



CISTRANA Workshop

**National policy priorities and R&D programs in the
field of ICT**

The Case of Israel

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Agenda

- Overview
- Government R&D Support
 - Overview
 - R&D Programs Supported by the Office of the Chief Scientist
- Review of Support, and Some Views on the Future



Some Facts on Israel Hi-Tech

- More Israeli companies are traded over NASDAQ than of any other country except the U.S and Canada
- Ranked first in the world in terms of Venture Capital Investments as percentage of GDP
- Among the leaders in terms of R&D expenses as percentage of GDP



Stages in the Emergence of the Israeli Hi-Tech Industry

- **Initial Conditions:**

- Primarily an agrarian economy, pre-occupied with survival issues

- **Mid-70's: Technology as a Basis for Economic Growth**

- A consensus begins to emerge both in the private and public sectors that technology developed by the local talented work-force can become the competitive advantage of the Israeli economy



How to Overcome the Handicaps?

1. **Multinationals Establish Subsidiaries in Israel:**

- Introduce technology and crucial skill sets into the local company
- Instrumental in shrinking the geographical barrier
- Examples: Motorola, Intel, Microsoft

2. **Government Assistance**

- R&D grants
- Yozma - the government venture capital fund

3. **“Bootstrapping”**

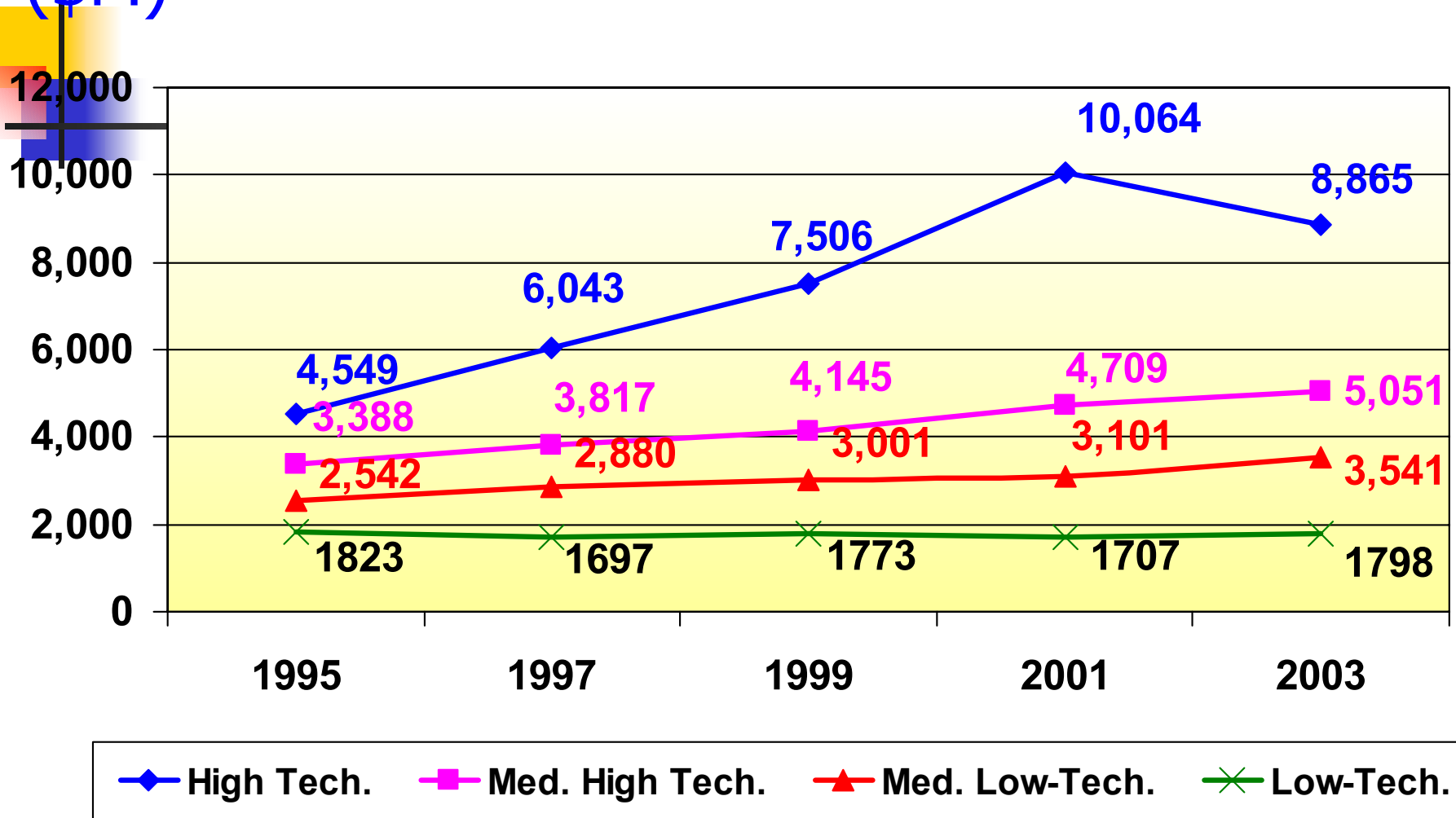
- One company's success makes it easier for the next



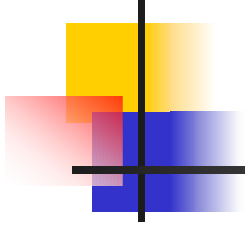
Some Features of the Hi-Tech Picture in Israel

- In general, a sectorally-neutral policy.
 - Notwithstanding the above, de-facto very strong support for the ICT sector!
- Research Institutes play a minimal role in hi-tech development, especially in the ICT sector.
- Very strong emphasis on start-ups, small firms, relatively few large companies

Industrial Export by Technological Intensity (\$M)



Source: C.B.S.

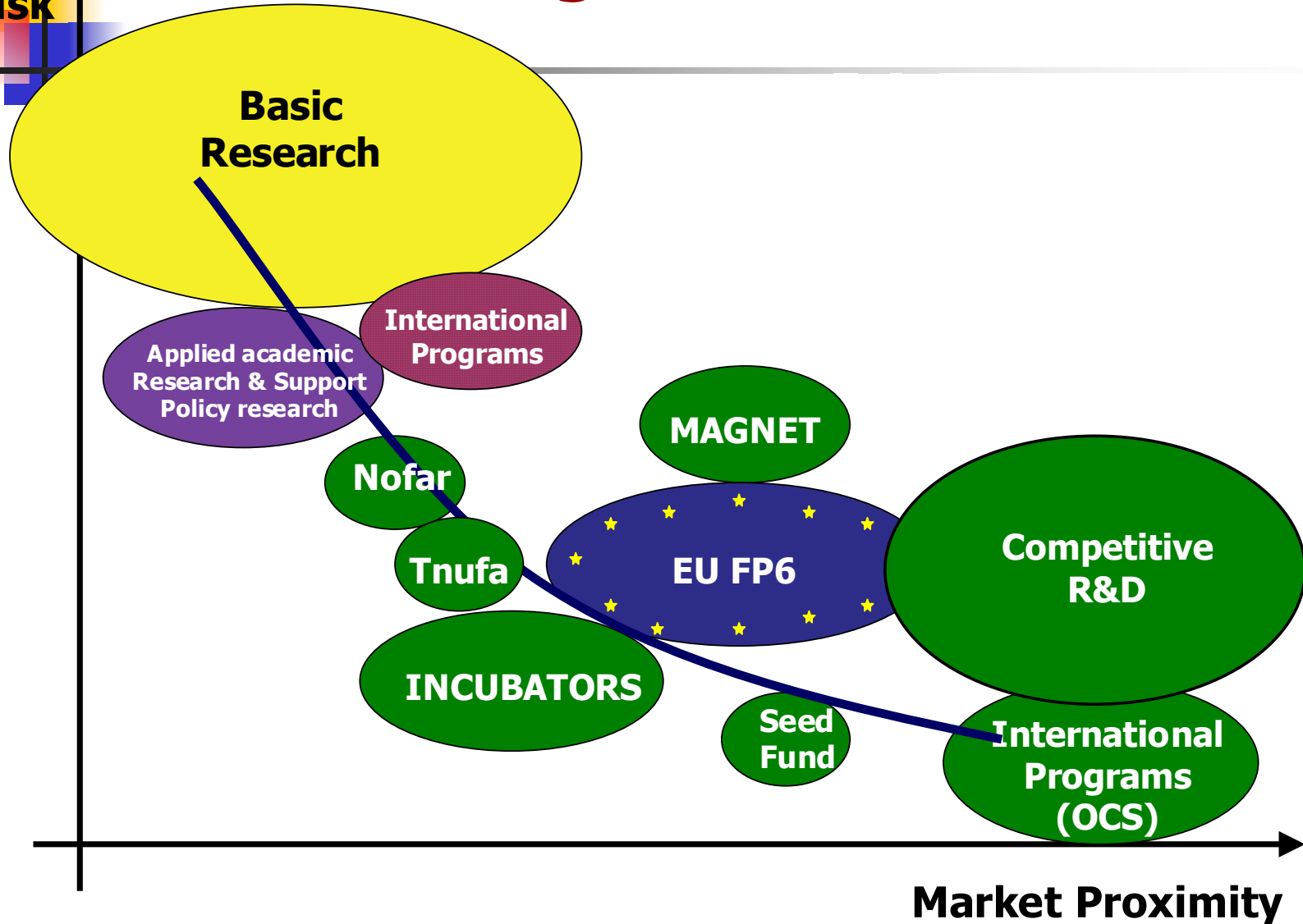


Government R&D Support

Support Programs Along the R&D Chain



Risk

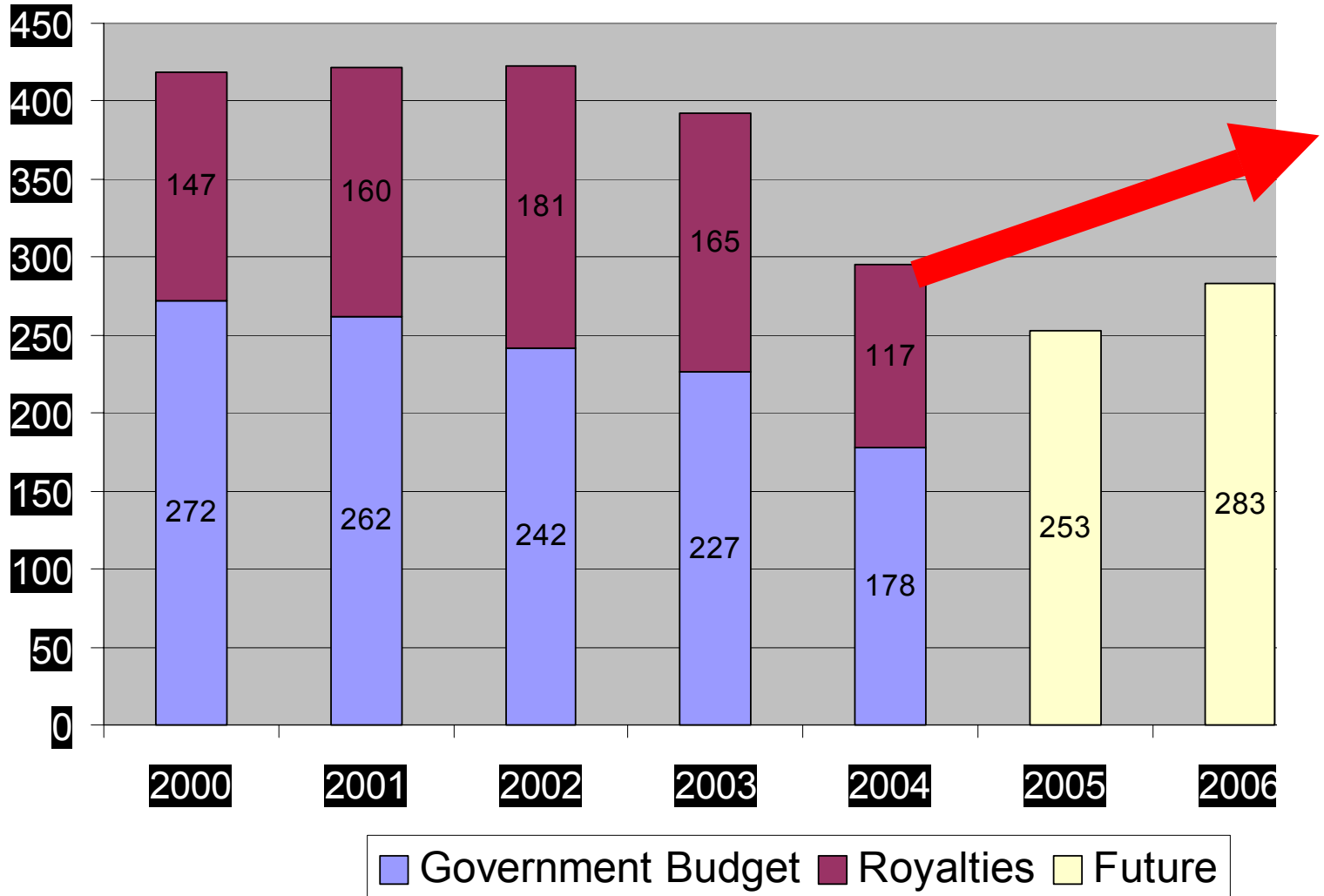




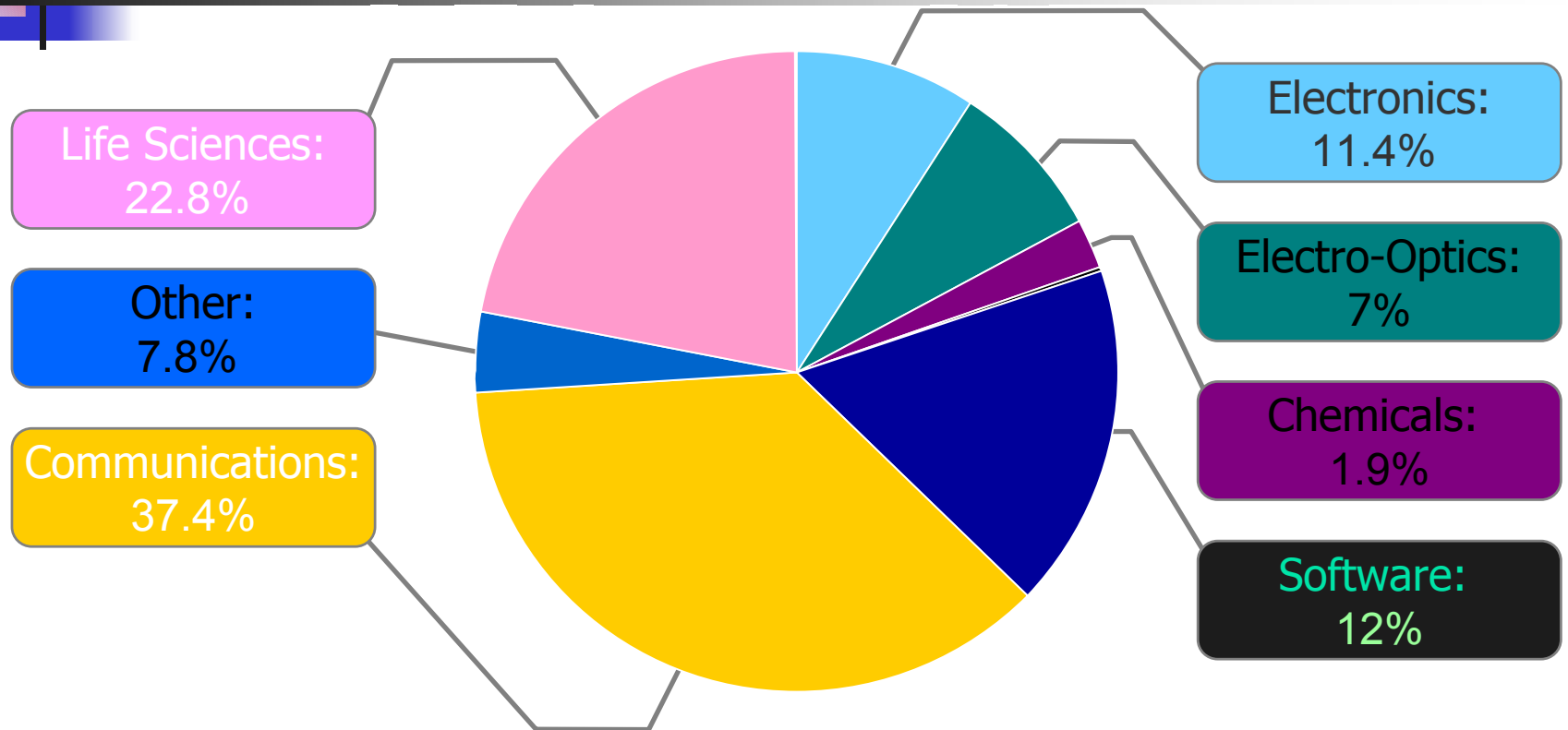
Office of the Chief Scientist

- OCS is part of the Ministry of Industry and Trade, operating since 1973
- Responsible for implementing government policy regarding support and encouragement of industrial R&D
- Sharing the risk inherent in industrial R&D

OCS Annual Budget (millions USD)



OCS Grants by Technological Sector 2004



Activities of the OCS

Chief Scientist
Dr. Eli Oppen



Activities in Israel

R&D Fund

Magnet
Magnetron, Nofar

Tnufa

R&D Centers
in Universities

Technological
Incubators

Support of
Research Institutes

Seed Fund

Support of
Traditional Industry

International Activities

Bi-National Funds

Bi-National
Agreements

EU R&D Program
FP-6 FP-7

Eureka

Global Enterprise R&D
Cooperation Framework

US-Israel Science &
Technology Commission



The R&D Fund

Competitive R&D

- 2003 Budget – \$ 284 M (73% of total OCS annual budget)
- Supports competitive industrial R&D projects
- Grants are awarded on a sliding scale from 20%-50% R&D budget
- Royalties payment is 3%-6% of future products' sales
- Supports over 1000 projects from more than 500 companies each year

Magnet Consortium

Generic R&D

2004 Budget – \$ 48 M

- Supports the formation of consortia comprised of industrial companies and academic institutions in order to jointly develop generic, pre competitive technologies
- The technology cannot be acquired from commercial sources at competitive prices
- The potential sales are sufficient to economically justify the R&D investments
- Grants of up to 66% of approved budgets are available with no royalty repayments
- Niche programs: Magneton, Nofar



Technological Incubators

Pre-Seed & Seed R&D

- 2004 Budget – \$ 26 M
- Provides a framework & support for nascent companies to develop their innovative technological ideas that can attract private investors
- Each Incubator is an independent legal entity and has skilled and experienced general manager & board of directors
- Each Incubator provides suitable facilities for R&D activity & administrative and logistic support to projects



Technological Incubators – Cont.

Pre-Seed & Seed R&D

- Each project can stay in the Incubator for a maximum period of 2 years
- 24 Incubators, part of them in peripheral areas (13 out of the 24 have been privatized- 1 is a biotechnology incubator)
- 8-10 projects in each Incubator - Approx. 200 projects per year
- Grants are awarded up to 85% of the approved budget to a maximum of \$500,000 per 2 years



Tnufa

Pre-Seed & Seed R&D

- 2004 Budget – \$ 3 M
- Provides pre-seed grants and business development services to technopeneurs, to help them obtain private seed money, VP funding and corporate partners
- Grants (up to 85% to a maximum of \$50,000) can be used for building a working prototype, preparing a business plan and filling a patent
- Tool for Go / No Go decision

Bi-National R&D Fund

Bi-national Activities

- BIRDF-with U.S.A
- SIIRDF-with Singapore
- CIIRDF - with Canada
- BRITECH –with the UK
- KORIL-RDF - With S. Korea



Parallel Funding Agreements

Bi-national Activities

France 

Hong-Kong 

Sweden 

Belgium 

Italy 

Turkey 

China 

India 

Victoria
(Australia)



Finland 

Taiwan 

Germany 

Portugal 

Maryland
(USA)



Holland 

Spain 

Ontario
(Canada)





Multinational Activities

- 6th Framework Program
- Eureka
- Matimop – Promotes and assists participation of Israeli companies in international cooperation programs for industrial R&D

Israeli Science & Technology Systems for Competitive Funding





Review: Summary of Current Situation

- No budget is allotted initially to any particular sector, including ICT.
- Very little regional influence in supporting R&D.
- Strong emphasis on retaining IP, production rights in Israel.
- VC's are gaining increased importance.
- Little government involvement in R&D efforts of some very big MNP's (Microsoft, Intel, IBM).



Recent Developments on the Israeli R&D Scene


- The OCS Budget is now perceived as a significant part of the national budget
 - There is no longer enough money for all
- VC's are shouldering an increasing part of industrial R&D
 - Advantages (e.g. funding, commercial direction) & Disadvantages (exit-minded)
- Arguments that Israel is over-emphasizing the ICT sector



OCS: Some Recent Developments

- OCS has become prioritizing some areas for the first time (biotech, nanotech)
- Emphasis of international activities
- Activities to encourage innovation in traditional industry

Trends Towards Normalization in Israeli R&D



Previous Situation	Recent Developments
Relatively insular	Emphasis on international cooperation
No formal sectoral prioritization	For the first time, two areas will receive increased funding (biotech, nanotech)
Virtually no support for institutes	OCS is participating in setting up a nanotech center in the Technion, biotech incubator was initiated
Extremely hi-tech oriented	In process of setting up support system for traditional industry



Challenges for the Future

- Should the Government take a more proactive role?
- Should preference be given to certain sectors? (Targeting – Biotech, Nanotech)
- To what extent should the Government protect the IP of its co-investments?
- How to promote both foreign & local investments?
- What about traditional industries & unemployment?



SWOT Analysis of the OCS Support Mechanism

■ **Strengths**

- It worked so far!
- Very much in line with entrepreneurial nature of our population, matching the growth of the ICT industry
- Market-driven approach

■ **Weaknesses**

- Things change!
- Some of the changes: globalization, maturing of the local industry
- Need to start to think more strategically, longer term



SWOT Analysis (cont.)

- Opportunities

- To foster growth in traditional industries, using ICT technology
- Gaining cooperation with global leaders

- Threats

- The world isn't standing still, new emerging contenders



Conclusion

- Israel industry is seeking cooperation as an avenue of mutual benefit.
- What is almost certain is that the future will be different from the past
- We're optimistic that we will be able to adapt.