The success mode of Israel innovation technology

Yigal Erlich
Israel Innovation Technology - Success Factors

- Israeli “DNA” - mixture of knowledge, innovation, entrepreneurship
- High quality human resources - academia, defense, immigration
- Entrepreneurial culture and attitude - entrepreneurs, startups
- Defense-related technologies and R&D – being commercialized
- Global technology companies - strong presence of major companies
- Capital – VC funds, strategic and financial investors, Angels
- Proven global exit avenues - IPOs and M&As
- Modern infrastructure – legal, banking, financial, IP protection
- Government support - incentive plans, tax exemptions and benefits
Entrepreneurial Culture

- Rewards risk-taking
- Attitude of must-win
- ‘Go global’ approach
- Proven ability to come up with innovative solutions to complicated problems using limited resources
- Determination, persistence, endurance, commitment
Human Capital Resources

High quality academic institutions • 8,000 engineers graduating annually • exposure to large defense R&D projects • skilled labor force, immigration • entrepreneurial culture • serial entrepreneurs • exposure to managerial culture and methodologies of multinationals

5 nobel prize winners in science in recent years
<table>
<thead>
<tr>
<th>Government Involvement</th>
<th>Professional VC funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Market failure conditions</td>
<td>✓ Capable to raise funds</td>
</tr>
<tr>
<td>✓ Government as a catalyst</td>
<td>✓ Choosing the right investments</td>
</tr>
<tr>
<td>✓ Predetermined exit conditions</td>
<td>✓ Managing the investments</td>
</tr>
<tr>
<td>✓ No government control</td>
<td>✓ Building value for exit</td>
</tr>
<tr>
<td>✓ Indirect investments (funds)</td>
<td></td>
</tr>
<tr>
<td>✓ Risk sharing</td>
<td></td>
</tr>
</tbody>
</table>
The success mode of Israel innovation technology

Yigal Erlich
Introduction

Yigal Erlich

- Former **Chief Scientist** of Israel’s Ministry of Industry, Trade and Labor
- Established the **Technological Incubators** Industry in Israel
- Founder & Manager of **Israel’s anchor VC, Yozma**
- **Seed investor & active board member** in technological startups such as Biosense (acquired by J&J for $430M), Conduit (current value: $1.35B) and Radiancy (traded in Nasdaq with market cap of $200M)
The Importance of High-Tech to Israel

Main contributions to the economy
- 40% of GDP annual growth
- 50% of industrial exports
- 40% of VC investments ends as tax revenue, direct and indirect
- each US dollar invested in R&D contributes 6 US dollars to industrial product

Most new employment comes from new small businesses
- 3:1 ratio of direct and indirect employees to engineers
- employment growth rate is double that of the rest of the economy

Suited to Israeli business culture
- entrepreneurial culture – creative, persistent, innovative, must win attitude
- large number of entrepreneurs and engineers per capita
- using limited resources cost effectively

Magnet of attraction to foreign investors
- Second only to the US
  - Roosevelt Island University project, NY, $2 billion investment, new technology center
  - 12/11 won by Israel Technion and Cornell University

Growth Engine of the Economy
Government Support

- **Ministry of Industry - Chief Scientist support of industrial R&D**
  - $400m annually - grants, MAGNET, Incubators, other programs
  - R&D cooperation with countries and large companies
  - employees – grants for up skilling and training programs

- **Favorable tax regime and grants for investors and companies**
  - tax exemption for foreign investors in VC funds
  - tax benefits and grants for export-oriented industries, R&D centers

- **Science and education, reverse brain drain**
  - programs supporting excellence – Talpiot, research projects and centers
  - establishing 35 academic Excellence Centers, $400m annual budget

- **Civilian commercial benefits of defense R&D**
  - exposure to cutting edge multidiscipline large technology projects
  - special intelligence technology units: 8200, 8100, Air Force
  - developed military industry – RAFAEL, IAI, Elbit Systems
Building Blocks of Israel’s Innovative Technology Sector

- Academia, Universities, Engineers, Postgraduates
- Skilled Educated Man Power, Immigration, Reverse Brain Drain
- Executives, Veterans from Global Firms
- Innovative & Entrepreneurial Culture, serial Entrepreneurs
- Human Capital
- Venture Capital, Exit Avenues: M&As, IPOs
- Technology Clusters, Startups, Large Companies
- Modern Infrastructure, Government Support
- Technology Infrastructure
- Academic Science and Research Centers, Researchers
- Defense R&D
- Multinationals: R&D Centers, Strategic Investors
- Technological Incubators
Mission:
• To create a venture capital market in Israel

Policy:
• Establish a $100M Government investment company.
• Create professionally managed Funds.
• Entice VC investments in Israeli early stage companies:
  (i) create and invest in new VC funds together with experienced partners
  (ii) make direct investments in startup companies together with professional investors.
## Yozma Drop-Down Funds

<table>
<thead>
<tr>
<th>FUND</th>
<th>CAPITAL MANAGED ($MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Original size</strong></td>
<td><strong>10 years later</strong></td>
</tr>
<tr>
<td>• Eurofund</td>
<td>20</td>
</tr>
<tr>
<td>• Gemini</td>
<td>25</td>
</tr>
<tr>
<td>• Inventech</td>
<td>20</td>
</tr>
<tr>
<td>• JPV</td>
<td>20</td>
</tr>
<tr>
<td>• Medica</td>
<td>20</td>
</tr>
<tr>
<td>• Nitzanim-Concord</td>
<td>20</td>
</tr>
<tr>
<td>• Polaris</td>
<td>20</td>
</tr>
<tr>
<td>• Star</td>
<td>20</td>
</tr>
<tr>
<td>• VERTEX</td>
<td>20</td>
</tr>
<tr>
<td>• Walden</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>210</strong></td>
</tr>
</tbody>
</table>

© Yozma Proprietary
15 Years of Venture Capital Activity at a Glance

- $20 billion invested in the VC sector
- $14 billion raised by Israeli VC funds
- M&A: $28 billion, IPO: $6 billion
- More than 5,000 startups established
- NASDAQ: 100 Israeli high-tech companies are listed
- Main contributor to the economy, GDP, export, employment
- Human capital emerged as Israel’s main resource
- Global recognition achieved as an innovative technology center
<table>
<thead>
<tr>
<th>70's, 80's</th>
<th>90's</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cheap labor</strong>&lt;br&gt;<strong>Academic Institutes</strong>&lt;br&gt;- IBM&lt;br&gt;- Intel&lt;br&gt;- Motorola&lt;br&gt;- National Semiconductor</td>
<td><strong>Business Opportunities (greater than the “country risk”), Skilled Workforce, M&amp;As</strong>&lt;br&gt;- IBM&lt;br&gt;- Intel&lt;br&gt;- Motorola&lt;br&gt;- National Semi.&lt;br&gt;- Compaq&lt;br&gt;- Microsoft&lt;br&gt;- Applied Mat.&lt;br&gt;- 3Com&lt;br&gt;- Nortel&lt;br&gt;- Samsung&lt;br&gt;- TI&lt;br&gt;- GE&lt;br&gt;- Qualcomm&lt;br&gt;- Hitachi&lt;br&gt;- Sun&lt;br&gt;- Cisco&lt;br&gt;- J&amp;J&lt;br&gt;- AOL&lt;br&gt;- Alcatel&lt;br&gt;- Acer&lt;br&gt;- HP&lt;br&gt;- Guidant&lt;br&gt;- SAP&lt;br&gt;- CA&lt;br&gt;- Infineon&lt;br&gt;- Marvell&lt;br&gt;- Avaya&lt;br&gt;- Vishay&lt;br&gt;- EMC&lt;br&gt;- Oracle&lt;br&gt;- Boston Sci.&lt;br&gt;- Siemens&lt;br&gt;- Broadcom&lt;br&gt;- KLA</td>
</tr>
</tbody>
</table>

© Yozma Proprietary
Increased Multinational Presence in Israel
Seeking Technology Innovation and Development

Partial list

Source: IVC Research Center
VC Investments in Israel

10-Year Total: $15.9 billion

Israeli Funds: $6.6 billion, 40% of total
Foreign and Other: $9.2 billion, 60% of Total

Source: IVC Research Center
New Startups Established

2011: 27% decline compared to 2010
Israeli VC fund capital shortage > fewer startups!

Source: IVC Research Center
VC Investment by Sector - as % of Yearly Total

2011 compared to 2008

Internet: 23% vs 14%, increase of 64%
Semiconductors: 7% vs 15%, decrease of 53%

Source: IVC Research Center
Summary – Israel’s High-Tech Sector

• Within 65 years, Israel has evolved from a primarily agricultural economy to become a global technology leader

• Technology has become the main growth engine of the economy - the magnet attracting foreign investors and leading multinational companies

• High technology is the major contributor in creating resources based on human capital, increasing the demand for skilled and unskilled labor, improving the level of income and raising the standard of living for all groups

• An expanded technology sector is a result of an improved quality of education and development of a modern digital infrastructure throughout the country

• Technology is increasingly important today as a result of turbulent global economic conditions; the rapidly changing regional geopolitical situation; the growing social awareness and the needs for increased resources resulted from it
Thank you