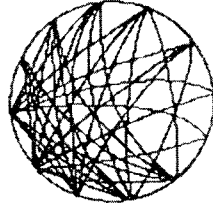


## CHAPTER 2



### TEAMING FROM THE BEGINNING

#### How Groups Became Virtual

*“Long Distance Operator.  
This is Memphis, Tennessee.”*

Chuck Berry’s famous 1958 hit could be the theme song for an unusual scenario. Cameron Harker, an Australian chemical industry salesperson, has an urgent question about a trial he is running for a client at a Brisbane paper mill. He knows that someone somewhere else in the world probably has the answer. Fortunate to be an employee of the specialty chemical company Buckman Laboratories based in Memphis, Tennessee, he simply sits down at his keyboard, clicks on his modem, and taps out a message. Within a few hours time, his problem is solved. Responses come back from people around the world—Canada, South Africa, Sweden, and the United States. They also come from many levels in the company—a general manager, a national sales manager, a product development manager, and people in research and development.

## **Our Company Never Closes**

In the new boundary-crossing world that Buckman Labs (as it is known) inhabits, Cameron Harker does not actually dial into company headquarters in Memphis. There flags from each of the countries in which it has subsidiaries fly at the main entrance. Instead, he makes a local phone call through which he accesses one of Buckman's 62 discussion areas on a global electronic communications network. By dialing in and posting his request, others among his 1200 company colleagues will see his message and respond immediately—even though they live in 19 countries on 5 continents with customers in 80 countries.

The city famous for Elvis, Beale Street, and the Blues is also home to a company now celebrated in virtual team circles. Buckman Labs has been way ahead of the pack for a long time with its problem-solving teams that circle the globe. After more than a decade of pioneering its online knowledge network, Buckman has answered a lot of questions that other companies are just beginning to ask. And, the city of Memphis, known as “the distribution center of the United States,” itself is no laggard. Because of its geographic centrality, many companies, including Federal Express and Northwest Airlines, use it as a hub. A test bed for many of BellSouth's new telecommunications products, the city has had high-speed data lines (called ISDN) available since the early 1990s.

### ***Increasing the Span of Communication***

Bob Buckman is the visionary behind Buckman Labs' global “knowledge transfer” system, K'Netix. In 1996, Buckman stepped down to vice chairman after 17 years at the helm of the privately held company that his father started in 1945. A \$270 million company, Buckman Labs provides specialty chemicals to the pulp and paper, water, and leather industries. The company's products keep swimming pools free of algae, clear effluent streams of heavy metals, and allow contamination-free manufacture of paper products.

The online network that allows everyone in the company to talk to one another from anywhere at any time is not just supporting technology for

the company. It is the logical manifestation of Buckman's deeply held beliefs about people, business, and the nature of competition. Buckman often begins his speeches with a telling quote from former Scandinavian Airways chair Jan Carlson:

*An individual without information cannot take responsibility; an individual who is given information cannot help but take responsibility.*

For people to be effective, Buckman says they have to have information with which they can increase their "span of communication" and thus their "span of influence."<sup>1</sup> These key tenets that lie at the heart of the K'Netix design allow and encourage everyone to participate. Although he is a chemist and a statistician, Buckman sounds at times like a communications theorist. In this case, good theory appears to make for good business: the number of sales from new products has grown dramatically since the early 1990s when the online information system began to burgeon.

"The speed at which you can communicate defines how quickly you can make money," Buckman says. "If I can respond to a customer in six hours anywhere in the world at any time, that's a competitive advantage. As the speed of communication increases, customer response time moves toward instantaneity. That redefines competition. Any entrepreneur in the world will understand that."

To unleash the power of the individual, Buckman says to "radically change their span of communication and I mean radically. Anyone should be able to talk to anyone else inside and outside the organization. We want to close the gap with the customer. How do we increase our cash flow with the customer? By increasing our power on the front line. But that can only happen if the individual has good span of communication."

Buckman's goal is to have 80 percent of the company "effectively engaged on the front line," that is, directly connected with customer needs. "If you're not doing something useful for a customer, why are you here?"

Currently, he figures that 50 percent of the company is on the front line, an increase from 16 percent in 1979.

The impetus for K'Netix was the desire to share best practices for solving customer problems. "But we couldn't run Ph.Ds around the world fast enough at the speed that we needed," Buckman recalls. When they started the network in 1985, a portable PC weighed 17 pounds and email was in its infancy. "That's where it all started—with e-mail, trying to communicate better, pure and simple."

Geographic separation was not Buckman's only problem. Even when people are located in the same place, Buckman figures that people are out of their offices on average 86 percent of the time. "Why do organizations spend huge sums of money on systems that only function 14 percent of the time?" Buckman asks. Most salespeople spend practically no time, if any, in the office. Likewise, executives and most managers are rarely at their desks from 9 to 5 every day.

The desire to share best practices *anywhere all the time* turned into an online discussion system based on some very simple principles. It should:

- ? Reduce the number of transmissions of knowledge between individuals to one.
- ? Give everyone access to retrieving from and contributing to an easy-to-use, fully searchable, automatically updated company knowledge base.
- ? Be available all the time anywhere in the world since "our company never closes."
- ? Communicate in whatever language is best for the individual user.

### ***Maximizing Participation***

By today's stupefying technology standards, the Buckman global knowledge network is pretty elementary. "We use the same e-mail system that 4.5 million other people do," says Victor Baillargeon, the Ph.D. chemist who was until 1996 vice president of Knowledge Transfer at Buckman. After five years using a cumbersome IBM network that required different codes for different countries, they moved in 1992 to CompuServe,

the Columbus, Ohio-based network. Everyone at Buckman can easily dial into a local service or directly into a CompuServe node.

CompuServe “forums” have been around since the mid-1980s. The idea behind the forums is very simple. Each one is on a different topic and anyone with forum access privileges can post messages to it. Because it captures everything electronically, the system maintains its own ongoing history of the discussion. Buckman has numerous forums on topics germane to its business such as the TechForum that has 24 discussion groups (including BuLab News, the online company newsletter) that are open to everyone in the company. The Purchasing Section is where all Buckman purchasing agents around the world communicate. The forums also house proprietary discussion groups. There new products, corporate strategy, and finance are under discussion by small teams with direct responsibility for these areas.

“We chose CompuServe because of ease of use,” explains Alison Tucker, who managed the forums for the first several years and now heads Buckman’s Internet initiatives. While other companies are out hiring programmers to develop complex information systems, Buckman chose instead to buy off the shelf. “The only reason companies create their own systems today is ego!” Bob Buckman says emphatically.

The Buckman system works because the barriers to participation are low. Everyone has access to PCs and laptops with modems. When people travel, they can take an “electronic first aid” kit with them, equipped with whatever they will need for the country they are visiting including adapters and cables.

How do you get 1200 people around the world comfortable with logging in every day to solicit and contribute advice to people they never (and may never) see?

It took a lot of time, training, attention, and senior-level commitment. At the beginning, Tucker spent “endless amounts of time online. Sometimes 12 hours a day,” she recalls. “I was learning to manage all these crazy discussions. When we started out, half the things going on were not business related—people talking about their kids and their dogs. We’ve always been this global company, but people didn’t have a chance to talk until this happened. We’d have (real-time online) chat sessions

at 5:30 or 6:00 PM Memphis time with people saying, 'I have to go answer the phone or door.' People in Japan were telling jokes to people in Brazil."

To encourage companywide participation, Buckman himself took to the world circuit. He gave speeches on the role of knowledge transfer and his belief that the company's intelligence lies "between the ears of the people, not in some database." From the beginning, he has been an active daily participant. "It has to have unequivocal leadership at the top," he says.

For the first six months, they ran weekly reports to see who was participating and who was not. "Bob sent very civil, gentle messages asking people why they weren't online and whether they needed any help," Baillargeon recalls. "But the unspoken message was very loud and clear. If you wanted to keep your name off the report that was run on Fridays, then you logged in by Thursday afternoon. We haven't needed to run a report since the first six months."

### **Leveling Out**

The initial getting-to-know-one-another frenzy lasted for about three months and then things began to settle down. Today, the system still has a Break Room that has no monitoring and no maintenance. There the Super Bowl, the World Series, and World Cup rugby (which "sometimes gets pretty heated among the Irish, Australians, and South Africans," according to Baillargeon) are tile burning topics. Buckman built in permission to use any feature of CompuServe's system from the beginning. The company has encouraged nonwork-related online exploration as an important way to learn the electronic environment.

Over time, the conversations have become self-policing. Baillargeon reports few incidents of "flaming," where people vent, argue, or attack one another online. Participants have developed a style of communicating their requests that is to-the-point and informative. Skilled experts on the topic moderate all business forums. They monitor the discussions, provide help where needed, and archive material that becomes part of the company's knowledge library.

“Our use was very high at the beginning while everyone was learning and now it’s leveled out,” Tucker says. “The key thing is to be patient and advertise, advertise, advertise to your people. We didn’t have anybody to learn from. And we still don’t, but we’re learning from each other.”

K’Netix is the overarching term for all the electronic environments of the company, not just the online forums, which are considerably more than online question-and-answer sessions. “These discussions aren’t just a few snap answers,” Baillargeon says. “It may take days or even weeks until subjects are complete. A lot of the time it’s a full-blown discussion, not just here’s a question, here’s an answer.

### ***A Climate of Trust***

Buckman people agree that such a system would be impossible without a “climate of respect and trust that has to be pervasive,” in Baillargeon’s words. “If I’m asking a question from one part of the world and I get a reply from someone I don’t know in another part of the world, I have to trust that they’re giving me their best effort and their best knowledge. Part of my incentive to participate is that today I may be bothered by having to reply but tomorrow I don’t know what I’m going to need to ask for.”

The “climate of trust” at Buckman is represented in a “Code of Ethics” that new employees receive in laminated pocket-size form and which hangs framed in every office.

*Because we are separated—by many miles, by diversity of cultures and languages—we at Buckman need a clear understanding of the basic principles by which we will operate our company.*

So begins the firm’s social compact born out of a very practical problem that arose in 1983 when the company’s global presence started to become significant. “Folks working in other countries started to ask what

they should tell their people to do about bribes,” Buckman recalls. “Everyone sent in ideas and Steve Buckman [Bob’s cousin and, since 1996, CEO and chairman of the company] pulled them together and it’s never changed since. It became the glue.”

### ***The Future of K’Netix***

After 10 years of learning, Buckman Labs continues to push out the electronic border. Finance, human relations, and a host of other corporate services have moved completely online. “If the SEC (Securities and Exchange Commission) feels secure using CompuServe, then we should,” says Buckman when asked about security issues. A marketing information data analysis system is under development as is a Customer Information Center, which will be the repository for all customer information. Forums are being developed that include customers, and the entire database is being migrated to icon-based images. World Wide Web pages are materializing to deal with a wide variety of topics and a user-friendly interface is being built to the groupware product Lotus Notes.

Perhaps most interesting is the Distance Learning project that Buckman himself chairs. The idea is to bring knowledge to the learner rather than bring the learner to the knowledge. Since the Buckman learners speak nearly a dozen languages, the frontier issue of instantaneous translation is the current problem to solve. Because the company’s business of producing specialty chemicals is so highly “specialized,” construction of the dictionaries for translation is its own headache.

Bob Buckman is not stopping at simply providing distance learning in the native speaker’s language. His hope is that eventually K’Netix will be entirely language-sensitive. When someone posts a note in English, people in Japan will be able to read it and respond in Japanese which in turn people can read and respond to in Portuguese, Swedish, Dutch, French, Spanish, and Italian as well as English—and whatever other languages employees speak.

In the end, Buckman believes that the system’s success rests on people not tools. “It’s 90 percent culture change and 10 percent technology,” he says. “You cannot drive this change through technology and technology budgets. It’s people who bring about the change. These systems and



methodologies are now self-generating and don't need that long, hard push to indoctrinate into the culture. It's a journey not an end and we are still struggling."

Global teams that never meet are the latest in a long line of innovations in small groups. We have been working on this form of organization for a long time.

## **Four Ages of Small Groups**

The magnitude of the change now gripping us all—in speed, complexity, and globalization—is captured by the view that humanity is undergoing a major evolutionary transition from an industrial to an information-based economy and society. Alvin and Heidi Toffler use “three waves of change”<sup>2</sup> to capture the essence of the big view of human civilization:

- ? The Agricultural Age wave began 10 to 12,000 years ago, and marked a dramatic shift from the Nomadic Era. Farming and herding eventually replaced hunting and gathering. Populations grew larger, cities and towns developed, and family size increased as people settled down.
- ? The Industrial Age, running roughly from the 18th through the mid-20th century, saw factories replace farms as the economic engine. Populations have exploded and urbanized, while families have grown smaller. This age represents today's tradition, the old from which the new seeks to emerge.
- ? The Information Age is growing out of the third wave of change, beginning in the mid-20th century. We are now riding the turbulence of transition. The world's economies are becoming information-based, electronically connected, and globally interdependent. Population is still rising and families are still small but diversified.

The Tofflers' three waves of change divide all of human history into four great ages. To span all our contemporary organizational capabilities, we need to include the first human era.

? The Nomadic Age, beginning indistinctly between two and three million years ago, was when our ancestors acquired the ability to speak, make tools, and configure social organizations. Populations were sparse and families were relatively small.

### **Four Varieties of Organization**

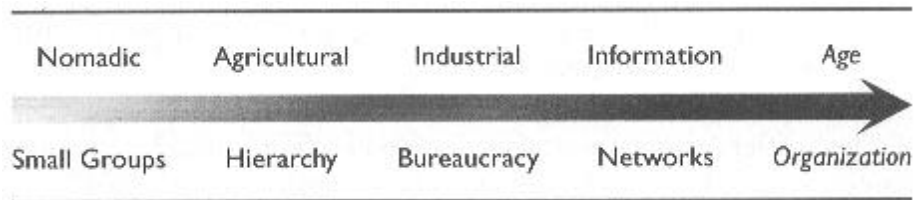
Each of the great ages also has initiated a new social configuration.<sup>3</sup> Nomads roamed around in *small groups*. The great agricultural organizations were the first *hierarchies*. The rise of industrialism brought the large-scale use of *bureaucracies*. The Information Age has its emblematic organization as well: boundary-spanning *networks* (Figure 2.1).

Over the ages, we have accumulated organizational knowledge. When hierarchy came along, people did not stop meeting in small groups. When bureaucracy evolved, hierarchs did not throw down their scepters and call it a day. Indeed industrial bureaucracies depend upon the ranks and levels that agrarian hierarchies invented. While developing its own signature characteristics, each age also incorporates essential organizational features of the ones before it.

Networks, the emerging organization of the Information Age, incorporate aspects of its predecessors: the levels of hierarchies, the specialties of bureaucracy, and the purposes of small groups.

Old forms do not, however, persist unchanged. With each new age, new versions of old forms supplement the human organizational repertoire.

**Figure 2.1 Ages of Organization**



*The original autonomous small group—the family—survives today, still central to society yet different in each era.*

New forms of hierarchy (for example, shared leadership at the top) and bureaucracy (for example, decentralized) are appearing within networked organizations.<sup>4</sup> There also is a new variant on small groups--virtual teams (Figure 2.2).

### **Groups of Nomads**

The mobile family that foraged to survive was the basic social unit of the Nomadic Era. Relatively small in size, these families were partly self-sufficient and partly interdependent with other families. Together, they periodically set up camp in larger groups. Once in the camps, task-oriented groups naturally took shape. Hunters, gatherers, and traders joined forces according to circumstance and need.

**Figure 2.2 Four Ages of Small Groups**

	Nomadic	Agricultural	Industrial	Information
<b>Families</b>	Mobile family	Extended family	Nuclear family	Diverse family
<b>Task Teams</b>	Gatherers Hunters Traders	Farmers Herders Artisans	Positions Specialties Professionals	<b>VIRTUAL TEAMS</b>
<b>Social Groups</b>	Health Leisure Friendship	Castes Classes Religious	Associations Special interest Clubs	Electronic groups Virtual communities
<b>Decision Groups</b>	House heads Camp councils	Rulers, elites Military units Owners	Legal Representative Committees	Direct participation Virtual government

*The first teams were the task-oriented camp groups of the Nomadic Era.*

Camps also stimulated other relationships outside the family. These nonkin affinity networks, as the anthropologists call them, enabled people to have friends, share information, offer healing, encourage hobbies, enjoy leisure and recreation, and participate in contests. Without cooperation across kin lines, humanity never would have gone beyond subsistence. These “virtual” kinships, what anthropologists call fictive kinships, were critical to human progress.

### ***The Agriculture of Small Groups***

In the Agricultural Era, families grew to be larger and more extended. Farmers and herders, the new task-oriented economic units, eventually crowded out hunters and gatherers (although not completely, hunter-gathering societies still survive on several continents today). Skilled tool-makers evolved into artisans. With them came the masters of the trade with their own small shops and apprentices. Society stratified into castes and classes. Religious groups emerged as a common spiritual life integrated larger communities inhabiting bigger societies.

The great organizational innovation of this era was the rise of ruling elites and military units. To protect land, agrarian settlements marshaled military hierarchies that could coerce people. Along with organized violence, hierarchy brought along a positive development: The clear efficient authority structure of ranks, small group units combined into larger units. This innovation—which uses the cross-systems principle of levels—was a great leap forward in the human capacity to organize large numbers of people.

At the same time, the first cornerstone of capitalism was put in place. Military and religious leaders became owners of land previously held by the groups who lived on it. In economic terms, ownership is the ultimate source of coercive authority—the right to sell, to hire, and to fire.

This feature is the bedrock of hierarchical rights and responsibilities in companies and it affects teams today. Because they are by their nature hierarchical decision makers, executives must confront a schizophrenic problem when they try to team with one another. They have a dual nature—hierarchs who are guardians of supreme power and team members who are partners in power. This makes it particularly difficult for executive groups to become effective task-oriented teams.

### ***Organization as Machine***

In the Industrial Age of the past few hundreds of years, the typical family size shrank again and became more nuclear. While remaining key to the social domain, the family abruptly ceased being the basic economic unit of society.

Instead, segmented, specialized work ruled. Task-oriented bureaucratic units became the basis for economic gain. Rules bound replicable operating units. The units in turn aggregated into larger mechanical processes that produced predictable results. Society viewed small groups of all sorts as interchangeable, replaceable parts of the machine organization.

Formal representation under law, where small groups stand for larger communities of people, is the great social invention of bureaucracy. New organizations defined by constitutions, laws, policies, and procedures created numerous bureaucratic small group structures—from Supreme Courts to city councils.

### ***Small Groups in the Information Era***

As the millennium draws to a close, increasingly diverse styles of families are proliferating. The nature and role of the family are hot topics. Families are again becoming a significant economic unit, not just as consumers but as joint “businesses” with two or more income streams.

At work, distributed, decentralized, flexible organizations are replacing many collocated groups. The technological capacity to share information and the staggering increase in the ability to communicate

provide fertile soil for the growth of *virtual teams*, the new boundary spanning, task-oriented working groups born of the Information Age.

Online affinity groups attest to the emergence of virtual social groups, virtual communities.<sup>5</sup> Still hard to see at this point are the new governance forms. As the ultimate protector of “the way things are, and bound by laws, rules, and regulations too numerous to count, government is likely to lag behind in organizational change. Yet even in government, inventive, more flexible structures are proliferating.<sup>6</sup>

## **The Generic Small Group and Team**

Over thousands of years, human life has spawned many kinds of small groups. To see what is special about teams we need to understand what is common to all small groups. Then we can distinguish virtual teams from other kinds of teams.

People tend to have their own definitions of teams and how they differ from groups, but researchers have forged considerable agreement on the matter.

### ***Foundations of Small Groups***

As recently as the mid-1980s, the standard model<sup>7</sup> of small groups required a hunt through research in anthropology, sociology, organizational psychology, and management. At that time, there was a building consensus that a small group was a coherent system that one could study independently at the crossroads of several disciplines, but it was not a well-developed field.

A decade later, a search of the literature on groups and teams turns up a coherent field of research. Today, a very clear model of small group characteristics stands with considerable consensus behind it. Indeed, the general definition established in the mid-1980s has enjoyed a decade of testing and exploration. A 1996 summary of current research quotes a respected researcher’s 1984 review of the literature with approval:<sup>8</sup>

*Virtually all definitions of the term small group include three attributes: two or more individuals, interaction among group members, and interdependence among them in some way.*

This leads to a very short definition of a small group:

*Individuals interacting interdependently.*

People become a group by virtue of doing things of mutual benefit together. A small group is *not* a random collection of people, like a crowd crossing a street or passengers on a plane. *Groups* of people have something more, an interrelatedness and a common motivation that adds up to more than just a bunch of individuals.

*A collection of people becomes a group when the whole is greater than the sum of the parts.<sup>9</sup>*

The standard model embeds a small group in a larger context. It is very rare that a new small group arises out of nowhere. Usually, small groups arise from pre-existing groups—the special accounts group that grows out of a finance organization, the book club that is adjunctive to the church, the pick-up basketball team that grows out of the playground building project spawned by the PTA. In business, small groups are invariably part of a larger organization or set of organizations.

*Individual members* of the group define its boundaries. Whatever it is that enables people to say they are “in” the group while others are “out” of the group identifies the boundary. When people are on an e-mail

distribution list, they establish themselves as members of that virtual group. If you are not on the list, you are not a member. Membership recognized by insiders and outsiders alike gives a group its basic boundary.

The second element of small groups is *interaction*—the multiple links among members. Communication, the foundation for human interaction and relationships, is inherently a shared activity. Language, first invented in the earliest forager camps, continues to be concocted in new groups today. Acronyms, stock phrases, and in-jokes are all linguistic indicators of group cohesion.

For millennia, small group communications meant that people talked to one another face-to-face, using the medium of sound waves traveling in air. Even today people assume that most small group communication is face-to-face. That is changing.

*We are experiencing the most dramatic change in the nature of the small group since humans acquired the capacity to talk to one another.*

Researchers prefer the term *interdependence* to describe what most management and popular organizational writers refer to as an essential attribute with terms like “unifying purpose” or “shared goals.” The words “individuals interacting” are not sufficient to define a small group. There must be interdependence—joint purpose and shared motivation—to incorporate individuals into a group whole.

### ***Teams Tackle Tasks***

So what are teams? In the standard model, the step from small groups to teams is short and simple. Both the scientific literature and the popular press express the distinction in the same clear way:

*Teams exist for some task-oriented purpose.*<sup>10</sup>



The orientation to task is what distinguishes teams from other types of small groups such as family households, social groups, and governing bodies. While all small groups carry out tasks to some degree (as well as make decisions and support social interactions), task *is* the focus for teams. All other aspects are ancillary. ~

While having a purpose is fundamental to all small groups, teams are specifically and deliberately results-oriented. Tasks are the work, the common process that is the means to the results, the jointly held end. In setting goals, teams project desired results and agree upon tasks to carry them to their objectives.

In addition to the membership boundary found in all small groups, tasks create a team boundary. The nature of the goals and the work required to carry them out drive the need for certain members and skills to be part of the group. Conversely, different members shape and reshape the purpose and tasks of the group. Indeed, the goals and tasks often exist before the team identifies its members. The feedback loop between task definition and appropriate membership becomes a core defining process during a team's early development.

Purpose in all its forms—interdependence, vision, mission, strategies, goals, results, and, especially, tasks—lies at the center of understanding teams. Purpose also is notoriously difficult to grasp and make predictably practical. Much of the best thinking around teams has gone into books that elaborate various aspects of purpose, in many cases making that thinking applicable through tips, tools, and processes.

While the task focus distinguishes teams from small groups, the essential distinction between teams and *virtual* teams comes in the boundary-crossing nature of their interactions. The day-in-and-day-out reality of communicating, interacting, and forming relationships across space, time, and organizations makes teams virtual.

## **Virtual Teams Cross Boundaries**

Buckman Labs is a sea of virtual teams that constantly form and dissolve. To solve a customer problem, a global virtual team comes together without anyone chartering it and it includes anyone in the company who

chooses to participate on a particular topic. When the discussion is over, the virtual team disbands.

Buckman’s teams are quite different from traditional task groups comprising people from the same organization functioning in the same place at the same time. This is a description of both the conventional 9 to 5 office and the assembly line 7 to 3 shift that structures the industrial model of work.

Since we are in new territory here with a new type of team, we need some coordinates to explore the terrain (Figure 2.3). One point of reference is the familiar one of space and time. Less obvious but equally important is the dimension of organization.

Space and time are treated here as a single interrelated idea (spacetime) that is appropriate to the concepts of post-Newtonian physics. Distance in space—even a short distance—takes time to cross. At greater distance across time zones, day turns into night and impedes people’s ability to interact simultaneously—even with media that travel at the speed of light.

Spacetime and organizational boundaries mix and match into four kinds of teams, one conventional and three virtual, all of which Buckman Labs uses.

In traditional Industrial Age collocated teams, people work side-by-side (the same space and time) on interdependent tasks for the same organization. Several decades ago, even before the new communications technologies were widely available, one form of virtual team began to

**Figure 2.3 Varieties of Teams**

<b>Spacetime</b>	<b>Organization</b>	
	<b>Same</b>	<b>Different</b>
<b>Same</b>	Collocated	Collocated Cross-Organizational
<b>Different</b>	Distributed	Distributed Cross-Organizational

appear, the cross-organizational team. Today, cross-organizational teams of all kinds are common.

### ***Collocated Cross-Organizational Teams***

Collocated cross-organizational teams comprise people from different organizations who work together in the same place. At Buckman Labs, an informal group of people who number “between 4 and 15,” according to Buckman Labs’ Alison Tucker, all work in Memphis but for different Buckman organizations. Though their task is to brand the company’s products, only some members of the team are from marketing.

Perhaps the most familiar type of virtual team is the classic cross-functional group of experts and stakeholders who come together to solve problems or seize opportunities that require cooperation across organizational boundaries. A good example is the Shell Offshore project team that developed the process for designing, building, and running drilling operations and pipelines a mile undersea. The team included a geophysicist, paleontologist, drilling supervisor, production superintendent, construction engineer, human resources training manager, and organization development consultants. They left their regular jobs and gathered in New Orleans to devote full-time to designing the social and technology systems to support the new operation.

Most of the great management movements of the last two decades have stressed the formation of cross-functional teams. The quality movement and later re-engineering have stimulated the sprouting of teams everywhere, many of them cross-functional. Concurrent engineering and CALS<sup>12</sup> a decade earlier encouraged the formation of new product design and development teams that reached across the life cycle, from marketing and engineering to sales and support, which Boeing used in its 777 design teams.

Although failures are legion and frequent, cross-functional teams (which have permeated every industry, sector, and level of organization) have been an astonishing management success story. The innovation has now spread well beyond internal boundaries. Cross-organizational teams include suppliers, customers, and even competitors in alliances of all kinds that cross corporate borders.

As distances expand across space and organizations, the options to collocate teams shrink even as the ability to work at-a-distance grows. Relocation itself is increasingly difficult because of spiraling costs, people's unwillingness to move, and the short timeframe of many projects that does not justify the expense of moving people. Teams *must* spread out.

### ***Distributed Teams***

Distributed teams comprise people in the same organization who work in different places either interdependently (like a multisite product development group) or separately (like branches and local offices). Buckman Labs research and development operation is distributed across all the company's sites.

To carry out interdependent tasks, teams with members in different places clearly have a distance problem to solve. Perhaps just one person is situated remotely. Perhaps several are. Sometimes everyone is in a different place. More than a dozen people in Boise Cascade's Paper Division Printing and Converting Business group have moved out of the company's Portland, Oregon, offices—choosing instead to work from home.

The ability to work at a distance is reshaping the traditional headquarters-field relationship. Site managers belong to the same organization but rarely work as a team under the old model. Indeed, branch offices, one familiar example of de facto distributed teams, often are encouraged to compete in a system that pits one against the other in the effort to maximize output and beat quotas.

When branches work together, however, they form virtual teams of people in the same organization situated in different places. The 47 branch managers of BankBoston's First Community Bank formed a team among themselves to address common service issues and to develop cross-branch priorities based on their own needs and shared learning. Branch teams face the same problems of crossing space and time as more organizationally-diverse virtual teams. Local intergroup boundaries are sometimes more difficult to bridge than more distant affiliations because of competitive forces arrayed along contiguous organizational borders.

Even if not distributed in space, virtual teams can be spread out in time. Teams of shifts and groups of managers and professionals-on-the-move share facilities—people in the same organization who use the same place but at different times. Buckman’s manufacturing plants run on three eight-hour shifts daily and, as Bob Buckman estimates, their management teams are in their offices just 14 percent of the time.

When Eastman Chemical Company began its long drive to develop teams in the late 1970s, they began with shift supervisors. As the interface between shifts became more complex, the information load increased, so Eastman formed teams within and across shifts that supported 24-hour quality improvements.

A new variation on the old time-shift theme is the galloping trend towards “officing.” Flexible office arrangements include the “hoteling” concept, such as IBM’s “sales warehouse offices.” There people sign up for a workspace on arrival at the office. Other future-here-right-now work environments maximize collaborative workspace with mobile and home-based offices for independent work.

### ***Distributed Cross-Organizational Teams***

Distributed cross-organizational teams involve people from different organizations who work in different places. Buckman’s Distance Learning Team of a dozen people from multiple organizations includes several who work from home, such as one member who lives in Boston and attends real-time Memphis meetings over the phone.

The classic virtual team combines people in different places and organizations with some need to function at the same time (synchronously)—not all of the time, of course. Most work combines a pattern of individual tasks and group tasks, time spent working alone and time spent working with others. For most virtual teams, synchronous interaction-shared time—is a scarce resource. Time together is planned, prepared for, and followed-up on. Hewlett-Packard’s worldwide distributed product information management system (PIM System) team combines quarterly face-to-face meetings and extensive use of electronic media to function across global distances and 24-hour timeframes.

Time creates a complication that not even instantaneous communication can solve. As the distance increases and more time zones are crossed, the window of synchronicity in the work day narrows. New England is six hours behind Europe, and people in California leave work just as their counterparts start their next day in Japan. Even when real-time interaction is possible technically, it may not be practical.

The most extreme type of virtual team is one that is cross-organizational and that rarely and in some cases never meets in the course of doing its work. Without face-to-face time, this type of team tests the limits of dealing with contentious issues, but may shine for information-sharing and technical problem-solving tasks. Buckman's global conversation system provides conditions that allow worldwide cross-organizational teams to form within hours to work on a customer problem or opportunity that may last for days or weeks.

### ***Variations on a Theme***

Virtual teams also spring up in traditional settings. When a collocated team uses tools that a distributed team requires just to survive, they may achieve levels of performance far beyond the conventional norm. Buckman's many collocated teams have benefited enormously from their virtual team systems and the experiences of their colleagues around the world. Small collocated core teams can help support the needs of a larger distributed organization.

By implication, the traditional model of work meant that everyone in the group of course spoke the same language and took their nonverbal cues from the same broader culture. Today even when people are in the same location the chances of their speaking different languages are high.

Virtual teams break the traditional mold as people work across boundaries. When people occupy different places and come from different organizations, they can be certain that they will have to cope with difficulties in communicating across culture and custom with different languages. The language differences that virtual teams have to contend with are not all born of different country tongues. Two people from different professional upbringings can have almost as much problem communicating as two people who grew up speaking English and Japanese.

When teams go global, their language and culture issues clearly loom larger. However, all teams of the future will have to cope with the fact of increasing diversity in the workplace. Not only is the workforce becoming more diverse, but the task requirements of complex work demand that a more diverse group of people works together, whether in traditional settings or in virtual teams.

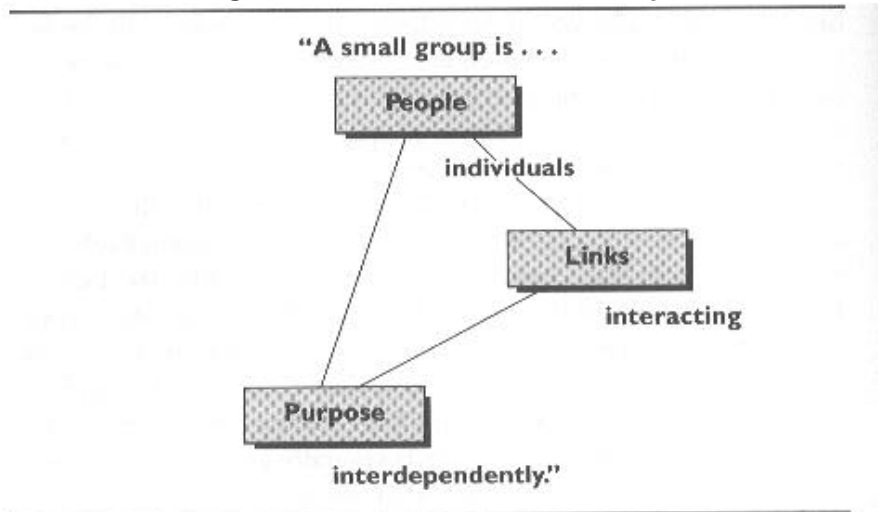
BankBoston's First Community Bank (FCB) tested the limits of the large-scale, cross-cultural, cross-organizational virtual team. Working in partnership with the Overseas Chinese Credit Guarantee Fund, a Taiwan-sponsored effort to make loans to Chinese business people around the world, Boston's FCB had to include players from many organizations. According to Steven Tromp, a director of commercial lending at FCB, the team included people from a dozen organizations within the bank, four people from Chinese community groups in Boston, and six representatives of the Taiwanese government. "And that was just the inner circle of the team," Tromp says. "Dozens more were touched by it as time went on including the business people who finally got the loans. It was all done through e-mail, phone calls, and 'who knows who.' It was a neat example of a virtual team."

Sometimes collocated teams have even greater difficulty than virtual teams dealing with variations of language and culture. Because they are less aware of their communication barriers, collocated teams do not necessarily create appropriate compensatory norms. There is an analogy here to the relationship between distance and collaboration. Data show that people are somewhat less likely to communicate with a colleague upstairs in the same building than with one in another building.<sup>3</sup> When people know they are at a distance—culturally and linguistically as well as spatially—they are more conscious of the need to be explicit and intentional about communication.

## **A System of Virtual Team Principles**

The three-part model of the virtual team concept—people, purpose, and links—is a simple but powerful conceptual tool (Figure 2.4). With it, you can grasp something as slippery as a network and something as immediate as a small group. "People linking with purpose" is our

**Figure 2.4 Three Foundation Concepts**



expression for the standard small group model “individuals interacting interdependently.”

To account for the essential characteristics of virtual teams, we need to go down a level. In Chapter 1, we briefly outlined nine Virtual Team Principles that expand the three-part model, adding qualifiers to general team features that make them “virtual.”

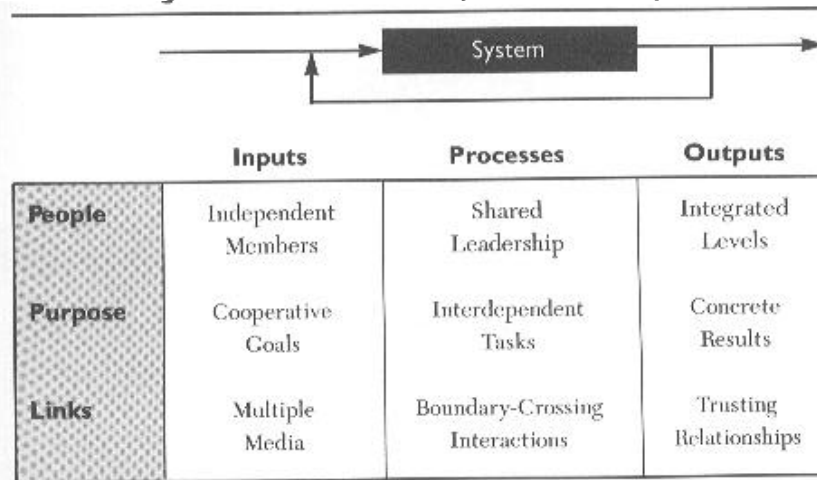
The nine principles together provide an integrated framework for understanding and working in virtual teams.

*The principles of people, purpose, and links form a simple systems model of inputs, processes, and outputs.*

To start a virtual team, you need independent people, cooperative goals, and multiple media. As the team goes through its life cycle development process, people share leadership, undertake interdependent tasks, and engage in myriad boundary-crossing interactions. As the



**Figure 2.5 Virtual Team System of Principles**



team's life cycle unfolds, it produces concrete results, integrated levels of organization, and, if the teaming is done with integrity, trusting relationships (Figure 2.5). We describe these principles in greater depth in the following three chapters.

Virtual teams are teams and then some. Virtuality always adds a "spin"<sup>14</sup> to classic learnings about teams. The greatest difference between virtual and conventional teams is in their links. Within links, the explosion of electronic connections, particularly the new digital media, is the driving force of change (see Chapter 4). Virtual teams also include everything that is familiar about traditional teams, beginning with clear purpose.