in mind, might be promising.

Entrepreneurial networking has straightforward, practical implications. At the macro policy level, the central issue has been whether the Silicon Valley or Route 128 could be duplicated. We could not change people's personalities. Nor could we reproduce the whole social/economic infrastructure of these two areas. However, we can experiment with the idea of entrepreneurial networking, using the Forum as a model. A networking organization like the Forum is an evolving, voluntary association. Therefore, we must be aware of the potential tension between the grass-roots nature of self-help networks and the planned nature of public policy.

At the individual level, entrepreneurs have to be conscious of the importance of remote acquaintances with whom they meet occasionally primarily by chance. These people are more likely to know novel information and have access to unexpected resources. Instead of relying on haphazardness, entrepreneurs can enhance the probability of meeting them by attending an organization like the Forum. For this purpose, one should question the natures of associations one attends. If they all are cozy places to meet same persons over and over again for a long time, it would be nice and warm. But one must try a different sort of networking organizations based on weak ties,

diversity, and high turnover. This is to broaden one's world, or to seek out a new world where someone might have gone before.

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Appendix 1
Determinants of Multiple Membership
(Regression Analyses)

$$\begin{aligned}
\text{MULTI} = &-1.166 + .038\text{AGE} - .792\text{SEX} + .227\text{BVLRN} \\
&\quad (2.20)^{**} \quad (-1.97)^{*} \quad (1.710)^{*} \\
&R^2=.148 \quad F(3,51)=2.96, \quad p<.05 \quad N=55
\end{aligned}$$

$$\begin{aligned}
\text{MULTI} = &-1.506 + .042\text{AGE} - .828\text{SEX} + .226\text{BVLRN} + .003\text{BKLRN} + .58\text{BNTWK} \\
&\quad (2.12)^{**} \quad (-1.97)^{*} \quad (1.64) \quad\quad (.02) \quad\quad (.47) \\
&R^2=.153 \quad F(5,49)=1.77, \quad \text{ns} \quad\quad N=55
\end{aligned}$$

$$\begin{aligned}
\text{MULTI} = &-1.490 + .040\text{AGE} - .869\text{SEX} + .277\text{BVLRN} + .690\text{DWTIE} - .064\text{BKLRN} \\
&\quad (2.06)^{**} \quad (-2.12)^{**} \quad (2.04)^{**} \quad\quad (1.93)^{*} \quad\quad (-.45) \\
&+ .036\text{BNTWK} \\
&\quad (.30) \\
&R^2=.214 \quad F(6,48)=2.17, \quad p<.10 \quad N=55
\end{aligned}$$

Notes
1. Dependent variable is MULTI (multiple membership). Independent variables are AGE (respondents' age), SEX (gender dummy, male is coded as 1), DWTIE (weak tie dummy), and three benefit dimensions: BNTWK (networking benefits), BKLRN (benefits of knowledge learning), and BVLRN (benefits of vicarious learning).
2. Missing values are processed pairwise.
3. Values in parentheses are t values for each regression coefficient. Their significance levels are indicated by asterisks:
   $^{*}p<.10$, $^{**}p<.05$

Appendix 2
Determinants of Perceived Importance of Each Benefit Dimension (Regression Analyses)

$$\begin{aligned}\text{BNTWK} = 5.556 &+ .563\text{DPOTEN} + 1.024\text{DWTIE} - .059\text{AGE} - .850\text{SBANE} + .831\text{BCS} \\ &\quad (1.31) \qquad (2.33)^{**} \qquad (-2.86)^{***} \quad (-1.71)^{*} \qquad (1.68)^{*} \\ &+ .904\text{VG} \\ &\quad (1.67)\end{aligned}$$

$R^2 = .321 \quad F(6,48) = 3.79, \quad p < .01 \quad N = 55$

$$\begin{aligned}\text{BKLRN} = 3.484 &+ .735\text{DRES} + .671\text{DWTIE} + .006\text{AGE} + .102\text{SBANE} + .366\text{BCS} \\ &\quad (2.05)^{**} \qquad (1.73)^{*} \qquad (.32) \qquad (.23) \qquad (.32) \\ &- .878\text{VG} \\ &\quad (-1.80)^{*}\end{aligned}$$

$R^2 = .179 \quad F(6,49) = 1.78, \quad \text{NS} \quad N = 56$

$$\begin{aligned}\text{BVLRN} = 5.142 &+ .232\text{DPOTEN} - .258\text{DWTIE} + .021\text{AGE} - .045\text{TOTLMO} \\ &\quad (.62) \qquad (-.67) \qquad (1.11) \qquad (-3.87)^{***} \\ &+ .358\text{SBANE} + .452\text{BCS} - .583\text{VG} \\ &\quad (.83) \qquad (1.06) \qquad (-1.24)\end{aligned}$$

$R^2 = .338 \quad F(7,40) = 2.91, \quad \cdot p < .05 \quad N = 48$

Notes
1. Dependent variables are BNTWK (networking benefits), BKLRN (benefits of knowledge learning), and BVLRN (benefits of vicarious learning). Independent variables are DPOTEN (potential entrepreneur dummy), DRES (outside resource people dummy), DWTIE (weak tie dummy), AGE (respondents' age), TOTLMO (total months of involvement), SBANE (SBANE participant dummy), BCS (BCS participant dummy), VG (128 Venture Group participant dummy).
2. Missing values are processed pairwise.
3. Values in parentheses are t values for each regression coefficient. Their significance levels are indicated by asterisks:
   $^{*}p < .10, \quad ^{**}p < .05, \quad ^{***}p < .01$