

## ISRAEL'S HI-TECH INDUSTRY

- ◆ Israel represents the second most intensive high-tech concentration in the world after California.
- ◆ Second only to Canada, Israel lists the highest number (over 100) of non-US stocks on Wall Street.
- ◆ Israel is second only to the US in the absolute number of start-ups, but leads the world in the number of start-ups per capita.
- ◆ Israel produces more scientific papers per capita than any other nation and has one of the highest per capita rates of patents filed.

### **Historical factors that led to the rapid development of Israel's hi-tech industry**

Israel became a hothouse for technology development out of a combination of necessity and a sense of national mission. Three factors contributed to the impressive growth of Israel's hi-tech industries: 1) Israel developed home-grown defense industries after French president Charles de Gaulle cut off arms supplies in the wake of Israel's victory over Egypt and Jordan in the 1967 Six-Day War; 2) the high percentage of scientists and engineers in the million immigrants from the former Soviet Union in the early 1990s; and 3) the opening to the world, in the wave of optimism following the 1993 Oslo agreements, that led to the establishment of the Palestinian Authority and the then-seeming prospect of a settlement of the Israeli-Palestinian conflict.

The French boycott prompted Israel to develop an aerospace industry that is the base for its 2007 status as the world's fourth largest exporter of defense products, one of a handful of countries to launch its own homemade satellite and develop its own fighter plane, and the first to deploy a working anti-ballistic missile system (the Arrow, partially funded by the US). The Russian immigration, in keeping with the national *raison d'être* of providing a refuge for Jewish victims of persecution, reinforced already-excellent Israeli academic institutions and is a major reason why Israel leads the world in the number of engineers (135 per 10,000 population, compared to 85 in the US). One effect of the Oslo deal was lifting the informal taboo that had kept many firms, from multinationals to international banks to global retailing chains, from setting up shop in Israel.

### **The global interest in Israeli business and technology**

Israel's first sixty years have produced a dramatic increase in its GDP: from a \$1.2 billion GDP in 1948 to a \$170 billion GDP in 2007. Israel has developed from a labor and land-intensive import-based economy, which is vulnerable to security and political uncertainty, to an increasingly know-how-intensive export-driven economy, which is less vulnerable to wars and terrorism. In 2008, over 100 companies are listed on American stock exchanges. Israel was recently admitted to the Organization for Economic Co-operation and Development (OECD) - the exclusive club of the leading global economies - the shekel has joined thirteen other top-traded currencies, and Israel's credit rating has been upgraded by Moody's, Standard & Poor and Fitch.

400 global (mostly US) companies have established plants and research & development centers in Israel. Intel chose Israel as the location for its first design and development center outside the US (1974). Today Intel has centers in eight locations throughout Israel. Other companies with R & D facilities in Israel include: Intel, Motorola, IBM, Microsoft, Alcatel and 3Com. IBM has just acquired its third Israeli company in 2008 and Microsoft concludes its seventh Israeli acquisition in recent years. HP, Texas Instruments, GE-Medical, Motorola, Cisco, EMC, AOL, Google, Marvell, Kodak, AT&T, Xerox, Phillips, SAP, Siemens and more giants have followed suit.

Overseas investment in Israel's high tech exceeds any single European country and surpasses France and Germany combined. Total overseas investment in Israel reached \$23.4 billion in 2006, compared with \$10.5 billion in 2005, \$9.1 billion in 2004 and \$5.1 billion in 2003.

### **Unique factors for Israeli success**

- ◆ Highly educated work force (2<sup>nd</sup> highest percentage in the world of university graduates – after the U.S.)
- ◆ The Israeli army serves as a nationwide screening program to identify the most promising and talented young people and puts them through rigorous training via elite programs in technology. Soldiers also learn leadership and problem solving skills. Personal networks are established during army service and often are the basis for future partnerships in civilian industry.

- ◆ Government support fosters high-tech development by granting 30- 60% of total development costs for new companies. The government recoups about \$100 million per year in royalties' payments from sales of subsequent successful products.
- ◆ The government funds 24 technological incubators that, in addition to financial support, offer vital managerial and marketing support to enable the start-ups to attract private investment. Unlike in the U.S. the Israeli government is a full partner in the incubator process. Approximately 200 projects in various stages of R&D are being carried out in the technological incubators at any given time. By the end of 2006, over 1000 projects had matured and left the incubators. Of these graduates, 57% have successfully attracted private investments. 41% of the incubators graduates (since the beginning of the program in 1991) are still up and running
- ◆ Israel has a well established venture capital industry with investors from major companies in the U.S., Western Europe and the Far East. Areas of investment include: communication, computer software, IT, semi-conductors, life sciences – medical devices and biotechnology and homeland security.

### **Missouri – Israel Business Connections**

Missouri exports to Israel in 2007 were \$80 million. More than 70 Missouri companies have discovered the benefits of doing business with Israel. Some examples:

In August, 2008 **Monsanto Co** entered into a five-year research and development collaboration with Israeli company, **Evogene Ltd.**, to discover yield-enhancing technologies at a time of increasing demand for grain globally. In a separate agreement, Monsanto has purchased an \$18 million equity stake in Evogene and has agreed to purchase an additional \$12 million in the future. Rehovot, Israel-based Evogene develops improved plants for the ag-biotech and biofuel industries.

**Sigma-Aldrich Corp.** subsidiaries, Sigma Israel Chemical in Petach Tikva and Makor Chemical in Jerusalem, sell chemicals manufactured in the United States primarily for research purposes.

**AMDOCS** – Israeli company with headquarters in St. Louis

**Anheuser Busch** – exports goods to Israel

**Enterprise Rent-A-Car** –Connect-Worldwide sales operation will represent Enterprise in Israel

**Kiosite** – Acquired Codetix, an Israeli-based firm, in 2007

**The Mattson Jack Group** – Pharmaceutical and biotech consulting firm

**Eagle Picher Technologies** (Joplin, MO) - exports high performance batteries to the Israeli Air Force and space programs

**Teva Neuroscience**, a wholly owned subsidiary of **Teva Pharmaceuticals (Israel)** and located in Kansas City, MO manufactures drugs acting on the central nervous system & sense organs. Teva Pharmaceuticals has a manufacturing plant in Mexico, Missouri. Teva Pharmaceuticals, located in Petah Tikvah, Israel, is the largest generic drug maker in the world.

**Midwest Research Institute** of Kansas City and Rotem Industries Ltd. are jointly establishing a renewable energy technological center in Dimona, Israel, to develop and commercialize new technologies.

