

# Connecting Across Boundaries: The Fluid-Network Organization

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The principal strategic challenge for global companies, as recently reported in a survey<sup>1</sup> of some 2,700 senior executives and managers, is the reconciliation of seemingly conflicting goals: thinking long-term while delivering short-term results, developing global scale while being locally responsive, and investing in innovation while increasing operational efficiency. In each aspect of this challenge – long-term vs. short-term results, global vs. local focus, and innovation vs. efficiency – there is a tension between two necessary but apparently opposing goals, which needs resolution.

All organizations also face another kind of tension: between separation and connection. Whether it's a question of partners in alliances, divisions in large corporations, teams in divisions, or even individuals in teams, there is always potential competition among the components, as well as varying degrees of collaboration. Managing this tension is the challenge in creating effective collaboration within and between organizations.

The solution to both kinds of tension is to convert the „either-or“ dilemma into a „both-and“ proposition by looking at the issue in a different way. Toyota, for example, did so with its breakthrough „just-in-time“ approach to manufacturing. This approach allowed Toyota to improve customer service and at the same time reduce inventory. The breakthrough stems from Toyota's discovery of the real leverage points in its process, those areas where a small change – such as reduction of changeover times – could have a major impact.

Unfortunately, traditional, top-down organizations are ill-equipped to resolve these organizational tensions. In fact, they systemically exacerbate them. Traditional organizations cause compartmentalization by breaking their innovation processes or value chains into manageable chunks. This approach prevents people from seeing how they can contribute to the whole process or the whole business: they are too focused on their own particular area of the process or chain. Furthermore, the familiar, formal solutions address only half the challenge of organizing people – what we call the „written rules.“ Attempts at organization must also address the „unwritten rules“ that are embedded in the culture.

The underlying challenge, according to the 2,700 executives surveyed, is to design organizations that are capable of refraining such issues – and coming up with innovative solutions – all the time. Such organizations would be both sufficiently decentralized to encourage innovation in all their parts, and sufficiently centralized or coordinated to adopt best practices quickly.

What would such organizations look like, and how would they function? We don't have all the answers yet, but we are beginning to understand the questions we should be addressing. Our experience with the organizational dilemmas that confront our clients, and our exploration of other organizations that have adopted interesting new approaches to resolving such dilemmas, suggests that companies that want to be both innovative and efficient at the same time need to adopt a new and different approach to organizing work and people: an approach we call a „fluid-network organization.“ Such an organization would explicitly reverse the compartmentalization that plagues traditional organizations. It would combine the „hard“ aspects of organizing people, such as decision-rights, boundaries, performance measures, and incentives, with the „soft“ aspects: values, visioning, new ways of thinking, and new means of influencing behavior.

While our concept of the fluid-network organization is still evolving, we have begun to envision its general outlines in terms of five organization-design variables;

- The „glue“ used to bind the organization
- The approach to defining „decision-rights“ and „boundaries“
- The choice of „measures“
- The „means of influencing behavior“
- The new „competencies“ required of potential leaders

Unfortunately, most efforts to improve an organization's performance address only one or two of these variables. For example, many interventions that aim to influence behavior focus on redesigning the financial incentive structure and perhaps the performance measures, but pay only lip service at best to the nature of the „glue“ or the competencies of leaders. Other interventions focus on the skills and mindsets of leaders, which the company thinks may overcome the conflicting pressures from the performance measures and reward systems. And even when the organization takes action on most if not all of the five design variables, too often these initiatives are led by different groups using widely disparate approaches. No wonder so many organization improvement programs fail to deliver on their promises. For an organization to foster innovation and efficiency

simultaneously, we believe that it must address each of these five design variables individually, as described below, and also that it must integrate its approach to all five variables.

## **The Glue**

Every organization has its „glue,“ or approach to coordinating its activities. Traditional approaches to coordination are still widespread; but we see them steadily eroding as more effective approaches gain ground.

The traditional means of coordination is supervision. In the absence of any other practical means of aligning people’s activities, supervision can be a major task, and a supervisor can be expected to coordinate only a few people – a narrow „span of control.“ In organizations of many hundreds of people, there are many supervisors, and they in turn need to be coordinated, creating a hierarchy of supervision. Today, many organizations are reducing overhead costs by flattening that hierarchy and reducing the number of supervisors. As a result, they must turn to other ways to align people’s activities.

One common way is to standardize what people are expected to produce and the way they must do it. Standardization reduces the number of variables a supervisor has to coordinate so that fewer supervisors are required. This is the engineer’s approach to managing. It is employed by both industrial engineers and reengineers, and it can be highly effective. But it can also kill innovation.

In contrast to mechanistic approaches that introduce rigidity, a more flexible glue is alignment through a shared vision and values. This kind of alignment allows the organization’s members to determine their local actions while staying on course toward their collective vision. Organizations that have used this softer glue have, over the long run, outperformed their competitors that used the harder means of coordination, because they have been able to innovate and change faster. This has been confirmed by the research of James C. Collins and Jerry I. Porras in *Built to Last; Successful Habits of Visionary Companies*.

Innovative companies are vision- and value-driven. Equally important, they make innovation a part of their vision and their operating values. Honda has grown from a small manufacturer of bicycles after the Second World War into a widely admired global automobile manufacturer by continuously fostering innovation. It was the first auto manufacturer in the world to meet the U.S. emission and fuel-efficiency standards. It was also the first Japanese manufacturer to move into a luxury line of automobiles and the first to set up an integrated manufacturing facility in the United States. Through the years of Honda’s pathbreaking growth, its employees shared one phrase for their vision of how they would work together: „Let’s gamble.“

„Something New From Everyone“ was a vision held by employees at Tata, the notable Indian manufacturer of trucks, during the years in which Tata developed many new products and manufacturing processes to successfully fend off a challenge from Japanese truck manufacturers.<sup>2</sup>

And „Freedom“ is one of the four core values of W.L. Gore and Associates, a company that has grown by applying advanced technologies to create unique products that have reached leading positions in their respective market segments: GORE-TEX® materials, implantable medical devices, ribbon cables for computers, etc.

Vision and values provide effective glue because they resolve the tension between rule-based efficiency and innovation. In every organization, efficiency requires compliance with rules. The key is to establish only the fewest possible essential rules, so that there is sufficient freedom for innovation. Crucially, aligning those rules with a shared vision and values can ensure that the rules not only matter to the people they affect, but also make a significant difference to business performance. Also, the organization must have the means to change and improve the rules as it learns. Therefore the adoption of a few simple rules, and the creation of participative councils for governance, are the keys to the success of a robust network in any form, whether it is a network of independent corporate entities such as Visa, a network of business units and service providers within a corporation such as Honda, or a looser network of teams such as at W.L. Gore and Associates.

## **Decision-Rights and Boundaries**

Even with a shared vision, people need to understand what their decision-rights will be as they participate in the process of implementing the vision. Two important aspects of these decision-rights are who has control over the deployment of which resources, and how and by whom the rules will be established that affect people and work in the organization. The answers to these questions delineate the internal boundaries of power in the organization. These questions are not as easily answered in networked organizations as they may be in traditional, hierarchical organizations. Colleagues in a network do not „report to“ each other as they do in a hierarchy. In a network, people must learn to coordinate their actions like the parts of a clock while maintaining their various realms of sovereignty. Together, they must reframe the question of „who will control?“ as „how will we govern?“

Visa is an organization that exemplifies the successful displacement of control by governance. A network of many thousands of entities all over the world, Visa includes banks, merchants, and service establishments. While they are all independent – and many are in direct competition with each other – they also adhere very rigidly to some operating procedures and standards, without which the network couldn't function reliably. The key to the creation and operation of this network, as its founder Dee Ward Hock describes it, is the process of governance. Visa has multiple boards of directors, none of which is superior or inferior to another. All interconnect. The development of the „minimum critical specifications“ for the operation of the organization was the creative task jointly undertaken by the initial members of the organization. And the ongoing process of governance ensures that these specifications are honed and adjusted as the network learns and improves its capabilities. Beyond the structures of the firm's critical specifications, Visa's member entities enjoy very broad decision-rights.

At W.L. Gore, with its vision of „Freedom,“ the decision-rights of associates (as all members of the organization are called) are determined by the „water-line“ principle. Employees envision their enterprise as a ship on which they all sail together. If someone occasionally bores an accidental hole above the ship's waterline, it's not calamitous; after all, innovative organizations must make allowances for some mistakes. A hole below the waterline, however, could sink the ship. Therefore the waterline principle states that on „any action that might seriously harm the success, the reputation, or the survival of the enterprise, the associate will consult with appropriate associates who might share the responsibility of taking this action.“

The boundaries in most organizations are defined around functions. These are the organization's centers of knowledge and competencies, which focus on getting a particular aspect of the business's operation right. In today's post-reengineering business environment, cross-boundary processes usually connect functions together to create and deliver the organization's products and/or services. However, the definition of processes does not in itself eliminate the „silo“ mentality, the „not-invented-here“ syndrome, the „them-and-us“ attitude and all those other too-familiar cultural problems that block innovation so effectively in so many companies.

The fluid-network organization addresses these problems by creating what we describe as „permeable boundaries.“ To make their formal organizational boundaries permeable, we see companies deliberately creating dense, horizontal linkages that cut across the boundaries and stimulate regular two-way communication and learning. ABB, for example, is a network of 60 companies. This network is connected by many councils, including an Executive Committee at the apex, country structures to connect all companies in a country, a board for every business area, and functional coordination teams across a business area. In addition, people are connected by exchanging visits regularly, by a staff of veteran executives who travel constantly to drive the coordination, and by ABB's worldwide Abacus information system.

We believe it is very important to include participative governance councils in a scheme of permeable boundaries. This is because the organization has to have some rules by which it does certain things the same way everywhere. Otherwise it will not foster best practice, nor will it have the means to vigorously promote its core values. To create buy-in and establish effective champions for the rules, the participative governance councils (or decision councils) should incorporate representatives of those most affected by the rules, as well as people who have experience of and expertise in making rules for the organization as a whole. These decision councils must take responsibility for rules governing the organization's core competencies, those areas in which innovation and improvement are endemic to the organization's future success. Certain companies we know, for instance, have already set up brand councils populated by both the people contributing to the brand's development and those who depend on a strong brand to do their selling job successfully. Other companies have recognized that their greatest strength is people, so they have set up human resource councils. These councils include those people whose job it is to find the best human resource development practices in other companies and to create forums for sharing best practices within their own corporation. The human resource councils also include those who need to improve the capabilities of their human assets to make their businesses more successful.

Another form of connecting across organizational boundaries, and making them more permeable, is the extensive use of project teams. Honda has used teams to link the parts of its organization for decades. Honda is divided into three separate companies, one each for development, engineering, and production-cum-selling.

The companies, which maintain separate accounts, are charged with growing Honda's knowledge and capabilities in their respective functional areas. These three organizations are the firm spines of Honda's „fan-shaped“ organization. These spines are connected by the flexible threads of ad-hoc project teams, which are required to include members from all three companies. Projects are not limited to new products or new facilities, but also include initiatives for innovation and change in the operation of the business. These Project Teams ensure that resources are combined and decision-rights are shared across the organization in a fluid way. This way of organizing is different from a traditional, rigid matrix in which the combinations of resources are predetermined in the cells of the matrix. Because change in rigid organization structures entails major upheaval, matrix organizations tend to be very inflexible.

## Measures

Most business organizations measure their performance in terms of their profits, which reflect the efficiency with which they use resources to produce income. But few organizations develop and use measures of their innovation. The exceptions, not surprisingly, are organizations that are known for producing streams of innovations, such as 3M. For instance, 3M measures the percentage of its revenues that come from new products: 30 percent from products less than four years old and 10 percent from products less than one year old. In Arthur D. Little's Global Innovation Survey<sup>3</sup>, published at the end of 1997, we see that the companies most confident of their innovation performance use as many as 11 measures to monitor and improve their innovation activities.

Some companies attempt to measure not the output of innovation, but the process itself, so that they can improve the pace of innovation. For example, Analog Devices measures the „half-life of improvement“: how long it takes a division to achieve half of its targeted improvement in a given area. This measure reflects the organization's ability to think through and implement change and innovation in any area of opportunity. 3M gives its people a generous allowance of 15 percent of their time to work on whatever projects they like. The company hopes thereby to allocate adequate resources for innovation.

A word of caution, however: determining good measures is not an easy task, and – as our innovation survey has found – many companies are lulled into a false sense of security by adopting too naive an approach. Innovation, by its nature, is a nonlinear process; cause-and-effect linkages are not obvious. The need to operate efficiently while achieving innovation further complicates the picture as far as measurement is concerned. Often the pressure to produce results in one area will produce undesirable results in another area. For companies – or partnerships – that do not understand the systemic connections, well-meant initiatives may produce undesirable outcomes. We have found „systems thinking“<sup>4</sup> a powerful tool for determining critical leverage points and appropriate measures. Companies across industries and continents are using this tool to help them see patterns in events and behaviors, to recognize their own and others' roles in generating these patterns, and hence to determine what actions will reinforce desirable outcomes while alleviating undesired effects. Applied to innovation, systems thinking can ensure that companies are measuring the right things, so that they can not only improve their own innovation performance but also anticipate and preempt competitive thrusts into the market.

## Means of Influencing Behavior

Financial incentives are not the only means of influencing behavior in organizations, though they are the means that executives most often focus on, particularly in the United States. Another powerful means is persuasive communication. This is receiving more attention now, albeit with over-emphasis on the top-down propagation aspects of communication, rather than the two-way dialogue that can lead to better understanding and commitment.

Other powerful means for influencing behavior are role-modeling and „expectancy.“ Neither is much practiced yet, although role-modeling is quite well understood – at least as a theory – by many managers. Expectancy is a subtler approach often used by great leaders and coaches. By simply expecting successful performance from people, they get people to pull themselves to succeed. As Sumant Moolgaokar, CEO of Tata, once said, „I have seen people rise to meet great challenges and realize their true potential when they believe you expect they will do it.“ Unfortunately, despite its efficacy, and despite the fact that many people happily use an expectancy approach in their personal and family lives, few people fully recognize it as a management discipline. So no explicit development has yet taken place to yield a set of management skills specifically for expectancy.

Financial incentives and downward communications do motivate compliance with stated objectives. This can be useful in the pursuit of efficiency, focus, and discipline. However, it can also stifle innovation. To enable innovation, organizations need a climate of trust that provides a „safe failing space.“ Combining the spectrum of behavior influencers – financial incentives and top-down messages, career and skills development opportunities, and role-modeling and expectancy – will yield the desired combination of efficiency and innovation, provided the signals coming from all these angles are aligned and consistent. For instance, there is little point in top management proclaiming the customer as king, if staff are denied the training and experience opportunities they need to excel in their customer-management skills. Nor will exhorting staff to collaborate in teams have much effect if people are still rewarded on their individual contributions to the business. By keeping all its signals aligned, the organization never obliges its people to analyze conflicting signals and try to determine which ones matter most. Thus the organization encourages consistency in people's behaviors and actions and builds the desired organizational culture.

## New Competencies

Managers like certainty and they like to have control. But in an increasingly networked world, neither is possible. Arun Netravali, Vice President for Research at Lucent Technologies' Bell Labs, says: „If you look at the old telephony model, there were big switches and transmission lines. Now the network is becoming a large,

global, homogenous kind of thing where communication and storage take place everywhere. It's collaboration among all the different parts that leads to the result. The complexity is so great that, at a micro level, it is impossible to know what is going on. As engineers, we don't like this kind of thing too much. But we have to tolerate ambiguity."

In a world in which managers cannot have power over the whole organization and yet want results that require the cooperation of others, they need new concepts and leadership skills. Systems thinking, to which we have referred earlier, must be a core ability of leaders in a networked world. Similarly, other concepts and tools required to move ahead toward full-fledged fluid-network organizations, as discussed above, are now available. Some of them have been around for many decades, while others are more recent. They have all proven effective individually. The task now is to understand and apply these concepts and tools congruently.

Leading companies such as Coca-Cola, Shell Oil, and British Petroleum have recognized this and are providing their managers with the new tools they need. Many of these tools are associated with the five disciplines of organizational learning, explained by Peter Senge in *The Fifth Discipline*.<sup>4</sup> The objective is to enable managers to go beyond tolerating ambiguity to understanding its root causes and discovering the high-leverage actions they can take to influence the behavior of the system. Saying it another way, the aim is to help leaders discover (*pace* Reinhold Niebuhr) „the passion to change what they can, the patience to accept what they cannot, and the wisdom to see the connections.“

<sup>1</sup> *The survey was conducted in 1997 by the International Council of Executive Development Research jointly with Arthur D. Little's School of Management; respondents were senior executives in 28 global corporations with headquarters in North America, Europe, Asia, and Australia.*

<sup>2</sup> *For a description of Tata's approach, see The Accelerating Organization: Embracing The Human Face of Change, by Arun Maira and Peter Scott-Morgan, McGraw-Hill, 1997.*

<sup>3</sup> *The Arthur D. Little Global Innovation Survey studied 669 companies in 10 industries across 23 countries in the Americas, Europe, and Asia Pacific. The survey detected a significant gap between companies' perception of the importance of innovation to their business over the next five years and their confidence in the current level of their innovation performance to meet that challenge. Measurement of a comprehensive range of indicators emerges as a key success factor for sustained innovation performance and improvement.*

<sup>4</sup> *Peter M. Senge, The Fifth Discipline, Currency Doubleday, New York, 1990.*

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