

## CHAPTER 3

# TURNING HIERARCHY ON ITS SIDE: HOW SMART ORGANIZATIONS KEEP THE BABY AND THROW OUT THE BATH WATER

### EASTMAN: A TEAMNET COMPANY

Once, when “going West” meant trekking across the Appalachian and Allegheny mountains, Kingsport in eastern Tennessee was a doorway to the colonial frontier. Today, home to Eastman Chemical Company, it is the new outpost of the 21st-century Information Age organization.

Eastman, as it is known, is big and old, and in a dirty industry. If you think in stereotypes, you’d be hard pressed to consider it an ideal teamnet enterprise. Put your stereotypes aside. Eastman is a premier example of what can happen when a company networks itself from top to bottom. In 1993, it received the U.S. “Nobel” for quality, the Malcolm Baldrige National Quality Award.

Eastman offers lessons for networked organizations everywhere. It especially answers questions asked by many old-line organizations in traditional industries: Can we change? Can we transform ourselves from old to new without ripping everything out and starting over? Will it be worth it?

This story offers hope and inspiration. But remember this: it is no quick fix.

## EASTMAN'S STORY

George Eastman founded his chemical company in 1920 to provide an independent supply of chemicals for his photography business. Although big by other standards, Eastman Chemical Company remained a medium-sized player in an industry of giants. When the company loaded 80 of its employees, some of whom had never flown before, onto a plane to go to Washington, D.C., to accept the Baldrige Award, it was the 10th largest chemical company in the United States and 34th in the world, with 17,750 employees and \$4 billion in sales.

Times were not always so good. In the late 1970s, the company was in crisis: a major product line was losing market share. The reason? Poor quality.

To solve the problem, they initiated a focused quality improvement effort. Results were dramatic: customer complaints plummeted to less than one-tenth their previous level as manufacturing costs dropped; productivity increased and market share expanded.

This is where many quality improvement stories end. Flush with victory, successful executives feel they have a winning formula for handling the next crisis. No need to make big changes.

Not at Eastman. This is where things began. In 1982, they started a companywide Customer Emphasis Program. Within a year, they had crafted their original "Quality Policy," the first of four "foundation" documents still in use as guiding principles a decade later. Within two years, customers were coming into the plants and joining the improvement efforts, heralding a major reversal of both corporate policy and tradition.

The company formed teams at all levels beginning in the mid-1980s, which ultimately proved to be the critical defining element in Eastman's success.

“We do all our work in teams,” Bob Joines, Eastman’s vice president of quality, says.

By taking a hard look at their culture, they realized how many of their internal practices were barriers to teamwork (see chapter 8). So, they removed them, paving the way to write “The Eastman Way,” their second foundation document, which serves as the “people pillar” of their philosophy.

They took another big leap forward in 1986 when they developed their Quality Management Process (QMP). QMP provided a common language and process for teams at all levels to use, starting with the team at the top. Senior executives had to “walk their team talk.” They began to set clear goals, which they call “major improvement opportunities”

They applied for the Baldrige for the first time in 1988. They hoped to win, of course, but they also used the application process to drive their growing efforts to pay more attention to customers, to empower and offer development opportunities for employees, and to spawn new relationships with suppliers. They didn’t win on the first round, but by using the Baldrige Award criteria for internal measures, senior management again worked to refine the corporate vision and mission.

In 1991, Eastman published their third foundation document, “Strategic Intent,” and, in 1993 it adopted their fourth pillar, “Responsible Care.”<sup>®</sup> An industry alliance developed this set of commitments to health, safety, and the environment,<sup>1</sup> reflecting a codification of Eastman’s already exemplary record in these areas.

Results of more than a decade’s work are impressive. Seventy percent of their customers around the world rate Eastman as their No. 1 supplier. The company has reduced quality-related claims and returns due by 35 percent and achieved a shipping reliability of nearly 100 percent for four years. As the pace of change quickens, Eastman kept up by reducing its time to market 50 percent from 1990 to 1993 and churning innovation into 22 percent of sales with products five years of age or less.

Eastman is an Information Age company. Management, not product, puts them at the leading edge of the transitional wave. What gives them their organizational advantage? Use the teamnet principles to see.

## LOOKING THROUGH THE TEAMNET GLASSES

As a whole, Eastman is a “network of interlocking teams,”<sup>2</sup> says Bob Joines. In our terms, Eastman has developed teamnets, not only in name and theory, but in practice. They exist not only in a department or division, but throughout the entire company.

“How do we get everyone engaged for alignment?” Joines asks. “We start at the top, with CEO Earnie Deavenport and the 11-member Executive Team. Everyone is a member of interlocking teams across the levels. We have 800 or 900 of them. But they’re not the only teams we’ve got. We also have 500 to 600 cross-functional teams. This is where the real work gets done.”

These are only the named, official teams. Thousands more exist informally in a culture of high trust and considerable clarity about shared purposes.

### *Purpose*

When Eastman hit its market wall in 1979, it found a clue about where to go to discover the source of its business purposes—its customers. “We started asking and still do ask, ‘who are our customers and what do they need?’” Joines says.

Since then, Eastman has maintained a close vigil on its customers. Every team focuses on its customers, both internal and external. Eastman’s QMP and its common team methodology add a vital assessment step between customers and the “plan—do—check—act” quality improvement cycle. To assess its customers and its reason for existence, each Eastman team develops its vision and mission, along with specific results and ways to measure them.

This process begins at the top, Joines explains. Complete participation by senior management, along with the interlocking team structure, has enabled the development and deployment of common purposes throughout the company. Operations connects with vision at Eastman. They translate abstract business theories into pragmatic realities.

In “Strategic Intent,” its vision statement, Eastman sets out “to be the world’s preferred chemical company.” The mission is “to create superior value” for five sets of stakeholders: customers, employees, investors, suppliers, and the public.

The strategy focuses on “exceeding customer expectations” while achieving “major improvement opportunities, the annual goals.” With goals in hand, organizations throughout Eastman develop “strategic alternatives.” Teams develop alternatives as “supporting projects,” which they include in the annual plan.

*Every project team understands its connection to the strategic intent, where the real legitimacy for its work resides.*

Everyone participates in building the plan as a whole, which senior management takes responsibility for guiding.

### ***Members and Levels***

Teams within teams within teams. In a large enterprise teamnet like Eastman, people belong to multiple levels of internal teams, as well as a variety of external partnership teams.

At Eastman, each member of the top team represents both an organization and a team made up of members who themselves lead organizations. This is the strategy of “interlocking” teams. Everyone is line. There are no staffs.

“Each team,” says Joines, “has its own understanding of the mission

and purpose. They know who their customers are and what their key success factors and result areas need to be. Each team creates measures of performance over time.”

People make up human organizations the way parts make up machines. Eastman involves everyone. This pragmatic approach to employee empowerment rests on a basic belief in people.

To be successful, people need knowledge, skills, and education, along with authority. They cannot take responsibility and act for the good of the customer and the company without authority. “We need people to feel like owners of our enterprise,” Joines says.

The paragraph on teamwork in “The Eastman Way” combines the independence empowerment offers with the compensating focus on unifying purpose:

*“We are empowered to manage our areas of responsibility. We work together to achieve common goals for business success. Full participation, cooperation, and open communication lead to superior results.”*

Ideology, or “the way things have always been done,” does not prevent Eastman from changing what needs to be changed. “We had to get rid of some structural impediments to teams,” Joines says. They pushed considerable decision-making authority down the vertical chain of command. They have pushed down salary decisions, in particular, to the working units (see chapter 8), providing a powerful, practical source of autonomy and responsibility.

Eastman also partners with both customers and suppliers. Some 40 customer—partner teams (representing 80 percent of their business) and 42 supplier teams<sup>3</sup> cap extensive cross-boundary interactions with businesses at both ends of their value-creation system, inputs and outputs.

### *Leaders and Links*

“We rotate leadership at the highest level,” Joines responds when asked how Eastman handles leadership.

Rotating leadership is a fact of life at Eastman: the company sets out to empower people, enabling all to lead when desired or necessary. “We set out principles and guidelines rather than prescriptions,” Joines says. Leaders on one team are members of another. In this way, leadership multiplies and expands rather than becoming exclusive and hoarded.

Joines estimates that high-performing cross-functional teams have cut the number of traditional first-line supervisors by almost a third. When you focus on the work, unneeded areas of bureaucracy naturally wither away.

Senior management is the citadel of hierarchy and the last bastion of traditional control. Yet here, too, Eastman pushes the frontier with a number of very senior teams. A team of five, comprising the presidents of the manufacturing facilities, manages the manufacturing function. Leadership rotates every quarter. The senior administrative team also self-manages. Leadership in core competencies, such as Polymer Technology, Organic Chemical Synthesis Technology, and Site Management, is even more distributed. The 12 market-focused business organizations, however, look somewhat more traditional: they cluster in two teams led by executive vice presidents, the same design used for the Worldwide Business Support team.

All teams meet regularly, usually every week or two. Extensive communications systems—phone, fax, e-mail (which Joines describes as “pervasive”), telephone conference calls, newsletters, events, and more—support a culture of open information and access.

Physical links offer an opportunity to interact with others, but without relationships among the people, the physical links are meaningless. People at Eastman expect direct, cross-boundary communication; it is the norm.

“Feedback from the Baldrige examiners described us as a ‘seamless’

organization,” comments Joines. “We absolutely promote horizontal communication and expect it to go that way. There is no formal system of hand slapping. We’re not doing skunkworks; rather, what we’re engaged in is open and supported.”

“The Eastman Way” lays out the values that are enunciated and explained in the company: honesty and integrity, fairness, trust, teamwork, diversity, employee well-being, citizenship, and a winning attitude. Trust underlies even the norm of horizontal communication. It is the deeper foundation that Eastman worked on early and comes back to often. Here is the true nutrient soil of beneficial relationships.

## TURNING THEORY INTO PRACTICE

“In order to make changes,” says Joines at the very start of our first interview, “Theory is key. Unless we understand the applicable theory and are convinced it’s right, [it’s] no go.” He is talking not just about the technology systems, but also, and especially, about the social system. “We are clearly driven by business needs, fundamentally survival. To be successful, we have to come to grips with the social side. We won’t make it without every employee’s hands on the plow.”

Eastman engages in active social science in pursuit of business goals. Theory is the source for innovations—hypotheses—that are tested, revised, and retested until a sufficiently high level of confidence is reached and the change is embraced. Pilots and prototypes provide valuable laboratory results to inform large-scale implementation strategies.

General guidelines develop from theory to replace detailed rules. Many leaders can make localized decisions yet produce overall coherence.

Eastman reflects all the basic teamnet principles, demonstrating how a theory of network organization and an evolutionary model of accumulating capabilities work in the real world.



## **THE INEVITABLE USE OF HIERARCHY**

Now let's see how hierarchy fits into the picture. But this view of hierarchy is different from the usual one. It's about organization instead of power—how the right design gives competitive advantage. To illustrate, we adapt one of the most famous parables of general systems theory, that of the two Swiss watchmakers, first told by the Nobel Prize-winning economist Herbert Simon, who called them Tempus, meaning “smooth time,” and Hora, meaning “serial time.”

### **THE INNOVATORS**

Two young technologists, feeling the limits of their then crude craft, began to develop breakthrough products for their market. Soon, both developed splendid prototypes of awesome versatility and complexity. Indeed, Sam Serial, the pride and joy of the traditional masters in the field, finished his model noticeably sooner than Laura Levels, the challenger of orthodoxy. Clearly, Sam had the edge in what could be a very big market. The business press eagerly looked forward to the unfolding story.

News of the revolutionary demos spread, and people started to call for information, interrupting the young entrepreneurs with questions. Within a few months, Laura was delivering to delighted customers, while Sam struggled to complete the first production copy as orders piled up. Both decided to hire apprentices and to train new workers in their respective methodologies to meet the demand. Laura was able to train new people quickly and boost production enormously, while Sam sank further into the mud as training crawled and products only occasionally appeared.

After Sam Serial's bankruptcy, the observers began to investigate to learn what they could from this epic story of success and failure. The key difference, they discovered, was in how each designed the work of constructing the product—the organizational advantage.

Sam simply extended the “Old Way” of fitting pieces together into a whole by adding many more pieces. The effect was somewhat like a rich mosaic, a thousand parts put together intricately, just so— a beautiful but fragile assembly.

Laura, however, borrowed a method from nature and constructed a series of subassemblies, 10 pieces to a group, intermediate components of the product. The extra steps spent putting subassemblies together accounted for the initially longer time needed to build the prototype. This integrated approach produced a design both elegant and resilient.

When assembly is interrupted, the partially completed unit is put down and naturally it falls *a-part*. It *dis-assembles*. What works well in isolation does not always work well in the real world that is full of interruptions—otherwise known as change. For each thousand steps of process, Sam risked hundreds of steps at every interruption, while Laura lost only an average of five steps when she resumed the assembly process. Laura had designed “stable clusters” between the elementary pieces and the product as a whole, specific points in the process that held together without the next step.

The power of Laura’s method of chunks within chunks became clear as volume increased and markets changed. Laura Levels, with a probability of just one interruption per 100 steps, gained a 4000-to-1 advantage over Sam Serial.

Such is the power of hierarchy of the scientific sort. Simon called this pattern the “architecture of complexity.”

## PUTTING PIECES OF COMPLEXITY TOGETHER

*Systems within systems within systems. Why is  
this design principle so universal and so powerful?*

Simon said that complexity evolves much more rapidly from simplicity if there are “stable intermediate structures,” subsystems sturdy enough not to pull apart. Hierarchies predominate in nature, he said, because “hierarchies are the ones that have the time to evolve.”

*This is a profound, basic, natural design  
principle: a hierarchy of levels.*

Add levels to your understanding of hierarchy; it’s more fundamental than the social power structure that you usually mean when you refer to hierarchy.

In the scientific sense of levels, hierarchy is basic to astronomy: planets and satellites in solar systems in galaxies in galaxy clusters that are part of superclusters and even greater amalgamations. Hierarchy brings us molecules, atoms, particles, and quarks in physics. Biology has cells, tissues, organs, organisms, ecologies, and environments. Pennies make up dimes that make up dollars in the U.S. currency system. Time comes in subassemblies of minutes, hours, days, weeks, months, and years. Libraries shelve books according to the Dewey Decimal System version of this theme. We even build our community communications systems this way with trunks, feeders, and drop lines to the house.

Levels within levels—hierarchies—permeate every aspect of the core technology of the Information Age.

Computer hardware is built in levels—from binary switches to chips to logic boards to computers to systems with peripherals. We design software in levels of complexity from machine languages to assemblers to operating systems to applications; structure files hierarchically, whether in DOS directories or Mac folders; and connect PCs in local area networks plugged into wide area networks linked to the global Internet.

We use the hierarchy principle every time we analyze a problem or

break something complex into smaller parts. We also use it to put things together, for synthesis, to create new wholes out of parts. When we outline our thinking, we use hierarchy.

It is no surprise, then, that the same level structure permeates organizations. As individuals, we are parts of families who make up communities and neighborhoods, which in turn are included in local, state, and national jurisdictions. All of these are points of natural cleavage—stable intermediate forms, as Simon says—in the hierarchy of society.

*All networks are hierarchical. Even the simplest ones are made up of interacting parts that are themselves complex—people or companies, for example.*

Interruption is a metaphor for change in the story of the inventors, Laura Levels and Sam Serial. The need to organize in stable clusters, modules, and levels increases as the pace of interruption picks up. Subassemblies—distinct components that can stand on their own—become more necessary, while rigid control structures become liabilities under the unrelenting push of ever-increasing change.

Networks do not throw the baby out with the bath water. They directly incorporate the powerful principle of hierarchy in its timeless sense—the *force behind stable clusters*—into the organizational form of networks, a key legacy of the Agricultural Age of hierarchy.

## **THINKING THE NETWORK WAY**

To cope with more complexity, groups have to be smarter. Each epoch has brought a new level of organizational intelligence required to meet its challenges. Group intelligence lies in a group's actual organization,

in how it does its work. Over time, the capacity for group intelligence has increased.

New ages in human civilization bring new configurations, new patterns, to organizations. As the organizational repertoire increases, groups of all sizes have the potential for even greater intelligence. Even a small increase in the average intelligence of our groups has an enormous impact on our collective ability to solve the problems of the world.

## TEAMNET PRINCIPLES ACROSS THE AGES

To understand what's going on around us, we use mental models of the world.

Each new era brings a shift from one dominant world view to another. When the industrial view prevailed over the agricultural one, and both over the "precivilized" hunting-gathering world, the new patterns were seen as replacing the old ones, if not destroying them.

But:

*The Age of the Network includes rather than replaces its predecessors.*

Quantum physics doesn't regard Newtonian mechanics as absolutely wrong, but rather as relatively limited. In the same way, bureaucracy is not wrong; it's just limited. Indeed, it *should* be limited to those functions for which it is most appropriate.

We use simple social models for simple organizations: informal small groups or simple hierarchies. Few situations are more absurd (or boring) than those in which a very small group of people adheres to Robert's Rules of Order. We've all been to those meetings (and sometimes run out screaming).

More complex situations call for more complex models. Until recently, our only response has been to structure multilevel hierarchies

bursting with internal bureaucracies. Their rigidity is as maladaptive in the Age of the Network as Sam Serial's sequential manufacturing process.

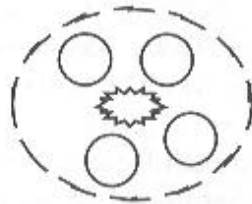
*Today's dramatically increased, complex pace of change calls forth new designs—teams and networks together.*

Because it is inclusive, the network is also compatible with earlier forms of organization. Networks can describe all types of organizations, including hierarchies, which are special cases of the more general network form.

Each age has made an essential contribution to the evolving organizational model reflected in the Five Teamnet Principles (see chapters 4 and 5).

- ? The Nomadic Age provided the basic idea of *members* defining *boundaries*.
- ? The Agricultural Age contributed the concept of *level* structure.
- ? The Industrial Age offered up the precision of *specialized purpose*.
- ? And the Information Age contributes explosive-in-number *links* that cross boundaries, levels, specialties, cultures, places, industries, jurisdictions, politics, religions, and every other difference important to people.

#### SITTING AROUND THE CAMPFIRE: SMALL-GROUP BOUNDARIES



In the Nomadic Age, people formed tribes, multifamily groups of individuals who offered one another a survival advantage over being alone. Nowhere is the systems truism “The whole is greater than the sum of its parts” more evident than when a group emerges from the association of individual people. The principle of “greater than” arises from relationships among the members. At this scale, you can “feel” synergy.

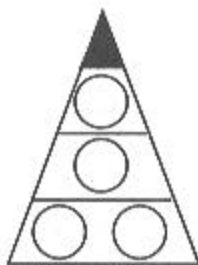
Groups come to life all the time. A group that lasts has “clicked” at some point in its development, a new “whole” born with the first unconscious use of the term “we.” People just *know* when a group is a group and when it is not.

The members of a group define its boundary, which means that if membership is not clear, then neither is the boundary. Small groups and networks alike are apt to have fuzzy “dotted-line” boundaries. Their boundaries clarify and then blur, unlike the sharper, exclusionary, in-or-out “solid-line” boundaries of hierarchy and bureaucracy.

The center of a small group is magnetic. As nomads, the group sat and lived around the camp fire, with those closest to the heat forming the inner circle. Then came the outer circle and finally the camp ‘perimeter—the boundary.

In the language of the network, individuals are members, rimmed by a boundary, that can be fuzzy or distinct. This fundamental design is basic for teams of all ages at all levels.

#### PYRAMID POWER: CLIMBING THE HIERARCHICAL LEVELS



Mention the word “hierarchy” and few people will cheer. But this often dreaded word brings into social use one of nature’s basic organizing patterns—levels. Everything complex is part of more complex things that are made up of parts that are themselves even more complex.

*Hierarchy, in the scientific use of the term, is a fundamental cross-boundary systems principle.*

Nowhere is it more important to be able to separate the conceptual contribution from its historical development. An unfortunate terminological quirk has made it difficult to bring this critical systems idea to the area that needs it most: the complex social world.

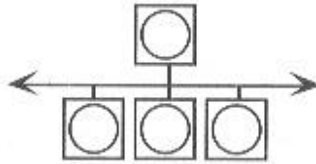
“Hier-archy” literally means “priestly rulership.” While science easily sheds the theological nuances to reach the universal clarity underneath, this is not so easy in organizations.

The *level* structure of nature is the “baby” in the “bath water” of traditional hierarchy. Inclusive levels do *not* imply one-way information flow and top-down control in nature. There each level has its regularities, its appropriate scales of space and time.

It is critical to separate the powerful principle of levels from the characteristic of vertical control that is part of hierarchy’s social meaning. Networks retain the “architecture of complexity” through the principle of integrated levels.



THE SYSTEMS WE LOVE TO HATE: BUREAUCRACIES  
WITH A PURPOSE



Bureaucracy and hierarchy (in the social sense) have a lot in common. Both laud rank. Bureaucracy, however, draws its legitimacy from a different source. It looks to the law where the top-down, one-way control hierarchy uses coercive force. No matter how much you hate bureaucracy, legality is a vast improvement over the brute force, “might makes right” legitimacy of hierarchy that prevailed in the Agricultural Age.

The Industrial Age’s great contribution to organization is specialization. Horizontal bureaucracy offers great strength when combined with vertical hierarchy. It provides a rational process for spreading out work. Thus, bureaucracies are able to achieve much larger and more stable social structures than hierarchy alone.

A sense of purpose is central to people and organizations of all ages. Bureaucracy makes purpose explicit. It is formal, and it serves as the ultimate rationale. Bureaucratic constitutions and charters begin with the organization’s purpose.

For example, the first words of the Preamble to the U.S. Constitution establish this country’s purpose and set some goals: “We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.” Such “in order to” statements are formal and serve as the ultimate authority. Organizations “get a life” for a reason. They divide and manage work in pursuit of a goal.

Specialization allows an organization to define work at all levels. Since there are infinite ways to chop up work, this is where the group's competitive IQ develops. The smarter it is, the better the group is at dividing and integrating the right chunks of work. This is unavoidable creative work for every group, recognized or not.

Time is continuous, smooth, and progressive in the industrial world view; ideally, it is serial. Serial time, like Newtonian physics, provides an excellent model of reality for many situations. We use it spontaneously to plan our everyday activities:

*Thinking ahead to a cup of coffee, I start from my office, go through a linear sequence of steps to the kitchen, more steps to make the coffee, and wait for it to go through its steps, one by one, to reach the goal—a cup of coffee.*

We often “chunk work” in a literal picture of a serial process. Businesses with a goal of developing and delivering products to customers, for example, create functions that mimic it: marketing and R&D, design and production, and sales and service, corresponding to the beginning, middle, and end of the process.

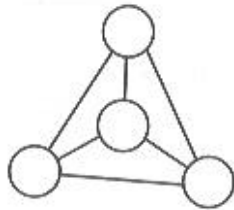
The merits of analytic specialization are well known, as are its limits. By dividing up work, people achieve more together than each person can alone doing all the steps in sequence. But too much specialization fragments reality and imposes an immense control-coordination burden.

At the bottom of the rational bureaucratic tree, work is “Taylored”<sup>5</sup> into standardized units suitable for the mechanized time of mass production. Specialties and repetitive, sequential steps that may be fine in moderately paced change environments begin to proliferate uncontrollably in turbulent environments requiring rapid adaptation. In this environment, complexity limits purely analytic solutions.

In networks, the principle of unifying purpose plays the same role as goal-oriented specialization does in bureaucracy. The focus on pur-

pose in a network is more intense because it is the primary source of legitimacy, it holds members together voluntarily. Successful networks articulate their purposes explicitly and express them as useful plans and activities.

#### THE TIES THAT BIND: NETWORK LINKS



Links stand for all sorts of human connections—similarities, communications, relationships—and have always been with us.

Links are very simple when you consider each link on its own, one by one. But even a few links connected together form distinctive patterns, and complexity expands rapidly as the number of links grows.

Relationships among people and groups develop over time through interaction. Technologies that provide new media for interaction have been leading-edge drivers of change throughout the ages. New technologies provide new opportunities for new interactions that, over time, enable new relationships and organizations.

Spoken communication among people helped inaugurate the first age of civilization, and each age added new capabilities—writing in the Agricultural Age, printing in the Industrial Age, and electronic communication in the Information Age.

For most of history, links among people that reached beyond personal connections have been scarce and costly. Links are formal, tagged with one-way signs, and relatively few in traditional hierarchies and bureaucracies.

*Boom! Links explode in number in the Information Age as our personal reach suddenly goes global. We complete the loop by being able to talk to anyone anywhere at any time. The vertical frontier closes as organizations become massively interconnected in all directions, and we catapult into the Age of the Network.*

We dramatically increase the need to manage greater complexity in the horizontal dimension as we reach the limits of vertical hierarchy. We do so not by adding more specialities but, instead, by creating more links.

In the Information Age, links are much more numerous and more real than in past ages. Many more people and technologies serve linking roles and functions now than in the past.

Massive linking allows decentralized, individual access to centralized, shared information. This increases decentralized decision making following a centralized strategy. Links give the network its basic benefits, the best of both centralized and decentralized worlds:

- ? Flexibility,
- ? Speed, and
- ? Power.

Networks provide the flexibility of pulling together what's needed when it's needed; the speed of multiple decision makers with authority who operate from common values and plans; and the power that comes from close links among independent members.

Successful networks bring great benefits. But links alone do not a smart network make. A profusion of unrelated links brings only confusion.

The true intelligence of a group lies in how it configures itself. Its configuration comes from the pattern of relationships as a whole, and

the smartest organizations constantly reconfigure to fit more complex environments and changing purposes.

Links connect all the teamnet principles: members and leaders within and across boundaries, across levels, and across purposes. All the elements together lead to the network—the Organizing Pattern of the Age of the Network.

## WINDS OF CHANGE

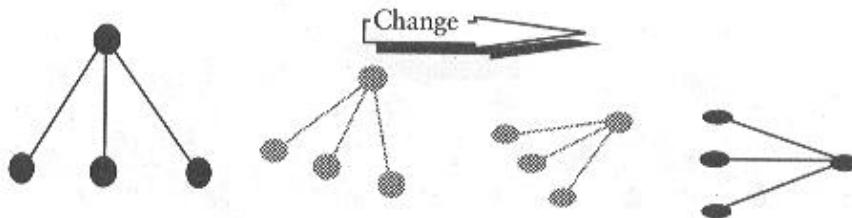
How does the idea of a small group expand over time? A simple abstract allegory, almost a cartoon, illustrates how the ideas come together as a group enlarges, accumulates capabilities, and becomes more complex.

In the mostly command-and-control vertical hierarchy (in the social sense), power flows from top to bottom. The organization chart has height, with very narrow breath of expertise. The effect is like a two-dimensional cutout. Hierarchies, while tall, imposing, and quite successful when the pace of change is slow, easily blow over as the winds of change increase. Just look at the “boom-bust” cycles of the ancient agricultural hierarchies from Egyptian to Mesopotamian to Mayan.

Now add bureaucracy. The result is a much more stable arrangement. By metaphorically putting hierarchy and bureaucracy together, we get a “stool.” A stool, standing upright, with feet spread apart, is quite useful and sturdy. It provides horizontal support for the up-down dimension.

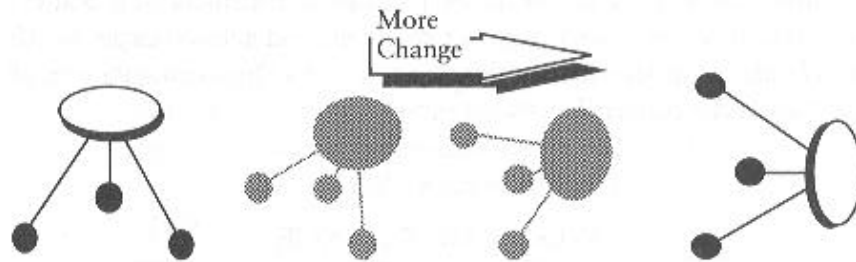
### CHANGE HITS THE TOWERING HIERARCHY

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## MORE CHANGE TOPPLES HIERARCHY-BUREAUCRACY

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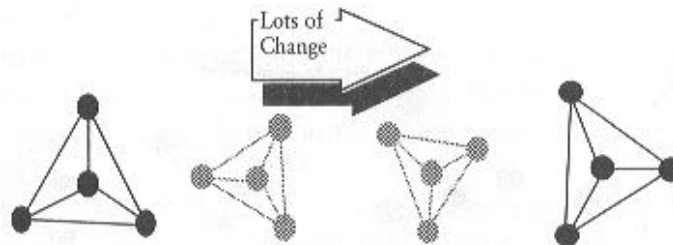
The stool is likely to tip over, however, when big winds of change blow from unexpected directions. If it does not have the right orientation, the hierarchy-bureaucracy stool becomes useless. Since the feet aren't tied together, pressure on the top of the stool can easily cause it to collapse.

Now add links among the groups at the base of the stool's legs. When you connect all the organization's fundamental parts, you create an enormously strong structure, symbolized here by the tetrahedron, which the visionary architect R. Buckminster Fuller called the universe's minimal closed structure.

*To convert a hierarchy-bureaucracy to a network, just add links.*

## FAST CHANGE SPINS THE NETWORK

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Different orientations in a network may be called top or bottom, periphery or center, or, perhaps most appropriately, foreground and background. Here we symbolize the leadership of networks, foreground representatives of the whole. Different parts of the organization, different leaders, come to the fore as the winds of change whip through the environment.

Tumbling quickly through time, networks seem to take on a spherical shape. They are always right side up.

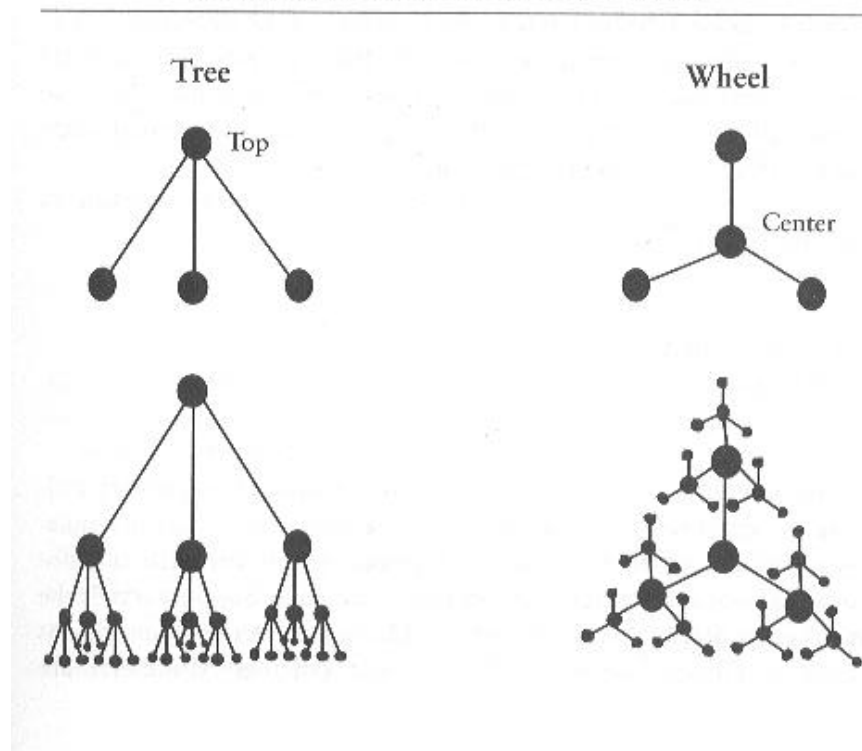
### TURNING TREES INTO WHEELS

There are other ways to show levels besides the familiar top-down tree chart. You also can represent hierarchy horizontally.

Instead of trees, think of wheels. A tree's top and bottom are

#### HIERARCHICAL LEVELS IN TREES AND WHEELS

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functionally equivalent to a wheel's center and periphery. Superior-subordinate roles in trees have corresponding hub-subhub roles in wheels. Both arrangements reflect the same logic of hierarchical levels.

The difference, of course, comes in the use of links. Vertical, one-way connections constrict information flow, while two-way hub-and-spoke communications provide control and coordination opportunities. To convert a wheel to a network, just add links (as in the previous diagram, above, that shows the network tetrahedron).

## **THE FOUR-DIMENSIONAL EASTMAN ORGANIZATION**

Eastman used a truly cross-sectional approach in showing how its hierarchy, bureaucracy, and network fit together in a 21st-century organization. The central and foreground position of the Chairman and CEO, Earnie Deavenport, symbolizes hierarchy. Structurally, his position anchors the hub-and-spoke locations of the six major corporate components. Bureaucracy is well represented both in the general use of specialization and purpose—every subgroup has a unique name and mission—and in specific components devoted to maintaining traditional bureaucratic functions.

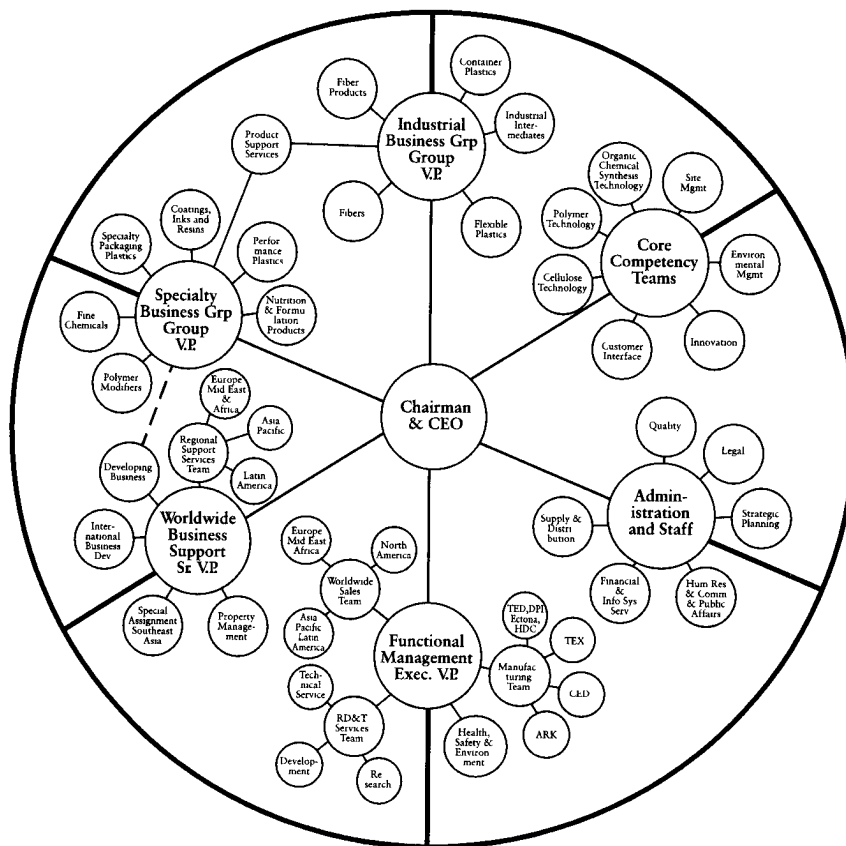
Eastman created “four matrixed dimensions”<sup>6</sup> to accomplish its mission effectively:

- ? Functions
- ? Core competencies
- ? Geographies
- ? Business organizations

Two components embrace the bulk of Eastman's bureaucracy, collected together under a Functional Management team and an Administration and Staff team. Core Competency Teams comprise a loose network of specialty clusters. Worldwide Business Support serves the various geographies while Eastman's 12 basic business organizations (such as Fibers, Container Plastics, and Polymer Modifiers) are



## EASTMAN CHEMICAL COMPANY'S ORGANIZATION CHART



grouped into two components, Specialty Business and Industrial Business.

What makes the Eastman chart so uniquely indicative of an Information Age networked organization is its periphery. This heavy outer circle attaches directly to all the major components and represents the direct connections among the departments. Deavenport talks about the “white space,” where, according to Joines, “we don’t have writing; that’s where collaboration takes place and work gets done.” In the circle, he repeats, “no one is on top.”

The thicker outer line is intentional. “The circle around the whole is the superhighway that connects us,” explains Joines. This circle symbolizes how the whole coheres through links.

*Add links.*

These two words are the fundamental formula for transforming existing hierarchies and bureaucracies into networks—human connections and physical communication links. Let the specialized organizations sort themselves out by focusing on their purpose and the work needed to achieve global corporate goals.

“Work gets done across and within and between functions. Major processes in the organization have to go horizontal. A lot of important work doesn’t get done in the vertical sense,” Joines explains.

Still, there’s a place for hierarchy, he says. “Sometimes Earnie (the Chairman and CEO) has to make decisions no one else can. You can’t stamp out hierarchy and run an organization. You have to have vertical alignment. To be successful, you have to learn to do both of these together. Our interlocking teams are a hierarchy in a sense, and then we *turn hierarchy on its side.*”

## SECTION III

# PRINCIPLES AND PRACTICE

In this “how to” section the big ideas are put into practice, using networks as an explicit type of organization that operates according to certain principles.

In chapter 4, “A Pocket Tool for Teamnets,” you learn the Five TeamNet Principles, where to apply them, and how to avoid failure along the size scale from small to megagroups. More on the principles appears in *The TeamNet Factor*, especially chapters 2–7, where we also devote two chapters to small business networks, here represented by the story of Harry Brown’s EBC Industries.

In chapter 5, “Rx for Monday Morning,” you learn to apply the principles at different phases of the network’s life to assess and plan small but complex groups—from the executive suite to the shop floor to the neighborhood. More information on process and practice ap-

pears in chapters 8—10 of *The TeamNet Factor* (including a systematic work process design methodology with associated planning tools). Finally, in chapter 6, “The Hinge of History,” you shift from operations to strategy, taking assessment and planning up a level. Contrast your situation with a remarkable example from the frontiers of networking in the federal bureaucracy, which also illustrates a network launch process. “To network or not; that is the question.”