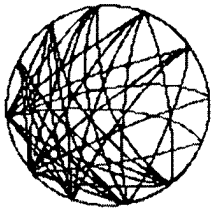
CHAPTER 8



WORKING SMART

A Web Book for Virtual Teams

This "how-to" chapter focuses on the many practical ways virtual teams can develop and use their combined smarts, their "group intelligence."

> *On the whole, a virtual team must be smarter than a conventional collocated team—just to survive.*

Being smarter means that the team shares its ideas freely and creatively. People think together about what they are doing. Brainstorming is one obvious way that a team engages its intellect. Every diagram a team makes, every memo written, agenda proposed, and idea exchanged—all of the team's shared interactions—combine into mental or cognitive models. As people share their mental models and test them in the environment, they collectively think up better ones. The better the shared understanding, the stronger the model. Better group models equal greater group intelligence.

All teams share cognitive models of themselves as a team, of their work, and of their environments. In most situations, these models are fragmentary and unexpressed. In the conventional, well-structured collocated team with its ever-present boss and proverbial water cooler

for informal interaction, their explicit articulation often is unnecessary. Virtual teams, by contrast, lack the traditional cues, and thus need clear ways to view themselves and their work.

> *To work smarter, virtual teams need to build explicit models with common categories and the right relationships.*

Abstraction is sometimes difficult for people who prefer to communicate about concrete things. Most of us like knock-on-wood, hard reality, the "I can see it, feel it, taste it" satisfaction of material concreteness. Unfortunately, these aspects of traditional work are in short supply for virtual teams. The faster, more global, more complex Information Age world demands greater abstraction. The trick is to learn how to use abstraction to advantage.

Before continuing with this chapter, please stop to think of a team that you know well. Perhaps you will choose the most successful team you have ever been on, a team you are on now, or a team you would like to design. Use your experience as you read. Enter information or check off items (for example, "We wrote down our purpose," or "Cathy, B.J., and Ron are team members"). Leave question marks where you are not certain how your example applies, or note blanks that represent missing pieces of the process that you are remembering, experiencing, or imagining.

Awash in the flux and chaos of change, the method by which a new team takes form is not linear. It "iterates" through a series of "rapid prototyping" cycles. The team does a mental mock-up of itself.

Below, we present three phases of planning and development for a virtual team. Phase 1 is a high-level overview; Phase 2 goes through a more complete planning process; and Phase 3 offers complex virtual teams a way to develop more systematic detail.

These three cycles together provide a summary of the book's most practical ideas. Thumbnail-size versions of the book's graphical figures point to concepts elaborated earlier. Follow the page numbers to find the original figures and more on the ideas (this is a print version of a

World Wide Web link). The boxes and tables are meant to symbolize fields in a database. Imagine filling in the data. Then you have the information you need to create a plan, handbook, and Web site.

Each of the phases, outlined below, has features of the basic elements of the virtual team model: purpose, people, and links.

Phase 1

Team Concepts
Virtual Team Name
Statement of Purpose
Overall Results
Delivery Dates
Location
Key Goals
Key People List
Team Size and Bands of Involvement
Contact Information
Team Types

Phase 2

Purpose Flow
Process Elements by Goal
Task Deadlines
Responsibility Matrix
Task Leadership
Process Leadership
TeamFlow Model
Distance Gauge
Media Palette
Media Plan
Members/Media Matrix
Virtual Team Handbook

Phase 3

Virtual Teams Principles Taxonomy
"Stressed 5" Team Process

McGrath Task Circumplex
Cooperation/Competition Gauge
Individual/Group Gauge
Task Factors
Media Characteristics Chart
Task Timing
Hierarchy Ruler
Network Organization Chart
Virtual Team Web Book

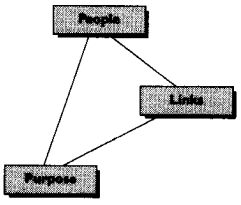
As you consider each phase, please keep in mind that virtual teams benefit enormously from face-to-face meetings. These are particularly important in the early phases of development. If meeting face-to-face is too costly or otherwise constrained, consider using a mix of the many interactive technologies available to virtual teams, as described in the examples in this book.

Virtual teams that follow a clear process, supported by technology that captures their work as it unfolds, will naturally and unconsciously develop a tangible group intelligence. Once we know groups can be smart, we are on our way to learning how to enhance our collective intelligence.

Phase I: Setting Up the Basics

How does a virtual team begin? People with an idea start talking and soon a new virtual team is on its way to formation. Regardless of how it

Team Concepts



Get a grip on your team by seeing its configuration of people, purpose, and jinks. (See Chapter I, Figure I .2.)

begins, a team grows in three basic dimensions—people, purpose, and links. A purpose statement and a team directory summarize key early outcomes of Phase 1.

Create an Identity

A team's name is its smallest mental model. Names may be dull but descriptive, creative expressions of mission, or wild things that capture people's imagination.

Virtual Team Name

> Name yourself. A name labels the category of the team itself. Consider using a formal name that clearly communicates what the team is about, for example, SunService's Live Call Transfer Team. Use a short tag for internal use—in this case LCT—or let a nickname bubble up through the ongoing group conversation.

Names often summarize an overall purpose that a team expresses through its mission. The act of writing a vision or mission statement and then hanging it on the wall has become the well-deserved object of ridicule in many organizations. If the exercise stops there, chuckle on. When the exercise of writing a purpose statement becomes the basis for the group's work, it is a powerful source of energy. We cannot overstate the importance of a virtual team going through a process to make its

Statement of Purpose

> Construct a prose statement of intent that answers the question, "Why are we doing this?" Make explicit the team's mission—its top-most goal and motivation to action. The purpose statement is the formal informational icon of group legitimacy.

purpose tangible. In the end, this means writing down the purpose and creating a charter, however informal.

Rule number 1 of every team is to get the purpose right and make it clear to everyone, a task that is at once more important and more difficult for virtual teams. Even when it receives its purpose from above, a team must interpret and express it in its own terms. In a distributed team, which functions with far less oversight than is customary in a collocated team, people must understand and commit to the purpose.

Overall Results

The primary team product is the answer to the question, "What are we going to do?" The bottom-line result is the group's *raison* d'etre. Mentally place yourself at the end of the project and then look back. Use words and draw pictures that describe the final product of the team's work.

Delivery Dates

Document the team chronology from the beginning. Define any known deadlines and establish a best-guess time limit for results. Create a list of significant external dates, such as budget cycles and major conferences. These dates anchor the team calendar and begin to rough out the phases and pace of activity.

A team often expresses the concrete image of the ultimate result of its work in numbers—more market share, lower cost, faster cycle times. Decisions, events, reports, presentations, prototypes, or anything else that represents the concrete consequences of joint effort are also examples of end-point results.

Teams live in time. They sputter into life as people talk, meet, argue, agree, and formalize. Early team history accumulates as people make contact and develop relationships. Key outside dates that impact the

team help shape the anticipated timeframe. To establish the boundaries of their overall process, the team needs to set delivery dates for results at the beginning, however imprecise the estimate. They can be set as a one-time deadline, a set of milestones, or as periods of performance evaluation (for example, quarterly or annually for ongoing teams).

Location

> Does the virtual team have a natural home given the circumstances? Identify physical locations and phone numbers where applicable. Set up electronic addresses and places where possible.

Location, like all these early features of virtual teams, may not be very clear or specific on the first iteration, but it will over time become a given of the team's work. Soon virtual teams will come to associate themselves with Web locations, which are infinitely configurable suites of group and individual workspaces.

Name *the Goals*

To get from abstract vision to concrete realization, you need to organize the work and decide who is going to do what. A deceptively simple approach to work process design is to establish a set of goals which, when achieved, together accomplish the overall purpose. Well-conceived goals become the major components of the team's work and the seeds around which subgroups form to actually do the work. These major internal team components are like the internal functions of a corporation—units of work that also identify clusters of people.

Brainstorm this list early and often, keeping the categories fluid during the first phase as purpose, people, and links are initially detailed. Look ahead to nailing them down in the next phase as the basis for the team's internal organization.

Key Goals

Make a first pass at naming the key goals of the team. Keep the major categories to a handful or two at the most. Assess whether this set of goals covers the statement of purpose and the overall result. Consider how people can work together in goal-oriented subgroups.

Identify the Players

People or purpose, which comes first? The natural impulse is to immediately come up with a list of people. The more practical approach is to first draft an initial purpose and then identify whom you need to involve.

Key People List

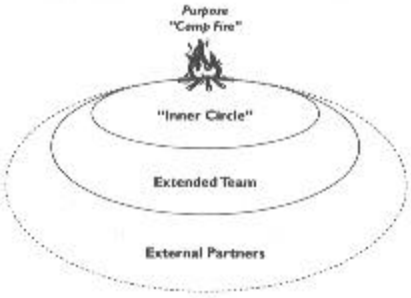
Name	Organization	Location

Figure out which organizations you need to involve in your project, then identify specific people for the team. Note the organization of everyone involved and the location of their primary workplace. This is the starting point for the team directory.

A team emerges from the activities of specific people who can be represented by a list of names. Early team lists are usually quite dynamic. For example, the people who came up with the original idea may not be on the team. Key people may require recruiting, and the team

may identify member "slots" for needed expertise, experience, or representation. Lists of member names may start on the back of envelopes, but they eventually become relatively formal, providing a roster of fundamental team identity.

A list of names offers an additional bit of basic information about the team: its size. However, membership boundaries may be less than exact, particularly in the beginning. Thus size is sometimes expressed as a range (for example, 8—10 people). Membership is often a moving target for virtual teams, becoming increasingly complex as the team grows.



Team Size and Bands of Involvement

Make a first pass at the team's "bands" of membership: the small core group, the extended network of closely involved part-timers, and a periphery of experts and support people who are recruited on an "as needed" basis. (See Chapter 5, Figure 5.3.)

Make Connections

Team formation is above all a communication process. To reach people in the virtual world, you need to know their many addresses. Not incidentally, these addresses offer strong clues about people's current access to different media and their ability to operate in a distributed environment.

Contact and location information is central to the team directory—it is its catalog of boundaries and the means of crossing them.

Contact Information

Name/Organization	Medium	Address
...	...	...

Collect the many addresses that people and organizations have including office locations, snail mail (traditional postal) addresses, phone numbers (which may be numerous—office, home, car, cell, voicemail), fax numbers, e-mail accounts (perhaps several), Web page addresses, server names, and meeting places.

Do *Assessments*

Why, what, who, where, and *when.* By this point, you have asked the basic questions and have settled some initial team parameters. You probably know by now what kind of virtual team is coming to life.

Team Types

Spacetime	Organization: *Same*	Organization: *Different*
Same	Collocated	Collocated Cross-Organizational
Different	Distributed	Distributed Cross-Organizational

Look at your list of member organizations and where people are located to see the boundaries the team crosses. Use the chart to determine the virtual type. (See Chapter 2, Figure 2.3.) Consider how much time the team will spend together (synchronous) and how much asynchronous interaction it requires.

If a virtual team is distributed, but from the same organization, it is likely that communications and participation issues will dominate its

development. A collocated but cross-organizational team is likely to experience difficulty with establishing common purpose and making decisions. Virtual teams that are both distributed and cross-organizational will experience both forms of stress and are most in need of new behaviors and support infrastructures.

With purpose, size, and timeframe in hand, you can also make some overall judgments about the complexity of the project, its chances of success, and its estimated costs. Look as well at the technologies that will affect the team's product or process. Note especially how much you can do online. Go digital wherever possible, as soon as possible, all other things being equal.

> *Now is the time to consider major changes! Encourage change early in the process and discourage it later*

This level of detail may be all you need. You ought not burden a relatively short and simple project with a few known players with unnecessary planning. If you can settle the basics in a few two-hour meetings and summarize them in a couple of pages, you need go no further in designing your virtual team. However, you still need to cycle through the essential elements described above several times. This guarantees that everyone involved will thoroughly understand the right mental models.

> *Always invest in beginnings.*

Phase 2: Planning for Action

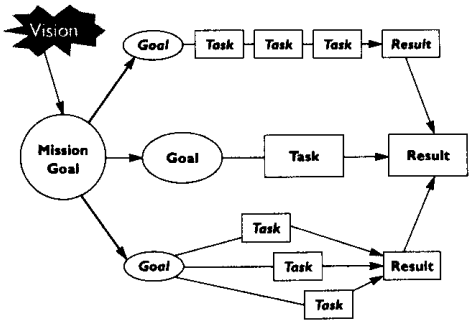
With your simple model of "who you are and what you are doing" in hand, you are ready for greater detail. Usually this second planning cycle involves more people, including both sponsors and a critical mass of individuals who are responsible for implementation and results. Participatory planning is a powerful way to achieve early virtual team alignment.

Two important outcomes of this phase are a responsibility matrix and a team handbook.

Purpose in Motion

Purpose is dynamic and complex, not static and simple. Virtual teams use their purpose to set themselves in motion and guide their daily work.

Purpose Flow



Pull purpose apart into vision, goals, tasks, and results. Arrange the elements from vision to results as a flow through time. Indicate major goal and task interdependencies. Initially this is nothing more complex than a brainstorming diagram. Later, as the categories of work become more established, you can formalize the diagram as a logical PERT chart. (See Chapter 3, Figure 3.2.)

As you cycle back to look at purpose for a second time, magnify it at different levels. Use a more inclusive frame of reference to set the statement of purpose in a broad context of vision, principles, and values. Then break the mission down to the next level of goals, tasks, and results. While it is useful to meet face-to-face for this part of the process, it is not mandatory. Often it is not even possible. However, you need to achieve the same results using interactive media, a clear process, and common information.

Agreed-upon tasks are the ways people spend their time in accord with the team's goals and results. Far too many teams are off and running with only a task list written on a flip chart and little idea of how the

tasks connect to a larger purpose or specific results. For virtual teams, the list of tasks is the last part of purpose to talk about, not the first.'

Identify Process Elements

Work is a process of tasks accomplished, meetings held, decisions made, milestones met, and results produced.

Process Elements by Goal

Goal	Tasks	Results
...	...	...

Now is the time to detail the purpose. Check to see that each goal has at least one result and that each result has at least one task. Ensure that tasks clearly connect goals to results. Also identify key meetings, decisions, and milestones as you think through achieving the goals.

At the heart of a team's working model is its task set. Tasks are the execution center of the work plan to which members, leaders, resources, time, and other elements are attached. Return to goals, tasks, and results frequently and change them as new people and activities connect to them. Question whether you have divided the work intelligently and labeled it properly, and whether you need to develop new relationships. Until the end of Phase 3, these categories should remain dynamic.

All the actual activities and interactions involved in doing the work itself lie inside the "chunks" of work labeled as tasks.

Timing tasks generate a schedule that you can represent with that familiar icon of work plans, the horizontal time bars of a Gantt chart. Planning estimates turn into actual elapsed times as the team tracks itself

Task Timing

Task	Start	Finish
...	...	...

For each task, attach start and finish dates. If you know the overall time frame, you can estimate specific deadlines. Use a flow diagram to evaluate task/time interdependencies. Refine your deadline projections as the project progresses based on ongoing actual information.

through the process. This basic project data allows the planning process to seamlessly become the management process.

Tasks may need no more than an ending date to indicate when specific actions need to occur in order to produce results. Indeed, people often resolve the trade-off between independence and interdependence by agreeing upon results and end dates. This balance between everyone working together, working in subteams, and working independently has to be flexible.

Clarify Responsibility

Tasks undergird the team's membership needs. A simple responsibility matrix captures the set of relationships between members and tasks.

One of the hidden dangers always lurking on the sidelines of virtual teams is the ethic that everyone needs to be involved in everything. You can avoid this recipe for disaster by clarifying just which tasks and decisions need everyone's input and which do not. The rich conversation about who needs to be involved in each task helps people to sort through and reduce anxiety about what is attainable. The exercise inevitably flushes out additional needs for expertise and representation, leading to new recruitment and perhaps a larger team. At the same time, people often reevaluate, cluster, or break out tasks further during this review.

Responsibility Matrix

	Member A	Member B	Member C
Task 1	x	x	x
Task 2		x	x
Task 3		x	

Identify "who needs be involved in what" through a dialogue, either in person, on the phone, or online, that examines each task. Whenever someone is involved in a particular task, make an **x** in that member's column. Some tasks require only one person. Others may call for everyone's involvement. Most tasks need a subset of the team as a whole. Use this chart as a way to explicitly divide the work, obtain the right participation, identify leadership, and track commitments.

Task and Process Leadership

For each task, designate one or more members as task drivers, specific members who are responsible for specific results.

Task Leadership

Tasks	Leadership
...	...

Identify who is responsible for what. Check that each task has at least one leader. Tasks lead to results, so every result will have at least one person responsible for it. Leadership may be singular or multiple, determined in the course of the task-by-task dialogue.

Virtual teams increase their overall leadership capability as they divide the work. By identifying task-based leadership, a group distributes its management burden in this team-defining dimension. A team may go into a planning session with one appointed leader and come out with everyone a leader. Leadership acts as a repository of trust within the group. The higher the level of trust, the less people will feel the need to be involved in everything.

Task leadership alone is not sufficient for team success.

Process Leadership

Name	Process Role
...	...

Process roles include team leadership as well as such functions as liaison, facilitation, knowledge development, agendas, and support. Be inventive when labeling process roles. Remember that this is frontier territory in the virtual world.

It is relatively easy to make task leadership explicit. Not so with process (social) leadership. Aside from overall team leadership, the roles required to develop and maintain the team process are hard enough to recognize and acknowledge in collocated situations.

Make Models Accessible

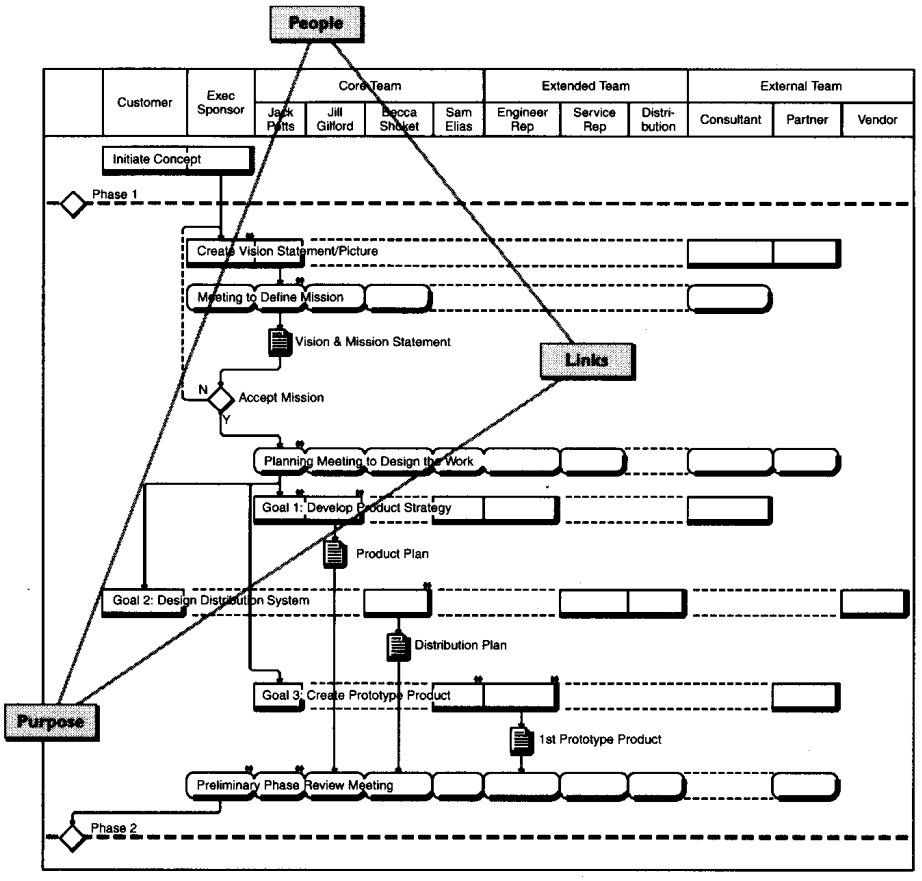
The explicit, visible models that a team creates are considerably easier to depict and access than the models that individuals hold inside their heads. As distributed work becomes more complex, the digital medium is the ideal way to make the team's process and product models come alive.

While product models, the topic of the team's work, will vary enormously, process models have an underlying similarity. The responsibility

matrix is a powerful way to summarize purpose/people/links information that is key to every virtual team.

Computer-based tools can help you depict and update a relationship-oriented process model of virtual teams. The deployment charting method was pioneered by Dr. W. Edwards Deming and first extensively employed by Toyota in the 1960s.[2] TeamFlow[3] (Figure 8.1) is an artfully simple process mapping application designed for modeling and managing virtual team processes. At the heart of the deployment model is the responsibility matrix that reflects agreements about who is doing what.

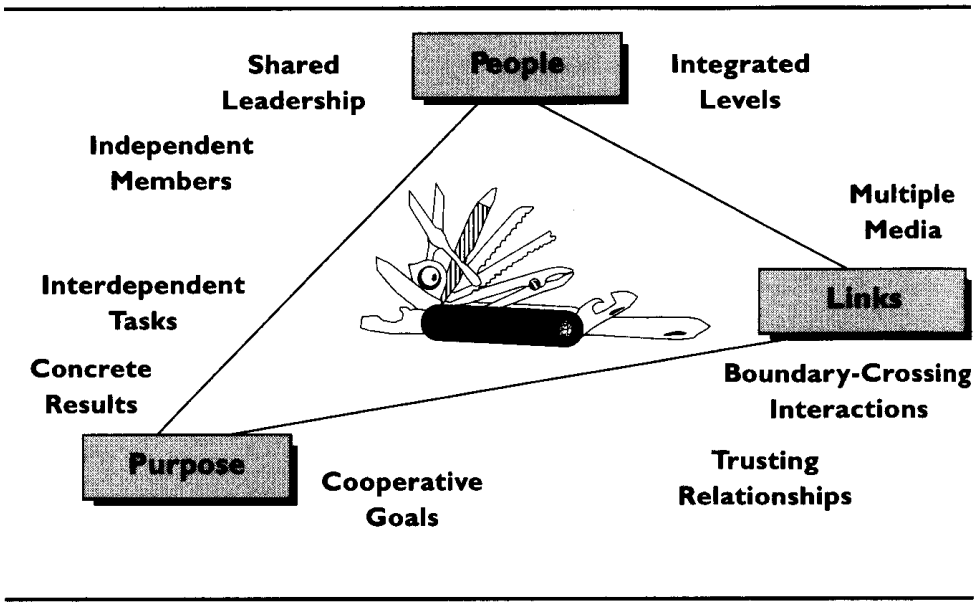
Figure 8.1 Virtual Team Model and TeamFlow



You can connect information that touches on all nine Virtual Team Principles to the process matrix and its two associated views—a time-oriented Gantt chart to track progress and an organization chart with a directory.

1. *Goals* serve as headings for groups of tasks and results.
2. *Tasks* are the set of linked boxes as a whole.
3. *Results* appear as document icons.
4. *Members*, individual and organizational, comprise the horizontal labels at the top of the matrix.
5. *Leadership* is indicated by tags on the tasks designating roles.
6. *Levels* are reflected in the hierarchy of the organizational chart and the levels of detail in the plans.
7. *Media* are accessed through addresses in the member directory and file names of other information associated with tasks and results.
8. *Interactions* happen over time and are indicated by the timing associated with each process element, summarized in a Gantt chart.

Figure 8.2 Virtual Team Pocket Tool



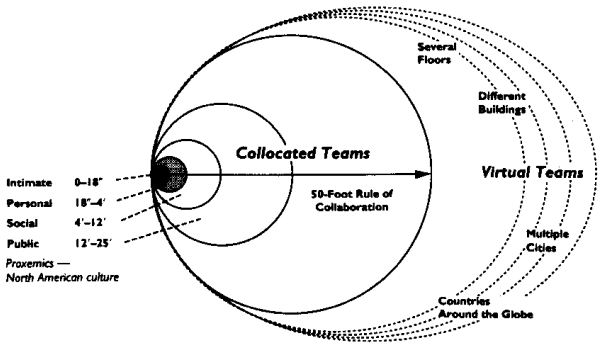
9. *Relationships* among members are represented by the linked boxes showing who is involved in each activity.

This information makes the principles concrete and useful. Remember the principles[4] as a tool set (Figure 8.2) to assess, plan, implement, and evaluate a team's work. Use them as a simple mental checklist or as a framework for creating a formal plan (as above).

Create Media Plan

The responsibility matrix and leadership roster indicate who needs to develop relationships with whom to complete different aspects of the work. Many virtual teams need or may greatly benefit from face-to-face time, particularly at the beginning to develop the plan and build trust. Since physical separation is the most common plight of virtual teams, it

Distance Gauge

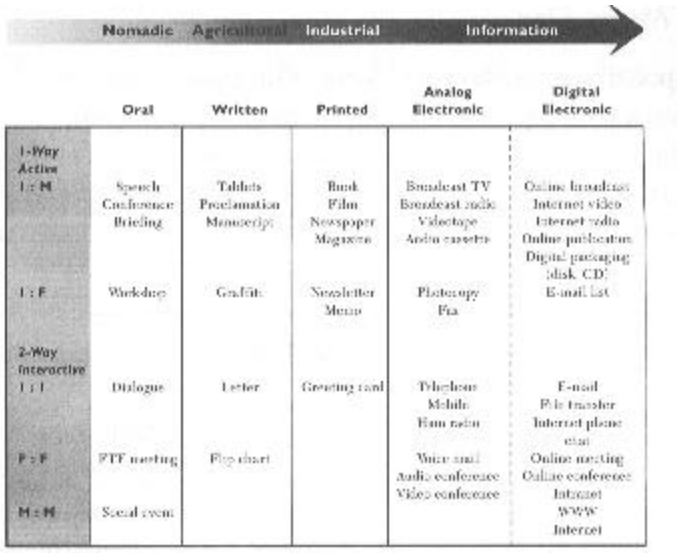


Use the distance gauge on a person-by-person basis to assess the likely frequency of face-to-face contact and the relative cost of the team getting together. The 50-foot rule suggests that people have to be very close together to gain the advantage of spontaneous interaction. Beyond that close range, cost and travel time increase with each greater distance. When people are face-to-face, take into account cultural differences in regard to personal proximity "comfort zones." (See Chapter 1, Figure 1.1.)

is important to evaluate the impact of distance in thinking about the team's communication.

Now that you have a feel for the work flow and time constraints, you are ready to develop a media plan. Consider your many options at this time.

Communications Media Palette



Use our sample set of media as guidelines or create a palette yourself from the systems you know about and have available. Choose from all eras of communications to best fit the work and process needs. (See Chapter 4, Figure 4.1.)

Virtual teams need to consider both product and process media. Product media relate to how you present the work you are doing. Process media relate to how you communicate in order to get the work done. First, will you deliver any results in a communication medium (for example, a document or presentation)? What work and results can you do in digital form so that they are accessible online? After you know what

the work is and whom to involve, ask what media you need to carry the team itself and its work process of boundary-crossing interactions.

Media Plan

Media	Type	Interaction	Frequency	Location
...	...	...	...	...

Fill in the name of the communication medium you are using. Determine which of the five types it is: oral, written, print, analog (electronic), or digital (electronic). Designate whether it fosters one-way or two-way interaction. Note its frequency: periodic (for example, weekly, monthly), continuous (for example, e-mail), or variable and episodic (for example, special meetings). Indicate its location, physical or digital, as appropriate. (See Tetra Pak example, Chapter 5, Figure 5.1.)

A media plan may not amount to much if it simply mandates a face-to-face Monday morning meeting, a typical collocated team approach to staying connected. Virtual teams, however, require multiple media to meet a variety of product and process needs.

Look for the most appropriate media for meeting your needs, with obvious consideration of the limits of cost and availability. You may want a video conferencing system but find that it is currently too expensive for you. Within your constraints, experiment to find what works best. Then stretch your sights, particularly to find ways in which digital media can be useful to you. Digital media are ideal for virtual teams and will eventually become ubiquitous.

Virtual Team Handbook

By the end of Phase 2, you have accumulated considerable detail about your team and its work. Now is the time to pull it together into a team

Members/Media Matrix

In determining the co… who has access to … do

	Member A	Member B	Member C
Medium 1	x	x	x
Medium 2	x		
Medium 3	x		x

handbook. A handbook can act as a shared “information place,” a common resource for team members that is a tangible token of membership and a means for initiating new members. The physical handbook itself may be as small as a document or a file folder but it often comes packaged as a three-ring binder. The sections and content of a handbook are excellent models for setting up a digital workplace (see next section). It is best to have both a “carry-it-around” handbook of key information as well as a more extensive online version.

The virtual team handbook contains both process and product information:

1. Process information includes everything from purpose statements and team directories to budgets and instructions for using databases.
2. Product information, which always is unique to the team, includes everything from product requirements to marketing plans and the product itself.

Process Information

Organize process-related information for the handbook in three sections reflecting the purpose, people, and links aspects of the team.

Section I: Purpose and Plan

Gather together all the purpose materials here including the statements of vision, mission, and goals, action plans with tasks and results, matricies of responsibilities, and decisions as they are made.

In the early part of a team's life, this section is very dynamic, changing and growing moment by moment. As the team's plan stabilizes, this section becomes a repository of that stability, serving as an internal management and navigation tool. Externally, the summarized purpose statement becomes the public face of the team answering the question, What are you doing?"

Section 2: Team Directory

Review and update the contact information. Expand the list to include the new members whom you have identified by the more detailed look at the work. Broaden the information about people to include team roles and task responsibilities. Develop a format for entering organizational information by name.

A virtual team has external contacts as well as internal interactions. Team directories may include all the people and organizational contact information required in the course of its work. At the front of the directory section, post a team membership list to keep boundaries as clear as practical. You can represent complex teams in terms of bands

of involvement—for example, the core team on one page, the extended team on the next, and all others such as occasional experts and reviewers in a third group.

Section 3: Calendar and Communications

Summarize all the relevant dates on a team calendar including result deadlines, task completion milestones, and scheduled events as well as holidays and other significant dates that impact timing. Capture the group's stream of consciousness, for example, by collections of meeting minutes, memos, and key group messages.

Getting calendars in sync is a major problem for virtual teams, along with the fact that published information always seems to be out of date. Online event lists, calendars, and scheduling systems address these problems and are essential parts of the virtual team's infrastructure. Store and organize all of the online communication for virtually instant recall and reuse, uniquely powerful features offered by digital media.

Product Information

The second part of the team handbook is organized according to task and results-related information. Constituting the bulk of the handbook as the work progresses, this section includes background documents, information related to work-in-progress, and drafts of results. Since even small groups generate a lot of information, use the binder as a selection device to keep key information pruned to the essential elements. Provide summaries, tables of contents, and pointers to other relevant documents and data wherever possible.

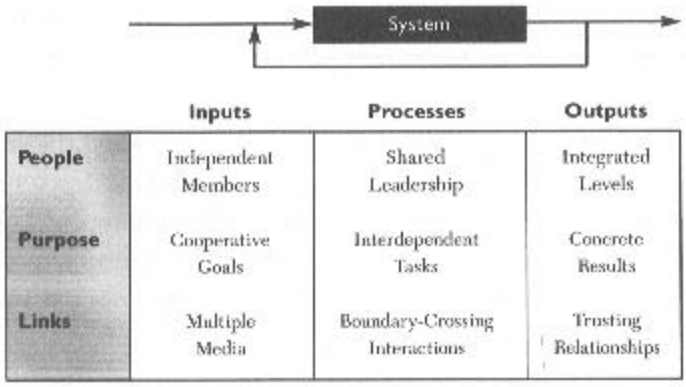
A well-organized, task-based plan with a responsibility matrix and common information gathered into a virtual team handbook can be very low tech and uncomplicated. This plan contains enough detail for alignment without being so detailed that it unnecessarily constrains people. For many virtual teams, this is enough.

Phase 3: Managing the Process

Teams that are particularly large, complex, long-lasting, or interconnected to other teams will need a third cycle of planning and a more comprehensive set of tools. Even if the level of detail you have achieved in the first two iterations satisfies you, review your task list against the eight types of activities discussed in this section.

One outcome might be to develop your team handbook on the Web. Also consider using the responsibility matrix as a group interface to common process information.

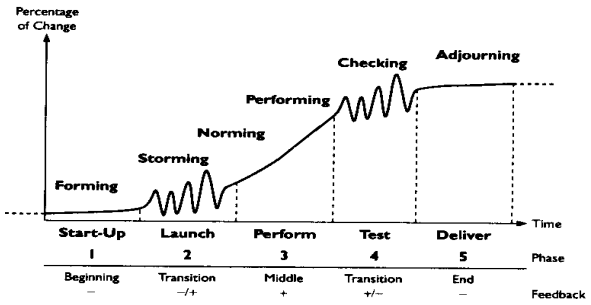
Virtual Team Principles Taxonomy



The taxonomy (a theory-based framework) breaks out the three basic team elements into nine principles arrayed as an input-output systems model. The systems approach helps ensure a comprehensive look at team complexities. (See Chapter 2, Figure 2.5.)

Teams are truly varied, each as unique as a person. Yet, there are patterns of life and behavior that are common to all teams. The virtual team principles enable you to evaluate your own situation systematically. Adapt them to your unique circumstances.

"Stressed S" Team Process



One of the most general patterns in nature is the growth process. Use a life cycle process model to set your milestones and chart your progress. Anticipate turbulence at the natural stress points in your journey. Be Prepared for change. (See Chapter 6, Figure 6.1.)

By the third cycle, the planning process accelerates and the team's activities push into the performance phase. More detailed planning usually takes place in a more distributed mode. Individuals and subgroups develop many of the additional details while the team is apart. Then when the team comes together (physically or virtually), it integrates them to complete and legitimize the plan.

Type the Tasks

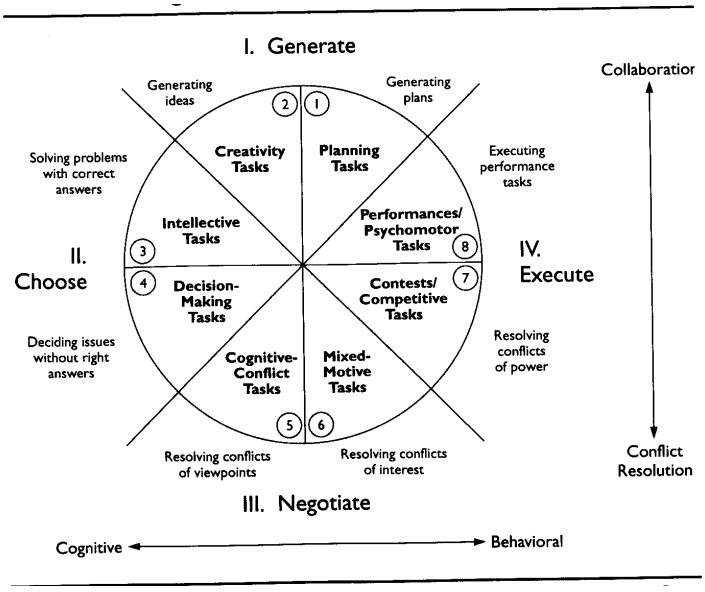
As with the previous two phases, the third phase begins with purpose. Here we introduce another tool to help us flesh out tasks, the defining quality of teams. If you can identify the type of task you are performing, you have at your disposal a large body of "know-how" about teams full of tips, tools, techniques, methods, and processes.

While the content of any particular virtual team's task is unique, the general form of the tasks is not. Just as you can categorize tasks as cooperative or competitive, independent or codependent, so you can categorize them according to the type of interactions they require. Joseph McGrath, a social psychologist at the University of Illinois, suggests four

basic types of tasks, which he labels with verbs: generate, choose, negotiate, and execute. He arranges these types in a pie, the "McGrath Task Circumplex" (Figure 8.3).~

Imagine the process of building a house. Pounding nails and pulling wire—execution tasks—create the concrete result of a livable house. Putting the right nail in the right place at the right time involves many other activities. Owners and architects plan and create and plan again. Architects and engineers solve problems of load and leverage in design. Interior designers work with owners and architects to make decisions that depend on taste rather than fact. Owners, contractors, and other vendors negotiate over who does what for how much. Some work is put out for competitive bid.

Figure 8.3 McGrath Task Circumplex



Note:Adapted from *Groups:* Interaction & *Performance* by McGrath, 1984. Upper Saddle River, NJ: Prentice-Hall, p. 61, Figure 5.1. Copyright © 1984. Adapted by permission of Prentice-Hall, Inc., Upper Saddle River, NJ.

All these activities lie behind the driven nail. Building a house appears to be the archetype of a project requiring a collocated team. However, the larger "building-a-house-from-beginning-to-end" process clearly involves a virtual team of many specialties, usually even a team-net, a virtual team of teams.

To open the right tool drawer, you must first appropriately identify the type of task you need to perform. Each of the types carries its own way of doing things:

- *Generating tasks—which* include (1) *planning tasks* to create plans and (2) *creativity tasks* to generate ideas—are the most collaborative ones. They involve a mix of thinking and doing activities. Usually, there is no "most correct" outcome to new plans and ideas. Planning is an iterative process of work design, while creativity involves divergent data gathering and brainstorming together with convergent idea integration.
- *Choosing* tasks—which include (3) *"intellective"* activities focused on solving problems with correct answers and (4) *decision-making tasks* where there are no right answers—are the most cognitive ones. Invariably they involve individual and group thinking. The intellective are the traditional science tasks where "truth wins" as judged by data and a jury of peers. Decision making under conditions without clear external standards, where most of human and social science lies, deals in probabilities, extrapolations, and estimates.
- *Negotiating* tasks—which include (5) *cognitive-conflict tasks* about clashing viewpoints and (6) *mixed-motive tasks*. which are about resolving conflicts of interest—are the most difficult group activities. Conflict resolution activities are the most competitive tasks and, like the generating tasks, they have few clearly correct answers. Groups need to be flexible and inventive around these issues. Here, success requires negotiating processes and skills. This is the arena of political activity, of tough choices that often require executive involvement.
- *Executing tasks—which* include (7) *contests* and competitions that are physical resolutions of conflicts of power, and

(8) *performances* and other psychomotor activities that require joint action—are the most behavioral ones. Executing includes a mix of individual and group activities. This is the domain of direct action, and these tasks dominate in the operational roles of an organization.

Taken as a sequence—generating, choosing, negotiating, and executing—the range of tasks models a team's natural life cycle. Many kinds of teams begin with planning (1), then move through a period of data gathering and creativity (2), followed by problem-solving (3) that data and accepted principles can settle. The team settles remaining problems through a succession of more competitive conflict-resolution processes, from issues without right answers (4) to differing viewpoints (5) and interests (6). They escalate unresolved issues of power (7) for settlement by the hierarchy. As tasks clarify and issues resolve, direct actions (8) produce concrete outcomes. And keep in mind:

- The code of eight task types is a language for steps in any sequence of work. For example, some teams begin with a planning task (1), move directly to resolving conflicts of viewpoints (5), then back to creativity (2), do another loop of planning (1), and then go directly to execution (8).
- The team's dominant task may type it as a whole. Some teams arc set up for planning, others for problem-solving, and still others for decision-making.

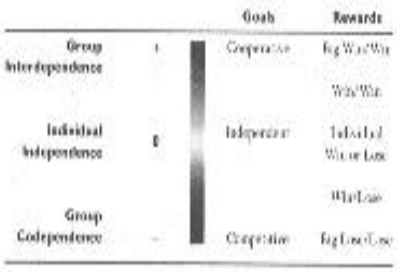
The practical reason for determining which type of tasks you are doing is to identify appropriate tools, processes, skills, and competencies. Use of this system can also help extend your knowledge of virtual teams. By using a classification scheme based on the type of work, you can compare best practices, methods, and trends across many virtual teams.

Your Type of Tasks

As you take a third look at the work, consider the risks and rewards for the people involved. All goals are not naturally cooperative endeavors.

Teams are frequently set up to resolve conflicts, such as a cross-functional executive team charted to cut costs.

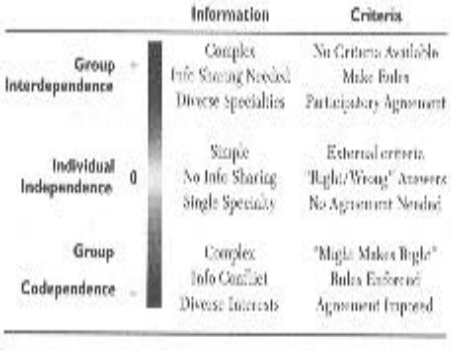
Cooperation/Competition Gauge



Consider the mission and each of the goals in terms of their cooperative index. Is it a win-win for the people working to achieve results? Or is it a win-lose competitive situation? Will winners and individual separately? Will the team be rewarded as a whole? As part of the whole enterprise? (See Chapter 6, Figure 6.2.)

The cooperative character of goals colors the associated tasks and is the first step in typing the work. Second, consider tasks in terms of their suitability for individual or group effort. Teams typically involve both “me” and “we” tasks.

Individual/Group Gauge



Consider each of the tasks in terms of its one-or-more index, Is the task one where one person will be enough or perform best? Identify and agree upon the tasks that require the most group involvement. (See Chapter 6, Figure 6.3.)

You can now assess each task with an array of indicators to better understand what it is and how to do it.

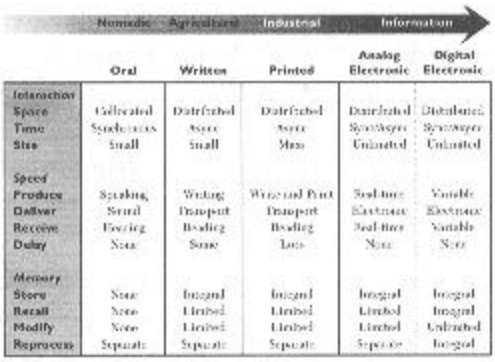
Task Factors

Task	Cooperative/ Competitive	Individual/ Group	McGrath Type	Tools/ Processes
...	...	...	...	...

Write down each task and then tag it in a variety of ways: Is the goal driving the task cooperative or competitive in nature? Will an individual or a group perform it best? Is it a generating, choosing, negotiating, or executing task? What specific processes and tools are best for each task type?

Many tasks require specific media to support their process and interim results.

Media Characteristics Chart



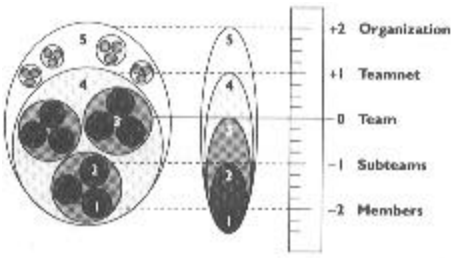
Evaluate tasks for interactivity. What challenge does each task pose in crossing space and time? How much speed do you need and how much memory? Use the chart to identify the right media for the job. (See Chapter 4, Figure 4.2.)

Make judgments about the appropriateness of media depending on the task type. For example, media that are good for creativity are not necessarily best for negotiation.

Level with People

Good virtual team models provide multi-level views of the people involved in order to navigate the organizational space. The most powerful single conceptual tool people can use to develop and communicate meaningful mental models is the concept of levels (i.e., hierarchy in the scientific sense).

Team Hierarchy Ruler

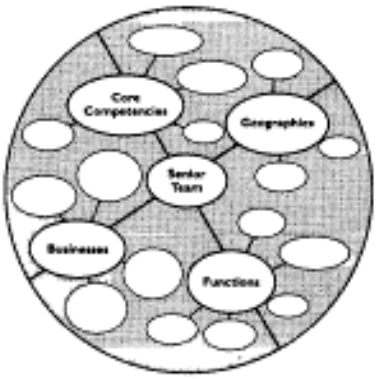


From the point of reference of the team, identify the levels of detail comprising the team and where the team fits into larger organizational contexts. (See Chapter 5, Figure 5.5.)

Hierarchical diagrams represent both authority relationships and the logic an organization has developed for its work. Virtual team directories should contain basic positional information that indicates who reports to whom (especially important in matrix organizations). Try rendering your many-tiered organization in the style of Eastman Chemical Company's Pizza Chart.

Finding the right people at the right time for a task is a challenge. Ideally, corporatewide Yellow Pages offer access to people through work experience, skills and competencies, educational records, other formal qualifications, and personal information that people choose to make available.

Network Organizational Chart



Use hub-and-spoke arrangements to show hierarchical relationships. Draw network connections both for major internal team components and to connect the team as a whole to the larger work universe. (See Chapter 3, Figure 3. I.)

Virtual Team Web Book

In a few years, virtual team *Web* books will be almost as common as manual team handbooks are now.

The World Wide Web stands out as the defining tool of the emerging world of virtual work. This is the portal to what is still the cyber frontier of the Internet and the even vaster matrix of all interconnected computers. In virtual team applications, using the Web means creating intranets.

An almost ideal medium for shared mental models, the Web combines anytime-anywhere availability with an unrivaled flexibility of expression that potentially embrace all media. At the hub of the Web is the *link,* not even a proper technology but a pure package of information, an address tag—a Uniform Resource Locator (URL).

On the Web, you can link any information to any other information anywhere. Most remarkably, you can put these links into context, however consciously or unconsciously constructed. A team[5]s Web site is a place to clearly and explicitly grow its common information. Smart teams thereby become more conscious.

- Virtual team Web sites can be as simple as they need to be. A home page with a name banner and clickable references to current events, purpose, people, and communications may be all that is necessary.
- The next step is to create an online end-product model—a picture, description, and/or diagram of the results showing major components. This can act as a common navigation tool to the team's product.
- The third step is to use the Web with its interactive power to create a visible dynamic process model of the team using the information developed in the three cycles of planning.

The responsibility matrix created by a team can be a powerful *group* interface, its navigation tool for process information. All the elements can be hot, clickable URLs to associated information. For example, click on a name and go to a directory entry, click on a task and go to its description, or click on a link to learn what someone is doing on a task.

The Web approach to team intelligence is completely scaleable in size. Teams may use personal home pages (like those offered by many Internet Service Providers) or they may plug into global internal networks of intranet sites, as at Sun Microsystems, where they leverage vast resources. Modeling tools can combine product and process views at any level of complexity.

Remember that there are no rules for what you can and cannot include. Regardless of what information you provide, whether you keep **it** mostly in hard copy or move immediately to a Web-based resource, your virtual team handbook will be a tremendous source of information and even pride for your team.

Invest in a handbook or Web book and your virtual team will reap the benefits of being smart, nimble, and fast.