Reproducing the Firm: Routines, Networks, and Identity

Wilfred Dolfsma, Liza Chong-Simandjuntak, and Amber Geurts

Abstract: Firm survival or reproduction does not occur as a matter of course. Especially under circumstances in which uncertainty and equivocality prevail is firm reproduction potentially problematic. Uncertainty prevails when there is insufficient or inadequate information to assess a situation, equivocality when the information available is multi-interpretable. Firm routines, social networks in a firm, and an organization's identity can explain how a firm reproduces. We offer suggestions as to which of these will contribute to firm reproduction under what circumstances.

Firms exist because, jointly, people can produce goods that they cannot produce individually, or they can produce these goods much more efficiently. People collaborating in firms can do so because of the social fabric that they create and maintain inside the firm. The social fabric consists of the relations between individuals in terms of a multitude of possibly overlaying social networks (Aalbers and Dolfsma 2015), as well as of routines that grow from these social relations. The social relations can — but need not — be informal, and a plurality of social relations between individuals potentially exists inside a firm. Routines — a concept similar to the concept of institutions, but best used in a more restricted manner, perhaps referring to specific micro-level practices — must be supported by social relations. However, they can develop to become independent of the social relations that support them, especially when routines are formal.

Wilfred Dolfsma is a full professor and associate dean (teaching) at Loughborough University London (UK). Liza Chong-Simandjuntak is a lecturer at the University of Curaçao (Curaçao). Amber Geurts is a research associate at the University of Groningen (Netherlands).

Reproduction of institutions, including firms as well as the social relations and routines inside a firm that in part constitute it, is not self-evident (cf. Dolfsma, Finch and McMaster 2011). Drawing on institutional economics and social psychology, we argue that participants in a firm (individuals and groups) need a sense of purpose or identity in order to autopoietically reproduce (Luhmann [1984] 1995). In order for a firm to reproduce through actions of agents, who are not fully and constantly monitored, a sense of purpose must be shared. Without a shared purpose, the alternative would be full and constant monitoring, assumed sometimes, implicitly in principal-agent theory, but nearly impossible in practice.

Thus, a theory of the firm implies not just that social relations are present and studied and that the activities of agents are somehow parsimoniously understood using the concept of routines, but also that it is recognized that a sense of shared purpose is required among participants. Even if social relations (largely) persist between the same individuals, and even if they continue to behave in accordance with the same routines, a firm may not be reproduced if there is no organizational identity that is shared by all involved.

Relations and Networks

The division of labor inside firms makes a firm a thoroughly social entity in the sense that the individuals inside it must communicate, exchange knowledge and information, and constantly align their activities with each other. Individuals do so formally and explicitly, as well as informally and tacitly. The multiple types of relations between individuals in a firm constitute a diversity of networks inside a firm that easily becomes complex (Aalbers and Dolfsma 2015). Figure 1 illustrates the diversity and resulting complexity of even a single, relatively small network. Any social grouping, including a firm, will have multiple such networks. The number of possible, directed connections between individuals in a single network is *n!*. In our fictitious example that would be *5!*, which equals 120 possible (directed) relations.

Figure 1 is not the representation of an actual network in a firm, but Figure 2 is. Figure 2 presents the network of relations between employees who themselves chose to give advice to others (i.e., advice network) in Company Q. They are based in the research department of a financial company that is part of a large multinational company operating in the automotive industry. Part of this research team is based in its USA headquarter (non-encircled portion of Figure 2), and part of the team is located in some other location on the globe (encircled portion of Figure 2). The department-internal advice network is presented in Figure 2. We collected data for three other networks, and there are more networks to be recognized in this as well as in any other firm. The relative lack of social interactions between the individuals in this department is recognized by its senior management as a potential threat to the department's continuity and a situation in which opportunities are not created and developed.

While there are a number of possible networks in each organization, the formal workflow, the informal friendships, and the advice networks are important ones for a

firm to properly function. The first is shaped by management and involves mandated interactions and exchanges. The second is self-initiated and a source for the development of trust. The third is self-initiated as well, but it is work-focused. A firm that has a well-developed advice network, and individuals well-positioned in it, can expect to outperform other firms (Sparrowe et al. 2001). These three networks (and possibly others) are all means by which individuals exchange information and knowledge that is relevant for a firm's ongoing operation.

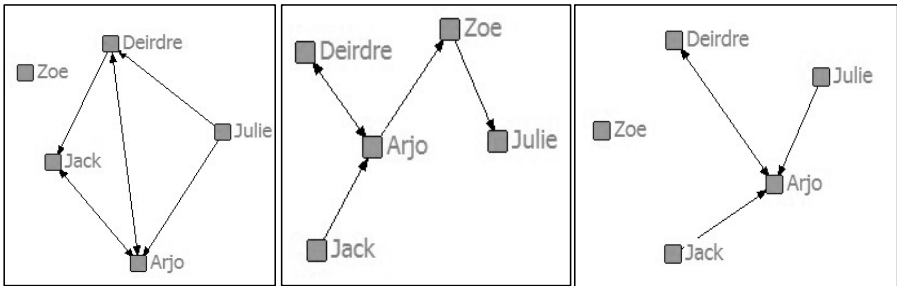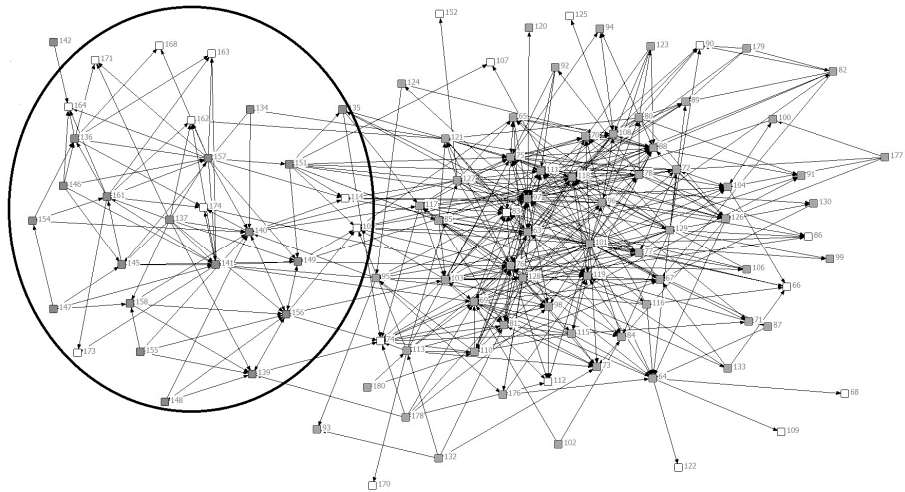**Figure 1. Fictitious Examples of a Network Between Five Individuals**

Figure 2. Advice-Network of Researchers in the Financial Arm of Company Q, a Global Player in the Automotive Industry

Routines

Much aligning of activities and sharing of knowledge is not explicitly and separately mandated by senior management, and it may occur even without the individual

employees making conscious decisions. The aligning and sharing often happens when an individual is not even in direct contact with another individual physically present. This is possible because of explicit policy about what employees should do, as well as — in a substantial number of circumstances — because of routines that emerge about expected behaviors of individual employees in a firm. Routines can differ widely among firms. Routines set expectations among all individuals involved in a practice about what is appropriate behavior to show in different circumstances, triggering an *if→then* sequence of behaviors. Routines are of the *if→then* kind, thus ensuring that individuals act without giving a situation too much forethought. Therefore, organizational routines create a status quo expectation among participants in a firm, or practice generally, which helps reproduce the firm.

As Kenneth Boulding has taught, however, each practice (or system) faces an external environment that affects it (Dolfsma and Kesting 2013), i.e., "irritates" the *if→then* routines that make the system work, as Niklas Luhmann ([1984] 1995) put it. What is needed then is a conceptualization of what might restabilize the systemic nature of a practice once it has been "irritated."

From the interactions, a plethora of routines emerge in Company Q that guide how individuals work and collaborate. Such routines, for instance, are about how to have meetings, when to have meetings, and what medium should be used for the interactions, while other are about how to organize department meetings and how to involve colleagues located elsewhere. One part of a meeting, for instance, is to have colleagues talk about an academic conference they attended (most individuals in this innovation department have a Ph.D. in econometrics, statistics, or computer science). This was a standing agenda item, in addition to updates about ongoing projects. Also, there are routines — when formalized, these boil down to department or firm policies — about sharing information within a larger group than just with a single conversation partner. The department held separate seminar-style academic meetings. The routines that emerged or were instigated thereby affect employees' private lives, as some routines determine how (very) early in the morning to have meetings with colleagues, who are physically located elsewhere, or about who can physically liaise between the two locations.

Sometimes, some established (mundane) routines may not be useful anymore, but some general or meta-routines may be invoked to search for a solution that is largely in line with the established (mundane) routines that are not challenged. Meta-routines are "mechanisms that modify existing routines and guide the search for and selection of new routines" (van Driel and Dolfsma 2009, 52). Meta-routines are invoked to modify existing routines, or search and develop new ones (Nelson and Winter 1982, 18). Invoking these may allow the firm to return to a manageable situation without resorting to a more fundamental reorientation.

Social network relations between individuals in a firm offer the means by which novel kinds of routines are sought as information spreads across individuals in an organization through the contacts maintained. Social interactions will thus stabilize a system after it had been "irritated," and, in the process, new routines emerge or existing routines are reconfirmed in the social interactions that constitute a network. Because of this function of social networks, in addition to supporting the

development of routines, social network relations help determine when (and if) some routines can possibly be abandoned without upsetting the status quo.

Sense of Purpose: Organizational Identity

Purist social network scholars contend that the shape of social networks in a firm, as in any other social grouping, determine the nature of the interactions inside them, including the routines that emerge. By contrast, we argue that something else is at play, too.

According to social identity theory, a firm's self-definition of identity reflects constituents of a shared understanding of what is central, distinctive, and enduring about an organization (Albert and Whetten 1985; Ashforth and Mael 1989). This identification influences firm actions and behavior (Ashforth, Harrison and Corley 2008; Ullrich, Wieseke and van Dick 2007). It serves a coordinating and guiding role, including at a meta-level, and provides individuals within a firm with a focal point in regard to what constitutes a legitimate action in line with the organizational identity. Stronger identification thereby motivates people to pursue beneficial outcomes for the firm in question to ensure its reproduction.

The social identity espoused in Company Q shapes the kind of meetings it has, and what is discussed in them. The research department is part of a financial company that operates at arm's length of a multi-national company (MNC) it is directed by, an MNC that has faced steep competition for decades and has had trouble positioning itself in the market. Some believed that the company did not have a unified purpose, which made it difficult for customers to understand what it was all about. From our perspective, this means that well-intended individuals employed in the MNC could undertake activities that undermined the firm's own goals. General management recently made a big and concerted effort to change this, which has altered many of the practices, interactions, and routines in the firm by producing and getting support throughout the firm for a shared organizational identity. The identity reshaped routines, sub-department positioning, and formal reporting structures. One example of this is the way in which individuals' performance was assessed, which changed to reflect team contributions as separate, explicit items. The personal development reviews changed in style, in part because different information was recorded, but this change also materialized in new documents and information technology (IT) systems being developed.

A firm's social identity informs the nature of the interactions between individuals in general, but is particularly relevant to non-trivial new situations for which no routines yet exist. A firm's social identity, reflecting the values of its members (cf. Dolfsma and Verburg 2008), thus is involved in the setting of novel routines that ultimately (help) reproduce the firm.

A Framework: Equivocality and Uncertainty

Routines, networks, and organizational identity are important for a firm to be able to reproduce. Reproduction of an institution, such as a firm, is not self-evident. The

three mechanisms play out, more or less, depending on the circumstances in which the firm finds itself. We would like to suggest a characterization of the environment under which these circumstances are likely to be most visible (Table 1). Thus, we argue that uncertainty and equivocality characterize the environment (cf. Daft and Lengel 1986) of a firm as an information-processing entity (Ocasio 1997). These two characteristics are different, albeit related, and it might be useful to discuss them as separate concepts (cf. Dolfsma 2001).

Table 1. Firm Reproduction Mechanisms in Different Circumstances

		Uncertainty	
		High	Low
Equivocality	High	Organizational identity	Social networks
	Low	Meta-routines	Routines

Mindful of the Knightian distinction between risk and *uncertainty* (Knight 1921), we define uncertainty as the situation in which either not enough or not the right kind of information is available for decision-makers to make sound decisions. If more and the right kind of information were available, however, sound decisions would be made. *Equivocality*, however, is present when information can be interpreted very differently, depending on agents' viewpoints — and additional information may not resolve the differences. Viewpoints may persist despite adding information, and further information would not resolve the confusion and lack of understanding. It is the task of organizations to reduce both uncertainty and equivocality (Daft and Lengel 1986, 555). The question is: Which mechanisms can best be used under which circumstances? We suggest that when both uncertainty and equivocality are low, established routines and working procedures can be used to maintain the firm as a going concern.

When uncertainty increases but equivocality remains low, established routines may not be useful anymore. Invoking meta-routines will allow the firm to return to a manageable situation. For Toyota, for example, such a meta-routine is that of "self-testing, trial and error," which means that any solution to a problem should come from within rather than being bought in by outside experts (van Driel and Dolfsma 2009). While Ford and Ford Credit maintain an organizational identity of "One Ford: One Team — One Plan — One Goal" (and related meta‑routines) to stress coherence and consistency, Philips promulgates "local for local" (meaning that solutions and responsibility are to be found at as low a hierarchical level as possible) (Blanken 2002, 19).

When uncertainty is low but equivocality is high, there is a need for active aligning of viewpoints using what might be called "rich media," such as face-to-face meetings between two individuals or in small groups. Interaction is rich if more ways of communication are used and the response can be immediate. Phone calls are "rich" still, as there is the potential for immediate feedback, but they are less "rich" since

they only use the medium of audio. In this case, therefore, firms draw on social networks.

When both equivocality and uncertainty are high, a firm's organizational identity is at play. The organization will find itself discussing what its purpose is and how it understands the world it inhabits, so it creates shared understandings among its employees without which it cannot function. Social networks and, to an extent, meta-routines can help establish an organizational identity. Yet, a firm's identity ensures that employees understand what is being discussed and decide broadly in line with what the (implicit) purpose of the firm is. In other words, while the meta-routines, routines, and the functioning of social networks in a firm need to be broadly in line with the firm's organizational identity in order to reduce uncertainty and equivocality, none of these mechanisms can itself be fully prescriptive of an individual's behavior (cf. Dolfsma, Finch and McMaster 2011). Yet, together, they support a shared sense of purpose that helps reproduce the firm in case of uncertainty and equivocality.

Conclusion

We expressed the expectations that (meta-)routines are set in a firm, are supported by the social network connections between individuals in that firm, and are guided by the social identity held by individuals within the firm. We argued that these expectations offer a powerful explanation about how a firm manages to reproduce even as it faces challenges of uncertainty and equivocality in its environment — two factors that generally prevent a firm's reproduction.

References

Aalbers, Rick and Wilfred Dolfsma. *Innovation Networks – Managing the Networked Firm*. London, UK: Routledge, 2015.

Albert, Stuart and David A. Whetten. "Organizational Identity." *Research in Organizational Behavior* 7 (1985): 263-295.

Ashforth, Blake E. and Fred Mael. "Social Identity Theory and the Organization." *Academy of Management Review* 14, 1 (1989): 20-39.

Ashforth, Blake E., Spencer H. Harrison and Kevin G. Corley. "Identification in Organizations: An Examination of Four Fundamental Questions." *Journal of Management* 34, 3 (2008): 325-374.

Blanken, I.J. *Een industriële wereldfederatie, (1950–1970)*. (*History of Philips Electronics*). Volume five. Zaltbommel, Europese Bibliotheek, 2002.

Daft, Richard L. and Robert H. Lengel. "Organizational Information Requirements, Media Richness and Structural Design." *Management Science* 32, 5 (1986): 554-571.

Dolfsma, Wilfred. "Metaphors of Knowledge in Economics." *Review of Social Economy* 59, 1 (2001): 71-91.

Dolfsma, Wilfred, John Finch and Robert McMaster. "Identifying Institutional Vulnerability: The Importance of Language, and System Boundaries." *Journal of Economic Issues* 45, 4 (2011): 805-818.

Dolfsma, Wilfred and Stefan Kesting. *Interdisciplinary Economics – Kenneth Boulding's Engagement with the Sciences*. London, UK: Routledge, 2013.

Dolfsma, Wilfred and Rudi Verburg. "Structure, Agency and the Role of Values in Processes of Institutional Change." *Journal of Economic Issues* 42, 4 (2008): 1031-1054.

Knight, Frank. *Risk, Uncertainty and Profit*. Boston, MA: Houghton Mifflin, 1921.

Luhmann, Niklas. *Social Systems.* Translated by John Bednarz, Jr., with Dirk Baecker. Palo Alto, CA: Stanford University Press, [1984] 1995.

Nelson, Richard R. and Sidney G. Winter. *An Evolutionary Theory of Economic Change.* Cambridge, MA: Belknap Press, 1982.

Ocasio, William. "Towards an Attention-Based View of the Firm." *Strategic Management Journal* 18 (1997): 187-206.

Sparrowe, Raymond T., Robert C. Liden, Sandy J. Wayne and Maria L. Kraimer. "Social Networks and the Performance of Individuals and Groups." *Academy of Management Journal* 44, 2 (2001): 316-325.

Ullrich, Johannes, Jan Wieseke and Rolf van Dick. "Continuity and Change in Mergers and Acquisitions: A Social Identity Case Study of a German Industrial Merger." *Journal of Management Studies* 42 (2007): 1549-1569.

Van Driel, Hugo and Wilfred Dolfsma. "Path Dependence, Initial Conditions, and Routines in Organizations: The Toyota Production System Re-examined." *Journal of Organizational Change Management* 22, 1 (2009): 49-72.