

Venture Labor, Media Work, and the Communicative Construction of Economic Value: Agendas for the Field and Critical Commentary¹



Fifteen Implications of Networked Scholar Research for Networked Work

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Networked work is the venture labor of workers involved in multiple teams. Scholars are a special kind of networked workers, partially involved in temporary teams to produce findings, presentations, papers, and patents. Many networked scholars are linked across universities by common interests, data stores, opportunities for research funding, and publications. Our NAVEL team's study of 144 Canadian scholars in the GRAND network

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found that already-networked scholars were more likely to be recruited into new research teams. Although network members were officially equal, senior and entrepreneurial scholars were more equal than others. Despite norms of interdisciplinarity, scholars in the same subfields sought out one another. Although the scholars used multiple digital means to communicate, in-person meetings—and hence physical proximity—ruled.

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The popular view of academics is of tidy professors going to their classes a few times a week and scribbling an article or two every year. “Why would you want to talk about professors as ‘workers?’” one of this Special Section’s editors asked. Indeed, in the 1960s, then-University of California President Clark Kerr’s book, *The Uses of the University*, enraged academics by showing faculty members as foremen in the new industrial state.

Since Clark Kerr’s time, knowledge work has become even more entrepreneurial. Many successful academics have self-branded to promote their own work, and they form collaborative networks to secure grants and to publish. The number of authors per article has soared, even in essay-ish fields. While standard in the physical sciences, this has even started to happen in the humanities, now being entrepreneurially relabeled as the “digital humanities.”

Nowadays, many scholars are networked, linked across many universities by common interests, data stores (from stars to Shakespeare), and opportunities for research funding and publication. Sometimes informal collaborators brand themselves for the purposes of self-promotion and broader visibility, as when a score of scholars from the University of Toronto have identified themselves as “NetLab.” While scholarly connectivity is an old tradition, first formalized by the Royal Society of England in 1660, these are no longer quondam intermittent scholarly visits and letters. Rather, scholars are using digital media to work together in cooperative projects, complemented by sporadic meetings to reinforce trust relationships and deal with complex issues.

To get some understanding of contemporary scholarly networks, NetLab’s NAVEL (Network Assessment and Validation for Effective Leadership) research team—itsself based at three Toronto-area universities—studied the large GRAND (Graphics, Animation, and New Media) network of academic and industry researchers engaged in 40+ projects each containing multiple research teams. GRAND operated between 2010 and 2015, stretching 5,000 kilometers across Canada, from Nova Scotia to British Columbia (www.nce.ca). More than 40% of the Canadian network’s members were computer scientists, and the rest were well versed in digital media. We surveyed 101 of the original 144 GRAND scholars, often twice, and interviewed 47 of them in depth. The network had a multilevel structure, with a director and central research management committee, project leaders, and other academics. Roughly half of the researchers belonged to more than one project.

Here is the gist of what we learned, which may be useful for others doing or studying networked work:

It helps to be already networked if you want to be part of a network. Although being smart and ambitious were conditions for being asked to join the network, they were not sufficient. The initial organizers entrepreneurially took the initiative and recruited people they knew. These participants, in turn, asked kindred souls to join. Recruitment snowballed over three degrees of connectivity: The initial organizers asked others to be lead "network investigators" who recruited others to be "collaborating researchers." Many of these participants brought along some of the students and postdocs with whom they were already working.

In a networked organization, preexisting networks continued; some flourished. Although GRAND's director worked to broaden the network's membership, many members had been connected in preexisting networks that continued. They could leverage these ties to strengthen collaborative contacts within the GRAND network. Because computer scientists were more numerous and received more research funding, they were more likely to have known each another through scholarly conferences and visits to each other's labs. This enabled them to form project teams quickly through snowball recruitment or to continue existing collaborative work under the GRAND aegis. As the largest discipline, often linked to GRAND's organizers, they were better able to invite colleagues. By contrast, the social scientists and humanists worked hard to build their contacts with each other and with computer scientists.

Network members were equal, but some were more equal than others. There was social stratification within GRAND. Although GRAND's director worked hard to make all feel included, senior faculty had more access to GRAND's research funding, and some had more access to inside information. Those who held higher academic status within their respective fields or knew more scholars were members of more project teams and knew more scholars in other teams. They were better able to extend their new GRAND networks, often bridging network holes.

Networked team members were entrepreneurial, with mixed motives and goals. Participation is voluntary in scholarly networks. Whereas some joined for the intellectual excitement, others joined to get research grants and publishing opportunities, and others joined for the networking opportunity itself. Many motives were mixed, with junior scholars especially needing to balance the opportunities of network membership with the possible disdain of senior members of their disciplinary departments who questioned why they were diverting their energies to work with outsiders.

The GRAND network became its own brand over its five-year life span. Projects and teams also became brands if they were successful. Not only did individual scholars achieve success, but their involvement in a hot team enhanced their successful image. For example, our own NAVEL project became well known for studying GRAND itself. Brands take time to build. It helps if some of the entrepreneurs have staying power and some concentrate on cementing relations within a project.

Despite weak explicit boundaries, like preferred like. In GRAND, birds of a similar sub-disciplinary feather still flocked together because they had prior ties, shared tacit knowledge, had common reward structures, and hired each other's students.

Network members with higher centrality exchanged more advice. Their multiple links made them valuable resources. To some extent, higher status network members tended to be central network members, but others entrepreneurially made themselves central by creating new ties, reinforcing existing ones, exchanging advice, and bridging team and project boundaries.

Multiple means of communication ruled. In GRAND's case, these were in-person chats and group meetings, project wikis, e-mail, and e-mailed attachments of data analysis, draft papers, slides, and algorithms.

In a digital media world, proximity prevailed. Despite team members' geographical dispersion, those who worked in the same city—or even the same university—were in more contact. Often this was because they had known each other before and because they were able to see each other in person.

In a digital media world, in-person meetings ruled. Much networking happened at GRAND's annual meetings. In-person gatherings provided opportunities for scholars to solve complex issues not easily negotiated via digital media, to give short presentations to the entire network, and to bond over dinner and drinks.

Tacit knowledge may be as important as achieving deliverables. GRAND functioned as a network of practice. Ongoing dialogue and advice were prevalent, often with carryovers to other research that members were doing. GRAND members often served as information bridges to colleagues in their departments: It is important to know who knows who knows what.

In a network of voluntary affiliations, ties that actually did collaborative work declined. The number of active collaborators in teams lessened as specific tasks needed to be accomplished. The excitement of working in the GRAND networks initially drew many scholars into multiple work teams. As the initial glow wore off, some researchers could not work on as many projects as they had hoped to. Some regretfully realized that the parallel workflows inherent in large multidisciplinary projects would limit them to smaller teams within these projects. Yet the number of people giving advice remained stable while the number of acquaintances grew.

Densely knit coworking networks produce more output; sparsely knit advice networks acquire more knowledge. This seemingly contradictory finding is because members of densely knit networks are more cohesive and have lower coordination costs, whereas members of sparsely knit networks have access to a more diverse fund of knowledge. Both internal bonding ties and external ties are useful and often found in different team members.

Diversity has costs in creating a common culture and assessing productivity. In GRAND, computer scientists, social scientists, and humanists each meant different things when they talked about the key concept of "community," but because the word was the same, misunderstandings continued for a long time. Evaluation of productivity was hard: Humanists value books; social scientists value journal articles; computer scientists value conference papers. Reporting project achievements at the end of the

year were always challenging for social scientists and humanists who felt their achievements were not well understood.

Projects and teams die, but some relationships and tacit knowledge continue. Although GRAND has wound down, we still know who to call about what.

To what extent is our research applicable to other forms of networked work? These scholarly researchers mostly have safe, tenured (or solidly tenure-streamed) jobs, but as ambitious folks, they chase scarce and valuable prizes—striving for grants, recognition, and publication. GRAND members partially transcended the disciplinary boundaries of their departments – remnants from the industrial past – and ventured into more flexible, more fluid worlds of networking. They are hustling entrepreneurs, on and off digital media, venture capitalists of knowledge work who are seeking opportunities through grants, publications, and networks. Yet most do not recognize how much of their success is due to the structural opportunities they have had in being recruited and interconnected, because their scholarly network was a combination of structural affordances, entrepreneurial behavior, and digital media.

Scholarly networks are not only interesting in their own right; they may be a leading-edge indicator of how networked work will work. We believe our findings can inform broader domains of networked work: for both teams within large organizations and more transitory teams of self-employed workers or small businesses. As scholarly networks have become entrepreneurial, organizations are becoming networked.