From Networks and Communities to Action Nets: Understanding Internet-Induced Acts of Organizing and Connecting

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***Abstract*—**In this conceptual paper we propose a shift from away from the prevailing discourse in organization and management sciences with centers on reified structural forms and constellations of organizations rather than the highly distributed, serendipitous and fluid acts that take place in nets of multiple, fragmented contexts referred to as *action nets*. In order to do so, we first review a variety of structural concepts that has dominated the organization and management literature to date regarding networks and (collaborative) communities and argue that both concepts—through their predominant focus on structure and connections—largely overlook the organizing actions of people that precede them. Reviewing the drawbacks of these existing conceptualizations of organizations, we then leverage the concept of action nets, argue that it can provide us with a deeper understanding of contemporary Internet-induced processes of organizing, and illustrate its meaning with a vignette of online organizing. Finally, we suggest that a thorough study of action nets, rather than networks and communities, can help us understand 1) how action nets are made and remade through acts of organizing and connecting and 2) the ways of work of people who move rapidly around in virtual space.

***Keywords*—**Action nets, collaborative communities, Internet, network

I. Introduction

THE ubiquity of mobile computing has generated a worldwide integration platform for communication and collaboration that provides a space for universal compendia of ideas and actions. Consequently, new sources of innovation and collective action emerge from the actions of large undefined groups of people that operate outside conventional boundaries of organizations [1]. Examples of such processes of innovation and collective action abound: teachers and students who collectively create, modify, and translate coursework (connexions); the creation and revision of a free, web-based, collaborative multilingual encyclopedia (Wikipedia); and the collective use, modification, and redistribution of software by open source software communities (Linux, Symbian OS, Mozilla, etc.).

In an attempt to make sense of these new forms of *connecting*, scholars have primarily relied on existing conceptualizations of *organization*, in particular those of networks and communities, such as social networks, virtual communities, and so on. However, in the face of these new forms of connecting—as they take place through the Internet—our existing conceptualizations and their focus on places (organizations) and people become problematic.

More specifically, the prevailing discourse that relies on reified understandings in terms of the structure (i.e. form) of organizations is unlikely to yield the necessary insights to understand contemporary acts of organizing that are highly distributed, serendipitous and fluid and take place in nets of multiple, fragmented contexts. Therefore, we propose a shift in our discourse and our perspectives of time and space, from a discussion in terms of networks and communities to one that centers on *action nets* [2].

To study action nets means to focus on the perpetual processes of organizing and connecting as these are made and remade in the actions of people. Hence, it allows us to look at interconnected acts of organizing without adding such reifying labels as networks and communities, until it is clear what label might be put on them [2]. Therefore, in this paper we propose that rather than starting with the question of whether the concept of *network* or *collaborative community* is better able to grasp the nature of new organizational forms, we should first and foremost look at what is being done in these new acts of organizing. In other words, we build on the idea that organizations are not the source but rather the product of *organizing*.

Only when we understand the actions and interactions of people who come and go, contribute and withdraw as they move around through virtual space—i.e. when we take action nets as our starting point—can we capture the collective construction of forms of organizing, such as networks or communities. Hence, this is not to say that network or community concepts are irrelevant, but rather that these should be treated as the outcome rather than the origin of people's organizing actions.

In what follows, we will first discuss and juxtapose the concepts of networks and (collaborative) communities. Then,

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we will argue that both concepts—through their predominant focus on structure and connections—largely overlook the organizing actions of people that precede them. Next, we propose the concept of action nets, argue that it can provide us with a deeper understanding of contemporary Internet-induced processes of organizing, and try to illustrate the concept of action nets with a vignette. Finally, we conclude with a discussion of possible implications of action nets and explore further avenues for research.

II. Theoretical Background: Communities and Networks

In this section we will briefly review and juxtapose (collaborative) community and network concepts of organizations. Despite the merits in using the concepts of networks and collaborative communities for understanding contemporary organizational *structures*, their strong structural imperative [3]limits our understanding of the *processes* of acting and interacting that are constitutive of the forms of 'virtual' organizing that we aim to grasp.

A. The community and collaborative community concept

The word 'community' is derived from the Latin word *communitas*, which broadly refers to joint possession or use, fellowship or organized society (Oxford Latin Dictionary). More specifically, a community can be defined as a unified body of individuals with a common (e.g. professional) interest, characteristic or location (Webster Dictionary).

The concept of community has a long history in the social sciences. It emerged with Tönnies' [4] gemeinschaft-gesellschaft taxonomy and his focus on the social structure or physical entity of traditional communities. Around the same time, the concept was used by Durkheim [5] to describe a number of variable properties of human interaction that could be identified both in traditional and more modern forms of community. As such, Durkheim's [5] concept of community did not only focus on the structural element of communities, but also paid attention to processes of interacting and acting as these took place in communities.

Most of the recent attention for communities has focused on the positive impact of community as an organizing form for knowledge sharing and innovation [6]. However, these new forms of communities, which are highly dispersed and which increasingly rely on technology for interacting, while displaying some of the characteristics of traditional communities, depart from the gemeinschaft notion in some fundamental ways.

Rather than relying primarily on face-to-face communication and shared norms [7], new forms of communities are characterized by alternative integrative mechanisms, most importantly, the collective focus on achieving shared goals. Moreover, instead of focusing solely on the social, non-instrumental nature of community relations, it becomes increasingly clear that relations among members of modern communities can be simultaneously socially and economically valuable. Consequently, the term community no longer refers to small groups—gemeinschaften—but can be sustained by large groups of people.

We focus here on the notion of collaborative community [6] a form of community that arises when a collectivity engages cooperative, interdependent activity towards a common object. Thus, in contrast to traditional communities that evolve around shared norms and values and strong relationships within the group, the collaborative community relies on value rationality—a shared commitment to a set of ultimate goals—and collaborative interdependence—formal, participative structures that enable collaboration among peers and participation from external stakeholders.

B. The network concept

The concept of the network is a product of combining community's idea of social ties with a primary emphasis on structure [7]. A network is a social structure that consists of nodes, representing actors, and ties, which can signify different types of interdependence or relations between the actors, for instance, friendship, advice or knowledge exchange.

In contrast to the community literature, which focuses primarily on the social, cultural and affective effects of community relations, the social network literature has tended to focus on practical or material benefits that arise from network relations [8, 9]. Yet, new conceptualizations, both of communities and networks, have stressed that types of transactions are not clearly separated, rather the same actors can be a source of practical or material benefits and of socio-emotional support [7, 10].

Moreover, whereas community literature has focused largely on ongoing interactions, social network analysis has been concerned instead with short-term interactions. Nevertheless, there has been attention to more stable, enduring networks of exchange among partners (individuals or organizations) that maintain a close relationship over time.

C. Drawbacks of existing conceptualizations of organization

As shown in Table 1, our conventional conceptualizations of organization—market and hierarchy—are not well-suited for understanding or supporting goals of innovation, knowledge sharing, and learning [11]. On the other hand, the (collaborative) community and network concepts have provided better understandings by stressing the interdependent and collaborative nature of organizations. Yet, as aforementioned, we argue that these concepts also have their limitations in understanding the sort of organizing process that we aim to understand, by focusing on *structures* of relations rather than *acts* of organizing and *processes* of connecting.

Furthermore, studies on communities and networks have generally been static; hence, have neglected the dynamic nature of organizing and connecting. Especially in the face of organizing processes that occur through online platforms, our concepts should aim to capture actions and people that are in constant flux.

In what follows, we will discuss the concept of *action nets* [2] and argue that it can help us focus on actions of organizing as the starting point and networks and communities, i.e. organization, as possible products—temporary reifications.

Another similarity between action nets and community or network concepts is the assumption that organizing happens in many places at once. This means that organizing no longer requires physical presence or face-to-face communicating. Yet,

Table 1. Juxtaposing Five Organizing Principles

	Market	Hierarchy	Community (Gemeinschaft)	Collaborative Community	Network
Social mechanism:	Price competition	Authority	Trust	Value-rationality	Restricted access, Macroculture, Collective sanctions, Reputation
Fits task that are:	Independent	Dependent	Interdependent	Interdependent	Interdependent
Best supports goals of:	Flexibility	Control	Innovation, knowledge sharing, learning	Innovation, knowledge sharing, learning	Innovation, knowledge sharing, learning
What is exchanged?	Goods and services for money or barter	Obedience to authority for material and spiritual security	Favors, gifts, know-how	Know-how (tacit knowledge)	Know-how (tacit knowledge)
Reciprocity:	No reciprocity	No reciprocity	Generalized reciprocity	Generalized reciprocity	Generalized reciprocity
Nature of inter-dependence:	Horizontal	Vertical	Vertical	Collaborative (both horizontal and vertical)	Collaborative (both horizontal and vertical)
Structure of tie network:	Global, open	Local, closed	Local, closed	More global, open ties as well as stronger local ties	Global, open
Value standards:	Individualism, universalism	Collectivism, particularism	Collectivism, particularism	Both high collectivism and individualism; high particularism and universalism	Both high collectivism and individualism; high particularism and universalism
Level of commitment:	Low	Medium to high	High	High	High
Main weakness:	Strong appropriability regimes impede knowledge dissemination	Offers weak incentives for new knowledge creation and dealing with tacit knowledge	Risk of closure and insularity	Structural imperative, hence, neglecting the *process*; Static, hence, neglecting the dynamic nature of connecting	Structural imperative, hence, neglecting the *process*; Static, hence, neglecting the dynamic nature of networking

III. Action Nets

Networks and communities assume that actors and structures come first and actions come only after these two conditions have been met. An action net perspective, on the other hand, assumes that actions come first, actors second, with networks or communities possibly third, yet, only when it becomes clear what label to put on the patterns of organizing

that we are studying. The reason for actors to be second is because an action net perspective considers them to be exchangeable [2].

Action net does not disregard impermanent solid outcomes of organizing, but rather stresses that organization itself should not be the starting point of analysis. To focus on organizing is not to deny organization, but rather to view it as a temporary reification of patterns of organizing that for a moment appear to be fixed, for instance in the form of networks or communities.

What action nets share with community and network concepts is the assumption that connecting is an indispensable part of all organizing. However, it focuses on *processes* of connecting as opposed to *structures* of connections. Moreover, whereas networks and communities focus on relations between actors, action nets looks at connections between actions, which produce actors and potentially structures. Therefore, it focuses on the question of *what is being done and how this connects to other things that are being done in the same context* [2]?

whereas community and network concepts focus on connections among a stable set of actors (e.g. employees or professionals in a firm), action nets look at how actions connect and therefore allow for changing constellations of actors.

In order for actions to connect across different places and at different times, some form of translation is required [12, 13]. In other words, ideas that travel from one context to another are subject to acts of reinterpretation, modification and appropriation so as to fit them to the new milieu.

In this respect, *boundary objects* [14] play a crucial role in connecting different actions that take place in different contexts. Boundary objects refer to objects that are flexible or plastic enough to be adapted to local needs and circumstances, yet, are at the same time sufficiently robust to maintain some level of commonality to allow for the sharing (i.e. connecting) of ideas and actions. In other words, the object has different meanings in different milieus, yet, its shared representation makes it understandable across these settings.

In the context of actions nets, boundary objects are a crucial way to connect actions by embodying information and ideas as well as through establishing shared understandings, hence, creating cognitive and emotional connections respectively. Moreover, boundary objects can be a source of inspiration and mimetic behavior for similar actions conducted by different people in different places [13].

In what follows, we will illustrate this rather abstract notion of action nets with a vignette, in order to demonstrate how action nets can help us make sense of actual acts of organizing and connecting as these occur through online platforms.

An illustrative vignette of action nets

In what follows, we use the example of *Nabuur*[1] to illustrate how action nets can help us make sense of the distributed, serendipitous, and fluid processes of organizing. We only highlight a number of key principles of action nets in the Nabuur case in order to provide a concrete illustration, rather than a thorough verification of the action net concept.

Nabuur is an online volunteering platform[2] that links volunteers—called *neighbors*—with local communities—called *villages*—in Africa, Asia and Latin America. The platform aims at bringing together what they refer to as the best of old times, namely neighborly help, with the best of now, the Internet. Consequently, it provides anyone, anywhere, anytime an opportunity to upload village projects or contribute solutions.

Table 2. Juxtaposing Networks/Communities and Action Nets[3]

	Networks or Communities	Action Nets
Difference in time	Actors come first, structures and actions follow later	Actions come first, actors and potentially structures follow later
Orientation to connectedness	Structures or patterns of connections	Processes of connecting
Type of connections	Relations(connections) between actors	Relations(connections) between actions
Orientation to geographical distribution	People in organizations are distributed, hence, require no physical presence	Acts of organizing are distributed, hence, requires no physical presence

The Nabuur platform is organized through what we refer to as *waves* [1] as opposed to meetings. Meetings represent the more traditional form of gathering and are fixed in time, place, and duration. Waves, however, allow people to come and go, contribute and withdraw, whenever they feel like it. Hence, the idea of a wave assumes that the actors who act within a particular context change overtime, hence, that our focus should not be on the actor as the principle unit of analysis, but on actions. Whereas actors come and go, actions (or projects) continue or remain, whether enacted by the same or by different actors.

Consequently, it is more important to look at connections between actions (or projects) than between people. Connecting actions and projects is crucial for Nabuur as finding solutions to local issues within the context of one project can prove a valuable source of ideas and knowledge to other projects that are formed. Therefore, organizing between individual volunteers and villages means connecting actions that are separated in space and time in such a way as to form a net.

Since Nabuur encompasses projects from all over the world and different constellations of actors connect around different projects, ideas travel from one context to another and need to be translated in the process. Therefore, boundary objects play a crucial role in connecting ideas, actions, and projects. In this context, the most important boundary object is the platform itself, which acts as a forum for exchanging and storing experiences. Furthermore, this platform includes lower-level boundary objects, such as pictures, stories, and reports, which can all act as the basis for cognitive, emotional, or mimetic connections.

We view action nets as a useful concept for understanding acts of organizing as these occur through the Internet. The Nabuur platform illustrates that focusing on actions instead of actors as the core of all organizing and connecting can help us understand the ways of work of people who move rapidly from one project to another in virtual space.

IV. Discussion and Implications

With the rise of the network society, scholarly attention for network and community forms of organizing increased. Yet, today we witness an even more extreme form of organizing, in which innovation and collective action emerge from the actions of large undefined groups of people that operate outside conventional boundaries of organizations.

We submit that a thorough study of actions nets can help us make sense of these highly distributed, serendipitous and fluid processes of organizing, by virtue of its focus on acts of organizing and connecting as well as its adoption of actions as the unit of analysis. Moreover, an action net perspective can guide systems designers who aim to enhance unstructured syntheses, serendipitous discoveries, and any other forms of computer-aided tasks that involve unexplored outcomes, expect fresh design alternatives, or aim at boundary spanning results [15].

As our vignette illustrates, given that these new processes of organizing are and will likely be the source of innovations and collective action, understanding the processes of organizing that characterize these action nets can provide the basis for new *organizing* theories and methods.

V. Conclusion

Action nets form the core of Internet-induced acts of organizing and connecting. We suggest that a thorough study of action nets, rather than networks and communities, can help us understand 1) how action nets are made and remade through acts of organizing and connecting and 2) the ways of work of people who move rapidly around in virtual space. In the next iteration of this work, we will develop further the basic concepts of networks, collaborative community, and action

[1] Nabuur is an old word in Dutch meaning "neighbor"; for more information see nabuur.org

[2] Note that 'platform' does not denote a structure or form of organizing, but rather refers to a context in which acts of organizing can take place.

[3] In putting networks and communities together, we do not suggest that these concepts are the same, however, with respect to the themes that are juxtaposed in Table 2, we submit that networks and communities rely on similar assumptions.

nets, and in particular explore in depth the interrelationships among them and their implications to acts of organizing and connecting and the analysis hereof.

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