

Book Reviews

Innovation Nation: How America Is Losing Its Innovation Edge, Why It Matters, and What We Can Do To Get It Back

John Kao. New York: Free Press, 2007. 306 pages. US\$26.00.

Though originally written to inform the 2008 U.S. presidential primary agenda, *Innovation Nation* offers an insightful roadmap for anyone with global operations to develop innovative solutions for so-called wicked problems. John Kao draws on his wide-ranging experiences, covering the spectrum from Harvard Business School to Hollywood to the U.S. Navy Postgraduate School, yielding policy direction for corporations, governments, and academics in the United States and other nations to face ever more competitive challenges in the global economies of the 21st century.

The book can be roughly divided into three sections: (1) the history of large innovation projects in the United States (e.g., Manhattan Project, National Aeronautics and Space Administration [NASA]); (2) the importance of strong leaders driving heavyweight teams; and (3) a prolific vision of innovation for the future world.

Immediately in Chapter 1 Kao introduces a new take on the term *wicked problems* as complex and ambiguous issues, such as climate change, health care, national security, and capacity for opportunities. “The wicked problems of our time rarely have clear-cut solutions that be unlocked by a single discipline” (p. 24).

Chapters 2 and 3 detail how today’s innovation centers are deliberately planned and carefully executed in geographies as diverse as Shanghai, Singapore, Denmark, and Ireland. For example, the author presents that spending (as a percent of gross domestic product) on research and development (R&D) in the small island nation of Singapore is expected to outpace that of the United States by 2010. Keys to successful innovation centers, like Singapore’s biotechnology research center Biopolis, include infrastructure investments in social makeup and education as well as finance. Kao identifies four principal driving forces behind today’s growth of innovation centers (pp. 65–75):

1. Silicon Valley is now everywhere—the productive ecosystem of Northern California is being reproduced all over the world.
2. Talent is now everywhere—top tier graduates in engineering and science are returning to their homelands to work and teach.
3. Capital is now everywhere—initial public offerings (IPOs) in China totaled over US\$40B in 2007 alone.
4. Government investment in military and aerospace is now everywhere—of 42 leading edge technologies for future weapons, 20 came from outside the United States.

So, if innovation lies everywhere and the key advantages previously held by the United States are disappearing, what differentiates a successful innovation nation? In the middle section of the book, Kao clearly stipulates that “human capital is the primary key to a national success story” (p. 85). Communicating a very strong message for education, the chapter on “Making Talent” sadly points out that engineering degrees awarded in the United States have plunged 20% since a 1985 peak. Meanwhile, Ireland has seen the establishment of nine new regional technical colleges in Limerick and Dublin in barely 30 years. Thus, the author proposes a portfolio of ideas including innovation apprenticeships (p. 109), integrating game culture into education curricula and marketing the importance of education so that becoming an innovator in the United States is as compelling as becoming a movie or sports star.

As top universities in the United States begin to draw fewer and fewer foreign students, those who do graduate are often choosing to return to their native countries for employment. Tighter U.S. restrictions on student visas and green cards for skilled workers since 9/11 have made it increasingly more difficult for universities and companies to continue to recruit the world’s top talent. Thriving communities can entice these future innovators by offering quality of life, opportunities to specialize, and a reputation for tolerance. These philosophies feed directly to the author’s conclusions in Chapter 6 regarding the importance of place and innovation team structure.

After a brief historical review of the formation of Lockheed's now famous Skunk Works during World War II, which led to the creation of America's first operational jet fighter in just 143 days, Kao praises more recent innovative skunk works: Motorola's team to develop the RAZR phone, Oticon's digital hearing aid, and the U.S. Navy's next generation aircraft carrier. Common themes in these developments include strong leaders enabling diverse heavyweight teams, working environments conducive to creativity, and few bureaucratic roadblocks. Kao's dream place is one "where traditional corporate procedures collide with unconventional innovation techniques to create something new from the deconstructed parts" (p.141)—exactly what many are striving for today through open innovation.

Finally, Kao closes the book with a policy proposal to form 20 innovation hubs throughout the United States to link existing capabilities with high-quality education centers in places that are culturally inclined to creativity and innovation. Each such innovation hub would be financed by federal, state, local, and private funding but designed by local business stakeholders. Innovation hubs would be directed with a compelling narrative to echo former president John F. Kennedy's race to the moon, effective management of a portfolio of innovation initiatives, encouraging serendipitous investigations absent of bureaucratic barriers, free access to global resources, and vast interactions of likeminded scientists and researchers.

The only drawback to the author's interesting perspective in developing an innovation nation is a somewhat U.S.-centric viewpoint. However, the author concludes with a redeeming chapter titled "What's Good for the World Is Good for America." Here, Kao encourages a future of prosperity for all in that "globalization seen through the lens of innovation can frame a new ethos" (p. 243).

Innovation Nation is recommended reading for American thought leaders as well as anyone working to improve the effectiveness of their innovation teams. By careful study of past innovation successes in 20th-century U.S. and leading 21st-century innovation cultures, the book will compel readers to consider how innovation infrastructure improvements in their own company can facilitate solving today's wicked problems.

Teresa Jurgens-Kowal
Global NP Solutions, LLC