Book Start-Up Nation

The Story of Israel’s Economic Miracle

Dan Senor and Saul Singer
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Recommendation

Innovation and venture capital are the main engines for creating individual and national wealth. Take Israel, for example, say authors Dan Senor and Saul Singer, who portray the nation as a blueprint for how to launch innovative ventures. They profile the cultural, military and economic characteristics that make it the world’s most entrepreneurial nation. This uplifting, inspiring business story explains how Israeli entrepreneurs overcame significant challenges and analyzes how a country’s culture influences its business climate. *BooksInShort* finds that this well-informed text offers solid lessons about maintaining national competitiveness in the 21st century.

Take-Aways

- Israel’s cultural, military and economic traits make it the most entrepreneurial nation.
- Its infrastructure supports entrepreneurship with venture capital, research and development funding, and a large number of scientists and engineers.
- At one start-up for every 1,844 citizens, Israel has more fledgling businesses per capita than any other nation.
- New Israeli firms benefit from close-knit military, social and educational networks.
- Israel’s informal culture de-emphasizes status and age, but recognizes talent and drive.
- In 2008, Israel received 2.5 times more venture capital investments per capita than the U.S.
- About 45% of Israelis go to university, one of the world’s highest attendance levels
- Immigrants boost Israel’s population and its entrepreneurial talent base.
- Israeli Arabs and very observant Jews have benefitted less than other citizens from the nation’s economic development.
- Israel must maintain its economic growth by using its cultural mix of “ambition and collectiveness,” its high-tech business centers, and its innovative spirit.

Summary

Radically New Ideas

Israel deliberately focuses its national assets on innovation and entrepreneurship. It has one of the highest levels of research and development of any nation and a higher concentration of engineers and scientists than any other country. A land of early adopters, Israel is the world’s top internet user and has the highest density of business start-ups: 3,850, or “one for every 1,844 Israelis.” It leads the way in technological innovation, and it excels at launching start-up businesses and building them up to Nasdaq-level. Israel has more Nasdaq-listed corporate headquarters than Europe, and it draws many international investors. Israel attracted $2 billion in venture capital in 2008, which, on a per capita basis, was akin to the investment that went to the United Kingdom, or to Germany and France combined. In 2008, venture capitalists invested 2.5 times more per capita in Israel than in the U.S.

> "Technological innovation is the ultimate source of productivity and growth

Israel, with its 7.1 million population, is a bastion of entrepreneurship, but that was not always the case. After the United Nations vote that established the state in 1948, Israel's neighbors attacked it and inflicted immense wartime losses. When it achieved independence, Israel had a low standard of living – comparable to America in 1800. Since then, Israel's economy has grown significantly. It has fought three more wars, experienced a fivefold increase in population and greatly increased its economic standing. Its record is "unmatched in the economic history of the world," says economist Gidi Grinstein. In fact, Israel's experience as an incubator of new companies demonstrates techniques that may be useful in other nations, especially the U.S., where the rate of innovation has declined. The U.S. can correct this drop by fostering start-ups, which create jobs, and by refocusing on technological innovation, which drives growth and productivity.

> "Israel's [military] reserve system is not just an example of the country's innovation; it is also a catalyst for it."

For an example of Israeli innovation, look no further than computer chip giant Intel, which benefitted significantly when Israeli engineers invented a new chip design now used in Intel's Centrino and the Core 2 Duo chips. Intel's U.S. managers initially rejected the concept behind these landmark chips. To win their acceptance, Israeli scientists had to convince Intel that basing chip performance on clock speed – how many times a chip could switch on and off per second – was the wrong benchmark, since more speed requires more energy and produces more heat. Israeli engineers designed a system with a slower chip speed that split the stream of instructions coming into the chip. This reduced the heat, improved performance and saved energy. Israeli engineers used persistent testing and campaigning to convince Intel of the wisdom of using the "mobility" chip. Israel's mobility chip division now produces nearly half of Intel's revenues.

Command Decisions

The Israeli army gives lieutenants more command authority than any other nation's military gives its officers at that rank. Israel empowers lieutenants to make fast decisions without authorization. It keeps its military command small – one officer to nine soldiers, compared to the U.S. ratio of one to five – so lower level soldiers must exercise initiative. In practice, this means that a typical commander who is in charge of 100 enlisted soldiers and 20 officers is 23 years old. Israel relies on its reserves for military power. At age 18, every Israeli, male and female, serves two to three years in the military. Many later attend college; about 45% of Israelis are university educated.

> "Launching a start-up or going into high-tech has become the most respected and 'normal' thing for an ambitious young Israeli to do."

Mandatory national service maintains the nation's antihierarchical structure. Soldiers do not salute officers, and privates can disagree with generals. This culture de-emphasizes status and age, and stresses talent. Through active and reserve duty, army units stay together for years. This builds a powerful national network of social and business connections. While high school graduates elsewhere focus on college to set their career paths, young Israelis strive to be admitted to top military units. Each unit has a rigorous selection process and offers specialized knowledge and training, which its graduates later put to use in the private sector.

> "In Israel, you get experience, perspective and maturity at a younger age, because the society jams so many transformative experiences into Israelis when they're barely out of high school

For example, Unit 8200 is the Israeli military's top intelligence squad. Its members deploy their computer skills to track terrorists. As these soldiers move into the private sector, they use their know-how to detect online fraud and unauthorized computer intrusions. They've launched several notable firms, including two credit card and internet fraud detection companies: Checkpoint, now worth $5 billion and listed on Nasdaq, and Fraud Sciences, which PayPal acquired for $169 million. The Israeli army's most selective unit is Talpiot, which is limited to the top 2% of high school grads. Talpiot combines military service with technological university training, and its soldiers become "cross-disciplinary" leaders and problem solvers in the army and in business.

> "The reserve system helps to reinforce that chaotic, antihierarchical ethos that can be found in every aspect of Israeli society, from war room to classroom to boardroom."

The Israeli military culture fosters traits that build entrepreneurship. For example, it encourages soldiers to approach problems with a "*rosh gadol*," Hebrew for a "big head," which means using a big-picture approach. The military rewards large-scope thinking, improvisation and initiative, which it institutionalizes through a formalized, intensive debriefing after every exercise. The debriefing is important. Soldiers intently debate successful and unsuccessful experiences so they learn from their achievements and their mistakes. Debriefing becomes part of any officer's formal evaluation. Israeli entrepreneurs credit their success to this military process, which encourages innovation and adaptation in complex situations, always mixing "ambition and collectiveness."

Economic Expansion

Israel's economic development unfolded in two great leaps "separated by a period of stagnation and hyperinflation." In the first (1948-1970), per capita GDP almost quadrupled, and the population tripled, even with three large wars. In the second leap (beginning in 1990 and ongoing), Israel became a world leader in innovation and entrepreneurship. For example, in 1998, Cisco opened an Israeli research and development center with 700 workers. It grew as Cisco "acquired nine Israeli start-ups." The center played a critical role in developing the advanced, $2-million CRS-1 web router. The company has invested $1.2 billion in Israeli high-tech start-ups.

> "Somewhere along the way – either at home, in school or in the army – Israelis learn that assertiveness is the norm, reticence [is] something that risks your being left behind

Before venture funds blossomed in Israel, its entrepreneurs could turn to the Binational Industrial Research and Development (BIRD) Foundation, which had $110 million in U.S. and Israeli government funds to seed joint business ventures. In 1978, Ed Mlavsky became BIRD's director. Intending to take a one-year sabbatical from his executive job at Tyco, he stayed in Israel 13 years. Over time, BIRD spawned $8 million in sales, funded 75% of Israeli Nasdaq firms and taught "Israeli companies how to do business" in the U.S. To accelerate economic growth, Israel's government and private investors put $100 million into a venture capital (VC) development agency called Yozma (which means "initiative"). It created 10 new VC funds from 1992 to 1997. To qualify, a new fund needed backing from three sources: a foreign venture capitalist, an Israeli venture capitalist, and an Israeli bank or investment firm. Between 1992 and 2009, some 240 firms invested in Israeli start-ups. Yozma did so well that other nations, from Japan to Australia, used it as a model.

"Entrepreneurship has played only a negligible part in Arab world economies

In 2003, Israel instituted financial industry reforms advanced by then-finance minister Benjamin Netanyahu. Israel cut taxes, transfer payments and 400 government jobs. The country reformed its banks, and privatized the national airline (El Al) and telecommunications firm (Bezeq). Netanyahu created Israel's investment management industry by allowing financial managers to charge fees, which was previously prohibited. The nation put $300 million a month from maturing government bonds into its investment industry, including Israeli VC funds. In a major endorsement of Israel's approach to business, in 2008, Warren Buffet made his first non-U.S. investment, paying $4.5 billion for Iscar, an Israeli machine-tool company.

Breaking the Embargo

Just as Russia's 1956 Sputnik satellite jolted the U.S. into the space race, France's 1967 arms embargo sparked Israel's weapons industry. When France stopped supplying arms, it forced Israel to become self-sufficient. However, no other small country had ever attempted to manufacture sophisticated weapons. By the late-1970s, Israel had produced its own tank (the Merkava) and fighter aircraft (the Nesher, Kfir and Lavi). In 1988, Israel became one of only a dozen nations in the world to launch a satellite into space.

"The greatest contribution of the Jewish people in history is dissatisfaction. That's poor for politics, but good for science." (President Shimon Peres)

Israelis work hard to overcome their nation's small size and limited resources. Their multitasking and improvisation have led to greater interindustry cooperation, another impetus for innovation. For example, the Israeli firm Compugen adopted a fresh approach to developing new drugs by using techniques from organic chemistry, mathematics, biology and computer science. The firm brings medical and military experts (many Compugen leaders are Talpiot alumni) together to work on genetic sequencing. Another firm, Aespironics, developed a new type of inhaler by combining medical advances and wind turbine technology. Beta-O, a medical firm, is working on putting together geothermal algae, fiber optics and certain kinds of cells in a pacemaker-sized device that could be surgically implanted to treat diabetics with pancreatic failure.

The Arab World's Entrepreneurial Dilemmas

The Arab nations that surround Israel also need to incubate innovative businesses and encourage entrepreneurs. Experts say to sustain its political and economic stability, the Arab world will need 80 million new jobs by 2020 – a pressing need given that 70% of the population in Arab Muslim countries is younger than 25. This goal translates into a job growth rate twice that of the U.S. during its 1990s economic boom. Arab nations must handle some very complex internal issues – such as over-reliance on oil, unequal treatment of women, illiteracy, limited political expression, citizenship restrictions and lack of democracy – in order to build more entrepreneurial cultures.

"Innovation often depends on having a different perspective."

Israel's democratic, iconoclastic culture supports and enables innovation. In contrast, Dubai, to take one example, has tried to attract companies from several industries – internet, media, health care, biotech, manufacturing, knowledge – but the firms it has attracted open service facilities but not centers of innovation. When corporations come to Dubai, they aim to make money. However, for several reasons, including the difficulty of obtaining citizenship, they rarely develop the long-term emotional and business relationships necessary to cultivating an entrepreneurial economy.

Looking Ahead

Immigration, a key source of Israel's entrepreneurial base, boosted the country's population from 806,000 at its founding to 7.1 million. From 1990 to 2000, about 800,000 people from the former Soviet Union migrated to Israel. About one in three of these immigrants was a scientist, technician or engineer. Since 1984, Israel has brought in about 40,000 Ethiopian Jews plus many more Jews from around the world. Attracting new immigrants is such a high national priority that a cabinet-level ministry exists for that purpose. While individual assimilation is often difficult, the country has benefitted greatly from its investment in new citizens.

"Immigrants are not averse to starting over. They are, by definition, risk takers. A nation of immigrants is a nation of entrepreneurs." (Gidi Ginstein)

While Israel has accomplished a great deal, about half its population has not fully participated in its economic growth. For different reasons, two high-birthrate populations, Israeli Arabs and very observant Jews, have in some ways been left behind. Since few members of these groups join the army, they do not build the social networks that weave entrepreneurial business connections.

"The innovation going on in Israel is critical to the future of the technology business." (Bill Gates)

Education is also crucial to forming networks and breeding entrepreneurship. Israel has 27 colleges and eight universities, four of which ranked among the world's top 150 institutions of higher learning in an international survey. However, thousands of Israeli Arabs who graduate from college still have difficulty finding challenging work. Many of these grads are "against women in the workplace," a belief that complicates their job options in an egalitarian society.

"It would be hard to image a time when understanding the story of Israel's economic miracle could be more relevant."

Israel's economy must keep growing. President Shimon Peres advises entrepreneurs to focus on five industries, which may benefit from nanotechnology advances: biotech, energy sources, teaching devices, water and antiterrorism. While Peres's choice of industries is open to debate, he correctly emphasizes the need for continuous innovation, whether the ideas are generated at home or abroad. This effort's success hinges on fostering start-up companies and creating an environment where people can successfully combine creativity and calculated risks.

About the Authors

Dan Senor, a Council on Foreign Relations fellow, analyzes foreign affairs for Fox News and writes columns for *The Wall Street Journal.* He co-founded Rosemont Capital and worked for the Carlyle Group. **Saul Singer,** the *Jerusalem Post* editorial page director, wrote *Confronting Jihad.*