

## Portia Isaacson Bass, Ph.D.



### SUMMARY

Portia Isaacson Bass is primarily engaged in scholarly research in mathematical and empirical foundations of new information-technology (IT) product forecasting (e.g., diffusion, technology, architecture, sales, prices). She is executive director of Bass's Basement, a not-for-profit (501c3) corporation, dedicated to research and education concerning new-product sales forecasting. She is also CEO of Bass Economics, Inc., which provides consulting on IT market forecasting. Dr. Bass occasionally serves as an expert witness in computer, telecom and semiconductor industry litigation.

Dr. Bass was a pioneer in the personal computer industry. She co-founded a computer store in 1976; built Future Computing Incorporated into the personal computer industry's leading technology and market forecasting firm, with over 160 employees, at the time it was acquired by McGraw-Hill. She, in the report *IBM's Billion Dollar Baby*, correctly analyzed the impact of the IBM PC and foretold the PC-compatible technology and market within days of IBM's introduction; she accelerated IBM PC compatibility through Future Computing's laboratory work with manufacturers, software companies, and resellers; and created the first PC dealer tracking service, *StoreBoard*. She introduced Compaq Computer Corporation's founders to their venture capital investors and was herself a founding investor.

Starting in 1986, she served two years on Microsoft's Board of Directors. During 1987-1988 she published *Future Thinker*, a newsletter that reviewed published market research and business information in the computer, telecommunications, semiconductor and office products industries. In 1989 she started the information service that became BIS Strategic Decisions' *Personal Computer Market Advisory Service*. From 1989 through 1993, she published *Pen-Computing Reference Report*. Since 1993 Dr. Bass has consulted on IT product/component strategies (e.g., personal computers, notebooks, handheld computers, wireless telephone, semiconductor devices, and Internet appliances).

As an entrepreneur, Dr. Bass has been featured in *Wall Street Journal*, *Venture*, *Business Week*, *Forbes*, and *USA Today* as well as two books: *Women, Technology and Power: Ten Stars and the History They Made* by Marguerite Zientara and *What Works for Me: 16 CEOs Talk About Their Careers and Commitments* by Thomas R. Horton.

Dr. Bass holds a Ph.D., M.S., and M.A.S. in Computer Science (Computer Architecture and Operating Systems) and a B.S. in Physics & Mathematics. Her key past honorary positions include: ACM Council, IEEE Computer Society Board, 1977 NCC Chairperson, and IEEE Computer Principal Technical Editor and COMDEX Advisory Board.

## **RESEARCH INTERESTS**

- Mathematical and computer models for forecasting technologies and architectures, applications, adoption, market trends, economics and business environments addressing such issues as:
  - What causes generational transitions? When is a transition disruptive? What is a generational transition in the customers' eyes as opposed to a manufacturer's view? How do generational transitions affect sales, prices, market expansion, market shares, competitors, and customers? How often do generational transitions occur?
  - How do product features change over time? What are evolutionary changes as opposed to changes that cause generational transitions?
  - What is the relationship of Moore's Law and other functionality-growth laws for digital technologies to the learning (experience) curve? What are the appropriate metrics for measuring capability and performance of various technologies?
- Analysis of historical digital technology trends and historical evolution of computer (and other digital system) architectures to provide analogies for forecasts
- Development of software tools and historical databases for research and practice in diffusion modeling, technology forecasting and market forecasting.

## **PRESENT EXPERTISE**

- Theory and practice of forecasting digital technologies, applications and markets
- Mathematical and computer models of new product diffusion
- Entrepreneurship, especially in digital technology markets
- The future of digital technologies, applications, markets and industry
- Product management of digital products (including services)
- Emerging computer, operating system, data communications and application architectures
- Client/server and personal-computing architectures, markets and technologies
- Mobile-computing and wireless-communication architectures and markets
- World Wide Web authoring tools and content trends
- Computer components and peripherals markets (e.g. mass storage, semiconductors)
- Computer distribution channels and industry infrastructures
- Competitive analysis and strategic planning for technology businesses
- Web and PC software development: Microsoft .Net Framework, ASP.NET, C#, Visual Basic, Excel Object Model, SQL Server

## **EDUCATION**

- Ph.D., Computer Science, Southern Methodist University, 1974 (computer operating systems and computer architecture with minor in discrete mathematics)
- M.A.S., Computer Science, Southern Methodist University, 1973
- M.S., Computer Science, North Texas State University, 1972
- B.S., Physics and Mathematics, East Central University, Oklahoma, 1966

## **RECENT SCHOLARLY PAPERS**

- Jiang, Z., F.M. Bass and P.I. Bass. 2004. Virtual Bass Model and the Left-Hand Data-Truncation Bias in Product Diffusion Studies. *International Journal on Research in Marketing* (23) 2006,
- Bass, Portia Isaacson. Computer-Architecture Dynamics. Working paper. [www.basseconomics.com](http://www.basseconomics.com).
- Bass, Portia Isaacson and Frank M. Bass. 2004. IT Waves: Two Completed Generational Diffusion Models. Working paper and supplements. [www.basseconomics.com](http://www.basseconomics.com).
- Bass, Portia Isaacson. 2002. Principles of Technology Generations Diffusion Data: The IBM Mainframe Case. Working Paper. [www.basseconomics.com](http://www.basseconomics.com).
- Bass, Portia Isaacson and Frank M. Bass. 2001. Diffusion of Technology Generations: Model of Adoption and Repeat Sales. Working Paper. [www.basseconomics.com](http://www.basseconomics.com).

## **RECENT SCHOLARLY SOFTWARE**

- Bass, Portia Isaacson and Frank M. Bass. 2004. IT Waves: Open-Source Software. [www.basseconomics.com](http://www.basseconomics.com).
- Bass, Portia Isaacson. 1999-present. Bass Modeler Web Service and Excel Addin for Diffusion Modeling Research and Technology/Market Forecasting.

## **RECENT SCHOLARLY CONFERENCE PRESENTATIONS AND ABSTRACTS**

- Kim, Taesun, Frank Bass and Portia Isaacson Bass. 2005. Not to Worry: Bass Model Estimation Bias Is Small. 2005 INFORMS Conference presentation.
- Bass, Frank and Portia Isaacson Bass. 2004. Moore's Law and The Experience Curve: The Economics of Bits and Chips. 2004 INFORMS Conference presentation.
- Bass, Portia Isaacson. A Mathematics for Multigenerational Diffusion Models. 2004 INFORMS Marketing Science Conference abstract. [www.basseconomics.com](http://www.basseconomics.com).
- Bass, Portia Isaacson and Frank M. Bass. 2004. The Embedded Model of the Norton-Bass Successive Technology Generations Model. 2004 INFORMS Marketing Science Conference presentation.
- Bass, Frank and Portia Isaacson Bass. 2004. Moore's Law and The Experience Curve: The Economics of Bits and Chips. 2004 INFORMS Marketing Science Conference presentation.
- Bass, Portia Isaacson and John Isaacson. 2003. Multiple Generation Diffusion Model Estimation Using Adaptive Nonlinear Least Squares Algorithm NL2SOL. 2003 INFORMS Marketing Science Conference presentation.
- Bass, Portia Isaacson. 2002. Decomposition of Aggregate Observations by New Durable Product Diffusion Models. 2002 INFORMS Marketing Science Conference presentation.
- Bass, Portia Isaacson and Frank M. Bass. 2001. Diffusion of Technology Generations: Model of Adoption and Repeat Sales. 2001 INFORMS Marketing Science Conference presentation.

## OTHER SCHOLARLY PAPERS

- Window on the 80's, *IEEE Computer*, w/ E. Juliussen, January 1980.
- The Personal Computer vs. Personal Privacy, *Computers & Privacy in the Next Decade*. New York: Academic Press, Inc., 1980.
- Personal Computing, The Oregon Report, IEEE Computer Society, September 1979.
- Using Microprocessors--Extending Our Reach, COMPCON Proceedings Fall 79, September 4-7, 1979.
- The Next Ghetto: The Information Poor, Rocky Mountain Microcomputer Conference Proceedings, Pinegree Park, Colorado, August 28, 1978.
- Microcomputers in Business, '78 National Computer Conference PC Conference Proceedings, June 1978.
- Personal Computing: A Little Past and a Lot of Future, x'78 National Compute Conference Proceedings, June 1978.
- A Machine-independent Floppy Disk Controller with Portable Software, *Rocky Mountain Symposium on Microcomputers Proceedings*, w/ B. Johnson, August 1977.
- Personal Computing Dissected, *Computer*, IEEE Computer Society, July 1977.
- The Personal Computer: Evolution in Computer Science Education, Proceedings of East Texas State University Computer User's Conference. March 1977.
- Personal Microcomputers, Texas Association for Educational Data Systems, Austin, Texas, October 25-26, 1976.
- TPL: A Compiler for Instructional Use, presented to the Fort Worth Chapter of the ACM, May, 1975.
- Picture Systems, PS, and the Design of Channel-to-channel Computer Interface, Proceedings of the 2nd Annual Symposium on Computer Architecture, IEEE Computer Society and ACM, January 20-22, 1975.
- PS: A Tool for Building Picture-System Models of Computer Systems, Proceedings of the Third Texas Conference on Computing Systems, IEEE Computer Society, November 1974.
- PS Language Definition, ACM SIGDA Newsletter 4, pp. 20-26, September 1974.
- Picture-system Models and Computer System Design, Ph.D. Dissertation, Computer Science Department, Institute of Technology, Southern Methodist University, Dallas, Texas, 1974.
- A Semantic Model of a Concurrent Processing Language, Computer Science Conference, Federation of North Texas Area Universities, March 26, 1974.
- A Process-interrupt Mechanism for Block-structured Languages, 7th Annual Meeting of the Texas Academy of Science, February 28, 1974.
- A Programming Language for Concurrent Processing, Master's Thesis Computer Science Department, North Texas State University, August 1972.

## **BOOKS**

- Computer Industry Almanac, w/ E. Juliussen, L. Kruse, 1987.

## **EDITED BOOKS**

- Microprocessors & Microcomputers. Long Beach California: IEEE Computer Society. 1979.

## **EDITORSHIPS**

- Senior Technical Editor, *IEEE Computer*, 1978-1981

## **PROFESSIONAL SOCIETY OFFICERSHIPS AND COUNCILS**

- ACM Council Member-at-Large, 1978-1981
- IEEE Computer Society Governing Board, 1980-1982
- American Management Association Management Systems Council, 1978-1981
- Founder and Chairperson, Association for Computer Machinery Special Interest Group on Personal Computing, 1977-1979

## **CONFERENCE CHAIRS, MANAGEMENT AND ADVISORY BOARDS**

- 1977 National Computer Conference (NCC) Chairman, 1975-1977
- National Computer Conference Management Committee, 1977-1979
- IEEE Computer Society COMPCON Chairman, Fall 1979
- COMDEX Advisory Board, 1990-1991
- Unisys International CIO Conference

## **KEYNOTE ADDRESSES AND INVITED SEMINARS**

- The Future of Personal Computing, The Future of Personal Computing 92 Conference, ESP, Ltd., London, April 14, 1992.
- A Whole New World of Computing, Keynote Speech, Digital Consulting Conference, May 1992.
- Keynote Speech, Pen Computing Opportunities Conference, Japan, April 1992.
- Beyond Client/Server Computer Architectures, Client/Server Summit, Nice, France, Unisys Corporation, March 1994.
- Japan Microprocessor Conference, JEIDA, 1979.
- Japan Economic Journal PC Business Conference, 1985.
- TI-MIX Europe Symposium, Frankfurt, Germany, September 1979.
- Future Computing Seminar, Norway, September 20, 1979.
- Future Computing Seminar, Denmark, September 19, 1979.
- Luncheon Speaker, Annual Conference, American Institute of Certified Public Accountants, San Francisco, May 15, 1979.
- Keynote Address, USAF Computer Related Information Symposium (CRISYS) U.S. Air Force Academy, January 24, 1979.
- Keynote Address, Personal Computer Show, London, England, July 5, 1979.

- Keynote Address, Intl. Microcomputer Applications Conference, Tokyo, Japan, November 16, 1978.
- Luncheon Speaker, ACM-SIGMOD International Conference on Management of Data, Austin, Texas, May 31, 1978.
- Keynote Address, Annual Motorola Technical Review, November 2, 1977.
- Personal Computing: An Idea Whose Time Has Come, Personal Computing Exposition, New York, October 29-30, 1977.
- Personal Computing: A Business Perspective, Data Processing Management Association Annual Conference, Washington, D.C., October 10, 1977.
- Personal Computing Evening Keynote Address, IEEE COMPCON, Washington, D.C., September 8, 1977.
- Home Computers, Heart-of-Texas DPMA Annual Meeting, Banquet Speaker, March 1977.

### **INVITED SEMINARS AND SPEECHES**

- A Glimpse of the Future: IT Then, CIO Conference Speech, March 11, 1992.
- Changing Business through Technology - Pen Computing, COMDEX/Spring, April 8, 1992.
- The Personal Computer: Challenge to Computer Engineering, Computer Science Lecture Series, Stanford University, May 16, 1979.
- The Organizational Crisis: Assessing the Impact of Minis, Micros and Distributed Systems, AMA, San Francisco, March 28, 1979.
- P.O.P.S., Inc., Montreal, September 1979.
- Morgan Stanley Personal Computer Forum, New Orleans, May 3, 1979.
- Personal Computing: A Little Past and a Lot of Future, Goddard Space Flight Center, Maryland, May 22, 1978.
- Invited Speaker, IEEE Computer Society, Orlando, Florida, May 25, 1978.
- Keynote Address, University of Denver, June 12, 1978.
- Personal Computing, Computer and Business Equipment Manufacturers Association (CBEMA), Washington, D.C., June 1, 1978.
- Rochester Chapter of ACM, Rochester, New York, May 15, 1978.
- NECON '78, DPMA, Hartford, Connecticut, April 20, 1978.
- Twenty-second Annual Data Processing Conference, University of Alabama, March 8, 1978.
- The Future of Retail Computer Stores, Panel Discussion, The First West Coast Computer Faire, April 1977.
- Dinky Computers are Changing our Lives, Banquet Speech, Second West Coast Computer Faire, March 3, 1978.

### **OTHER PROFESSIONAL ACTIVITIES**

- Professional Development Seminars Organization by ACM Chapters, South Central ACM Regional Chapter Volunteer Training Workshop, October 23, 1976.
- Personal Computing, Dallas Chapter of the ACM, August 31, 1976.
- Personal Computing, Association for Systems Management, Dallas Chapter Meeting, August 10, 1976.

- What's New in Programming Language Theory, Session Chairman, ACM Conference, October 1975.
- Honorary Fellow, Association of Computer Programmers and Analysts, 1977
- Past, Present, and Future, Panel Discussion, 1976 National Computer Conference, New York, June 1976.
- Advisory Board, University of Southern California Project to Predict the Social Impact of Personal Computers, NSF Funded, 1978-1979
- MECC Computer Literacy Project Advisory Board, 1981-1983
- Structured Programming, DPMA Regional Conference, Texas, November 6, 1975.
- A Survey of Structured Programming Concepts, Fort Worth ACM, May 1975.

### **COMPUTER INDUSTRY COLUMNS AND ADVISORY BOARDS**

- Columnist and Contributing Editor, *Computer Reseller News* (the computer industry's leading trade publication), 1982-1997 (intermittently)
  - Business Intelligence, *Computer Reseller News*, October 1997.
  - Internet Beamed from Satellite Direct to User, *Computer Reseller News*, September 1997.
  - Wireless Internet, *Computer Reseller News*, August 1997.
  - Visual Basic Opportunity, *Computer Reseller News*, July 1997.
  - Another Step towards Digital Pen and Paper, *Computer Reseller News*, June 1997.
  - Digital Cameras, *Computer Reseller News*, May 1997.
  - Remembering 1982, *Computer Reseller News*, May 1997
  - What Sun Doesn't Tell You About Java, *Computer Reseller News*, April 1997.
  - Mathematica, *Computer Reseller News*, March 1997.
  - Will Emerging Technologies Ever Stop, *Computer Reseller News*, February 1997.
  - FrontPage Is a New Era in Web Development, *Computer Reseller News*, January 1997.
  - Survey of Emerging PC Storage Technologies, *Computer Reseller News*, October 1996.
  - Expert Systems in PC Distribution, *Computer Reseller News*, September 1996.
  - Emerging Technology Reviews, *Computer Reseller News*, August 1996.
  - Emerging Technology Reviews, *Computer Reseller News*, July 1996.
  - Emerging Technology Reviews, *Computer Reseller News*, June 1996.
  - Visual C++, *Computer Reseller News*, May 1996.
  - In Search of Java Applets, *Computer Reseller News*, April 1996.
  - Internet/Microsoft Integration Seen As Best Strategy, *Computer Reseller News*, Page 59, March 18, 1996.
  - Two New Digital Pens, *Computer Reseller News*, March 1996.
  - Network "Computers": Sun's Java is Native Language, *Computer Reseller News*, Page 65, March 11, 1996.
  - Visual Basic 4.0 Meets VCR, *Computer Reseller News*, Page 56, February 26, 1996.
  - The Final Frontier: Internet Apps Reach for the Stars, *Computer Reseller News*, Page 61, February 5, 1996.

- Windows Programming Meets the Internet in Many Ways, Computer Reseller News, Page 106, January 29, 1996.
- Lotus' ScreenCam: Making of a Movie, Computer Reseller News, Page 71, December 4, 1995.
- VARs Could be Stars in Lotus ScreenCam Movies, Computer Reseller News, Page 74, November 27, 1995.
- Our Notebook Computer Dreams Coming to Fruition, Computer Reseller News, Page 80, October 16, 1995.
- Building the Best Little Network on Earth, From Scratch, Computer Reseller News, Page 65, September 25, 1995.
- The World Wide Web Puts New Spin on Publishing for the Masses, Computer Reseller News, Page 58, September 4, 1995.
- Getting Connected: How to Resell the World Wide Web, Computer Reseller News, Page 59, August 28, 1995.
- World Wide Web Puts New Spin on Publishing for the Masses, Computer Reseller News, Page 53, July 17, 1995.
- Components: Breath of Fresh Air for Software, Computer Reseller News, Page 64, June 19, 1995.
- Software Developers May Learn to Like Living Life in an "Office" Environment, Computer Reseller News, Page 57, May 29, 1995.
- Wildfire's Telephony Assistant May be Your New best Friend, Computer Reseller News, Page 63, May 1, 1995.
- Entering an Era Where Phone Calls Can Spread Like Wildfire, Computer Reseller News, Page 57, April 24, 1995.
- On-line Help: PC's Next Great Breakthrough?, Computer Reseller News, Page 52, March 20, 1995.
- Notebook Technology is Growing by Leaps and Bounds, Computer Reseller News, Page 60, March 6, 1995.
- More Than a Name: Cyberphone Is Our Worldwide Workplace, Computer Reseller News, Page 56, January 23, 1995.
- Search Goes On for Best Windows 95 PC with Pen, Computer Reseller News, Page 51, November 21, 1994.
- Windows 95 Gives Blessing to Union of PCs and Telephones, Computer Reseller News, Page 61, November 14, 1994.
- PC Card Software: Puzzles of Installation, Distribution, Computer Reseller News, Page 77, October 24, 1994.
- Sound Proposition: Adding Audio to Mobile Computers, Computer Reseller News, Page 94, September 19, 1994.
- Client/Server Software Brings About Meeting of Minds, Computer Reseller News, Page 73, August 2, 1994.
- Integrated PCMCIA Peripherals Enjoy Rapid Growth in Popularity, Computer Reseller News, Page 88, August 1, 1994.
- Reader/Writers Inspire a New Type of Desktop-Mobile Link, Computer Reseller News, Page 49, July 4, 1994.
- Optical Technology Could Be Answer to Widening Storage Gap, Computer Reseller News, Page 64, May 30, 1994.

- Fledgling 1.8-inch Drive Market Begins to Take Wing, *Computer Reseller News*, Page 65, April 18, 1994.
- Multimedia Defined *Computer Reseller News*, Page 60, February 21, 1994.
- Will 1994 Turn Out to be the Year of the PDA-Market Boom or Bust?, *Computer Reseller News*, Page 57, January 24, 1994.
- The Future of IT-Counting Down to the 21st Century, *Computer Reseller News*, Page 82, December 13, 1993.
- Phoning Home Will Never, Ever Be the Same, I Hope, *Computer Reseller News*, Page 80, November 15, 1993.
- E-mail: Unplugged at Last, *Computer Reseller News*, Page 63, March 28, 1994.
- "Notabase," Could This Be the Next Killer Application?, *Computer Reseller News*, Page 56, October 11, 1993.
- Flash Memory Positioned Between RAM, Hard Disks, *Computer Reseller News*, Page 58, September 6, 1993.
- The Future of Mass Storage Lies in the (PCMCIA) Cards, *Computer Reseller News*, Page 46, August 2, 1993.
- Electronic Ink Emerges as a Launchpad of the Future, *Computer Reseller News*, Page 62, June 28, 1993.
- Rise of Heavy-Duty Systems, *Computer Reseller News*, Page 68, May 24, 1993.
- Ask Portia Column, *Computer Reseller News (CRN)*, 1982-1985.
- Columnist, *CIO Magazine*, 1992-1994
  - Meeting Expectations, *CIO Magazine*, Page 104, July 1994.
  - High Wireless, *CIO Magazine*, Page 92, May 15, 1994.
  - The Promise of PDAs, *CIO Magazine*, Page 64, April 15, 1994.
  - On the Road: Taking I.T. With You, *CIO Magazine*, Page 74, March 15, 1994.
  - Beyond Client/Server, *CIO Magazine*, Page 74, February 15, 1994.
  - A Telephone for the 21st Century, *CIO Magazine*, Page 86, November 1, 1993.
  - Why You Need the Card, *CIO Magazine*, Page 82, September 1, 1993.
  - The Fourth Era, *CIO Magazine*, July 1993.
  - A Programming Dream, *CIO Magazine*, Page 68, June 1993.
  - The Vision Thing, *CIO Magazine*, Page 72, April 1993.
  - Now You See It..., *CIO Magazine*, Page 68, February 1993.
  - That Wonderful Year, *CIO Magazine*, Page 68, December 1992.
  - Removing the Ties that Bind, *CIO Magazine*, Page 60, October 1992.
  - Illusions of Multimedia, *CIO Magazine*, Page 68, September 1992.
  - The Big Picture, *CIO Magazine*, Page 64, July 1992.
  - IT to the Front, Please!, *CIO Magazine*, Page 62, May 1992.
- Columnist, *OEM Magazine*, 1994-1996
  - Jumpin' to the Java Jive, *OEM Magazine*, Page 78, April 1996.
  - The Mainframe's Last Stand, *OEM Magazine*, Page 90, February 1996.
  - Browsers Here, There & Everywhere, *OEM Magazine*, Page 87, December/January 1996.
  - Win 95's Objects Will Make Waves, *OEM Magazine*, Page 71, October 1995.
  - Publish or Perish, *OEM Magazine*, Page 85, September 1995.

- The Next Little Big Thing, OEM Magazine, Page 78, July/August 1995.
- I Hear the Cyberphone Ringing, OEM Magazine, Page 81, May 1995.
- Digital Pens Take Aim...Again, OEM Magazine, Page 61, April 1995.
- Take a Notebook Computer and a Pen, OEM Magazine, March 1995.
- Back to the (Windows) Future, OEM Magazine, Page 71, February 1995.
- PCs Fill the Air with Soundwaves, OEM Magazine, Page 69, January 1995.
- PCMCIA Combo Dreams, OEM Magazine, November 1994.
- Dream Floppy: Where are You?, OEM Magazine, Page 51, October 1994.
- Wireless Fact; Wireless Fiction, OEM Magazine, Page 86, July/August 1994.
- Towards a Unified Performance Testing Theory, OEM Magazine, Page 77, June 1994.
- The 1998 PC-Card Olympics, OEM Magazine, Page 100, May 1994.
- In Defense of Lesser Media, OEM Magazine, Page 84, April 1994.
- Beyond Mere Megabytes, OEM Magazine, Page 93, March 1994.
- The Power of "Enk", OEM Magazine, Page 93, February 1994.
- The Phone, Circa 2001, OEM Magazine, Page 125, November 1993.
- Better Play Your Cards Right, OEM Magazine, Page 101, October 1993.
- Shifting \$Chips, OEM Magazine, May 1993.
- Choosing Chips for the Road, OEM Magazine, Page 98, July 1993.
- Contributing Editor and Advisory Board, *Datamation*, 1977-1979
  - Distributed Personal Computers, *Datamation*, May 1978
  - Computer Stores, *Datamation*, April 1978
  - Introduction to Personal Computing, *Datamation*, March 1978
  - Personal Computing and Change in Data Processing, *Datamation*, February 1978
  - Small Business Applications of Personal Computers, *Datamation*, January 1978
  - Reliability and Maintenance of Personal Computers, *Datamation*, December 1977
  - The Digital Information Utility, *Datamation*, November 1977
  - Home Computers, *Datamation*, October 1977
- Associate, *Byte Magazine*, 1977-1979

### **SUPERVISED AND/OR AUTHORED NEWSLETTERS**

- Cards & Slots: PCMCIA Market Letter, published monthly by Dream IT, July-1994 -- July 1995.
- PCMCIA Forecast Database, 1994.
- Future Views, Newsletter, April 15-January 15, 1986.
- Future Computing Illustrated, monthly from July 1980 to June 1982.

## **SUPERVISED AND/OR AUTHORED MARKET RESEARCH STUDIES**

- Pen-PC Reference Report vol. 1-5 and Update Service, 1991-1994.
- The Next Wave in PC Distribution, BIS, 1991-1992.
- New Desktop Advisory Service: Big Picture, w/ W. Ablondi, BIS, July 17, 1990 - October 1991.
- New Desktop Advisory Service: Research Notes & Presentations, w/ W. Ablondi, BIS, February 28 - October 1991.
- New Desktop Advisory Service: Strategic Planning Foundations, w/ W. Ablondi, BIS, July 6, 1990.
- Future Think Companies, First Edition, w/ J. Ray, 1989.
- Future Think Companies, w/ J. Ray, K. Bobo, 1989.
- Future Thinker, July 21, 1988 -- November 17, 1989
- Future Think Experts, w/ J. Ray, K. Bobo, 1989.
- Future Think Live Seminars, 1989.
- Analysis of Value Added Resellers: Doing Business as a VAR, w/ E. Arnesen, January 1986.
- IC Usage: Personal Computer Companies, w/ D. Wilson, February 1986.
- Software Forecast: 1st Qtr 1986, w/ E. Juliussen, H. Uribe, J. West, March 1986.
- Future Directions: The Decision Tool for Personal Computer Management, w/ E. Juliussen, February 1986.
- Personal Computer Manufacturers, w/ T. Williams, February 1986.
- VAR TRACK: 4Q 1985 - 3Q 1986, w/ L. White, March 1986.
- The IBM RT PC: Technology & Market Impact, w/ L. Lundquist, April 1986.
- Home Views, w/ H. Uribe, N. Wilson, 1985.
- Technology Hardware, Newsletter, December 1985.
- Office Personal Computer 1984 Customer Survey: Final Report, w/ W. F. Ablondi, April 1985.
- Home Computers: Hardware, w/ H. Uribe, J. Schmidt, W. Ablondi, January 1985.
- Distribution Views, Newsletter, January-December 1985
- Personal Computer VAR Programs & Policies, w/ E. Arnesen, February 1985.
- Personal Computer Manufacturing Costs Volume 1, w/ D. Wilson, February 1985.
- Office Personal Computers: Software Markets, w/ P. Park, E. Juliussen, March 1985.
- Consumers & Computers: Fourth Quarter 1984 Market Analysis, w/ T. Williams, March 1985.
- Personal Computer Manufacturing Costs Volume 2, w/ D. Wilson, March 1985.
- Personal Computer Manufacturing Costs Volume 3, w/ D. Wilson, March 1985.
- Vertical Markets: An Overview, w/ L. Windham, April 1985.
- Personal Computer Peripherals: Printers & Plotters, w/ T. Riggins, E. Juliussen, April 1985.
- Multiuser Systems & Software, w/ L. Lundquist, May 1985.
- Accounting & Business Administration Software Markets, w/ G.J. Weinnig, W.F. Ablondi, May 1985.
- Opportunities in Large Organizations, w/ T. Williams, June 1985.

- Consumers & Computers: Market Opportunities in the Home, w/ H. Uribe, W.F. Ablondi, June 1985.
- Office Buying Patterns, w/ M.M. McKee, W.F. Ablondi, June 1985.
- Opportunities in Small & Medium Businesses, w/ T. Williams, June 1985.
- Vertical Markets: Real Estate, w/ L. Windham, June 1985.
- Artificial Intelligence & Personal Computers Forum, Dallas, June 10-11, 1985.
- Hardware Trends: 16-& 32-bit Microprocessors, June 1985.
- Vertical Markets: Accountants & Bookkeepers, w/ L. Windham, June 1985.
- Personal Computer Peripherals: Mass Storage Devices & Media, w/ E. Juliussen, July 1985.
- Vertical Markets: Medicine, w/ J. Cross, July 1985.
- Personal Computer Distribution Channels: Distributors, w/ G. de Miranda, August 1985.
- Vertical Markets: Law, w/ J. Cross, August 1985.
- Vertical Markets: Manufacturing, w/ G. Weinnig, August 1985.
- Vertical Markets: Banking & Finance, w/ G.J. Weinnig, August 1985.
- VARs USA: Profiles of Value Added Resellers, Volumes 1, 2 & 3, w/ E. Arnesen, August 1985.
- Vertical Markets: Insurance, w/ G. J. Weinnig, September 1985.
- Vertical Markets: Retail, Wholesale & Distribution, w/ J. Cross, September 1985.
- Personal Computer Peripherals: Add-in Boards, Modems, Monitors & Input/Output Devices, w/ T. Riggins, September 1985.
- Personal Computer Aftermarket Opportunities, w/ P. Park, September 1985.
- Forecast Report: Third Quarter 1985, w/ E. Juliussen, J. West, 1985.
- Hardware Views, w/ L. Kruse, S. Kunkle, 1985.
- Future Views, w/ E. Juliussen, 1985.
- Storeboard: Peripherals Report, w/ E. Juliussen, October 1985.
- Vertical Markets: Scientists, Engineers & Architects, w/ G. J. Weinnig, October 1985.
- Vertical Markets: Restaurants & Hotels, w/ J. Cross, October 1985.
- VARs' Product Flow: 1985, w/ E. Arnesen, October 1985.
- Personal Computer Manufacturing Costs Volume 4, w/ D. Wilson, November 1985.
- Personal Computer Manufacturing Costs Volume 5, w/ D. Wilson, November 1985.
- Personal Computers in Communications, w/ L. Lundquist, November 1985.
- Personal Computer Manufacturing Costs Volume 6, w/ D. Wilson, December 1985.
- Hardware Trends: Semiconductor Memory, w/ L. Kruse, D. Wilson, December 1985.
- Competitive Analysis of Leading Companies, w/ T. Williams, December 1985.
- Analysis of Market Dynamics, w/ W. F. Ablondi, December 1985.
- End Users: The Next Wave, w/ J. West, December 1985.
- Service & Support, w/ J. Maddox, T. Williams, December 1985.
- Personal Computer Distribution Channels: An Overview, w/ L. Hardy White, E. Arnesen, December 1985.
- Graphics for Personal Computers, w/ H. Taub, December 1985.
- UNIX, XENIX, and Personal Computers, San Francisco, February 21-22, 1985.

- Home Information Systems & Software, White Plains, May 13-14, 1985.
- VARs 85: VARs Speak Out!, Newton, October 21-22, 1985.
- PC/MIS Managers Speak Out!, Dallas, December 9-10, 1985.
- Technology Views, Newsletter, January-July 1984.
- Wholesalers USA, w/ A.M. Brown, March 1984.
- Home Computers: A Market Overview 1984, w/ E. Juliussen, March 1984.
- Office Personal Computers: A Market Overview 1984, w/ E. Juliussen, May 1984.
- Distribution Strategies: Office Personal Computer Hardware and Software, w/ L. Windham, W.F. Ablondi, July 1984.
- Home Computers: Software, w/ E. Juliussen, August 1984.
- The Robot Report:
  - Volume 1, Introduction and Marketing, w/ D. Wilson, August 1984.
  - Volume 2, Technology, w/ D. Wilson, August 1984.
  - Volume 3, Technology: Selected Topics, w/ D. Wilson, August 1984.
  - Volume 4, Detailed Design Example, w/ D. Wilson, August 1984.
  - Volume 5, Bibliography, w/ D. Wilson, August 1984.
- Home Computers: Distribution, w/ E. Juliussen, October 1984.
- VARs USA: Profiles of Value Added Resellers October 1984, Volumes 1, 2 & 3, w/ E. Arnesen, October 1984.
- Dealer Plan Review and Analysis: 1984, October 1984.
- Office Products Dealers Survey: 1984, w/ T.A. Williams, October 1984.
- Home Computers: Consumers, w/ T. Parks, November 1984.
- Office Personal Computer Systems Manufacturers: Analyses & Profiles, w/ L. Lundquist, W.F. Ablondi, November 1984.
- Personal Computer Peripherals: Distribution Channels, w/ E. Juliussen, December 1984.
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- Computer Stores USA, Volumes 1, 2 & 3, w/ T.A. Williams, December 1984.
- Retail Views, Newsletter, January-December 1984.
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- Personal Computer Distribution Channels: Mass Merchants & Mail Order, w/ G. de Miranda, May 1984.
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- Office Personal Computer Software Market Forum, San Francisco, January 16-17, 1984.
- IBM PC Market & PC Tech Day, April 4, 1984.
- Computer Dealer Policies Forum, Los Angeles, March 5-6, 1984.
- Home Computer Market Forum, San Francisco, May 3-4, 1984.
- MacForum, San Francisco, June 21-22, 1984.
- Home Computer Distribution Forum: Channels to the Customer, San Francisco, July 19-20, 1984.
- RETAIL84: Focus on Computer Specialty Channels, San Francisco, June 25-26, 1984.

- Personal Computer Industry Tutorial: Opportunities & Pitfalls, Dallas, September 19-20, 1984.
- Analysis of Computer Stores: First Quarter 1983, w/ W.F. Ablondi, March 1983.
- Computer Stores USA: Profiles & Directories, Volumes 1 & 2, June 1983.
- Software Store Survey: Fall 1983, w/ E. Juliussen, December 1983.
- Fortune 1000 Personal Computer Market Report, w/ M. Stone, H. Kinne, E. Juliussen, November 1983.
- The Storeboard Report:
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- Second Annual Home Computer Market Forum, San Francisco, August 29-31, 1983.
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- Software Store Business Report, w/ A. Brown, P. Inserra, October 1983.

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- Multi-User Systems and Local Area Networks Forum, San Diego, December 12-13, 1983.
- Opportunities & Pitfalls Seminar
  - Opportunities & Pitfalls, Seminar, Dallas, October 25-26, 1983.
  - Opportunities & Pitfalls, Seminar, Fort Lauderdale, October 31-November 1, 1983.
  - Opportunities & Pitfalls, Seminar, San Diego, November 10-11, 1983.
  - Opportunities & Pitfalls, Seminar, New York, June 2-3; Chicago, June 9-10; San Francisco, June 20-21, 1983.
  - Opportunities & Pitfalls, Personal Computer Market Seminar, Dallas, August 23-24, 1982.
- Analysis of Computer Stores, March 1982.
- How to Start Your Own Computer Software Store, July 1982.
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- Personal Computer Educational Software Market Report, December 1982.
- Personal Computer Industry Views (Future Views), Newsletter, July 5, 1982-December 30, 1983.
- Personal Computer Software Industry Forum, Dallas, June 14-15, 1982.
- Personal Computer Peripherals and Local Networks Forum, Dallas, October 11-12, 1982.
- Home Computer Market Forum, Dallas, December 6-7, 1982.
- IBM's Billion Dollar Baby, w/ E. Juliussen, Fall 1981.

### **SELECTED OTHER ARTICLES AND CONFERENCE PRESENTATIONS**

- Market Talk: PCMCIA Advertising, IC Card Systems & Design, January/February 1995.
- Market Talk: What Are the Hot Sales Channels for PC Cards?, IC Card Systems & Design, November/December 1994.
- 1994: It's PCMCIA's Year-Oops!, IC Card Systems & Design, January/February 1994.
- Nomadic Information Technology, National Retail Federation Newsletter, March/April 1993.
- Wireless: A New Technology Wave, NCR Perspective, December 1992.
- Pen's Past, Present and Future, Mobile Office Magazine, March 1992.
- A Pen for All Reasons, Mobile Office Magazine, March 1992.
- Future Computing Presentation, AICPA Computer Services Conference, Orlando, Florida, May 21, 1981.
- Productivity, People, and Minis, Canadian Information Processing Society, Toronto, April 21, 1981.
- Future Computing Seminar, DPMA, Phoenix, Arizona, April 3, 1981.
- Professional Development Seminar, ACM, University of Southern California, March 14, 1981.
- Tomorrow's Personal Computers: What will the Future Hold?, Online Information Utilities '81 Conference, New York, March 3, 1981.

- The ISO-Vendor Roundtable, Panel, COMDEX '80 Conference, Las Vegas, November 20, 1981.
- Computers by the Millions, School of Engineering and Computer Science Colloquium, California State University, Northridge, California, October 16, 1980.
- Micro Systems Trends in the U.S.A., 1980 Computer Show, London, July 24, 1980.
- Lecture, NOMDA Conference, New Orleans, July 11, 1980.
- Seminar, ACM, Madison, Wisconsin, June 7, 1980.
- Speaker, Third Annual Personal Computing Forum, New Orleans, May 28, 1980.
- Seminar, ACM, San Francisco, May 10, 1980.
- Seminar, University of Birmingham, Birmingham, Alabama, March 27, 1980.
- Future Systems Forum, Presentation, Data Processing Management Association, Phoenix, Arizona, March 3, 1980.
- Personal Computers in Education, Panel, ACM, Kansas City, Missouri, February 15, 1980.
- Presentation, Canadian Information Processing Society, Toronto, November 15, 1979.
- Applications: Computers by the Millions, AMA, Chicago, November 7, 1979.
- Personal Computers from Japan, Midcon/80 Conference Proceedings, November 1980.
- Business Personal Computer Trends in the USA, 1980 Microcomputer Show Proceedings of the Wembly Conference Centre, London, July 22-24, 1980.
- A Glimpse at Computer Stores in Japan, Computer Dealer, March 1979.
- Interface Age Editorial Conference, Computer Dealer, January/February 1979.
- Microcomputers, American Management Associations, The Organizational Crisis: Assessing the Impact of Minis, Micros and Distributed Systems, Chicago, August 9, 1978.
- Business Uses of Microcomputers, Popular Electronics, August 1978.
- Horizons Seminar, IBM, Speaker, Wayzata, Minnesota, July 11, 1978.
- The Personal Computer and Change in the Computer Industry, Interface Age, June 1978.
- Personal Computing Is More Than a Hobby, w/ J. Grimes, Interface Age, June 1978.
- Personal Computers and Social Change, Personal Computing Festival Proceedings, '78 National Computer Conference, June 1978.
- Computer Retailing, PERCOMP '78 PERCOMP, Long Beach Personal Computer Show, April 28, 1978.
- The Micro Store, Computer Retailing, October 1977.
- A Computer in Every Home, *ABACUS*, Pilot Issue, AFIPS, April 1977.
- Personal Computing: An Idea Whose Time Has Come, Guest Editorial, *BYTE: The Small Systems Journal*, February 1976.

## **MOST SIGNIFICANT ENTREPRENEURIAL VENTURES AND PUBLICITY**

### Ventures

- 1976: Founding partner in one of the first 20 computer stores in the USA and the first in the southwestern USA. Successful. Sold in 1981.
- 1980: Founding partner and CEO of Future Computing, Inc., which became the leading technology forecaster and business information provider in the personal computer industry. Sold to McGraw-Hill in 1984 for \$8 million. Continued as CEO until 1985.
- 1985: Intellisys, Inc. Software for integrated electronic home. Built most "electronic" home of its day. Featured in many news stores and science TV shows. Featured article: Portia's Pad, IEEE Spectrum, May 1985. Failed to raise 3<sup>rd</sup> round of venture capital because too long term.

### Book Features

- Primary entrepreneur featured in the book *Women, Technology and Power: Ten Stars and the History They Made* by Marguerite Zientara. American Management Assoc.
- *What Works for Me: 16 CEOs Talk About Their Careers and Commitments* by Thomas R. Horton. American Management Assoc.

### Major Business Press and Television

- Featured entrepreneur in Wall Street Journal, Venture, Inc., Business Week, Forbes, USA Today, and Dallas Morning News as well as on CNN, ABC news, Good Morning America and Beyond 2000.

## **TYPICAL RECENT CONSULTING ENGAGEMENTS (for litigation see following section)**

- Compared the patent portfolios of two large semiconductor companies with respect to particular types of products. Estimated revenue affected by related groups of patents.
- Sales, price and technology multigeneration forecast for PDA-based wireless application.
- Built mobile computing forecast and market share models for company considering PDA market. Also performed competitive analysis
- Market segmentation and forecast for a new type of OEM semiconductor product
- Assisted in the technology choices, content design and planned evolution of a Web site for a substantial technology company
- Performed analysis and segmentation of customer database for one of the largest long-distance telecom companies
- Wrote technology and market background paper with many illustrations describing a major new enterprise client/server software product
- Gave keynote presentation at strategic planning getaway to top executives of computer company about the future of information technology

- Prepared marketing communications strategy and detailed implementation plan for the ambitious launch of a new and very unique semiconductor product related to pen computing
- Prepared market segmentation and forecast for a new consumer and small-business telecommunication service
- Assisted (scripted, designed graphics, reviewed, supervised edit) in creating a video describing a new semiconductor product requiring substantial OEM market education
- Assisted semiconductor company in identifying opportunities for semiconductor products in mobile computing and wireless communication markets
- Assisted PC manufacturer in planning architectural evolution of product line encompassing workstations, servers, and mobile computers over ten-year period
- Performed mass-storage distribution channels competitive analysis for broad-range storage manufacturer with identification of gaps in channel coverage
- Assisted large software company in creating appropriate strategic relationships
- Assisted in naming a substantial telecommunication company spin-off

#### **LITIGATION CONSULTING** (Expert Witness)

- Retained by Matsushita Electric Industrial Co., Ltd. (Dewey-Balentine) in patent infringement case. 2006-2007. U.S. market for PC optical-disk-drive controller chips. Report and deposition.
- Retained by Nemecek-Cole in legal malpractice case. 2005-2006. Analyzed use of the Bass Model. Report and arbitration testimony.
- Retained by PostX (Pillsbury Winthrop Shaw Pittman) in patent infringement case. 2005-2006. Analyzed use of the Bass Model. Two reports, deposition and trial testimony.
- Retained by Intel (Brown & Bain) in class action case concerning microprocessor performance. 2003-2005. Affidavit and deposition. Desktop PC market segmentation and microprocessor/PC performance benchmark testing.
- Retained by Mobility (Brown & Bain) in patent infringement case. 2003. Report, deposition and trial testimony. Market for power adapters for portable computers and various issues relating to subject patents.
- Retained by Sony (Heller Ehrman) in class action concerning notebook computer battery life. 2002-2004. Notebook battery life testing and market analysis.
- Retained by Compaq (Beck, Redden) in class action concerning claimed defective floppy disk controller. 2000-2002. Multiple reports and deposition. A analysis of floppy disk usage 1975 to present focusing on changing usage patterns and importance of floppy disk drives, analysis of consumer expectations about reliability of floppy drives and media; inspection of plaintiffs' computers; testing replica systems of plaintiffs' computers to determine likely causes of plaintiffs' complaints.
- Retained by Maxim (Brown & Bain) and TI Unitrode (Heller Ehrman). 2000-2005, report and deposition – market importance of voltage regulator patent in portable electronics (e.g., notebook computers, PDAs, wireless telephone). Notebook computer battery life technical simulation for notebook computers using regulators with and without the patented feature from late 1980s through 2001; notebook

battery life testing of notebooks with and without the patented feature, market analysis to determine notebook computer usage profiles, technology and product architecture trends from late 1980s through 2001; data analysis of sales of voltage regulators with and without the patented feature to indicate whether the patented features were the reasons for any success of the patented voltage regulators.

- Retained by Telxon Corporation (Rosenthal, Monhait, Gross & Goddess) in *Telxon v. Robert P. Meyerson, Dan R. Wipff, Robert A. Goodman, Dr. Raj Reddy, and Norton W. Rose*. 2000-present. Deposition -- pen computer market in early 1990s, the competitiveness of a specific computer design and prototype.
- Retained by Kenan Systems (Irell & Manella) for *Galaxy Networks, Inc. v. Kenan Systems Corporation*, 1997, report, deposition and trial testimony -- business practices in relationships between computer software companies and distributors.
- Retained by Applied Materials (Arnold, White & Durkee) for *Applied Materials v. Novellus*, 1996; report and deposition -- worldwide semiconductor sales and distribution patterns
- Retained by Packard Bell (Wilson Sonsini) for *Compaq v. Packard Bell*, 1996; report (no deposition) -- market importance of six patents
- Retained by Intel (Arnold, White & Durkee) for *Cyrix v. Intel*; deposition and trial testimony -- market for x86-compatible microprocessors without paging
- Retained by Dell (Arnold, White & Durkee) for *TI v. Dell*, 1992; deposition -- reasons for Dell's success
- Retained by Intel (Arnold, White & Durkee) for *Intel v. AMD*; deposition -- math coprocessor compatibility
- Retained by Fairchild (Brown & Bain) for *Fairchild v. Data General*, 1980-1981; depositions -- damages analysis

## **EMPLOYMENT HISTORY**

- 2005-Present Principal Researcher, Bass Model Institute -- a division of a not-for-profit (501c3) corporation dedicated to research and education concerning digital product dynamics and new product forecasting.
- 2000-Present Partner, Bass Economics, Inc. – consulting for users and creators of high-tech market and technology forecasts. Litigation support.
- 2000-Present Adjunct Professor of Marketing (research only), University of Texas at Dallas
- 1987-2002 President, Future Think, Inc. (d.b.a. Dream IT) -- Consultancy and publisher of business information about markets for digital products and services
- 1994-1998 Board of Directors, FOURTH SHIFT Corporation
- 1986-1987 Board of Directors, Microsoft Corporation
- 1984-1985 President, Future Computing, Inc., a McGraw-Hill subsidiary
- 1980-1984 Founder, President & CEO, Future Computing Inc.
- 1978-1980 Fellow and (later) Vice President BSD, Electronic Data Systems
- 1976-1981 Founder, Partner, and Vice President, The Micro Store
- 1975-1977 Assistant Professor, Computer Science, University of Texas at Dallas
- 1974-1975 Engineering Specialist, Xerox Corporation
- 1971-1974 Instructor, Computer Science, North Texas State University
- 1970-1971 Senior Systems Software Programmer, Recognition Equipment Inc.
- 1968-1970 Systems Software Analyst, Computer Usage Company
- 1968-1968 Scientific Programmer, Lockheed Electronics
- 1967-1968 Scientific Programmer Analyst, Bell Helicopter
- 1960-1962 U.S. Army (Honorable Discharge)

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