

# Notes

## Introduction

1. For more on the shift from hierarchy to networks, see *Megatrends: Ten New Directions Transforming Our Lives*, by John Naisbitt (New York: Warner Books, 1982).

## Chapter 1

1. Denmark spent \$50 million on its network programs, 1/2,000th of its annual \$100 billion GDP.
2. Quotes on co-opetition from television report from “World News Tonight with Peter Jennings,” ABC News, May 18, 1992.
3. Siemens Nixdorf quote on co-opetition from a June 8, 1992, press release distributed by Copithorne & Bellows, Cambridge, Massachusetts, for Siemens Nixdorf Information Systems, Burlington, Massachusetts.
4. Luc de Brandere of Brussels Bourse quote on co-opetition from “Public Sector Gets Private Incentive,” by Lucy Kellaway, *Financial Times*, June 18, 1990, p. 28.
5. Ray Noorda quote on co-opetition from “Preaching Love Thy Competitor,” by Lawrence M. Fisher, *New York Times*, March 29, 1992, section 3, p. 1, column 2.
6. Ted Engkvist’s quote on co-opetition from “NYNEX Information Solutions Group Inc.’s Ted Engkvist Explains Why Systems Integrators Need to Be Specialists,” *Systems Integration*, October 1990, p. 19.
7. The emotional nature of cooperation was raised by Darryl Landvater, president of Oliver Wight Publications, in an interview, July 27, 1992, Essex Junction, Vermont.
8. View of Arthur D. Little, Inc., from an interview with ADL Board member Robert Kirk Mueller, published in *The Networking Book*, by Jessica Lipnack and Jeffrey Stamps (New York: Viking Penguin, 1986), pp. 35—44.
9. Subtitle “Small Is Bountiful” is taken from *Old World, New Ideas*, a report by Joseph Cortright on the Northwest Policy Center tour of flexible manufacturing networks in Europe issued April 1990.

- (Northwest Policy Center, University of Washington, 327 Parrington Hall, DC-14, Seattle, WA 98195, 206-543-7900.)
10. Joseph Roberts's company, Advanced Circuit Technologies, is one of 10 firms comprising Team Nashua. The firms' individual annual sales range from \$500,000 to \$20 million and range in size from 8 to 10 employees to 200 people. (Team Nashua, 118 Northeastern Boulevard, PO Box 547X, Nashua, NH 03061, 603-880-6000; fax: 603-880-1785.)
  11. MD-12 market projections from "MD-12 Revealed as Taiwan Signals Approval for Tie-up," *Flight International*, May 6, 1992.
  12. Quote about the future of the MD-12 from a commentary entitled "New Meaning for 'Worldwide Company,'" by Jessica Lipnack and Jeffrey Stamps, *St. Louis Post-Dispatch*, December 22, 1991; also quoted in *Liberation Management: Necessary Disorganization for the Nanosecond Nineties*, by Tom Peters (New York: Knopf, 1992).
  13. View of Japanese networking movement from "Vision of the Alternative Society Described by Networking" keynote speech by Jessica Lipnack and Jeffrey Stamps to the Japan Networkers' Conference, November 12, 1989, Tokyo, Japan.
  14. Alfred Peterson's comments on "barbecued sushi" reported in "Managing Paradoxes," by A. W. Demmler, Jr., *Automotive Engineering*, Society of Automotive Engineers, December 1990, vol. 98, no. 12, p. 32.

## Chapter 2

1. Computer conferencing "builds on the more familiar features of electronic mail—adding the capability of electronic spaces where groups of people can exchange views, develop plans, manage projects, and coordinate group and team efforts," according to Metasystems Design Group, Inc., 2000 North 15th Street, Suite 103, Arlington, VA 22201, 703-243-6622; fax: 703-841-9798.
2. The Calvert Social Investment Fund, with \$1 billion in assets, is the largest of the socially responsible mutual funds; it invests only in companies that pass a series of financial *and* social screens. We've been members of the Advisory Council since the fund was started in 1982.
3. Comment about joining a network fostering independence from manuscript margin notes written to us by Charles Savage, author of *Fifth Generation Management* (Digital Equipment Corporation: Digital Press, 1990).

4. “Working Together Apart” is the subtitle of *Enterprise Networking*, by Ray Grenier and George Metes (Digital Equipment Corporation: Digital Press, 1992).
5. Comment about doing business with the people you know from a telephone interview with Jerry Nagel, Red River Trade Corridor, Inc., 208 Selvig Hall, University of Minnesota, Crookston, MN 56716, 218-281-6510, ext. 458; fax: 218-281-5223.
6. For more on chaos theory, see *Chaos: Making a New Science*, by James Gleick (New York: Viking Penguin, 1987).
7. In “Causes of Failure in Network Organizations” (*California Management Review*, Summer 1992, vol. 34, no. 4), Raymond E. Miles and Charles C. Snow stress this voluntary aspect of network relationships. (*California Management Review*, 350 Barrows Hall, University of California, Berkeley, CA 94720, 510-642-7159.)
8. “Node” is the technical name for a member of a network.
9. “You really need to emphasize the quality of messiness in teamnets,” Lisa Carlson of Metasystems Design Group said in a phone interview. “Usually, the same people don’t stay on the team the whole time. This makes for comings and goings. It’s fuzzy and it’s messy.” When asked why this was a good thing, she said, “I don’t know if it’s good or not, but it’s true.”
10. For more discussion of leadership, see references to Japan’s “blunt hierarchy” in “Quick Start,” chapter 8.
11. Virginia Hine’s classic four-page article, “The Basic Paradigm of a Future Socio-Cultural System,” appeared in *World Issues*, Spring 1977 (Center for the Study of Democratic Institutions, Santa Barbara, California).
12. Elizabeth Lorentz’s comments on leaders as followers from mss. margin notes. (Lorentz Laboratory for Collaborative Enterprise, 180 South Broadway, White Plains, NY 10605.)
13. “Authority is not bad,” Pam Johnson of Digital Equipment Corporation said in response to a draft of this chapter. ‘An authoritarian way of expressing it *is* bad. Allowing everyone into everything breaks the rule of independence.’
14. “The Architecture of Complexity,” by Herbert Simon, *General Systems Yearbook*, Society for General Systems Research, 1965, explains the elegant principle described in the article’s title.
15. “Hierarchy” is the awkward name for the systems principle of

successive inclusion, meaning systems of subsystems composing supersystems. See “Transforming Bureaucracies and Systems,” the Reference Section, for more on the systems context.

### Chapter 3

1. Quotes on Armstrong's networks from “How Networks Reshape Organizations—For Results,” by Ram Charan, *Harvard Business Review*, September—October 1991. (HBR Publications, Operations Department, Harvard Business School, Boston, MA 02163, 617-495-6192; fax: 617-495-6985.)
2. Henry Bradshaw quote from *ibid.*
3. For more on The Philadelphia Guild, see “The Philadelphia Woodworking Initiatives: Manufacturing Networks as a Model for Improving Industry Performance,” by Gregg A. Lichtenstein and Anthony J. Girifalco, January 1992. (The Delaware Valley Industrial Resource Center, 12265 Townsend Road, Suite 500, Philadelphia, PA 19154-1286, 215-464-8550; fax: 215-464-8570.)
4. Quotes by Percy Barnevik from “The Logic of Global Business: An Interview with ABB’s Percy Barnevik,” by William Taylor, *Harvard Business Review*, March—April, 1991.
5. Quote about ABB from *Liberation Management: Necessary Disorganization for the Nanosecond Nineties*, by Tom Peters (New York: Knopf, 1992). Note that all ABB statistics are from Peters’s 1991 interviews.
6. For more on the pressure of internal comparisons, see sidebar article, “Power Transformers—The Dynamics of Global Coordination,” by William Taylor, *Harvard Business Review*, March—April, 1991.
7. Quote from Karlsson on interplay among countries from *ibid.*
8. Arthur Koestler was one of the earliest systems thinkers to recognize the importance of complementary dynamics in living systems. In *The Ghost in the Machine* (London: Hutchinson & Co., 1967), Koestler describes inward-looking “self-assertive” (competitive) tendencies entwined with outward-looking “integrative” (cooperative) tendencies. Several of his books have such paradoxical titles: *Darkness at Noon* and *Janus*, for example.
9. The phrase “winning combinations” is from the book by that name: *Winning Combinations: The Coming Wave of Entrepreneurial Part-*

*nerships between Large and Small Companies*, by James W. Botkin and Jana B. Matthews (New York: John Wiley & Sons, 1992).

#### Chapter 4

1. Conrail quotes from “How Networks Reshape Organizations—For Results,” by Ram Charan, *Harvard Business Review*, September—October, 1991.
2. *Forbes* cites W. L. Gore & Associates in “Where to Find the 400 Largest U.S. Private Companies,” December 9, 1991, p. 272.
3. For a profile of Robert Gore, see “No Bosses. And Even ‘Leaders’ Can’t Give Orders,” by Joseph Weber, *Business Week*, December 10, 1990, p. 196.
4. We published Bill Gore’s paper, “The Lattice Organization: A Philosophy of Enterprise,” by W. L. Gore, in *Networking Journal*, Spring! Summer 1985, vol. 1, no. 1, p. 24. (The Networking Institute, Inc., 505 Waltham Street, West Newton, MA 02165, 617-965-3340; fax: 617-965-2341.)
5. For an excellent view of corporate culture, see *Organizational Culture and Leadership: A Dynamic View*, by Edgar H. Schein (San Francisco: Jossey-Bass Publishers, 1985).
6. For many years when he was at Exxon Chemical Company, Bill Paul, now of Deltech Consulting, sent a monthly packet of leading-edge management articles to about 100 people. We were on the list, and one of his packets contained “Entrepreneurship Reconsidered: The Team as Hero,” by Robert B. Reich, *Harvard Business Review*, May—June 1987.
7. For the ultimate skunkworks story, see *The Soul of a New Machine*, by Tracy Kidder (Boston: Little Brown and Co., 1981).
8. Quote on the vision of a team from *Leading the Team Organization: How to Create an Enduring Competitive Advantage*, by Dean Tjosvold and Mary M. Tjosvold (New York: Lexington Books, 1991).
9. For more on self-directed teams, see *Empowered Teams: Creating Self-Directed Work Groups That Improve Quality, Productivity, and Participation*, by Richard S. Wellins, William C. Byham, and Jeanne M. Wilson (San Francisco: Jossey-Bass Publishers, 1991).
10. Impediments to success discussed in *Self-Directed Work Teams: The New American Challenge*, by Jack D. Orsburn, Linda Moran, Ed

Musselwhite, John H. Zenger, with Craig Perrin (Homewood, Illinois: Business One Irwin, 1990), p. v.

11. 'A quality control circle is a small group that voluntarily performs quality control activities within the workplace,' writes Masaaki Imai, author of *Kaizen: The Key to Japan's Competitive Success* (New York: McGraw-Hill Publishing, 1986), the influential book on Japanese management practices.
12. For more on self-help networks, see *Networking: The First Report and Directory*, by Jessica Lipnack and Jeffrey Stamps (New York: Double day, 1982).
13. Statistics on executive team growth from *Passing the Baton: Managing the Process of CEO Succession*, by R. F Vancil (Boston: Harvard Business School Press, 1987).
14. Definition of executive team from "Teamwork at the Top: Creating Executive Teams That Work," by David A. Nadler and Deborah Ancona, in *Organizational Architecture: Designs for Changing Organizations*, by David A. Nadler, Marc S. Gerstein, Robert B. Shaw, and Associates (San Francisco: Jossey-Bass Publishers, 1992), p. 212.
15. John Mauzo of Digital Equipment Corporation uses this initiation exercise for cross-functional groups.
16. For more on the history of functions in organizations, see *The Seamless Enterprise*, by Dan Dimancescu (New York: Harper Business, 1991), p. 27.
17. Statistics on Hewlett-Packard's success with teams from *ibid.*, p. 18.
18. Quote on hierarchy as an obstacle from *Rebirth of the Corporation*, by D. Quinn Mills (New York: John Wiley & Sons, 1991), pp. 3, 8, 30.
19. Use of clusters in GE Canada from *ibid.*, p. 286.
20. For more on the effective use of technology and its relationship to organizational design, see "Designing High-Performance Work Systems: Organizing People, Work, Technology, and Information," by David A. Nadler and Marc S. Gerstein, in *Organizational Architecture: Designs for Changing Organizations*, p. 118, note 14.
21. Statistics on American Transtech from *ibid.*, p. 110.
22. In regard to technology's not solving problems: One major chemical company did a study of its \$2 billion information technology investment and concluded that it could not attribute a single performance increase to its use.

23. Judith Campbell quote in regard to technology's helping organizations from *The Impact of Information Networking on Organizational Design and Strategy*, published by SEI Center Reports at the Wharton School, p. 13. (SEI Center for Advanced Studies in Management, The Wharton School of the University of Pennsylvania, Suite 1400, Steinberg Hall-Dietrich Hall, 3620 Locust Walk, Philadelphia, PA 19104-6371, 215-898-2349; fax: 215-898-1703.)
24. Michael Useem quote on errors from *ibid.*, p. 14.

## Chapter 5

1. Quote on big company joint ventures from "Corning Ventures Prove Togetherness Pays," by James Flanigan, *Los Angeles Times*, February 4, 1990, page D1.
2. Statistics on layoffs from "The Job Drought: Why the Shortage of High-Wage Jobs Threatens the U.S. Economy," by Brian O'Reilly, *Fortune*, August 24, 1992, pp. 62—74. This article looks at worker training, job displacement, lowering of income, and education, and includes examples of Fortune 500 companies solving these problems "by banding together" to increase exports, experiencing dramatic gains in areas like Huntsville, Alabama, where exports have increased at twice the national average.
3. In the United States, Fortune 500 companies now employ the same number of people as do businesses owned by women—12 million, according to the May 1992 issue of *Inc.* Figure of 3.6 million job losses from "The Economy: Problems," *New York Times*, February 14, 1993.
4. Description of IBM from "Out of One Big Blue, Many Little Blues: Chairman John Akers Thinks Shock Therapy Will Get IBM Moving," by John Verity, *Business Week*, December 9, 1991, no. 3243, p. 33.
5. Quotes on Corning from James R. Houghton's article, "The Age of the Hierarchy Is Over," *New York Times*, September 24, 1989, Forum section.
6. Quote on liquid crystal displays from "Corning's Class Act," by Keith H. Hammonds, cover story, *Business Week*, May 13, 1991, no. 3213.
7. Statistics on Corning from *ibid.*
8. Quote from Houghton on his quality initiative from *ibid.*
9. Corning and Dow Corning revenues from "Dow Corning's Billion Dollar Crisis," by Bill Vlastic, *Detroit News*, March 8, 1992.

10. Quote on Corning's treating partners fairly from *Partnerships for Profit* by Jordan D. Lewis (New York: Free Press, 1990).
11. Quote on networks as egalitarian organizations from Houghton, "The Age of the Hierarchy Is Over," note 5.
12. Umbrella bullets and definition of kaizen from *Kaizen: The Key to Japans Competitive Success*, by Masaaki Imai, p. 4. See chapter 4, note 11.
13. According to legend, J. M. Juran's lectures on "quality control management," during a visit to Japan sponsored by the Japan Union of Scientists and Engineers in 1954, pushed the quality movement to an overall management approach.
14. Quote from Philips' Dr. Wisse Dekker from *Kaizen*, note 12, p. 225.
15. Ackoff quote from "Creating Market Economies Within Organizations: A Conference on 'Internal Markets,'" by Jason Magidson and Andrew E. Polcha, *Planning Review*, January—February 1992, pp. 37—40.
16. Observation on use of information in service organizations from "Technology in Services: Creating Organizational Revolutions," by James Brian Quinn and Penny C. Paquette, *Sloan Management Review*, Winter 1990, pp. 67—77.
17. Applicability of service webs to simple and complex organizations from *ibid.*
18. Quote on the hollow corporation from "The Hollow Corporation: The Decline of Manufacturing Threatens the Entire U.S. Economy," by Norman Jonas, *Business Week*, March 3, 1986, no. 2935, p. 57.
19. Description of Nike from "Causes of Failure in Network Organizations," by Miles and Snow. See chapter 2, note 7.
20. Observation on outsourcing as positive influence on organizations from "Technology in Services," pp. 79—87 (see note 16). "Service technologies smash overheads through outsourcing," they write.
21. Statistics on longevity of joint ventures from *Teaming Up for the 90s: A Guide to International Joint Ventures and Strategic Alliances*, by Timothy M. Collins and Thomas L. Doorley III, (Homewood, Illinois: Business One Irwin, 1991), p. 9.
22. Statistics on merger from *ibid.*, p. 242.
23. Observation on importance of partner autonomy in joint ventures from "Building Strategic Partnerships: Creating and Managing Effective Joint Ventures," by Charles S. Raben, in *Organizational Archi*



- ecture: Designs for Changing Organizations*, p. 93. See chapter 4, note 14.
24. First five major categories in which companies work together to pursue joint strategies from *Teaming Up for the 90~s*, see note 21.
  25. Information about McKesson Corporation from “Beyond Vertical Integration—The Rise of the Value-Adding Partnership,” by Russell Johnston and Paul R. Lawrence, *Harvard Business Review*, July— August 1988, vol. 66, no. 4, pp. 94—101.
  26. Description of corporate venturing from “Building Strategic Partnerships: Creating and Managing Effective Joint Ventures,” by Charles S. Raben, in *Organizational Architecture: Designs for Changing Organizations*, p. 183. See chapter 4, note 14.
  27. Quote on Euroventures Fund from Collins and Doorley, note 21, p. 186.
  28. Definition of vertical supply alliances from Raben, note 23, p. 264.
  29. Advantages of large and small company alliances from Botkin and Matthews, p. 10. See chapter 3, note 9.
  30. For more on virtual corporations, see “The Virtual Corporation,” *Business Week* cover story, February 8, 1993, and *The Virtual Corporation: Structuring and Revitalizing the Corporation for the 21st Century*, by William H. Davidow and Michael S. Malone (New York: HarperCollins, 1992).
  31. Quote from TRW’S Joseph Gorman from “Learning from Japan,” by Kevin Kelly, Otis Port, James Treece, Gail DeGeorge, Zachary Schiller, and bureau reports, *Business Week*, cover story, January 27, 1992, pp. 52—60.
  32. Proposal for a Euro-American keiretsu from “Computers and the Coming of the U.S. Keiretsu,” by Charles H. Ferguson, *Harvard Business Review*, July—August 1990.
  33. Quote on cooperation and competition from “Regional Networks and the Resurgence of Silicon Valley,” by Anna Lee Saxenian, *California Management Review*, Fall 1990, pp. 89—111.
  34. Description of biotechnology industry from “Technology in Services: Rethinking Strategic Focus,” by James Brian Quinn, Thomas L. Doorley, and Penny C. Paquette, *Sloan Management Review*, Winter, 1990, pp. 79—87.
  35. Classic studies on relationship of environment of change to organizational structure by Tom Burns and G. M. Stalker, *The Management of Innovation* (London: Tavistock, 1961).

36. Quote on networks as offering competitive edge for 1990s from Charan. See chapter 3, note 1.
37. Observation on relationship of internal structure to uncertainty from Paul R. Lawrence and Jay W. Lorsch, *Organization and Environment* (Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1967).
38. Quote by USS Fairless Works' Eugene E. Harris from "Looking for— and Building—a Few Good Heroes," *Industry Week*, October 15, 1990, p. 16.

## Chapter 6

1. In regard to use of terms, we prefer "flexible *business* networks" (to "flexible *manufacturing* networks") since nonmanufacturing firms also participate in and benefit from the idea.
2. Statistics on Denmark from May 13, 1991, testimony of Niels Christian Nielsen before the Oregon House Committee on Trade and Economic Development considering a networking approach to economic development.
3. Erie Bolt's Harry Brown quotes from "Make Love Not War: How Competitors Are Joining Forces to Create Opportunities They Wouldn't Get on Their Own," by Tom Richman, *Inc.*, August 1988, p. 56.
4. Observation on Erie Bolt from *Catalog of U. S. Manufacturing Networks*, by Gregg A. Lichtenstein, Ph.D., 1992, available from State Technology Extension Program, National Institute of Standards and Technology, A343 Physics Building, Gaithersburg, MD 20899, 301-975-4520; fax: 301-975-2183.
5. Quote on why businesses join networks from *ibid.*
6. Quote on East Brooklyn having enough metal shops to build a car from "Network: East Brooklyn, NY: Cooperation Is Reviving an Old Industry," *Inc.*, August 1988, p. 58.
7. Regarding small industrial pockets all over the United States: In 1973, we moved our office to the remodeled Futurity Thread Company, in Newton's Nonantum neighborhood. Until earlier that year, women were still spinning thread in the factory, soon to be the offices we would occupy. Futurity Thread was located just a few blocks from Roberts Printing.
8. Statistics on number of flexible business networks in the United States

- from “Networking Comes to America,” *Entrepreneurial Economy Review*, Spring 1991, vol. 9, no. 3. (Corporation for Enterprise Development, 777 North Capitol Street, N.E. Washington, D.C. 20002, 202-408-9788; fax: 202-408-9793.)
9. Reasons why heat-treating companies joined network from “Heat in Ohio: The Difficult Birth of an American Network,” by Dennis J. Giancola in *ibid.*, p. 19.
  10. “Manufacturing Networks and State Policy in North Carolina,” by Stuart A. Rosenfeld, Raymond Daffner, and William P. Meade, April 1992. (Southern Technology Council, 5001 South Miami Boulevard, P.O. Box 12293, Research Triangle Park, NC 27709, 919-941-5145; fax: 919-941-5594.) Rosenfeld is now executive director of Regional Technology Strategies (P.O. Box 9005, Chapel Hill, NC 27515, 919-933-6699) and publisher of *Firm Connections*, a bimonthly newsletter about flexible manufacturing networks, available from his office.
  11. Information about STC’s pilot programs from *STC Regional Forum*, December/January 1992, vol. 5, no. 5., a newsletter by Southern Technology Council (see address in previous note).
  12. For more on ASTA, contact Arkansas Science and Technology Authority, 100 Main, Suite 450, Little Rock, AK 72201, 501-324-9006.
  13. Quote on Arkansas networks from “Rural Perspectives: Linking Networks and Economic Development,” by Stuart A. Rosenfeld, *Entrepreneurial Economy Review*, Spring 1991, p. 29.
  14. For information on the Arkansas Wood Products Trade Group, contact Arkansas Rural Enterprise Center, Winrock International, Route 3, Box 376, Morrilton, AR 72210-9537, 501-727-5435.
  15. For more on Woodworkers Manufacturing Network, contact Felton Lamb, Venture Resources, Inc., Little Rock Technology Center, 100 South Main, Suite 416, Little Rock, AK 72201, 501-375-2004.
  16. Quote on Catawba Valley Hosiery Association mills from “Manufacturing Networks and State Policy in North Carolina: Introducing Change” (see address, note 10).
  17. Description of TEEMS project genesis from *ibid.*, p. 21.
  18. Quote on why TEEMS needed a network from *ibid.*, p. 11.
  19. Floppy disk (DOS version) of “Flexible Manufacturing Networks: What, Who, Why, and How,” by Paul Sommers, May 22, 1992, (Northwest Policy Center, University of Washington, 327 Parrington DC-14, Seattle, WA 98195, 206-543-7900; fax: 206-543-1096.)

20. To order *Catalog of U.S. Manufacturing Networks* by Gregg Lichtenstein, see address in note 4.
21. Definition of flexible manufacturing network from *Flexible Manufacturing Networks: Cooperation for Competitiveness in a Global Economy* by C. Richard Hatch, ISBN: 0-9605804-8-4, published by the Corporation for Enterprise Development (see note 8).
22. Nielsen quote on independence from his testimony to Oregon Joint Interim Committee on Forest Products Policy, April 12, 1990, p. 8.
23. "NIST Network Brokers Handbook," by C. Richard Hatch, is available from State Technology Extension Program, National Institute of Standards and Technology (see address, note 4.)
24. For more information on the center, contact Anne Heald, Center for Learning and Competitiveness, University of Maryland, School of Public Affairs, College Park, MD 20742, 310-405-6350.

## Chapter 7

1. For a synthesis of the International Labour Organization study, the Emilia-Romagna experience, and developments among businesses in Silicon Valley, see "Can Small Business Help Countries Compete?" by Robert Howard, *Harvard Business Review*, November—December 1990, p. 4.
2. Description of Emilia-Romagna renaissance from a firsthand observer. See Hatch's *Flexible Manufacturing Networks*, chapter 6, note 21.
3. Cambridge University forecast on Emilia-Romagna from "Bologna Looks Set to Boom in Next Decade," *Estates Time Supplement*, Reuter Textline, March 6, 1992.
4. Statistics on banking industry in Emilia-Romagna from "Rural Savings Banks in Emilia-Romagna Region Perform Well in 1991," *Il Sole*, June 11, 1992, Reuter Textline.
5. Conclusions drawn from the work of C. Richard Hatch, Stuart Rosenfeld, and other observers.
6. Quote on the benefits of networks from "The Ties That Bind: Networks and the Making of Denmark's Competitive Edge," by C. Richard Hatch in *Entrepreneurial Economy Review*, Spring 1991, p. 13 (available from CFED, see address in chapter 6, note 8).

7. Quote from Niels Christian Nielsen on Denmark's success with networks from interviews with him, May 7—8, 1992, by Jessica Lipnack and Jeffrey Stamps in Washington, D.C.
8. Data on Oregon's employment situation from "Twelve Innovative Ideas for Economic Development, 1990," by Joseph Cortright and Tami Miller. (Joint Legislative Committee on Trade and Economic Development, State Capital, Room 132, Salem, OR 97310, 503-378-8811.)
9. For a copy of Oregon Senate Bill 997, State of Oregon, 1991, contact address in note above.
10. Quote on the power of targeting markets from *Old World, New Ideas*, by Joseph Cortright, April 1990. See chapter 1, note 9.
11. Quote on how governments aid business networks from *ibid*.
12. Quote on using appropriate language with business people from Ray Daffner, who also reports one businessman congratulating him at a meeting because "this isn't one of those *networks*," telephone interview, December 16, 1992.

## Section II

1. For the term "computerless software," we are grateful to Rick Berenson, a Boston area entrepreneur, attorney, and former McKinsey & Company consultant, who first described our work this way.

## Chapter 8

1. To obtain a copy of the "Four Hour House" video, contact Building Industry Association of San Diego County, 6336 Greenwich Drive, Suite A, San Diego, CA 92122, 619-450-1221; fax: 619-552-1445.
2. Quote on how much planning goes into the four-hour house from "BIA Needs But 172 Minutes to Build Home," by David Whitwer, *San Diego Daily Transcript*, October 11, 1983.
3. Quote on cooperating during planning phases from "BIA Four-Hour House Not Just Two-Ring Show," by Rob Schupp, *San Diego Daily Transcript*, September 22, 1983.
4. Re: Habitat's blitz builds. Blitz builds are high-profile events, usually attended by celebrities to publicize Habitat's efforts. Former U.S. president Jimmy Carter volunteers a week each year. But blitz builds

- are not typical. Usually, Habitat builds houses over a series of consecutive weekends. (Habitat for Humanity, Habitat and Church Streets, Americus, GA 31709-3498, 912-924-6935.)
5. Habitat plans to build 300 to 500 houses in South Florida by 1994 in response to the 75,000 homes damaged by 1992's Hurricane Andrew.
  6. This is one of Stephen Covey's *Seven Habits of Highly Effective People* (New York: Simon & Schuster, 1989).
  7. Gardner quote from his Remarks to Independent Sector, 1984 Annual Membership Meeting and Assembly, October 17, 1984, Boston, Massachusetts.
  8. Derivation of the word "polycephalous" from Hine's "The Basic Paradigm of a Future Socio-Cultural System." See chapter 2, note 11.
  9. Business process redesign is also known as "business reengineering"; see *Reengineering the Corporation: A Manifesto for Business Revolution*, by Michael Hammer and Jim Champy (New York: Harper Business, 1993).
  10. Books on teams hit some kind of zenith of popularity in the 1990s, but their principles have been around for many years, often known by different names.
  11. Four styles of team members from *Team Players and Teamwork: The New Competitive Business Strategy*, by Glenn M. Parker (San Francisco: Jossey-Bass Publishers, 1991).
  12. Quote on different kinds of leadership from *Fifth Generation Management*, by Charles Savage. See chapter 2, note 3.
  13. Much of this material was inspired by Bruce W. Tuckman's "Development Sequence in Small Groups," in *Psychological Bulletin*, 1965.

## Chapter 9

1. CALS stands for "Computer-assisted Acquisition and Logistic Support."
2. Bernie DeKoven of the Institute for Better Meetings displays the cost of meetings by minute for all participants to see. In big companies, these numbers are staggering: a two-day meeting of 15 technical people can cost a company in excess of \$12,000. (Institute for Better Meetings, 2972 Clara Drive, Palo Alto, CA 94303, 415-857-1757; fax: 415-493-1417.)
3. "The Strength of Weak Ties," by Mark S. Granovetter, Johns Hopkins

University, originally was published in *American Journal of Sociology*, vol. 78, no. 6, pp. 1360—1380.

4. The phrase “no sense of place” comes from Joel Meyrowitz's book by that name: *No Sense of Place: The Impact of Electronic Media on Social Behavior* (New York: Oxford University Press, 1985).

## Chapter 10

1. Max Weber first identified charisma, coercion, and law as the three sources of power in organizations.
2. A desktop computer software tool that charts cross-boundary process is TeamFlow, designed by Ron Cordes. (For more information, contact The Networking Institute, Inc., see chapter 4, note 4.)

## Chapter 11

1. By request, the identity of TransOceania remains anonymous.
2. For extensive treatment of groupthink and specifically the Cuban Bay of Pigs invasion, see *Groupthink: Psychological Studies of Policy Decisions and Fiascoes*, by Irving L. Janis (Boston: Houghton Mifflin Company, 1982).

## Chapter 12

1. In regard to the structure of fire departments: For three years in the 1970s, we helped the U.S. Department of Commerce set up Americas first national fire prevention agency.
2. For more information on his work, contact Doug Engelbart, 89 Catalpa Drive, Atherton, CA 94025, 415-322-9087.
3. Peter and Trudy Johnson-Lenz first coined the term “groupware” in 1978. (Institute for Awakening Technologies, 695 Fifth Street, Lake Oswego, OR 97034, 503-635-2615.)
4. Jerry Nagel, executive director of the Red River Trade Corridor (it runs along the Red River, one of only three rivers in the world that run north) of western Minnesota, eastern North Dakota, and the province of Manitoba, identifies voluntary geographies in North America, in varying degrees of development: the Midsouth Common Market, covering the 50- to 60-county, seven-state trade region around Memphis;

the Pacific Northwest Region; the Toronto-Buffalo Commerce Corridor; Man-Valley Tri-State Network of western Pennsylvania, eastern Ohio, and West Virginia; the Rocky Mountain Trade Corridor reaching from Edmonton, Alberta, through Montana to Denver; the Arizona-Sonora, Mexico, Commission; and the Red River. Nagel also supplied the European list. See chapter 2, note 5.

5. Miles and Snow believe different types of networks develop out of the different types of bureaucracy. See their article, "Causes of Failure in Network Organizations," chapter 2, note 7.
6. Ray Stata quote on planning as a learning process from his article, "Organizational Learning—The Key to Management Innovation," in *Sloan Management Review*, Spring 1989, vol. 30, no. 3.
7. The specific product described here is TeamFlow (see chapter 10, note 2).
8. Quote from Niels Christian Nielsen on each network's containing a surprise from interviews with him, May 7—8, 1992, by Jessica Lipnack and Jeffrey Stamps in Washington, D.C.

### **Afterword**

1. Jan Brenning, another friend from the Oxford days, later told us how Bill Clinton would sometimes arrive late for dinner because he was busy transferring the day's names to his card file. (See "Most Likely to Succeed," by Alessandra Stanley, *New York Times Magazine*, November 22, 1992, for another account of this Clinton habit.)
2. Quote on Clinton as "human switchboard" from "In Transition, Information Is Power," *Washington Post*, November 15, 1992.
3. Quote on Clinton as the "most thoroughly 'networked' politician of his era," from "He's Not Another Carter," by David S. Broder, *Washington Post*, November 15, 1992.
4. *Newsweek* was one of many publications that took a stab at trying to identify the many Clinton networks in "Clinton's Team: The Inner Circles," October 26, 1992.
5. Forty-six Leckford Road (in what was then a working class and now is a gentrified Oxford neighborhood) was a landmark for Americans studying at Oxford in the late 1960s. Jeff Stamps originally rented the three-story brick row house in January 1968, and lived there until he left Oxford to return to the United States in December 1969. Frank



- Aller, the Rhodes Scholar profiled in “Most Likely to Succeed” (see ‘Afterword,’ note 1), moved into the house before Jeff left. Then Clinton and Strobe Talbott, now Ambassador at Large for the former Soviet Republics, moved in.
6. For more on the power of “the strength of weak ties” see Mark S. Granovetter’s article by that name. See chapter 9, note 3.
  7. In a famous study, Yale’s Stanley Milgram found that anyone in the world could reach anyone else through 5.5 handshakes.
  8. During his 1988 presidential campaign, Al Gore carried around a laptop, which had been outfitted for him by Metasystems Design Group, according to Lisa Carlson, one of the company’s founders.
  9. Starr Roxanne Hiltz and Murray Turoff first used the phrase in their book by that title, *The Network Nation: Human Communication via Computer*. (Reading, Massachusetts: Addison-Wesley Publishing Company, Inc., 1978.)
  10. For more on grass-roots networks, see *The Networking Book* by Jessica Lipnack and Jeffrey Stamps (New York: Viking Penguin, 1986).
  11. For an excellent account of the media feedback phenomenon in Tiananmen Square, see “When Global Pen Meets Chinese Sword,” by Marilyn Lewis, *San Jose Mercury News*, June 11, 1989, Perspective section, p. 1.
  12. Quote on why James Houghton reorganized Corning, Inc., into a global network from his article, “The Age of the Hierarchy Is Over.” See chapter 5, note 5.
  13. Quote on the power of fusing “organizational vision and individual fulfillment” from Rosemarie B. Greco’s article, “From the Classroom to the Corner Office,” *Harvard Business Review*, September—October 1992, vol. 70, no. 2, p. 54.
  14. The “Plum Book” is the name for the directory of 3,000 political appointment jobs in federal government.

## Reference Section

1. The observation that bureaucracy fails in one of three ways from Miles and Snow. See chapter 2, note 7.
2. Koestler created the word “holon” from the Greek “holos,” meaning “whole” and “-on” meaning “part.” See *The Ghost in the Machine*. See chapter 3, note 8.

3. For more on a systems view of business, see *The Fifth Discipline: The Art and Practice of the Learning Organization*, by Peter Senge (New York: Doubleday/Currency, 1990). Some systems theories, like Jay Forrester's Systems Dynamics, are almost purely relational.
4. For more on the topic of its title, see "The Significance of Relationships in Entrepreneurship: A Case Study of the Ecology of Enterprise in Two Business Incubators," a doctoral dissertation by Gregg Lichtenstein presented to the faculties of the University of Pennsylvania, 1992. (Gregg Lichtenstein, 7348 Malvern Avenue, Philadelphia, PA 19151, 215-473-5393.)
5. June Holley and Roger Wilkens have written extensively on a systems view of flexible networks. See *Creating Flexible Manufacturing Networks in North America: The Co-Evolution of Technology and Industrial Organization*, published by Appalachian Center for Economic Networks, 94 North Columbus Road, Athens, OH 45701, 614-592-3854.
6. Cognitive science has a term for the part standing for the whole: "metonymy."
7. For a study of the common principles among general systems theories, see *Holonomy: A Human Systems Theory*, by Jeffrey Stamps (Seaside, California: Intersystems Publications, 1980). (Available from The Networking Institute, Inc. See chapter 4, note 4.)
8. For the Simon article, see chapter 2, note 14.
9. Confusion over the word "hierarchy" has been a subject of periodic sore debate ever since British systems theorist Lancelot Law Whyte first raised the issue in 1949.
10. For a comprehensive treatment of the principle of complementarity, see Stamps, *Holonomy*, note 7.
11. For the original work that established the field, see *General System Theory*, by Ludwig von Bertalanffy (New York: Braziller, 1968).
12. For further discussion of the S-curve, see *Diffusion of Innovations*, by Everett M. Rogers (New York: The Free Press, 1983).
13. The limit to growth of the S-curve is represented by the asymptote of the curve.