

# Book Review

## *Blueprint to the Digital Economy*

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*Book Review of Blueprint to the Digital Economy*

*Edited by Don Tapscott, Alex Lowy, and David Ticoll; Associate Editor: Natalie Klym*

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There is a tsunami approaching which few have noticed. This tidal wave results from the intersection of the technology revolution and a demographic revolution that I call the Net Generation. Due to their wired environment, they will change the approach to learning, the nature of work, the kind of play, the pattern of consuming—in short, the culture of their people (p. 2).

Variations upon Don Tapscott's themes of a "tsunami" and a "technology revolution" are repeated throughout the book *Blueprint to the Digital Economy*, a profound collection of essays offering forged visions and interpretations of the Internet's future impact on technology, society, and industry. It was written by prominent business, government, and academic leaders, along with many other influential professionals, all of whom had participated in a research and consulting program conducted by the Alliance for Converging Technologies. A brief biographical sketch of each author precedes the book's Introduction.

The editors acknowledge that although the word *Blueprint* in the book's title may at first appear antithetical to the fluidity associated with the Internet, ". . . there is indeed an underlying logic and order to the emerging digital organization form." The essays throughout the four parts of the book resound common themes of the Internet's logic and order. Some of the themes focus on e-business, disintermediation, outsourcing, consumer empowerment, aggregation, value chain, globalization, research

and development, universal knowledge, and customization.

Part One entitled "The New Rules of Competition" outlines strategies for business success in an uncertain future. In the first essay David Ticoll and Alex Lowry, both co-founders of the Alliance for Converging Technologies, and Ravi Kalakola, Chair Professor of Information Systems at Georgia State University, address the nucleus of the digital economy—e-business communities. These communities consist of a long-term network of customers, suppliers, manufacturers, and distributors who share ideas and information online and in real time in order to make robust and timely decisions for the benefit of all its members. To aid strategists in determining the most effective designs, rules, and types of governance for their e-business communities, the authors discuss four basic types of e-business communities and the nontraditional means of partnerships and value-added knowledge by which each creates new wealth.

A stimulating essay by Vincent P. Barabba of General Motors offers an astute business design that prepares companies to deal with the uncertainty of the future. The plan is an "envisioning process" that will enhance a company's competitive edge and minimize its organizational failure. Barabba warns companies that their traditional business plans should include more than point estimates such as growth of the GNP, price indices, and cost of raw

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materials. He advises them to conduct a study of their organizational needs followed by an analysis of how those requisites can be filled through the occurrence of a number of possible scenarios. Barabba lists four plausible yet challenging scenarios set up by management from GM and by experts from various fields. The author explains that General Motors wisely envisioned itself in both “make and sell” and “sense and respond” strategies with a “learning” attitude and not a “knowing” attitude. The manner in which General Motors studied and reacted to two of the scenarios is demonstrated by a decision tree formula and other graphical designs. The author points out that the process of working through scenarios allows companies to understand the possibilities of certain actions, prepare for sudden market change, realize discontinuities, and construct sound business plans.

The task of combining speed and knowledge, that is, “becoming smart very quickly” is another key element in designing an effective business strategy in a network computing environment. J. Bruce Harreld of IBM reminds the reader that this is an age of immediacy: production cycles are fast and efficient; commerce is continuous; and technical items rapidly become obsolescent. Thus, one requirement for an organization to be successful is that it must be able to respond and adapt quickly to market fluctuations. But prompt action alone is insufficient. The author also points out that knowledge, that which has been edited and analyzed from information, should be written down in a knowledge repository where it may be used as a resource by others in day-to-day work activities. Once this knowledge is combined with speed, a company can transact business more quickly, reduce costs, maximize profits, and survive according to the new rules of competition. As an example, IBM was a company on the threshold of becoming a dinosaur in the early 1990s but was able to survive because of its ability to adapt quickly to a rapidly changing environment—a lesson from which others can learn.

James F. Moore of GeoPartners Research lends additional insight into the e-business communities, which he also refers to as ecosystems. He sees these businesses as not

replacing the traditional multi-divisional firms but adding to their functionality. Unlike the highly controlled hierarchical organizational structure of the multi-divisional firms whose focus lie within their core operations and core markets, e-businesses are fully or quasi-digital network structures that evolve over a period of time. The process by which these networks of partners and alliances share information in conducting their business activities is mutually beneficial in terms of strategy and substantial financial returns. Members of a network also continuously assess the health and well-being of its partners to assure that there is no conflict of interest and that each is giving the resources needed for its e-business community to support the shared vision of innovation and growth.

The premise of the next essay by Paul Woolner of the Alliance for Converging Technologies is that many new digital start-up enterprises have more capital than the capacity to use it, which often results in over inflated market value of their businesses as well as a false sense of security. To guide new entrepreneurial enterprises through the transitional stages necessary to become sustainable and resilient organizations, Woolner offers several leverage points. Among them are the ability to maintain a clear focus of a company’s vision, to quickly adapt to required changes, to balance systems within work, to distinguish between partners and alliances, to reflect on business practice, and to use innovative work models and language to portray company image.

“Industry Transformations,” the second section of the book, details how the global digital economy is threatening the livelihood of many prominent industries and how they, in turn, are meeting these new challenges.

Lloyd Darlington, representing the Bank of Montreal Group of Companies, provides a lucid discussion of some of the threats that come into play in the transformation of the banking industry. One is competition. No longer limited to the brick-and-mortar banks, customers are presented with a vast array of competitive financial products and services through Internet web sites. For example, customers can now easily shop among “cherry pickers” such as Citicorp and Wells

Fargo on the Internet to see who is offering higher interest rates on deposits and lower interest rates on loans. The high cost of operating banking transactions through the branches, telephone, and bank machines is another threat to survival. To contain these costs, banks frequently are forced to reduce services and raise fees, which may, in turn, cause banks a substantial loss of customers. This common scenario has become known as a “death spiral,” and business strategists warn that it is “extremely difficult for a bank to exit.” Other threats include “intelligent agent” software that searches the Internet for a user’s customized requests such as who has the lowest mortgage rate available; “integrators” that manage and consolidate a customer’s finances; and Bill Gates who is making way for a virtual bank through the Microsoft Network. The author explains that in order for banks to reintermediate, they are confronting these threats with diverse strategies: participating in mergers, acquisitions, and strategic alliances with computer and telecommunications companies; increasing the number of ways customers can bank conveniently such as in cyberspace, at a one-stop stall or kiosk in a grocery, or through a traveling bank representative who makes house calls; engaging in research and development of products such as the debit and smart cards. The banking industry is making every effort to learn all they can about customers in order to provide customized service. To give a customer what he/she wants with value-added services has become a number one priority.

The new digital economy also poses threats for the publishing industry. To compete with the electronic providers of information, the traditional publishers are finding new and dynamic ways to maintain readership. The next essay by Chuck Martin of Alliance for Converging Technologies and author of *The Digital Estate* notes the importance of publishers’ tracking data about consumers, customizing online reading and fashioning its appeal with animation and hyperlinks, and providing valuable online services as well as free promotional offers found to be popular among consumers. The author discusses the strategy of aggregation, that is, the creation of partnerships between publishers and those who

have never been involved in the publishing business for the purpose of instilling public trust and attracting a larger audience. Another useful tactic used by publishers to reach more customers is the globalization of the Internet, which allows access to online web sites categorized by particular topics, special interests groups, and unique communities. The author seems to take delight in reminding those in the publishing business that they have a natural advantage over their contender—they have an innate ability to add meaning and interpretation to the information they present to their audience.

Unlike the previous authors, Carl E. Gustin of Eastman Kodak Company does not believe the film and picture industry is threatened by the digital technology. Instead, he is convinced that the two technologies complement one another as they continue to coexist. Gustin logically illustrates that conventional film will continue to have widespread use for many years since its image quality is far superior to all but the most expensive digital camera equipment. He sees the developing countries such as Russia, China, and Eastern Europe also continuing to use the traditional film due to its ease of use. Examples of businesses benefiting from the digital camera approach are insurance companies, real estate markets, and professional photographers who find digital photography to be cost effective, easy to use, storage efficient, and acceptable in quality. Gustin also illustrates the compatibility between film and digital photography for those who prefer to photograph by film but who also wish to enjoy it digitally. Retail kiosks can process digital images taken from both film and digital cameras and format the output onto compact discs, Internet accounts, or 3.5-inch diskettes. As other businesses engage in research and development, Kodak also researches the type of products and services that consumers want and makes every effort to satisfy those needs. When these plans require partnerships, Kodak, likewise, is an avid participant.

Carol Twigg of Educom collaborated with Alliance for Converging Technologies Michael Miloff to deliver a conclusive chapter citing many reasons that explain why higher education is undergoing a transformation. The student

population is older, more diverse, and growing substantially. Traditional class schedules are inappropriate for those people who work nontraditional hours or who have families. The brick-and-mortar campuses are often places of inconvenience for students who live at distant locations. The standard college curriculum does not always suffice the needs for potential students who need specialized training. There is a knowledge explosion that defies categorization by any one institution. Universities and colleges are cutting programs and reducing faculty due to the financial pressures to control costs and remain competitive. These authors believe that through a gradual paradigm shift the campus-centric college education will become a digital global learning infrastructure, allowing universal learning. In this system the authors envision many players including universities, media, publishers, content specialists, and technicians, marketing, selling, and distributing learning. Partnerships among these players will provide the best teaching and learning solutions.

The relationships between businesses, intermediaries, and consumers continue to change as the electronic marketplace takes its place in our culture. John MacDonald and Jim Tobin of Bell Canada co-author a chapter portraying the customer as eventually becoming the directive player, that is, the empowered player. Consumers know what they want to buy and how much they are willing to pay. Being networked-enabled, they have in their hands the ability to do comparative shopping and share their experience of buying from sellers with other consumers in their interest groups. An increasing number of consumers will reaffirm their empowerment by use of persona managers, also known as software "intelligent agents." Consumers can program the agents to search for sale items that meet specific criteria or allow personal correspondence with only particular sellers. The authors grant that although the consumers ultimately will enjoy the greatest benefits in the marketplace, sellers will also share in some of the rewards. By using tools for data mining and data warehousing, sellers can determine consumers' preferences and buying habits, thus giving them the knowledge to

customize their products and services to meet customers' needs.

Just as the logistics of the Roman Empire included an efficient organization, communications, and information that stretched over a network of roads spanning three continents, Dennis H. Jones of Federal Express professes the same attributes are the keys to success for any company. The author steps the reader through the various developmental stages that FedEx has taken to combine logistics with network computing. He demonstrates how companies such as National Semiconductor and Cisco Systems, who have outsourced their logistics management to FedEx, have been able to reduce their costs of transport, storage, and inventory.

Part Three entitled "Enabling the Internetworked Enterprise" examines companies' business solutions in terms of the interplay among infrastructure, enabling technologies, and application.

Raymond J. Lane of the Oracle Corporation begins his essay with a history of the fundamentals of computer networks. He shows how networked computing in a company or school can lower costs and facilitate ease of use. Lane predicts that everyday appliances containing network computers such as cellular phones with multi-capabilities, web television boxes, and personal digital assistants will grow significantly in the future in spite of certain obstacles that will temporarily inhibit their growth. Some of the obstacles cited are insufficient broadband width, people's fear of something new, concerns about data security and privacy, parents' need to filter out harmful material for their children, and the fear of theft of intellectual property among artists, entertainers, and literary persons. The greatest obstacle, according to the author, is the lack of the public majority having access to information appliances. Lane is very strong in his conviction that not until computer usage is universal will the Information Age be a reality. He writes, "Standard computers connected everywhere by a standardized, reliable network must be available if we wish to grow and distribute wealth everywhere on the planet." At the time when this essay was written, the author notes that less than

three percent of the world's population has access to computers.

In the essay "Making Intranets Obsolete," William J. Murphy of Hewlett-Packard explains that although intranets can still be a foundation for internetworked enterprises, they are insufficient in this new era of electronic business and competition to act alone. The new challenge for industry is to go beyond corporate firewalls in reaching new markets and managing sophisticated supply chains. Murphy reviews Hewlett-Packard's efforts at studying customers' future technological needs. Some of the company's viable solutions for those needs are as follows: to increase bandwidth at a low cost; create a more robust and secure network that is easy to install and manage; reduce the cost of computer usage by billing it as a utility cost; build more powerful and less expensive servers; build inexpensive but invaluable information appliances; and dissolve internetworking boundaries so that universal connectivity is not only possible but also secure.

Although John Roth of Nortel applauds the Internet for its great source of information and connection, he pleads for a webtone network that is comparable to the capabilities of our present day dial tone network. He contrasts the slow speed of the Internet, its interrupt errors, and some of its other drawbacks with the instantaneous access, simplicity, and reliability of the telephone. At this historic milestone when the volume of data has far surpassed that of voice, it is time to move data across a network in a wireless environment and in real time. The author's theme is that a network is the same as a company's business; it is indistinguishable from the physical business. A detailed example illustrates how Nortel's business is a network. In the early 1990s, Nortel abandoned its TCP/IP network and implemented an ATM network with an intranet on top. The author notes the company's move from a dial tone to a webtone resulted in the business reaching a maximum efficiency.

Robba Benjamin of Sprint seems pleased to argue that the ultimate stage of the new communications paradigm is that of creating communities for the purpose of enriching relationships through various cultures, people,

ideas, and experiences. Her enthusiasm for virtual communities counters those made by many cyber critics such as Mark Slouka and Clifford Stoll who describe cyberspace as cold, unemotional, and impersonal. The author's reference to the Starbright World shows a heart-warming example of a cybercommunity in action today. This community partnered by Sprint and Intel, along with the assistance of Steven Spielberg brings together seriously ill children from hospitals where they can play with one another in real time via the Internet. An outstanding example of a community used in industry is the Drums Network consisting of film editors, movie makers, animators, and a host of others sharing information for the purpose of making sound and timely decisions for the entertainment industry. Businesses are being driven to extend their services to the web where they must not only offer solid business solutions for customers but also a personal sense of community for customers to enjoy the business experience. Her vision of an ideal cyberspace is similar to that presented by John Roth.

Mark Weiser and John Seely Brown of Xerox PARC challenge the reader to experiment walking around a few hours with two empty toilet paper cardboard tubes similar to binoculars over their eyes. As a result, one would lose peripheral vision and see only the center of what is directly in view. The authors liken this experiment to the way data is distorted as it is received through computer devices. Although computer users can read text, hear sounds, and see images on their monitors, they are limited in the use of their senses in many other ways. For example, they are unable to attune to the nuances associated with received messages, to verify the authenticity of material, or differentiate among document genre. Although today's technology focuses only at the center of information rather than at its periphery, these authors are confident that research will aid in affecting a balance between the two.

How will the Internet change the structure and function of government? Will the Internet ever be under any jurisdiction? What are citizens' expectations of their national leadership in the governance of the Internet? Views relating

to these sociopolitical questions are addressed in the last section of the book, "Governance in the Twenty-First Century."

Michael R. Nelson, a former advisor to the Clinton administration on science and technology and presently an employee of the Federal Communications Commission, asserts that due to the digital information age there will be more fundamental changes in the next 10 to 20 years in governments' structure and functions than in the previous 200 years. The author speculates on how electronically enabled governments will change their roles in areas of national and personal security, physical infrastructure, commercial law, education, as well as others. His themes focus on governments working to collect and disseminate digital information effectively among many grass-root programs, private organizations, and schools. Groups can then use the information for expediting resolutions to problems, cutting costs, and tailoring solutions to meet local needs.

Stephen J. Kobrin from the Wharton School points out that due to the increasing usage of various brands of electronic cash and the many financial transactions made in cyberspace rather than in geographic space, problems and questions will arise contesting which country's economic laws and regulations apply in particular situations. He explains how the emerging digital markets can affect national economic control and render physical borders and sovereignty to be "irrelevant." He calls for economic policy makers to rethink the governance of the national economic system.

Vinton G. Cerf of MCI Communications reviews some of the abusive activities associated with the Internet. Digital fraud, forgery, propagation of misinformation, and misuse of

confidential data have the potential of undermining the Internet's infrastructure as well as seriously inhibiting its growth. The author recommends that the public and governments work together to secure the integrity and democratic nature of this powerful global medium.

Riel Miller, administrator in the Advisory Unit on Multidisciplinary Issues to the Secretary General of the OEDC, Paris, cites two trajectories that the world may take in shaping cyberspace for the future. One is a democratic and secure digital community of work, play, school, and shopping where people are willing to envision fundamental changes in their economic, social, and political traditions, as well as to collectively make choices to act upon their visions. The second possible future of cyberspace is that it remains an untamed community characterized by anonymity and lack of privacy with little organization or cooperation among its players.

In conclusion, *Blueprint to the Digital Economy* is recommended reading for anyone fascinated by the massive economic upheavals brought about by the wired revolution. The concentrated series of essays offers a peripheral vision of the Internet's effects on business and government as well as the vigorous strategies being implemented to meet the technological challenges of the future. Since each essay conveys a unique message and often thought-provoking ideas, the reader may wish to incorporate periods of reflection between readings. The layout of the book by individual essays also provides one with the option of selecting specific chapters to read. Regardless of one's approach, the book yields a useful and insightful study of the Internet whose contents are sure to capture attention.

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