NOTES

Chapter 1

1. The quote on how technology drives organizational change is from technology expert Kathleen Barry Albertini's manuscript notes, April 27, 1994.
2. We thank Edmond Molloy, a Dublin, Ireland, organizational consultant, for sending us this supplement to the *Irish Times.* See "Networks of Power," December 29, 1993, p. 7.
3. The quote on corporate espionage is from "Global Spy Networks Eavesdrop on Projects of Petroleum Firms," by William M. Carley, *The Wall Street Journal,* January 6, 1994, P. Al.
4. The quote on multiple leadership roles is from "Could AT&T Rule the World?" by David Kirkpatrick, *Fortune,* May 17, 1993, p. *57.*
5. Eastman Chemical Company's organizational chart is shown in detail in chapter 3, p. *75.*
6. The quote from Eastman's Chairman and CEO, Earnest Deavenport, is from "The Horizontal Corporation," by John A. Byrne, *Business Week,* December 20, *1993,* p. 80.
7. For a fast paced, "multimedia"-style look at the new organization, see *The Tom Peters Seminar: Crazy Times Call for Crazy Organizations,* by Tom Peters (New York: Vintage Books, 1994), p. *5.*
8. For a review of research collaborations, see "What's the Word in the Lab? Collaborate," by Peter Coy et al., *Business Week,* June 27, 1994, p. 79.
9. All quotes about the lab without walls are from Frank Starmer's December 30, 1993, e-mail message.
10. For an excellent source on building networking relationships, see *Networking Smart: How* to *Build Relationships for Personal and Organizational Success,* by Wayne E. Baker (New York: McGraw-Hill, 1994).
11. For more on the issues of leadership and coordination in networks, see *The Challenge of the Resource Exchange Network: From Concept to Action,* by Seymour B. Sarason and Elizabeth Lorentz (San Francisco: Jossey-Bass, 1979), chapter *5.*

12. The quote on why medieval networks came together is from *Making Democracy* Work: *Civic Traditions in Modern Italy,* by Robert D. Putnam, p. 126, quoted from Daniel Waley, *The Italian City-Republics* (New York: Longman, 1978), pp. 97, 114.

13. For an extensive treatment of the global flexible business network movement, see our third book, *The TeamNet Factor: Bringing the Power of Boundary Crossing Into the Heart of Your Business* (Essex Junction, VT: Oliver Wight, 1993), chapter 7.

14. For more information on how to eliminate waste in organizations, see *The Profit Potential: Taking High Performance to the Bottom Line,* by Carol J. McNair (Essex Junction, VT: Oliver Wight/Omneo, 1994).

15. The identification of unnecessary overhead created by checkers is from Marion Metcalf's "Comments on *[Age of the Network]* Manuscript," June 16, 1994.

16. Dr. Gunther Singer is an organizational consultant with Networking Design Institute, Feldhofgasse 28, A-9020 Klagenfurt, Austria. Telephone: 43-463-37730; fax: 43-463-319450; e-mail: gsinger@ndi.co.at.

17. For an excellent discussion of networks, see Virginia H. Hine's seminal paper, "The Basic Paradigm of a Future Socio-Cultural System," *World Issues,* Spring, 1977 (Center for the Study of Democratic Institutions, Santa Barbara, CA). See also *People, Power, Change: Movements of Social Transformation,* by Luther P. Gerlach and Virginia H. Hine (New York: Bobbs-Merrill, 1970).

Chapter 2

1. The quote on the decline in the national fire rate is from "Firefighters' mission a burning issue," by Chris Black, *The Boston Globe,* December 11, 1994, p. 9.

2. Statistics on the Internet are from "Fun facts and figures from the Internet Index," compiled by Win Treese, "The Voxbox," *The Boston Globe,* December 30, 1993, p. *50.*

3. For more on the international Mars project, see "US Joins with 3 Other Nations to Work Together on Plans for Mars Missions," by David L. Chandler, *The Boston Globe,* May 31, 1993, p. 28.

4. In 1994, *The Economist* carried an eye-catching ad for Airbus, which included an artist's rendition of the four countries involved in the venture.

5. For more detail on AT&T's operations, see "Could AT&T Rule the World?" by David Kirkpatrick, *Fortune,* May 17, 1993, p. 62.

6. The quote on the relationship between the Information Age and culture is from "Bell Atlantic's Virtual Work Force," by Raymond W Smith, *The Futurist,* March—April, 1994, p. 13.

7. For more on the relationship between proximity and collaboration, see *Managing the Flow of Technology: Technology Transfer and the Dissemination of Technological Information within the R&D Organization,* by Thomas J. Allen (Cambridge, MA: MIT Press, 1977).

8. Further work on proximity and the probability of collaboration has been conducted by researchers at Bell Communications and the University of Arizona, who built on Allen's study. See "Patterns of Contact and Communication in Scientific Research Collaboration," by Robert Kraut and Carmen Egido, Bell Communications Research, Inc., and Jolene Galeghei University of Arizona, *Computer Supported Cooperative Work,* Conference Proceedings, (New York: Association for Computing Machinery, 1988).

Chapter 3

1. Responsible Caresm is a registered service mark of the Chemical Manufacturers Association.

2. Information on Eastman's network of interlocking teams was drawn from Eastman Chemical Company's Malcolm Baldrige National Quality Award information sheet, "1993 Award Winner," provided by Robert C. Joines, vice president, quality, 1993.

3. Detailed numbers on Eastman's supplier teams are from Joines's manuscript notes, April 4, 1994.

4. Herbert Simon, one of the great intellectual pioneers of the Information Age (and 1978 recipient of the Nobel Prize for economics), wrote the parable to explain why the evolution of complexity so often takes on the sets-within-sets form. In "The Architecture of Complexity" (Yearbook of the Society for General Systems Research, *1965,* reprinted from the Proceedings of the American Philosophical Society, 1962), Simon explains "hierarchy" as a mathematical generalization about levels of a system independent of any level itself.

5. The "Taylored" pun alludes to Frederick Winslow Taylor, founder of "scientific" management based on reductionist principles.

6. For more information on Eastman's quality effort, see *Eastman Chemical Company Application Summary,* 1993 Malcolm Baldrige National

Quality Award (Kingsport, TN: Eastman Chemical Company, Publication ECC-68, January, 1994), p. 2.

Chapter 4

1. The quote on functions disappearing at EBC Industries is from a June 2, 1994, note written by Harry Brown.
2. For more on "The Nine Principles of War," see *Operations,* 14 June 1993, AR FM 100-5 (Army Operations Manual).
3. The description of VISA comes from remarks by Dee Hock, president and CEO emeritus, VISA International, at a meeting convened by the Joyce Foundation, October 11, 1993. We thank Joel Getzendanner, formerly of the Joyce Foundation, and Rebecca Adamson, founder of First Nations Financial Project, for introducing us to Hock's work.
4. The quote on networks connecting people is from a Cayman Systems advertisement that appeared in *Mac Week,* on February 21, 1994.
5. The quote on "ever-shifting" teams is from "Bell Atlantic's Virtual Work Force," by Raymond W. Smith, *The Futurist,* March—April 1994, p. 13.
6. The quote on networking as a key competitive strategy is from Safeguard Scientifics, Inc.'s, 1988 Annual Report.
7. Many other examples of both large and small companies are described in *The TeamNet Factor,* some in considerable detail, especially in chapters 2 through 7. The chart that appears here is parallel to the chart in *The TeamNet Factor,* p. 309, redone here with new examples.
8. For more on optimum size, see *Rebirth of the Corporation,* by D. Quinn Mills (New York: Wiley, 1991), pp. 3, 8, 30.
9. For more on "continuous improvement involving everyone," see *Kaizen: The Keys to Japan's Competitive Success,* by Masaaki Imai (New York: McGraw-Hill, 1986).
10. For an extensive discussion of the topic, see *The End of Bureaucracy and the Rise of the Intelligent Organization,* by Gifford and Elizabeth Pinchot (San Francisco: Berrett-Koehler, 1993), p. 175.
11. The quote on the intelligence of markets is from "Let's Turn Organizations into Markets!" by William E. Halal, *The Futurist,* May—June, 1994, p. 9.
12. For more on virtual corporations, see *The Virtual Corporation: Structuring and Revitalizing the Corporation for the 21st Century,* by William H. Davidow and Michael S. Malone (New York: HarperCollins, 1992).

13. For a description of life at Chiat/Day, see "The Virtual Agency," by Charles Rubin, *Mac Week,* December 13, 1993, p. 22.

14. The quote on Chrysler as a virtual enterprise is from "Chrysler's Man of Many Parts Cuts Costs," by Douglas Lavin, *The Wall Street Journal,* May 17, 1993, p. Bi.

15. For more on Intel's alliances, see "The Coming Clash of Logic," *Thc Economist,* July 3, 1993, p. 23.

16. For much more on flexible business networks, see *The TeamNet Factor,* chapters 6 and 7.

17. For more on Toshiba's alliances, see "How Toshiba Makes Alliances Work," by Brent Schendler, *Fortune,* October 4, 1993, pp. 116—122.

Chapter *5*

1. The complete quote, one of Dwight D. Eisenhower's favorite maxims, is "In preparing for battle I have always found that plans are useless, but planning is indispensable." *The Columbia Dictionary of Quotations* (New York: Columbia University Press, 1993), p. 688.

2. David Kearns, former CEO of Xerox, appeared in *Challenge to America,* a four-part TV series produced and moderated by Hedrick Smith, aired on PBS in January, 1994.

3. See chapters 8—10 of *The Teamnet Factor* for more on the development process, the startup phase, and a detailed launch methodology with associated planning tools.

4. For more on the need for transitional times in the workplace, see *Making the Most of Change,* by William Bridges (Reading, MA: Addison-Wesley, 1991). Our thanks to Sue Goran for referring us to this work.

Chapter 6

1. This quote, "information wants to be free," is from a speech by Stewart Brand, publisher of *The Whole Earth Catalog* and founder of The Well, the computer conferencing system based in Sausalito, California, given at the Western Behavioral Sciences Institute, La Jolla, California, July, 1984.

2. The "reinventing government" report is available in bookstores and directly from the U.S. government, in both hard copy and electronic form. To order the hard copy version, *Creating a Government That Works Better & Costs Less: From Red Tape to Results,* Report of the National Per-

formance Review, contact the U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328. For the electronic version, use the Internet: type "gopher ace.esusda.gov" and then choose "Americans Communicating Electronically," followed by "National Performance Review Information."

3. See *Reinventing Government: How the Entrepreneurial Spirit Is Transforming the Public Sector* by David Osborne and Ted Gaebler (New York: Plume/Penguin, 1993). Osborne served as a key contributor to the National Performance Review.

4. The quote "We can't solve 21st-century problems with 19th-century organizations" is inspired by this quote from Albert Einstein: "The significant problems we face cannot be solved at the same level of thinking we were at when we created them."

5. The U.S. Treasury Department's Mike Serlin, assistant commissioner, financial management service, first proposed the name "NetResults" to the 40 people gathered for the third day of the launch. "When I said it, the group applauded, and that was that!" he explained. Serlin also describes being in a network as analogous to performing in repertory theater, where people are adept at playing many roles.

6. Vice President Gore's support of NetResults has been communicated to National Performance Review staff members in various meetings.

7. To obtain a list of National Performance Review materials, send a one-line e-mail message via the Internet to "almanac@esusda.gov" with the following text: "send npr catalog" or send a letter via U.S. mail to National Performance Review, 750 17th Street, NW Washington, DC 20006; telephone: 202-632-0150.

8. In addition to the contacts listed in note 2, NetResults information is available on MetaNet (telephone: 703-243-6622); CAPACCESS, an electronic service provided by George Washington University (telephone: 202-986-2065); and Fed World, a U.S. Department of Commerce service (telephone: 703-487-4608).

9. Robert Maslyn gave this description of the "resident solo expert" in the U.S. federal bureaucracy at TeamNet Workshop No. 3, April 7, 1994, Cambridge, Massachusetts.

10. For a further discussion of holons, see "On Holonomy," chapter 9, this book, p. 226.

11. For an excellent treatment of the relationship of quantum physics and chaos to organizations, see *Leadership and the New Science: Learning*

about Organization from an Orderly Universe, by Margaret J. Wheatley (San Francisco: Berrett-Koehler, 1992).

12. The phrase "hinge of history" was first used by biophysicist John Rader Platt in his book *The Step to Man* (New York: Wiley, 1966). Platt was one of the earliest to project the spread of HIV along this same trajectory.

13. We thank 0. W. Markley, Ph.D., P.E., professor, Futures Research, University of Houston, Clear Lake, 2700 Bay Area Boulevard, Houston, TX, 77058, for the "Hinge of History" chart.

14. For the original work on "limits to growth," see the ground-breaking Club of Rome study, *Limits to Growth,* by Donella H. Meadows, Dennis L. Meadows, J0rgen Randers, and William W. Behrens III (New York: New American Library, 1972).

15. Among the seminal works on how organizations evolve in relationship to the environment is E E. Emery and E.C. Trist's article, "The Causal Texture of Organizational Environment," *Human Relations,* Vol. 18, August, 1965, pp. 20—26.

16. An even earlier classic study of change and organizational structure is *The Management of Innovation* by, Tom Burns and G. M. Stalker. (London: Tavistock, 1961). See also *Organization and Environment,* by Paul R. Lawrence and Jay W. Lorsch (Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1967) for observations on the relationship of internal structure to uncertainty.

17. Our chart "Environmental Pace of Change Assessment" combines and adapts Emery and Trist's and Burns and Stalker's classic research instruments (see notes 15 and 16).

18. The quote on doing business with AT&T is from "Could AT&T Rule the World?" by David Kirkpatrick, *Fortune,* May 17, 1993, p. *55.*

Chapter 7

1. The "only connect" quote is from *Howards End,* by E. M. Forster (London: Edward Arnold, 1910).

2. The quote on "creative juices" flowing is from Frank Starmer's December 30, 1994, e-mail message.

3. We use the words "virus" and "worm" interchangeably.

4. "Specifically, [the worm] invaded Sun 3 and VAX computers running versions of the Berkeley 4.3 UNIX operating system containing the TCP/

IP Internet protocols. Its sole purpose was to enter new machines by bypassing authentication procedures and to propagate new copies of itself. It was prolific, generating on the order of hundreds of thousands of copies among several thousand machines worldwide. It did not destroy information, give away passwords, or implant Trojan horses for later damage," wrote Peter J. Denning in "The Internet Worm," *American Scientist,* March—April, 1989, pp. 126—128.

5. The worm gained unwelcome entry into machines via a Unix protocol known as "fingered," which keeps the directory of all the people on a particular system.

6. For a spellbinding account of how the worm was stopped, see "With Microscope and Tweezers: The Worm from MIT's Perspective," by Jon Rochlis and Mark Eichin, *Communications of the ACM* [Association for Computing Machinery], Vol. 32, No. 6, June, 1989, pp. 689—698.

7. Rochlis and Mark Eichin also do an excellent job of evaluating what was learned from the worm.

8. Norris Parker Smith's description of the Internet as "anarchy that works" is from his article "Jockeying for Position on the Data Highway," *Upside,* May, 1993, p. 51.

9. As of July, 1994, *Dateline's* e-mail address is "dateline@news.nbc.com."

10. The description of Doug Lea's home—office is from his e-mail message of March 31, 1994.

11. For more on Christopher Alexander's extraordinary work, see his two seminal books, *A Pattern Language* (New York: Oxford University Press, 1977) and *The Timeless Way of Building* (New York: Oxford University Press, 1979). We thank Doug Lea and Lyn Montague for pointing us to Alexander's work.

12. The e-mail address for *Utne Reader* is "salons@utnereader.com."

13. For an excellent description of life on the Internet, see *The Virtual Community: Homesteading on the Electronic Frontier,* by Howard Rheingold (Reading, MA: Addison-Wesley, 1993). Rheingold's Internet address is "hlr@well.sf.ca.us."

14. MetaSystems Design Group, which runs MetaNet, can be reached at 2000 North 15th Street, Suite 103, Arlington, VA 22201; telephone: 703-243-6622.   Lisa Kimball's Internet address is "lisa@tmn.com."

15. All quotes from Lisa Kimball are from her April 22, 1994, e-mail message.

16. The Kaypro belonged to the Washington, D.C.-based former Episcopal priest Harrison Owen, an organizational consultant and developer of "Open Space" conferences.

17. For an extensive treatment of social network analysis, see *Social Structure and Network Analysis,* edited by Peter V. Marsden and Nan Lin (Beverly Hills, CA: Sage, 1982), p. 9.

18. Among the tools for analyzing networks are those explained in *Applied Network Analysis: A Methodological Introduction,* by Ronald S. Burt and Michael J. Minor and Associates (Beverly Hills, CA: Sage, 1983). The interdisciplinary International Network for Social Network Analysis represents many of the currents in this broad trend.

19. For a discussion of networks as an antidote to loneliness, see *Extending Families: The Social Networks of Parents and Their Children,* by Moncrieff M. Cochran et al. (Cambridge, England: Cambridge University Press, 1990). We are grateful to Elizabeth Lorentz for pointing us to Cochran's work, which shows that denser webs of connections make people happier.

20. For an in-depth treatment of the coordinator role, see *The Challenge of the Resource Exchange Network,* by Seymour Sarason and Elizabeth Lorentz (San Francisco: Jossey-Bass, 1979; Cambridge, MA: Brookline Books, 1988), p. 146.

21. In *The Creation of Settings and the Future Societies* (San Francisco: Jossey-Bass, 1972), Sarason defines "a setting as when two or more people get together in new and sustained relationships to accomplish stated goals. The smallest instance would be marriage, and the largest would be to overthrow an old and create a new society. A setting need not be tied to a particular, bounded space. The development of any network can be viewed as the creation of a setting, and therefore the problems of leadership have to be seen in terms of the early context of development." This quote is from *The Challenge of the Resource Exchange Network,* p. 143 (see note 20).

22. Elizabeth Lorentz told us this story during an interview at The Networking Institute, West Newton, Massachusetts, December 13, 1993.

23. This description of Mrs. Dewar's mind is from *The Challenge of the Resource Exchange Network,* p. 145 (see note 20).

24. For their first thinking on the coordinator role, see *Human Services and Resource Networks: Rationale, Possibilities, and Public Policy,* by

Seymour B. Sarason, Charles F Carroll, Kenneth Maton, Saul Cohen, and Elizabeth Lorentz (San Francisco: Jossey-Bass, 1977; Cambridge, MA: Brookline Books, 1988), p. xvii.

25. From this point on, all quotes in this chapter, unless otherwise noted, are from "Draft—The Coordinator Role in Networking: J.-J. New Book Chapter," by Elizabeth Lorentz, March, 1994.

26. The quote on the coordinator's job as a matchmaker is from *The Challenge of the Resource Exchange Network,* p. 145 (see note 20).

27. Because of its decentralized nature, no one knows the precise size of the Internet. One of the pioneers in tracking Internet growth is John Quarterman at Matrix Index and Directory Services (MIDS), who calls it "the "matrix." This quote is from his article "How Big Is the Matrix?" *Matrix News,* Vol. 2, No. 2, Index (Matrix and Directory, Austin, TX, 1992). Quarterman's Internet address is jsq@tic.com.

Chapter 8

1. This quote from historian Frederic Lane, which we found in *Making Democracy Work: Civic Traditions in Modern Italy,* by Robert D. Putnam (Princeton, NJ: Princeton University Press, 1993), p. 124, originally appeared in *Venice and History,* by Frederic C. Lane (Baltimore: Johns Hopkins University Press, 1966), p. *535.* We are indebted to Putnam for much of the information on which this section is based.

2. This quote from *Making Democracy Work* (see note 1), p. 129, is originally from *Before the Industrial Revolution: European Society and Economy, 1000—1 700,* 2nd ed., by Carlo M. Cippola (London: Methuen, 1980), pp. 198—199.

3. The rise of small business networks was the "hot news" that many business writers and reviewers picked out of *The TeamNet Factor.*

4. Stuart Rosenfeld is the founder and executive director of Regional Technology Strategies, P.O. Box 9005, Chapel Hill, NC 27515; telephone: 919-933-6699.

5. *Making Democracy Work* (see note 1) describes in detail the work of Putnam and his two Italian colleagues and many collaborators in Italy.

6. There was enormous disparity in social services between the north and the south. For example, Emilia-Romagna had one child-care center per 400 children; Campania, in the south, had 300 percent fewer, one per 12,560 children.

7. For the detailed analysis of Emilia-Romagna's "good government," reporting the study's composite index of institutional performance, see *Making Democracy Work,* p. 76 (see note 1).

8. All three maps are from *Making Democracy Work* (see note 1). The first, "Institutional Performance in Italian Regions," is map figure 4.1, p. 84. Copyright © 1993 by Princeton University Press. Reproduced by permission of Princeton University Press.

9. The second map, "Republican and Autocratic Traditions," is map figure 4.4, p. 97. Copyright © 1993 by Princeton University Press. Reproduced by permission of Princeton University Press.

10. The third map, "Civic Community in Italian Regions," is map figure 5.1, p. 134. Copyright © 1993 by Princeton University Press. Reproduced by permission of Princeton University Press.

11. The quote on civil communities is from *Making Democracy Work,* p. 88 (see note 1).

12. The quote on the dense "concentration of overlapping networks" is from *Making Democracy Work,* p. 115 (see note 1).

13. Social capital has been a research topic and a concept under development for more than a decade, especially in sociology. See Ronald S. Burt, *Structural Holes: The Social Structure of Competition* (Cambridge, MA: Harvard University Press, 1992), for an excellent treatment. We use Putnam's formulation here.

14. The quote on reciprocity is from *Making Democracy Work,* p. 139 (see note 1).

15. This quote was taken from *The Trust Factor,* by John 0. Whitney (New York: McGraw-Hill, 1994), p. 11, which contains an excellent discussion of trust.

16. For a superb three-part series on problems in the fishing industry, see "Troubled Waters: Fishing in Crisis," by Cohn Nickerson, whose first article, "Stripping the Sea's Life," *The Boston Sunday Globe,* April 17, 1994, jumped from p. 1 to p. 24, where it had the headline "Greed, Mismanagement Ravage Fisheries."

17. The observation that cooperation becomes increasingly rational and practical is from *The Evolution of Cooperation,* by Robert Axelrod (New York: Basic Books, 1984).

18. For an excellent treatment of systems dynamics, see *The Fifth Discipline: The Art & Science of the Learning Organization,* by Peter Senge (New York: Doubleday, 1990).

19. The quote on defection is from Robert Sugden, as quoted in *Making Democracy Work,* p. 178 (see note 1).

20. Among the first to report on the Emilia-Romagna "miracle" were Michael J. Piore and Charles E Sabel in their book *The Second Industrial Divide: Possibilities for Prosperity* (New York: Basic Books, 1994).

21. For a superb treatment of this topic, see *Regional Advantage: Culture and Competition in Silicon Valley and Route 128,* by AnnaLee Saxenian (Cambridge, MA: Harvard University Press, 1994).

22. These points are made in Saxenian's article, "Silicon Valley Versus Route 128," *Inc.,* February 1994, p. 25.

23. The quote about DEC is also from Saxenian's *Inc.* article, p. 26.

24. On p. 50 of *Regional Advantage* (see note 21), Saxenian quotes the Harvard Business School case study of Hewlett-Packard.

25. The quote about Ken Olsen's management model is from *Regional Advantage,* p. 74 (see note 21).

26. The quote about DEC's power structure is from *Regional Advantage,* p. 76 (see note 21).

27. We are grateful to Joe Szocik of the Attleboro Area Center for Training (96 Pine Street, Attleboro, MA 02703; telephone: 508-222-0096) for the excellent memos he sent us emphasizing the challenges of economic disparities.

28. We thank David Williams of High Point, North Carolina, for sending us the article "A Timely Warning to the Developed World" by Michael Valpy, *The Globe and Mail,* December 17, 1993, p. A2, from which the quote on social capital was taken.

29. Ashby's seminal article "Variety, Constraint, and the Law of Requisite Variety," drawn from his book, *An Introduction to Cybernetics* (London: Chapman and Hall, 1956), appears in *Modern Systems Research for the Behavioral Scientist: A Sourcebook,* edited by Walter Buckley (Chicago: Aldine, 1968), p. 129.

30. For the basis of this important concept, see "The Strength of Weak Ties," by Mark S. Granovetter, *American Journal of Sociology,* Vol. 78, No. 6, pp. 1360—1380.

31. See *Structural Holes* (see note 13) for a similar idea that helps to maximize the efficiency and effectiveness of networks.

Chapter 9

1. The description of AT&T Universal Card Services' learning partnerships is from a conversation with Mike Plummer, June 24, 1994.

2. In our first book, *Networking: The First Report and Directory,* published by Doubleday in April 1982, we included a list of emerging trends. John Naisbitt, then of the polling firm Yankelovich, Skelly, and White, had monitored local newspapers to spot emerging trends, and his published list showed up in a computer conference we were part of on the Electronic Information Exchange System. Number one on his list was "FROM Industrial Society TO Information Society." We were astonished when, in September of that same year, we received an autographed advance copy of *Megatrends: Ten New Directions Transforming Our Lives* (New York: Warner Books, 1982) with a note from Naisbitt, who was on his way to achieving a very big best-seller. The revised and sharpened set now included an eighth megatrend—"FROM Hierarchies TO Networking"—and an extensive quote from an earlier article of ours, which had appeared in *New Age.* See *Megatrends,* p. 193, for the quote.

3. For more on reengineering, see *Reengineering the Corporation: A Manifesto for Business Revolution,* by Michael Hammer and James Champy (New York: HarperBusiness, 1993).

4. The definition of a team is from *The Wisdom of Teams: Creating the High-Performance Organization,* by Jon R. Katzenbach and Douglas K. Smith (Boston: Harvard Business School Press, 1993), p. 45.

5. For the classic work on the learning organization, see *The Fifth Discipline: The Art & Practice of The Learning Organization,* by Peter M. Senge (New York: Doubleday/Currency, 1990), where the quote appears on p. 3; see also *The Fifth Discipline Fieldbook,* by Peter M. Senge, Charlotte Roberts, Richard B. Ross, Bryan J. Smith, and Art Kleiner (New York: Doubleday/Currency, 1994).

6. Hierarchies may be logically considered a special case of networks.

7. Deming used somewhat different wording for these points at various times. The group here is drawn mainly from a December, 1989 set. See *The Team Handbook: How to Use Teams to Improve Quality,* by Peter R. Scholtes et al. (Madison, WI: Joiner Associates, Inc., 1992), pp. 2—24.

8. Population is only one exponential growth factor. See the "hinge of history" graphic in chapter 6, p. 142 of this book, for others.

9. For more on the burgeoning vision "business," see "Visioning' Missions Becomes Its Own Mission," by Gilbert Fuchsberg, *The Wall Street Journal,* January 7, 1994, p. Bi.

10. One excellent article on separatism, from which this quote was taken, is "Global Paradox; Growth of Trade Binds Nations, But It Also Can Spur Separatism; Dissident Groups Worry Less About the Economic Cost of Going Their Own Way; A World of 500 Countries?" by Bob Davis, *The Wall Street Journal* , June 20, 1994, p. Al.

11. For an early visionary piece about networking (written in 1987), see "Anything, Anytime, Anywhere: The Future of Networking," by William R. Johnson, Jr., in *Technology 2001: The Future of Computing and Communications,* Derek Leebaert, ed. (Cambridge, MA: MIT Press, 1991), pp. 149—175.

12. The quote on information sharing is from Levi Strauss's CEO, Robert Haas in "The New Post-Heroic Leadership," by John Huey, *Fortune,* February 21, 1994, p. 48.

13. See "The Technology Payoff: A Sweeping Reorganization of Work Itself Is Boosting Productivity," Special Report by Howard Gleckman et al., *Business Week,* June 14, 1993, pp. 57—68.

14. "High-tech/high-touch" is John Naisbitt's term from *Megatrends,* (see note 2), p. 1.

15. The quote on business's $1 trillion investment in information technology is from the cover of *Business Week* (see note 13).

16. For more on building a culture where "we're all bosses," see *The New Partnership: Profit by Bringing Out the Best in Your People, Customers, & Yourself,* by Tom Melohn (Essex Junction, VT: Oliver Wight/Omneo, 1994), p. *45*.

17. For an excellent discussion of top-level teams, see "Teams at the Top," by Marc Hequet, *Training,* April, 1994, p. 9, from which this quote is taken.

18. The quote on power sharing is from the *Fortune* cover story (see note 12), pp. 42—56.

19. For more on W. L. Gore & Associates, see our third book, *The TeamNet Factor* (Essex Junction, VT: Oliver Wight, 1993), pp. 80—84.

20. Many people invented the term "netweaver": Pat Wagner and Leif Smith of Denver, Colorado's, Office for Open Network; Peter Trudy

Johnson-Lenz of Lake Oswego, Oregon, inventors of the term "groupware," meaning computer software that enhances the ability of a group to work together; and Frank Burns and Lisa Kimball of MetaSystems Design Group in Arlington. VA. Most recently, we heard the term again from Carlos Nagel of the International Sonora Desert Alliance, who writes, "I now think of myself as a *netweaver* as much as a *networker."* The story of how Nagel used networking to save the Michoacan sea turtles appears in *The Networking Book* (London: Viking Penguin, 1986), our second book, pp. 116—118.

21. For a superb treatment of the use of networks, see *The New Organization: Growing the Culture of Organizational Networking,* by Cohn Hastings (London: McGraw-Hill, 1993), p. 162.

22. The quote on the absence of teams at the top is from the *Training* article (see note 17), p. 8.

23. For more on the structure of Asea Brown Boveri, see *The TeamNet Factor,* pp. 61—67 (see note 19).

24. Koestler wrote such powerful literary classics as *Darkness at Noon* (London: Jonathan Cape, 1940); a history of science with popular appeal, *The Sleepwalkers* (New York: Macmillan, 1959); and cross-disciplinary scientific works with a universal human core, such as *The Act of Creation* (New York: Macmillan, 1964) and *The Ghost in the Machine* (London: Hutchinson & Co., 1967), where he introduced the concept of the holon.

25. For more on Alexander's systems view of design, see *A Pattern Language* (see chapter 7, this book, note 11).

26. For more on systems and networks, see "Transforming Bureaucracies and Systems," the Reference Section of *The TeamNet Factor,* pp. 359— 382 (see note 19).

27. The Santa Fe Institute, 1120 Canyon Road, Santa Fe, NM 87501, is a good example of practical cross-boundary science growing in the 1990s, where a network of associates and residencies, established by, among others, the conceptual father of quarks, Murray Gel-Mann, studies and models complexity.

28. Holonomy means "the systematized knowledge of holons." See *Holonomy: A Human Systems Theory,* by Jeffrey S. Stamps, with a foreword by systems pioneer Kenneth Boulding (Seaside, CA: Intersystems Publications, 1980), p. 7.

29. For more on applying terms of negative and positive feedback in general systems theory, see *The Fifth Discipline,* pp. 79—92 (see note *5).*

30. The quote on rethinking the office "from the ground up" is from "In New Jersey, I.B.M. Cuts Space, Frills and Private Desks," by Kirk Johnson, *The New York Times,* March 14, 1994, p. Bi.

31. The "personal harbor" and "commons" sketch appears here courtesy of Steelcase, Inc. The drawing first appeared in "Field Research and Knowledge Work Process," by Paul Cornell and Pam Brenner, both of Steel-case's Research and Business Development Group, International Facilities Management Association 93 Conference Proceedings, October, 1993.

32. For more on the "quality without a name," see *The Timeless Way of Building* (chapter 7, this book, note 11).