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COMPLEX COLLABORATIONS IN THE NEW GLOBAL ECONOMY

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EXECUTIVE SUMMARY

Traditional forms of collaboration -- between individuals and within teams -- are not sufficient for competing effectively in the new, demanding global business environment. Organizations must be able to gain rapid access to knowledge, competencies and resources regardless of where they exist – geographically, organizationally and functionally – to meet constantly changing conditions and demands. They need to go further to find the pieces, pull them together, and find the best fit for their needs at the best price. In short, fluid, flexible, and easily reconfigureable collaborative forms – i.e., more complex collaborations – are needed to address the challenges of a complex world. We introduce an action model for successful complex collaboration and illustrate this model with two case studies. Our action model has five major steps: 1) Proactively structure the collaborative work to be done; 2) Develop collaborative relationships; 3) Design and implement collaborative processes and norms; 4) Learn from collaborative experiences; and 5) Develop an organization that supports complex collaboration. Our goal is to offer practical advice and actionable recommendations that can help managers create, facilitate and support complex collaborations of all kinds.

Traditional forms of collaboration are not sufficient for competing effectively in the new, more demanding global business environment. Organizations must be able to gain rapid access to knowledge, competencies and resources regardless of where they exist – geographically, organizationally and functionally. In order to accomplish this they need collaborative forms that are not like those of years past – individuals of similar background, located in the same place, interacting face-to-face, with clear loyalties and interests, operating under the umbrella of a single organization. The new collaborative forms can be strategic partnerships among multiple organizations with similar stakes in the outcome of the project. Or they may involve virtual collaborations among people and teams working in different parts of the world. What makes these collaborations so complex are the number of people involved, the multiple organizational contexts within which they must function, and the potential cultural and geographical distances they must overcome.

To perform effectively and remain competitive in the new global economy, organizations will have to learn how to design new collaborative forms and deal effectively with the many challenges these new collaborative opportunities present. Some of these challenges involve sorting out the roles, responsibilities, and expectations of multiple partners, building the relationships to support collaborative work, and communicating and coordinating tasks across geographic and cultural boundaries.

The purpose of this article is to identify how these challenges can be addressed. We will introduce an action model for successful complex collaborations and illustrate this model with two case studies. We will also identify several best practices for successful collaboration. Our goal is to offer practical advice and actionable recommendations that can help create, facilitate and support complex collaborations of all kinds.

The first case study is an interorganizational collaboration. It examines two projects for developing training programs for construction equipment service technicians involving a consortium among John Deere, several distributorships of John Deere construction equipment, and two community colleges. The second case presents an international collaboration involving two new product development efforts from the Radica Games group, a leading developer and manufacturer of handheld electronic games and video game controllers. We collected data for the cases by conducting interviews with 14 to 20 key participants and stakeholders for each of the projects. Most of these interviews were conducted face-to-face including some in Hong Kong and China for the Radica case.

OVERVIEW OF ACTION FRAMEWORK

Our action framework consists of five major steps, as summarized in Figure 1.

Insert Figure 1 About Here

We offer this framework with some reservations, since any framework simplifies reality. However, we believe that successful complex collaboration involves each of these steps. This framework is based on a simple tautology and premise: complex collaborations are complex; therefore, many things can go wrong. Misunderstandings about roles, lack of goal alignment, poor interpersonal skills, low trust, ineffective communication, turf battles, poor integration of tasks and people, and organizational rigidity can derail a collaborative effort. A complex collaboration needs to overcome these barriers in order to be effective.

Successful complex collaborations involve all of these phases, usually in an iterative cycle as depicted in Figure 1. Early in the process, work is structured (step 1) and collaborative relationships are developed (step 2). Collaborative processes and norms are designed and implemented during the collaborative effort (step 3). To provide a foundation for future collaborations, it is important to learn from the collaborative effort by capturing and documenting learnings at key milestones or towards the end of the project (step 4). This in turn will help develop organizations that support complex collaborations in general and make it easier to conduct future projects (step 5). Although we present each of the steps sequentially, organizations often do more than one step at a time. The important point is that all steps need to be addressed; if key steps are skipped, problems are likely to result.

Before moving on, we need to note that the primary focus of our action framework is on how to execute collaborative projects, not on changing the organization. That is why "proactively structuring the collaborative work to be done" is the first step in our framework, not "developing an organization that supports complex collaboration." However, as noted in steps 4 and 5 above, collaborative projects should also be designed to generate learnings that can be used to develop more supportive organizations. A preexisting supportive culture can help set the stage for a successful project, as our second case will aptly demonstrate, but that may not be the situation when the project is initiated. But organizations have to start somewhere, and doing it via successful projects is a good place to begin.

First, we will present our John Deere case, which provides examples of best practices from steps one through three. We will then discuss the Radica case, which builds on the best practices already discussed and provides several additional examples from steps three and five. The cases do not fully illustrate all the steps in our action model, in particular, step four, learning

from collaborative experiences. In the concluding section, we will draw implications beyond the case material to discuss what organizations can do to learn from their complex collaborations so that they can develop a capability for supporting future projects and make complex collaboration an ongoing source for innovation, performance and growth.

ACROSS ORGANIZATIONS: THE JOHN DEERE-RDO EQUIPMENT CASE

The case involves a collaboration among several different organizations, including the John Deere Co. and RDO Equipment Co. John Deere is the world's leading manufacturer of agricultural equipment, and one of the leaders in the manufacture of construction equipment. RDO operates one of the largest networks of John Deere construction and agricultural equipment dealerships in North America with over 40 stores in nine states. The case also involves several other distributors of John Deere equipment and two community-technical colleges in two different projects in different regions of the country.

The purpose of the collaboration was to address the shortage of service technicians in the construction equipment industry, a problem that was of great concern throughout the industry in the late 1990s when the project began. The shortage was the result of two circumstances – the greater use of more construction equipment in a growing economy and the preference of young people for "sexier" careers with more cachet and appeal (e.g., in computers and internet applications).

Because of this labor shortage, the Construction and Forestry Equipment Division of the John Deere Co. initiated the Construction and Forestry Equipment Technician (CF Tech) program in early 1999 to develop training programs for construction equipment service technicians in various regions of the country where the needs were particularly acute. The CF

Tech program is a vehicle for creating partnerships between John Deere, their dealerships, and two year community -technical colleges to develop these training programs.

Two projects are included in this case, both involving the development of two year degree programs, one at Central Lakes College (CLC) in Minnesota and a similar one at Navarro College in Texas. A number of issues emerged in these projects. How they dealt with them provide valuable lessons.

Step 1: Proactively Structure Collaborative Work

Any interorganizational collaboration is an uncertain and complex undertaking. The tasks may be new and some of the people executing the tasks may be unfamiliar. No one will be able to rely on how they typically do the work in their organization. The project structure needs to be created to fit the requirements of the collaborative task. Before any work begins, each collaborating partner must be committed to a shared goal. The shared goal for John Deere, its distributorships, and the community colleges is to expand the pool of well-trained John Deere construction equipment service technicians. Of course the reasons why each organization was committed to this goal varied: the colleges wanted to increase student enrollment, John Deere wanted to make money by selling equipment, and the dealerships wanted to make money by both selling and servicing the equipment. Fortunately, they could all achieve their individual goals by working together to achieve a shared goal. Thus, their goals were aligned.

Early in both projects, the key participants from John Deere, the distributorships, and the community colleges developed a plan. One of their first steps was to create an "implementation team" (this is our expression; they never identified themselves as such) and an "advisory committee." The implementation team consisted of a core group of participants from each of the

organizations who were responsible for the day-to-day tasks involved in the development and implementation of the program. The advisory committee was broader and included the members of the implementation team. It was responsible for providing advice on the development of the training program, recruiting students, and providing equipment, tools, and parts the students would work with in the hands-on portion of their training.

One of the first activities of the implementation team was to define the roles and responsibilities of each organization, as well as the tasks that needed to be done to keep the project moving forward. There were a few problems early in both projects, however, that suggested some important pieces were overlooked. In the Navarro College project, for example, the large number of collaborating organizations created initial confusion on the part of some of the participants about who was whom, which organizations they represented, and their particular roles in the project.

These issues suggest that formal agreements or contracts which clarify roles, responsibilities, expectations and relationships should be developed as early as possible in the project. We believe that these agreements and contracts are a key success factor in collaborations involving multiple organizations. The participants in these projects did create a number of documents which at least partially served these purposes – e.g., letters of agreement accompanying proposals seeking outside funding, and program brochures that outlined the different responsibilities of the different organizations. But as thoughtful and thorough as these documents were, both projects would have benefited from a more formal agreement developed by all of the parties at the earliest stages of the project. The proposals and brochures were essentially developed to meet particular issues or needs, not in anticipation of potential problems. If they were available at the outset of the projects, they may have been able to prevent some of

the early problems that initially developed. For example, a more formal document specifically outlining all the players and their roles, responsibilities, and relationships may have reduced some of the initial confusion experienced by the Navarro College participants.

Explicit agreements, contracts, and formal understandings are especially important for interorganizational collaborations where the sensitive issues of competition and confidentiality can inhibit the development of trust and the open exchange of information. It is also important for collaborators to be proactive in developing mutual understandings about respecting each others boundaries. If collaborators rely on external circumstances and requirements, such as funding agencies, to shape formal agreements, these agreements may include only those issues that are important to the external parties or agencies and miss issues that may be more critical to the projects'success. Instead the collaborators should deal with these issues early in the project's history. That way they can ensure that the issues that are most important to them are addressed and not left to be dealt with later, after they erupt and possibly threaten the project.

Step 2: Develop Collaborative Relationships

No interorganizational collaboration can be successful if the critical people from each organization do not develop effective collaborative relationships with one another. Not surprisingly, the strong collaborative relationships among key people from each organization were a strong success factor in these projects. What is perhaps less obvious is the actions that organizations should take to help people build strong collaborative relationships. Organizations should select people with strong interpersonal skills, particularly "lateral skills" -- the ability to work with others different than themselves -- for key linking roles. They should support and encourage the formation of close collaborative relationships among individuals across

collaborating organizations that are based on roles, interests, and personalities. Finally, organizations should reinforce the development of strong collaborative relationships through the shared values and norms of their cultures.

The key people from John Deere, its distributors, and the community colleges developed strong collaborative relationships which enabled them to weather several challenges that at times slowed down or threatened the success of both projects. One of the most serious challenges in the CLC project, the first of the two projects to be initiated, was precipitated by the resignation of the first Nortrax representative to the project. Nortrax was slow to replace him, raising concerns on the part of the other team members about Nortax's continued commitment to the project. This was a particularly difficult situation for Jan from RDO who now had no one to work with at Nortrax to deal with the critically important tasks that were the primary responsibility of the two dealerships involved in the project – e.g., supplying equipment and parts, recruiting students, etc. As Jan noted in one of our interviews, she didn't "know the company and had no person to contact…no relationship with a representative from Nortrax to help resolve the issues….As a result, all of the little issues were magnified." The bottom line was that the lack of a relationship with a trusted and familiar contact person at Nortrax, created a cloud of uncertainty about Nortrax's commitment to the project. More important, it threatened the very assumptions upon which the project was based – i.e., the different but essential contributions of the different organizations involved in the project.

What ultimately settled the waters was the appointment of Darrell, Nortrax's HR manager, to represent the company on the project team. His appointment eliminated the uncertainty about Nortrax's commitment to the project among the other team members, especially Jan. Darrell got along well with everyone and the chemistry among all of the team

members was clearly enhanced. With his addition to the team, they began to regain the momentum they had lost as a result of the uncertainties of the preceding months. Perhaps most important, this appointment gave Jan someone to work with to help resolve any issues that might come up involving the two distributorships.

Enable "collaborative pairs" to emerge. The pairing of Jan-Darrell was only one of the collaborative relationships that were critical to the success of both projects. Jan from RDO and Barb from CLC also played key linking roles and co-led the project in its earliest stages. The ongoing relationship between them was an important factor in the success of the project. Aside from their common academic backgrounds, they seemed to have little else in common. Their personalities were very different. According to Jan, "it's the cover of Ms. vs. the good Lutheran Mom" (Jan vs Barb, respectively). Despite these differences, their mutual commitment to the success of the project helped them bond, as did their shared experiences and tasks. They talked most days about the project-related issues each had to deal with in their respective organizations. Through their sharing of experiences and the challenges of the project, they quickly developed mutual trust.

Similar relationships were critical to the success of the Navarro College project. As was noted earlier, there were significantly more dealerships involved in this project, so the participants from Navarro College initially had considerable difficulty sorting out the roles of the other participants. For example, it took them several weeks before they realized that Jan worked for RDO, not John Deere. In addition, Steve from Navarro College was often confused as to whom he should talk to get the equipment and parts needed for the students.

As in the CLC project, pairings between key individuals seemed to emerge naturally to address particular needs. These collaborative pairs were clearly critical to the success of both

projects and may be a critical element in most, if not all complex collaborations among organizations. These relationships enable individuals to come together to accomplish tasks especially suitable to each collaborating pair. In effect, these collaborative pairings represent a meshing of task and role - related counterparts in the different collaborating organizations. Or in the words of Steve from Navarro College, nicknamed Dr. Deere because of his prior experience as a diesel mechanic, "its easier to deal with a gearhead if you are a gearhead; the gears mesh."

Organizations can create the conditions to increase the likelihood that collaborative pairings will emerge. In any interorganizational collaboration, key linking roles should be identified for the efforts that need to be integrated across organizations. The people selected for these linking roles should have the skills needed to work with others different than themselves. They need to have an understanding of how efforts should be integrated across companies. After people are selected, they should be provided with opportunities to develop collaborative relationships, via, for example, face-to-face meetings in the early stages of a project.

Select people with lateral skills for key integrating roles. Who are the "right" people for these integrating roles? What are the characteristics and qualities organizations can look for to select them? When asked to describe the factors that made their projects successful, almost all of our interviewees described the personal qualities of those who were most actively involved in the collaboration: for example, they possessed "a good sense of humor," "were easy-going," demonstrated "enthusiasm," and had a "positive attitude." In short, most if not all of the participants in both projects had good interpersonal skills.

The key people in the integrating roles also possessed "laterality," one of the most important components of good interpersonal skills. We believe that this quality is critical for the success of any complex collaboration. In our earlier book, "Teams and Technology" we describe

it as the ability "to work effectively with people of different functional backgrounds, work experiences, knowledge bases and skills." In cross-organizational collaborations, people lack hierarchical authority over their counterparts, making lateral skills particularly important. In order to be able to influence without power, people need to demonstrate credibility, communicate effectively, express empathy, and be open to differences.

Step 3: Design and Implement Collaborative Processes and Norms

Possibly the most compelling and noteworthy feature of both John Deere/RDO projects is that the collaborative process, the day-to-day interpersonal interactions necessary to carry out tasks and accomplish goals, were amicable and productive despite the difficult challenges the team members sometimes had to deal with. The processes they followed balanced a clear task focus with a sense of playfulness and fun. The monthly review meetings ran efficiently, with team members focused on the tasks that needed to get done. Counterparts working on the same task spoke frequently between meetings and work proceeded as planned. By all reports the members of the team worked very well together. Relationships among the team members were warm and congenial and, as noted by one interviewee, humor played a significant part in "how we do business and helps us get through the rough spots."

The team's use of humor is illustrated by an important meeting early in the project. John Deere organized a Product Support Expo in December 1999 for all of the participants involved in the various CF Tech programs around the country. This was an early opportunity for the members of the team to meet and build relationships, which sometimes happened in unplanned and unpredictable ways. During a meeting one evening in Jan's room a malfunctioning toilet seemed to inexplicably flush every time Jan was going to speak. They all found this to be very

funny (you had to be there). It served as an effective icebreaker for the meeting and created a sense of playfulness that helped keep everyone involved and the meetings moving forward. This sense of playfulness lasted well beyond this particular meeting and the John Deere Expo and served as a touchstone which they could revisit for a laugh at other occasions throughout the remainder of the project.

The John Deere/RDO projects were characterized by a strong task focus, strong personal relationships, high levels of trust, and a sense of fun and playfulness**.** The sense of fun emerged spontaneously from who they are, rather than from anything done consciously to produce it. The lesson from this case, which will be reinforced by the next case, is that successful collaborations begin with people. All else is secondary.

ACROSS DISTANCE, TIME, AND CULTURE:

THE RADICA GAMES GROUP, INC. CASE

In contrast to the "old economy" flavor of the projects in the first case, our second case from the Radica Games Group is "new economy" in its history, structure, process and product. The Radica Games Group is one of the world's leading manufacturers of electronic games including handheld and tabletop games, high tech toys, and video game controllers and peripherals. The company started out as a small operation in Hong Kong in the early 1980s, manufacturing gaming devices for the Las Vegas market. It later expanded its product line to include electronic versions of these games when the company opened up a factory in Southern China in 1991 and a product design and marketing operation in the US in 1992. The business grew rapidly from that point on and soon became the leading supplier of casino type electronic

games in the US with games such as Video Poker and Video Black Jack. Anticipating a decline in the market for casino-style games, Radica began to diversify its product line in 1995 to include other electronic handheld and table top games.

The product that eventually transformed the company from a small, struggling operation into an industry leader was the Bass Fishing Game, an electronic handheld games category that uses motion-sensing technology to simulate the actual kinesthetic and tactile experience of fishing. According to their web site "the product started an industry trend in creating virtual reality games where the product provides the feel of the real sport." Their slogan aptly conveys the intrinsic role of virtual motion in their games, "Get real…get Radica."

In 1999 Radica acquired Leda Media Products, a manufacturer of video game controllers in the UK, so that they could enter this rapidly expanding market. Controllers are handheld devices that plug into the video game consoles and are the means by which users play the game. Radica is now producing game controllers for the Sony PlayStation, Nintendo GameCube, and Microsoft Xbox.

The projects that were responsible for developing the Bass Fishing Game in the mid 1990's and the video game controllers several years later are the focus of this case. How they dealt with the challenges of great distance, different time zones, and dramatically diverse cultures and languages illustrate a number of critical success factors for complex collaboration.

An organization's history, context, and culture can help set the stage for successful projects. That is the case for Radica. As we will soon see, the organizational culture established in the early years of the company laid a foundation for the two collaborative projects that are the centerpiece of this case. So, we begin with describing how Radica's culture was built.

Setting the Foundation: Build a Collaborative Culture

Two employees in the earliest years of the company laid the foundations for Radica's future success. One was Bob Davids, a former industrial design engineer and casino manager who grew up in the vibrant custom car culture of Los Angeles in the early 1960s. He was initially a consultant to Radica in the early 1980s and became CEO in 1988. The other was S. W. Lam, a young industrial engineer from Hong Kong who joined the company in 1985. Lam grew up in Hong Kong and studied industrial and production engineering. The rich stew of Western and Asian culture that characterized Hong Kong during Lam's formative years led to an abiding interest in the blending of Western and Asian values and to ideas for creating business organizations that can take advantage of the best that each culture has to offer.

Their different backgrounds, complementary values and the especially strong relationship that developed between them in the early years of the company helped them transform the culture of the organization to combine the best of both worlds. What emerged from their efforts was a pervasive sense of goodwill and mutual respect for the perspectives and contributions of all of the cultures and sites represented within the company. "Mutual respect" at Radica means that all individuals and groups respect each other's expertise, input and boundaries. Everyone knows that it is okay to push back and offer dissenting views, and they also understand that these views have to be taken seriously. In addition, they know when to stop, and when to trust the experience and expertise of others and accept their considered judgment.

Another dimension of their culture which reflects the nature of the business they are in is a bias for action with an uncompromising focus on getting the product out the door. In the toy industry, where success or failure hinges on shipping the product out by a certain day, the competitive imperative is to keep things moving forward. As CEO Feely notes, "Christmas only

comes once a year." This bias for action means that quick decisions must be made to keep things on schedule. As a result, some views and considerations often get short shrift. These two aspects of their culture might at first glance seem incompatible, but upon closer examination, it is clear that they form a dynamic balance, a yin and yang, that has enabled Radica to develop and grow year after year. The other side of the cultural coin, the "people dimension" is what makes this bias for action work. They balance their intense focus on getting the product out the door under severe time pressures by trusting the best intentions and efforts of everyone involved and tolerating the inevitable mistakes that sometimes result.

How did Bob and Lam develop this culture? Unlike many attempts at culture building, they did not limit themselves to statements and homilies about the desired culture and how people should act to reflect its values and norms. They worked hard to change the organization in ways that reflected their values – e.g., by empowering workers in Radica's factory. They visibly modeled the behavior in the ways they dealt with each other and with others throughout the organization. When others behaved in ways that were inconsistent with the new culture they were trying to develop, they heard about it. Feedback and coaching were instrumental to their strategy for culture change.

Step 1: Proactively Structure Collaborative Work

Similar to the John Deere/RDO projects, Radica proactively structured their collaborative work. In Radica's case, however, the degree of structuring was significantly greater, reflecting the nature and complexity of their task – i.e., developing new products and collaborating across great distance, different time zones, and diverse cultures.

One of the first and most important steps was to partition the process into the key tasks, broadly defined, and assign each task to a team located at the regional site that is best suited to execute that task. In the Bass Fishing Game project, for example, the first task in the process was ideation and product design. This included deciding on the features of the game, the game flow (i.e., the sequence of decisions and actions that make up the total game experience), and its look and feel. This task was assigned to the product design group at Radica's Dallas office. This was also consistent with Bob's maxim that "design should be done close to the market." Since fishing is the second most popular participant sport in the US, Radica management assumed that the US would be the largest market for the game.

The second task, the software engineering and electromechanical design of the game itself, was assigned to the engineers in Hong Kong because of their expertise in engineering design. Bob was also impressed by the work ethic, attention to detail, and focus on costs that characterized most of the Hong Kong engineers he had come in contact with during Radica's early years in the city. The manufacturing was done in the factory in China. The primary reason was the significantly lower labor costs in China, but Bob was also interested in taking advantage of the Chinese "creativity in tooling and production," especially in how they were able to translate this creativity into efficient, low cost manufacturing. Thus, they differentiated the tasks involved in the development process -- product design, engineering, and manufacturing -- and created teams of people with the expertise to perform each of the tasks. In other words, they co-located those who were most reciprocally interdependent, a basic principle of work design.

Of course, this task differentiation, as well as the cultural, temporal, and geographic differences associated with these different tasks, required them to pay special attention to the challenges of integrating these tasks across sites. With the acquisition of LMP in the UK, the

challenges of integration went up another notch. As CEO Pat Feely wryly notes about the larger, more complex, and even more widely dispersed company, “the sun never sets on Radica.” The strong supportive and task-focused culture that we described earlier was clearly an important part of their efforts to pull all of these pieces together. The relationships and collaborative processes among the key players also played an essential role in their successful integration of tasks across the boundaries of time, distance and culture.

Step 2: Develop Collaborative Relationships

The critical success factors are very similar to the ones from the John Deere/RDO case. Successful complex collaborations require strong relationships among the "right" people. The right people are people with good interpersonal skills, particularly lateral skills, who are in roles that have significant impact on the collaboration, especially those roles fulfilling essential integrative functions.

Bob clearly exhibited lateral skills in the values he instilled throughout the company and the way he dealt with the employees in Hong Kong and China. He also recognized that potential in Lam. From their early collaboration Bob recognized that Lam had "one foot in each culture" and could therefore act as a “crossover point between the two cultures.” He reinforced those skills by the assignments he gave to Lam. After creating a product design group in the US to develop games to serve the US market, Bob sent Lam to the US as the engineering representative to the product design group as well as “to teach Americans how to save money.” It was Lam's lateral skills -- the ability to bridge East and West and the functions of design and engineering -- that enabled Lam to interface between the Dallas design team and the Hong Kong engineering team.

Since only one organization was involved in the Radica case, one person was able to fulfill the linking role. However, it is hard to imagine just one person, even one with as well-developed lateral skills as Lam, being able to fulfill this function in an interorganizational collaboration such as the one described in the preceding case. To deal with the challenges of a multi-party collaboration requires multiple relationships among the various people who represent each of the organizations involved in the project.

This was, in effect, the situation that Radica faced in the Controller projects. Things had become more complex following the acquisition of LMP. It was now no longer possible for just one person to fill this essential linking role. Other relationships were now required to help link the newly acquired team in the UK, essentially a product design group, with the product design team in Dallas. Since LMP had experience in developing video game controllers, as well as brand recognition in Europe where their products had been very successful, they took the lead in the design effort.

The US designers were initially uncomfortable with this new arrangement, so some conflict between the two sites was inevitable. The conflict grew particularly troublesome over the design of the logo for their new brand of controller products until the heads of the respective divisions embroiled in the "logo wars" stepped in. In effect, they formed a collaborative pair to help connect the multiple parties involved in the complex collaboration, much like the pairings between Jan and Barb, Jan and Darrell, and Steve and Dave in the John Deere/RDO projects. Their relationship, which had developed prior to this conflict, set the stage for its resolution. They were able to bring together the two designers who were the principal “combatants,” in effect creating a collaborative pairing between them, and the conflict was soon resolved. In

words of one of the Radica executives who helped resolve the logo wars, "solutions work out much better if you have a relationship with the person you are dealing with."

Given the essential role collaborative pairs and relationships play in the success of any complex collaboration, it is not enough to expect these relationships to just emerge as needed from the turmoil that typically characterizes the early stages of a complex collaboration. Even if the people are carefully selected for these linking roles, the relationships may take time to develop. Using a well-designed collaborative process may encourage the development of strong relationships, because they are often develop through ongoing work interactions.

Step Three: Design and Implement Collaborative Processes and Norms

The nature of the Bass Fishing game product created new challenges for Radica in collaborating across national and cultural boundaries. As a completely new kind of game for Radica, it required that the designers in Dallas, the engineers in Hong Kong and the factory in China work very closely together. However, the designers, the team members who were best able to judge the realism of the game experience, were several thousand miles distant from the engineering and production process? To make collaboration even more difficult, Radica was barely getting by. They were facing increased competition for their gambling games and the US economy was just slowly emerging from a long recession. As a result, their travel budgets were severely restricted and they did not even have email. They had to rely on decidedly old economy communication systems – fax, telephone, and overnight express. They used these means frequently and well, augmenting them with an incredible focus on tasks and outcomes; a determination to keep moving forward; a commitment to timely response to communications from others; and considerable trust in each others good intentions, capabilities and judgment.

The project team developed communication strategies and norms that fit that nature of its collaborative task. At the end of every workday, the product design team in Dallas would fax their drawings to the engineering team in Hong Kong. The drawings would typically illustrate a proposed feature for the game or an aspect of its physical appearance. The faxes would be waiting for the team in Hong Kong when they arrived at work a couple of hours later. The Hong Kong team then had to decide whether they could execute and manufacture the designs within the limits of their target price point. If they felt that they could not, thought they had a better way, or had other issues and concerns, they would counter with their own ideas which they would fax back to Dallas by the end of their work day. The US team might push back, arguing that a particular feature was critical, and the dialogue might continue for a few iterations, but there was rarely any second guessing when the Hong Kong engineers made their limitations clear. They were not afraid to disagree with one another, but their conflicts were about the tasks not each other. As Bob stated, "you don't get angry with your own people; responses shouldn't be personal and should never cast blame." This exemplifies their culture of mutual respect.

The difference in time zones acted as both an obstacle to collaboration, as well as a facilitator. The work days in Dallas were out of sync with the work days in Hong Kong, so direct interaction between the two locations was difficult. Lam, in an excellent example of his dedication and hard work, worked around this problem by talking on the phone in the evening with the engineers in Hong Kong whenever an issue arose that required real time explanation or discussion. The out-of-sync work days also enabled them to work “around the clock,” as they put it. By faxing drawings every evening from Dallas to Hong Kong and receiving feedback when the Dallas design team returned to their offices the next morning – much like passing a baton

back and forth in a never ending two person relay race – they were able to work almost continuously on a 24 hour basis.

Bob and Lam would both periodically travel back and forth to demonstrate their commitment to the project, keep everyone informed about what was going on, and show the face behind the communications, designs and decisions coming from the US almost every day. Perhaps the most important outcome of these trips was to reinforce the connections between the far flung sites and the mutual trust and respect that held it all together.

More high tech media – specifically, email, videoconferencing and 3-D design software – were available by time the Controller projects began. These new technologies not only offered substantial benefits, they also presented a new set of potential problems and challenges. This was especially apparent with the use of email which, as many individuals and organizations have learned in recent years, make it easier to communicate without thinking. After several months of miscommunication and unintentional slights and offense, the Controller project members became more aware of the limitations of email and learned to pay closer attention to what and how they communicate, especially when they communicate with team members in different countries. They now try to be as direct and to the point as possible in their emails. Slang, colloquialisms, and obscure, culturally-based references and humor are consciously avoided. They often reword communications from each other to clarify what is being said. In other words, given the barriers of language, culture, and distance, they compensate by being extra careful. The director of design in the UK office sums it up as follows: “geographical distance forces attention to communication. Being pleasant and treating people with respect is universal.” The enduring legacy of the early years helps. All parties recognize and trust the good intentions and competence of the others.

Another important factor is that they do not rely exclusively on email to clarify and resolve misunderstandings. In the words of one interviewee, they "think before they jump." That is, whenever an email comes through that is a potential problem, they pick up the phone and talk directly to the person who sent it, even if it means staying late because of the time difference.

Even with all of their new communications technology, project leaders and team members still see the need to travel among the various sites that make up the far flung Radica "empire," especially if the issues are critical and difficult. Face-to-face meetings can produce the kind of intensely focused attention needed to keep conflicts from boiling over. Travel and face-to-face meetings also can be used more proactively, to build the collaborative relationships and pairings that can help prevent problems or make it easier to deal with these problems when they do occur. Radica now recognizes the importance of "moving people around" to meet and get to know their counterparts at different sites, as well as learn about their culture. In the words of a Radica executive: "Solutions work out much better if you have a personal relationship with the person you are dealing with." She continues, "if you have the opportunity to spend some time with that person then it's easier to work out issues via email or phone. Once you know who the person is, what their motivations are, they are not just a name on an email."

PULLING IT ALL TOGETHER: OUR ACTION FRAMEWORK

Table 1 presents our action framework for complex collaboration, highlighting key practices for each step. This framework can help set the stage for a successful collaborative

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Insert Table 1 About Here

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project, whether it is between organizations or within a single organization. Each practice is general enough so that it can be applied to different types of collaboration, but specific enough to provide guidance for action. Our cases provide examples of best practices for steps one through three and we will summarize them. Steps four and five go beyond our cases, so we will be more speculative. Learning from the experience of particular projects and turning those learnings into a critical organizational capability are the final steps in our action framework. They are essential for moving beyond a successful project to an organization that can support complex collaborations of all forms.

Step One: Proactively Structure the Collaborative Work

The first step in executing a successful complex collaboration is to structure the project by defining clear and aligned goals, roles, responsibilities and tasks. In the John Deere/RDO case, the partners had a clear shared goal that was aligned with their separate priorities - to increase the pool of well-trained John Deere construction equipment service technicians. The partners formalized their expectations of one another through various working agreements and other documents. They would have avoided some unnecessary early confusion particularly in the Navarro College project if they had explicitly developed a mutual understanding about specific roles, responsibilities and other expectations early in the project. In the Radica projects, the new product development goals were aligned across functions and geographies. The structural challenge (as in any new product development project) was to partition the tasks effectively so that specialized work could proceed, while simultaneously integrating the different parts across the boundaries of time, distance, and culture. Team members -- whether they were doing design,

engineering, or production -- understood their roles and tasks, those of the people and teams with whom they had to work, and the expected deliverables from themselves and others.

Step 2: Develop Collaborative Relationships

In both the John Deere and Radica cases, the key players had the knowledge and skills needed to form the relationships for sustaining the collaboration, the second step in creating effective complex collaborations. What stood out were their lateral skills -- the ability to work effectively with people of different backgrounds, work experiences, knowledge bases and skills. This was most dramatically illustrated by Lam in the Radica case. He worked effectively across cultural (East versus West) and functional lines (designers versus engineers). Bob Davids, the first CEO selected Lam for a key integrating role because of his lateral skills, then provided him with opportunities to further develop these skills. There were also collaborative pairings in both projects -- close collegial relationships based on roles, interests, and personalities -- that helped to connect the multiple parties in the collaborations. These pairings emerged naturally in the course of doing the projects, but organizations can help this happen by selecting the "right" people for these roles and providing them with opportunities to develop strong relationships. The culture of an organization can reinforce the development of strong collaborative relationships. In Radica, for example, the culture of mutual respect reinforced the development of strong working relationships between the Dallas designers and Hong Kong engineers.

Step Three. Design and Implement Collaborative Processes and Norms

The processes and norms that guide how day-to-day work is done are critical for successful collaborative projects. Communication is one of the most important processes.

Communication strategies and norms must fit the nature of the collaboration. The critical role of regular, frequent communication cannot be overemphasized. Both projects illustrated that it is not possible to communicate too much.

Conflicts should not be personal, but instead focused on the tasks. If electronic technologies are used, they should be used appropriately and thoughtfully, particularly when communications have to cross cultural or organizational boundaries. In Radica, the importance of developing shared norms that support open discussion, cultural sensitivity, "work around the clock," and responsiveness stood out. The John Deere/RDO projects highlighted that a playful attitude and having fun supports collaboration and getting the work done.

Step 4: Learn from Collaborative Experiences

Although the organizations involved in the two cases have learned a great deal from their experiences in the projects we described, none of the projects incorporated formal, explicit, and systematic activities for documenting and evaluating what they learned from the project. The first systematic activity is to build in procedures at the very beginning for evaluating the project's performance. These procedures should include the identification of measurable objectives and milestones and the means for assessing performance relative to these objectives. With these procedures in place it is possible to conduct reviews at key points in the project to identify and document what is working and what is not. This information can then be used to modify and improve project structure, relationships and processes. But more than that, they can also be used to develop standard processes – a template – that can help guide future projects. If standard processes have already been developed, the learnings obtained can be used to modify and improve the standard processes. This kind of systematic evaluation is often a hard sell since

it takes time and money, and can reveal potentially embarrassing information. But setting aside the time and committing the resources will generate learnings that are well worth the effort.

Step Five: Develop an Organization that Supports Complex Collaborations

The principles learned from evaluations of prior projects and need to be embedded into organizational structures, systems, processes and procedures. As organizations learn, they develop capabilities. An organization develops the capability to conduct complex collaborations when it can consistently and successfully execute them. This capability is developed when all parts of the organization is aligned to support complex collaborations -- structure, task, technology, processes, rewards, and people practices. At the core of this capability is the organization's culture.

Organizational culture, an organization's shared values and norms, is especially important, in particular a culture that balances a hard driving focus on performance with trust and respect for the diverse competencies and good intentions of employees. The cultural values should be imprinted into everyday work processes. If mutual respect is a cultural value, then new product development processes should actively solicit the input of all key participants and conflicts should be resolved based on the merits of the case not on the attributes of the person.

Finally, it takes more than organizational culture to support complex collaborations. Other organizational characteristics are important, especially the competencies of the people within the organization, and of the organization as a whole. We believe the most important competence is laterality, the ability to work effectively across boundaries. Organizations need to develop a sufficient number of people with lateral skills to fill key integrating roles.

Conclusion: From Collaborative Projects to Collaborative Organizations

A culture that supports collaboration is one that balances a performance focus with concern for people. From the examples of Bob and Lam at Radica, we can see what it takes to create this culture -- leaders who:

- actively promote the appropriate values by stating them often and reinforcing the statements with consistent and appropriate actions.
- look for the kind of people who can embody their values, and when they find them, put them in positions of influence, much as Bob did with Lam.
- model the appropriate behavior and coach and reinforce this behavior in others. These activities played a very important role in building Lam's competencies and others as well, and building a culture based on mutual respect.

From the Radica case we can also see how important it is to embed the values of the culture into the work processes. Their communication processes and norms, especially around their ability to work around the clock and the "mindfulness" they bring to their email communications, demonstrate their culture in action. Developing the norms that make this work is similar to developing the culture these norms reflect. Frequent statements, consistent actions, modeling the appropriate behavior, and coaching and reinforcing the behavior of others – these comprise a prescription for creating values and norms that support complex collaborations in all its forms.

Organizations also need to develop competencies to support complex collaborations, at both individual and organizational levels. As we have said, the most important competence is lateral skills. To develop lateral skills, organizations need to provide opportunities for lateral career movement across cultures and functions, like Bob did when he moved Lam to Dallas to

further broaden his perspectives and sensitivities. These lateral career opportunities should be given to those with high potential, and viewed as necessary for developing general management skills. Training in interpersonal and communication skills and multi-cultural competencies can also help develop lateral skills.

Lateral career moves and training programs that bring together people from different teams, functions, and organizations can also serve another function, as a networking opportunity for building the kind of relationships and "pairings" that may be the starting point for future collaborations. Sending key people to professional and industry conferences can serve a similar purpose -- to network with their counterparts in other organizations and develop potential mutually beneficial relationships. These opportunities are not just important for high level people. Those on the front lines of collaboration, the people who will end up working day after day on the operational and tactical details of the collaboration, can also gain from these opportunities. Ideas and innovations often bubble from the bottom up, so getting the "soldiers" together, not just their officers, can have significant pay-offs as well.

No discussion of organizational supports is complete without saying a few words about two of the most important systems in the modern organization – reward systems and information systems. If lateral skills are important then the acquisition of these skills should be supported and rewarded. If collaborative work is important, then effective performance in collaborative projects and roles should also be rewarded. And finally, since information and knowledge are the essence of work in the 21st century, then being able to integrate, retrieve and work with this knowledge across boundaries of time, distance, culture and organization is the key to collaborative work in the 21st century. This means designing information systems with shared data bases and the

capability for anyone at any time to access information. These shared data bases can also be linked to key customers or suppliers, enabling collaboration across these boundaries.

We have now come full circle in our action framework for complex collaborations, from the initiation of a single project to the shaping of a supportive organizational context. Our framework is ultimately iterative, with each project building upon the context of collaborative competencies and culture within which it began. In time, the ability to execute complex collaborations will become imbedded in the everyday work of the organization and in the consciousness of the people within it. At that point a framework for guiding the design and implementation of complex collaborations will no longer be necessary. It will be the way the organization implicitly works, reaching across boundaries of time, distance, organization, and culture to pull together the people and resources it needs to compete, perform and innovate in the new global economy.

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Much of the pioneering work on interorganizational collaboration has been conducted by Barbara Gray. See, for example, her article with D. J. Wood, "Collaborative Alliances: Moving from Practice to Theory" in the *Journal of Applied Behavioral Sciences*, 1991, Vol. 27, pp 3-21. That entire issue of JABS is dedicated to the topic of interorganizational collaboration, so there are a number of additional articles that provide various perspectives on the topic and explore interorganizational collaboration in a number of different industries and contexts.

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TABLE 1

AN ACTION FRAMEWORK FOR COMPLEX COLLABORATIONS

1. **Proactively structure the collaborative work to be done.**

   Ensure goal commitment and alignment.
   Define collaborative tasks.
   Define roles and responsibilities particularly linking roles.
   Formalize agreements.

2. **Develop collaborative relationships.**

   Select people with lateral skills for key linking roles.
   Enable "collaborative pairs" to emerge.
   Reinforce collaborative relationships through organizational culture.

3. **Design and implement collaborative processes and norms.**

   Develop communication strategies and norms that fit collaborative task.
   Balance task-focus with fun and playfulness.

4. **Learn from collaborative experiences.**

   Include evaluation in project plans.
   Assess strengths and weaknesses.
   Document learnings.
   Develop standard processes for similar future collaborations.

5. **Develop an organization that supports complex collaborations.**

   Anchor learnings in the organization.
   Develop a collaborative culture that balances a performance focus with concern for people.
   Develop collaborative competencies particularly lateral skills.