

System Dynamics and Systems Thinking Resource Guide*

Forrester Consulting works with entrepreneurs, venture capitalists, corporate managers, and other management consultants to analyze complex business and economic problems using simulation models. Work includes: preliminary diagnosis of complex situations, developing exploratory simulation models, building model-based training tools, coaching managers and consultants in using models, and serving as experts in model-based litigation. International clients included large corporations, middle market firms and individuals interested in strategic analysis. Contact Dr. Nathan Forrester, 100 Galleria Parkway, Suite 400, Atlanta, GA 30339 Phone: (770) 956-4030 Fax: (770) 956-4031, user@mindspring.com or <http://www.mindspring.com/~nathanf>

G.K.A. (formerly Gould-Kreutzer Associates) is a systems thinking training and consulting company. They offer a wide variety of public seminars and in-house training courses in systems thinking that help managers develop an intuitive understanding of their company's underlying structures. By applying visual "mapping" techniques, managers can capture and communicate their mental models more effectively. In addition, they offer custom-designed computer simulation models, which can be used to explore management issues and develop corporate strategy. Address: 125 Cambridge Park Drive, Cambridge, MA 02140 Phone: (617) 441-7766, Fax: 617-491-6744, gkainfo@gka.com

High Performance Systems moved the field a giant step forward with the release of STELLA in 1985. A Macintosh-based modeling program, STELLA made the systems thinking modeling process accessible to non-practitioners. Their products – STELLA® and itthink™ – are "visual thinking tools" that build people's capacity for understanding and improving the way complex corporate, social, and physical systems work. Their software programs permit users to first visualize a system by constructing diagrams using the pictures and building-block icons, then brings the pictures and diagrams to life via animation. High Performance Systems also provides in-house and public workshops, as well as client-specific consulting. Address: 45 Lyme Rd., Hanover, NH 03755. Phone: (603) 643-9636, hiperfsys@aol.com or <http://www.hps-inc.com>

Innovation Associates focuses on building organizations that have the inspiration and ability to produce outstanding results while fulfilling the personal aspirations of their members. They offer the following programs as part of their ongoing work with clients: *Leadership and Mastery*, a 3-day program enabling leaders to clarify and communicate a realizable vision of the future for themselves and their organization, *Systems Thinking Workshop*, a 3-day working session to discover the system structure behind problems and to communicate more effectively from a systems perspective, and *the Production-Distribution*

* This information is provided as a service only; it is not intended as an endorsement. This information was originally compiled by Pegasus Communications, and was printed in the March 1991 issue of *The Systems Thinker*. Many of the organizations have provided updated descriptions for this printing. Tom Fiddaman, 1993 and Nan Lux, 1996.

Simulation Game (also known as the beer game), a hands-on business game developed at MIT. IA leads and customizes the game and the *Systems Thinking Workshop* and certifies instructors to lead the game and the workshop. Address: 100 5th Avenue, 6th floor, Waltham, MA 02154 Phone: (617) 398-8500 Fax: (617) 398-8523.

Jack Homer is an independent consultant specializing in feedback systems modeling, analysis, and education for business and government. In the public sector, he concentrates on health-related issues, including drug abuse, infectious disease control and medical technology assessment. In the private sector, he works with a wide variety of manufacturing and service companies who seek to transform their business processes and practices. Address: 36 Covington Lane, Voorhees, NJ 08043. Phone: (609) 924-2660 Fax: (609) 424-2133. Email: 70312.2217@compuserve.com.

LeapTec has brought system dynamics to government agencies and companies in such diverse industries as electronics, shipbuilding, metal treatment, computer software and hardware, aerospace, defense, telecommunications, and financial services in the United States, Canada, Western Europe, and Australia. LeapTec consultants help clients apply a system dynamics process to critical business or public policy issues such as market analysis, project management, capacity planning, and competitive strategy. They also offer standard and customized educational programs focusing on the general use of system dynamics or on client concerns. LeapTec offers systems thinking support services to help their clients introduce and strengthen systems thinking within their organizations. Address: 81 Hazard Avenue, Suite 1600, Providence, RI 02906 Phone: (401) 421-1616 Fax: (401) 421-9082, jimhines@interserve.com

MicroWorlds, a division of GKA Inc., is a system dynamics software company offering a comprehensive set of tools for strategy developments and managerial training. MicroWorlds' product lines include strategic training simulations, such as *People Express Management Flight Simulator*,[™] providing experiential practice fields for managers to examine the consequences of their decisions in a variety of industries; dynamic modeling software, such as *POWERSIM for Windows*,[™] offering integrated modeling and interface-building capability for beginning and advanced modelers; and facilitation tools, such as *Facilitation Graphics*[™] for Systems Thinking, allowing users to explore and document important organizational issues using causal loop diagrams, behavior-over-time graphs and hexagon maps. MicroWorlds provides training and technical support for all its products, including a regularly scheduled public training course, *Strategic Modeling with POWERSIM*.[™] Address: 125 Cambridge Park Drive, Cambridge, MA 02140. Phone: (617)491-6778 Fax: 491-6744. mworlds@gka.com

The MIT Center for Organizational Learning fosters collaborative research among innovative organizations to advance learning disciplines, develop new learning tools and processes, and study the impact of such innovations in organizations. Organizations who join the center as one of a small number of corporate sponsors are provided with management programs such as

competency courses and learning laboratories to develop their skills in systems thinking and the related learning disciplines. Address: MIT Building E60-364, 30 Memorial Drive, Cambridge, MA 02139. Phone: (617) 253-9815. Fax: (617) 252-1998.

Pegasus Communications, publisher of *The Systems Thinker* newsletter, is committed to helping managers develop a clearer understanding of complex business issues. Each issue of the newsletter describes a specific systems thinking tool that you can use to gain better insights into your managerial issues. The tools are accompanied by case studies or newspaper articles which illustrate how the tool is used to examine real business situations. Plus, *The Systems Thinker* also provides you with reviews of the latest software and books, a calendar of upcoming seminars and workshops, and in-depth discussions of the latest advancements in systems thinking. *The Systems Thinker* is published 10 times per year. Currently the publishers are offering a special charter subscription rate of \$117 for one year and \$197 for two years. Pegasus Communications also hosts an annual *Systems Thinking in Action* conference, which brings together leading practitioners and professionals to share experiences and teach techniques of practical importance. Address: PO Box 120, Kendall Square, Cambridge, MA 02142-0001. Phone: (617) 576-1231. Fax: (617) 576-3114, pegasus@world.std.com

Productivity Press now carries twenty classic texts in system dynamics that were previously available through MIT Press, in response to the renewed interest in disseminating the growing body of knowledge that came with the recent growth in the field. Productivity's future systems thinking publications will cover corporate applications of the principles of systems thinking, computer software modeling programs, interactive simulation games, and training programs that support corporate learning. Address: PO Box 13390, Portland, OR 97213. Phone: (503) 235-0600 or 800/394-6868, service@ppress.com or <http://www.ppress.com>

Pugh-Roberts Associates, the newly acquired division of PA Consulting Group, applies computer simulation modeling to areas of business strategy, market analysis, program management and executive training in a broad range of industries. Their program management models have been used with great success in contract dispute resolution, competitive bid analysis, and the mitigation of program performance problems. Pugh-Roberts is also the developer and supplier of the DYNAMO family of system dynamics modeling software for IBM mainframes and microcomputers. Address: 41 Linskey St., Cambridge, MA 02142. Phone: (617) 864-8880.

Sustainable Solutions, Inc. specializes in the creation of customized dynamic simulation models and games of managerial and economic systems, for use in policy analysis and employee training. Recent model-based analyses have been conducted on urban and regional systems, and not-for-profit organizations. Sustainable Solutions distributes the PowerSim software package in the U.S. as well as an array of simulation games that address issues in sustainable economic development. Contact: Dr. Michael Radzicki, 217 Park Avenue, Box 225,

Worcester, MA 01609. Phone: (508) 831-5767 Fax: (508) 831-5896,
sustsol@sunspot.tiac.net or <http://www.tiac.net/users/sustsol>

System Dynamics Group, MIT, Sloan School of Management, was founded by Professor Jay Forrester in the early 1960s. At that time, he began applying what he had learned about systems during his work in electrical engineering to every day kinds of systems. Professor John D. Sterman is the present director of the System Dynamics Group. The three main areas of research focus on the U.S. economy, using system dynamics in k-12 education, and in looking at total quality management issues. Professor John Sterman (jsterman@mit.edu) phone (617) 253-1951, Professor Jay Forrester (jforestr@mit.edu) (617) 253-1571 or Nan Lux (nlux@mit.edu) at (617) 253-1574.

The System Dynamics Society is an international scholarly organization whose membership encompasses teachers and researchers in schools, colleges, and universities, professionals in government and industry, and consultants active in the public and private sectors. What ties these individuals together is the use of a feedback perspective and computer simulation to understand problems arising in complex social systems and to enhance policy analysis and design. The society publishes a scholarly journal, the *System Dynamics Review*, and sponsors the annual International System Dynamics Conference. Address: Mrs Julie Pugh, Executive Director, 49 Bedford Rd., Lincoln, MA 01773. Phone: (617) 259-8259 Fax: (617) 259-0969, sdsociety@aol.com.

Ventana Systems, Inc. provides strategic decision support tools and consulting for business and government to solve problems, define strategy, and exploit opportunities through the optimal, computer-intensive use of operational and strategic information. Ventana is the developer of Vensim, a software simulation environment which supports fast development of accurate business, technological, and organizational simulation models. These models have been successfully applied in the areas of forecasting, business operations and market strategy. Address: 60 Jacob Gates Road, Harvard, MA 01451. Phone: (508) 456-3069 Fax: (508) 456-0964, vensim@std.world.com