QUEEN'S UNIVERSITY IRC

Designing for Collaboration

Brenda Barker Scott
Queen's IRC Facilitator

Industrial Relations Centre (IRC)
Faculty of Arts & Science
Queen's University
Kingston, ON K7L 3N6

Tel: 613-533-6628
Fax: 613-533-6812
Email: irc@queensu.ca
Visit us at: irc.queensu.ca

Collaboration is emerging as a core organizational competence, and indeed an imperative, in today's interconnected work context. Despite the need, collaborative results often fall short of the intended ideals. A large body of research suggests that while collaboration may be necessary, it is not easy (Bryson, Crosby & Stone, Rhoten, 2003; 2006; Suddaby, Hardy, & Huy, 2011). Failed collaborative efforts have led academics to point to the many sources of collaborative inertia; organizational elements that act as barriers to collaboration. What if, instead of attempting to overcome elements of inertia, we shift our efforts to designing holistic systems that enable collaboration? Below, I argue that collaboration is a design challenge. To enable more fruitful collaboration in our organizations, we need to design for it.

If we are going to design our organizations to support collaboration, we need to know what it is. The term 'collaboration' has been adopted widely and used ubiquitously to describe multiple types of interactive forms, from simple communication, to cooperation, to full-fledged co-creation (Aboelela, Larson, Bakken, Carrasquillo, Formicola, Glied, Haas & Gebbie, 2007). Today, most academics agree that collaboration is more than communication or cooperation; it requires mutuality amongst the players, as well as joint engagement in a dynamic and evolving process, directed toward the achievement of a shared goal (Bedwell, Wildman, DiazGranados, Salzar, Kramer, and Salas, 2012). Often, deep learning exchanges amongst the players are required to facilitate the sharing and leveraging of expertise required to create novel insights (Pennington, 2008). Collaborative efforts can focus around a wide variety of outcomes including problem solving, innovation, process improvement, or enhanced quality. Those participating can take many forms including teams, networks, communities, alliances, and partnerships. Whatever the focus, collaborative efforts aim to achieve outcomes that cannot be achieved by the parties working on their own; an outcome referred to as *collaborative advantage* (Huxham & Vangen, 2005; Moss Kanter, 1994).

The shift toward collaborative work has been attributed to a myriad of interconnected trends. The first is that the nature of white-collar work is fundamentally changing. Work is becoming increasingly knowledge-based, so much so, that knowledge workers form the dominant group within the North American workforce (Becker, 2007; Martin, 2013). By nature, knowledge work tends to be both cognitively complex and collaborative (Chan, Beckman & Lawrence, 2007; Davenport, 2005; Kampschoer, Heerwagen & Powell, 2007). On the one hand, knowledge within disciplines is becoming increasingly sub-specialized, resulting in a greater depth and parceling of knowledge within specialties. On the other hand, there is a parallel need for greater collaboration across those sub-specialties (Aboelela , et al., 2007; Jeffery, 2003).

A second and related trend is the growing awareness of the interconnectivity of problems and the diverse knowledge base needed to solve them. Many societal and scientific challenges require collaborative approaches that integrate and build on diverse knowledge and perspectives

(Cummings & Kiesler, 2005; Jeffery 2003; Lyall, Bruce, Marsdem, & Meagher, 2013). As Jeffery (2003), points out, "real-world problems do not come in disciplinary-shaped boxes" (p. 539). Accordingly, the emphasis is shifting to problem-oriented work, which requires the collaborative efforts of different disciplines with distinct, yet complimentary skills (Bryson, Crosby, Stone, 2006). As but one real world example in the area of public health, Aboelela and colleagues (2007) point to the problem of smoking cessation,

> … the discovery that tobacco use was associated with high rates of lung disease was not sufficient to lead to smoking cessation; the addition of research on risk assessment, motivation, and reasoned action were all important in designing programs that have fostered the current lower rates of tobacco use (p. 330).

At the organization level, the changing nature of work is supported by a number of technological, structural, and social trends (Thomson and Perry, 2006). Technological tools enable collaborators to share information, exchange ideas and knowledge, generate and test prototypes, and track and share progress (Malone, 2004). Structurally, a wide variety of collaborative arrangements, including consortia, partnerships, alliances, and collaboratories, are forming to manage these cross boundary challenges (Rhoten, 2003). In terms of who is doing the work, the next generations of employees entering the workplace, variously known as Generation Y, Millennials, and Generation 2020, expect to be engaged in interesting, collaborative work, in which they have ample opportunities to interact and learn with their colleagues (Meister & Willyerd, 2010).

This recognition, that environmental trends are creating the need for more collaborative work, has been long known. Almost 40 years ago Eric Trist (1977), referring to the environment as a 'turbulent field,' foresaw the need for a new organizational ecology, based on participative and collaborative principles.

Trist (1977) argued that as organizational environments become increasingly interdependent, complex and uncertain, new employee skills and behaviours, based on mutuality, participative learning and adaptability, are required. As Trist explains, "Since the present world has become interdependent on a scale hitherto unknown, this has the implication that collaboration, for the individual and the organization alike, has acquired primacy over competition" (p. 270). Trist also predicted that the traditional bureaucracy, "… (g)iven its solely independent purposes, its primary competitive relations, its mechanistic and authoritarian control structure, and its tendency to debase human resources …"(p. 272) was obsolete, and in 'contradistinction' to the context required for collaborative work. For Trist, authentic collaborative behaviours needed to be built from a base of collaborative principles. In describing an organizational model apt for meeting the demands of the post industrial environment, Trist offered the following:

> They will tend to be socio-ecological rather than bureaucratic in their modes of regulation (Trist, 1976), with much local autonomy and a good deal of participation and democracy. Their parts will be mutually articulated rather than arranged in strict hierarchies. This change represents a move from a coercive towards a negotiated order, the establishment and maintenance of which depend on collaboration. (p. 273-274).

Despite the foresight of pioneers like Eric Trist (1977), most frameworks of collaboration have emphasized the role of human agency. A common focus has been to explore the skills and attributes of the collaborators, the size, mix and makeup of the collaborative units, and the problem solving and learning approaches adopted by the collaborators (Bedwell et al., 2012; Wood & Gray, 1991). From this perspective, collaboration has been understood as a set of skills that individuals acquire and hone, or a process that can be superimposed within, and across, any number of organizational contexts. Yet, when collaborative results are less than optimal, scholars have identified the many barriers to collaboration. Indeed, a wide host of contextual barriers have been identified as a source of collaborative inertia, including: inadequate communication systems, authority imbalances, insufficient funding, poor relationships, diverse goals, jurisdictional issues, and incompatible norms, to name but a few (Cummings & Kiesler, 2006; Riley, 1997).

By viewing the barriers to collaboration as independent factors to be overcome, researchers have minimized their collective impact, and largely ignored the importance of the overall organizational context. Yet, there is a growing appreciation that collaboration requires a system of norms, relationships, processes, technologies, spaces, and structures that are quite different from the ways organizations have worked in the past (Adler, Heckscher, & Prusak, 2011; Huxham & Vangen, 2000; Kezar, 2006). A gaping hole exists around our understanding of the holistic contexts that enable collaboration.

To address this gap, researchers are beginning to explore collaboration from the point of view of organizational design. As Horgen, Joroff, Porter and Schon (1999) reason, given the importance of collaborative, knowledge based work, it stands to reason that the workplace setting needs to be designed to support it:

> The new world of work should logically be reflected in new workplaces and new ways of designing them. When the organization as a whole is challenged to rethink its central mission, assumptions, and strategies, then everything about the organization is equally subject to challenge—including the spaces within which the organization operates and the manner in which those spaces are created. One positive consequence of the unstable world is the desire to depart from stereotypical work practices and organizational design. (p. 6-7)

Within the stream of OD, Mohrman, Cohen, and Mohrman (1995) were amongst to the first to systemically explore the organizational features that need to be shaped and aligned to support collaborative work. Indeed, their inspiration came from their research results, suggesting that traditional team success factors—such as group composition, attitudes and task design—were simply not enough to overcome an unsupportive organizational context. Instead, they suggested, organizations need to be redesigned to support collaborative work. Mohrman and colleagues (1995) design model, based on the work of Galbraith (1973), includes six inter-related elements that must be reshaped to support collaboration. They include how an organization's strategy is defined, how work is parcelled, and how rewards are allocated, in addition to the organization's processes and structure.

More recently, and due in large part to the surging interest in physical space as an enabler to collaborative work, scholars from the burgeoning field of organizational ecology (Becker, 2007) are combining their knowledge of the design of complex facilities with their knowledge of how individuals and teams function. Frank Becker (2004; 2007), conceptualizes the workplace as an 'ecology' in which social, technological and physical sub-systems must inter-relate. As is true of any system, no single design element is sufficient. Designing an organizational ecology requires not only the right physical space, but also mutually reinforcing technology, management and social systems. Referring to the alignment of the core design elements as 'dynamic harmony' and it's opposite as 'dynamic constraint,' Becker cautions that when some elements run into conflict with others within the ecology, the designers intentions will necessarily be thwarted. As Becker (2007) suggests,

> Thus knowing that a company has the "best" information technology and systems, progressive human resource policies and practices, or well-designed offices will not predict effective knowledge management or the long-term success of the organization. A generous compensation plan will not guarantee teamwork, collaboration, and innovation in a company where the language of space speaks about bureaucracy, rules, standardization, and uniformity. However, just as no technological system or human resource policy guarantees preferred outcomes, neither can good design, by itself (p. 47).

In all, Becker (2007) suggests that workplace designers must carefully consider the ecological whole of the organization, while designing the many parts. However, cautions Becker, responsibility for each element of the organizational ecology often lies within distinct and competing factions. Information technology leaders tend to focus on technology tools and virtual spaces. Human resources leaders are more likely to emphasize job design, rewards and incentive programs. Facilities designers tend to the physical layout of the work environment. Yet, according to Becker, no single approach, by itself, can create the dynamic harmony needed to create a healthy and productive organizational ecology.

In a book entitled *Excellence by Design*, Horgen and colleagues (1999) offer a holistic model of workplace design that depends on the internal capability of four mutually reinforcing design elements – physical, organizational, technological and financial. Workplace design is understood to be the messy, uneven and continuous process of shaping these four inter-related dimensions to support the organization's core work. They define 'dynamic coherence' as the evolving match between the organization's changing work needs and the four elements of workplace design. Initiatives in one area, for example, new technology, create pressure for the development of the other areas. The idea is to surface and use the inconsistencies amongst the spatial, organizational, financial and technical elements to trigger transformation in other areas. Approaching workplace design through the lens of the four interdependent elements, suggest the authors, opens up the possibility for solutions that otherwise would not be considered. Core to Horgen et al.'s approach, is the active engagement of employees representing the financial, spatial, technical, and organizational disciplines, to knit together an otherwise fragmented and incomplete approach to organizational design.

Kampschoer et al., (2007) in their work with project WorkPlace 20.20[1], employ a framework of workplace design that explores linkages amongst the business goals, the physical environment, and resultant work behaviors. The authors employ a balanced score card approach to understanding the organizational needs according to financial, business process, customer and employee goals. Goals within each area are then linked to supportive workplace features, including new behaviours, work processes and the physical setting. Once again, as with Horgen et al.'s (1999) approach, the authors stress the importance of stakeholder involvement, discovery and learning in the process of workplace making. The authors understand organizational design to be both an art and a science, whereby a delicate balance between workplace goals, processes and physical space lead to enhanced organizational performance.

What can we make of this? In addition to understanding collaboration as a process, a skill and a relationship, academics and practitioners are beginning to explore collaboration as system; an ecology of norms, values, processes, spaces, roles, technologies and goals. Four frameworks for understanding the collaborative eco-system are offered. Each framework conceptualizes the workplace design elements in distinct ways. While Becker (2007) and Horgen et al., (1999) emphasize the importance of physical space and technology, Mohrman et al., (1995) emphasize the importance of strategy, structure, rewards and processes. It seems that each framework provides an important perspective, yet no one framework captures the whole. No doubt, new frameworks will emerge, as practitioners experiment with new collaborative forms and scholars attempt to study

[1] WorkPlace 20.20 is a collaborative research effort linking federal agencies in Canada and the U.S, academics from five major universities, and design practitioners in the study of how organizational design can support knowledge work.

them. For now, the basic learning is this: if we want collaborative behaviours, we need to design collaborative systems.

About the Author

Brenda Barker Scott has extensive experience in all aspects of organizational development acquired over a twenty-year career in teaching and consulting. Brenda is an instructor on a number of the Queen's IRC programs including Building Smart Teams, HR Decision Making, Organization Development Foundations, and Organizational Design. She is a graduate of Queen's University, and the co-author of *Building Smart Teams: A Roadmap to High Performance*.

References

Aboelela, S., Larson, E., Bakken, S., Carrasquillo, O., Formicola, A., Glied, S. A., Haas, J., & Gebbie, K. (2007). Defining interdisciplinary research: Conclusions from a critical review of the literature. *Health Services Research*, 42, p. 329-346

Adler, P., Heckscher, C., & Prusak, L. (2011). Building a collaborative enterprise. Four keys to creating a culture of trust and teamwork. *Harvard Business Review,* 89 (7-8), p. 94-101.

Becker, F. (2007). Organizational ecology and knowledge networks. *California Management Review,* 49(2), p. 42-61.

Becker, F. (2004). *Offices that work: Workspace strategies that add value and improve performance.* San Francisco, CA: Jossey-Bass.

Bedwell, W., Wildman, J., DiazGranados, D., Salazar, M., Kramer, W., Salas, E. (2012). Collaboration at work: An integrative multilevel conceptualization. Human Resource Management Review. 22 p. 128-145.

Bryson, J., Crosby, B., & Stone, M. (2006). The design and implementation of cross-sector collaborations: Propositions from the literature. *Public Administration Review*, 66(1), p. 44-55.

Chan, J., Beckman, S., & Lawrence, P. (2007). Workplace design: a new managerial imperative. *California Management Review,* 49 (2) p. 6-22.

Cummings, J., & Kiesler, S. (2005). Collaborative research across disciplinary and organizational boundaries. Social Studies of Science, 35 (5), p. 703-722.

Davenport, T. (2005) Thinking for a living: how to get better performance and results from knowledge workers. Harvard Business School Publishing, Boston.

Gailbraith, J. (1973). Designing complex organizations. Addison-Wesley.

Horgen, T., Joroff, M., Porter, W., & and Schon, D. (1999). *Excellence by design: Transforming workplace and work practice*, New York, NY: John Wiley & Sons, Inc.

Huxham, C., & Vangen, S. (Eds.). (2005). Managing to collaborate: The theory and practice of collaborative advantage. London, England: Routledge.

Jeffery, P. (2003). Smoothing the waters. Observations on the process of cross-disciplinary research collaboration. *Social Studies of Science***.** 33, (4). p. 539-562.

Kampschoer, K., Heerwagen, J., & Powel, K. (2007). Creating and testing workplace strategy. *California Management Review,* 49 (2) p. 119-137.

Kanter, R. (1994). Collaborative advantage: The art of alliances. *Harvard Business Review,* 72 (4), p. 96–108.

Kezar, A. (2006). Redesigning for collaboration in learning initiatives: An examination of four highly collaborative campuses. *The Journal of Higher Education*, 77 (5) p. 804-838.

Lyall, C., Bruce, A., Marsden, W. and Meagher, L. (2013) The role of funding agencies in creating interdisciplinary knowledge. *Science and Public Policy* 40: 62-71

Malone, T. (2004). The future of work. How the new order of business will shape your organization, your management style, and your life. Harvard Business School Press.

Martin, R. (2013). Rethinking the decision factory. *Harvard Business Review*, October. Retrieved from https://cb.hbsp.harvard.edu/cbmp/product/R1310E-PDF-ENG.

Meister, J, & Willyerd, K. (2010). The 2020 workplace: How innovative companies attract, develop, and keep tomorrow's employees today. Harper Business: New York.

Mohrman, S., Cohen, S., & Mohrman, A. (1995). Designing the team-based organization. New forms for knowledge work. Jossey Bass.

Pennington, D. (2008). Cross-disciplinary collaboration and learning. *Ecology and Society* 13(2): 8. Retrieved from http://www.ecologyandsociety.org/vol13/iss2/art8

Riley, R. (1997). Working together: inter professional collaboration. *Journal of Child Healthcare*. 1(4), p. 191-194.

Rhoten, D. (2003). Final report: a multi-method analysis of the social and technical conditions for interdisciplinary collaboration. The Hybrid Vigor Institute, San Francisco, California, USA.

Rittel, H., and M. Webber. (1973). Dilemmas in a general theory of planning. Policy

Suddaby, R., Hardy, C., & Huy, G. (2011). Where are the new theories of organization? *Academy of Management Review* 36, (2). p. 236-246

Thomson, A., & Perry, J. (2006). Collaboration processes: Inside the black box. *Public Administration Review*, 66 (1), p. 20–32.

Trist, E., & Bamforth, K. (1951). Some social and psychological consequences of the longwall method of coal-getting. *Human Relations*, 4, p. 3–38.

Trist, E. (1977). Collaboration in work settings: A personal perspective. *The Journal of Applied Behavioral Science,* 13 (3), p. 268-278.

Wood, D., & Gray, B. (1991). Toward a comprehensive theory of collaboration. Journal of Applied Behavioral Science, 27(2), p. 139–162.

Industrial Relations Centre (IRC)
Queen's University
Kingston, ON K7L 3N6
irc.queensu.ca