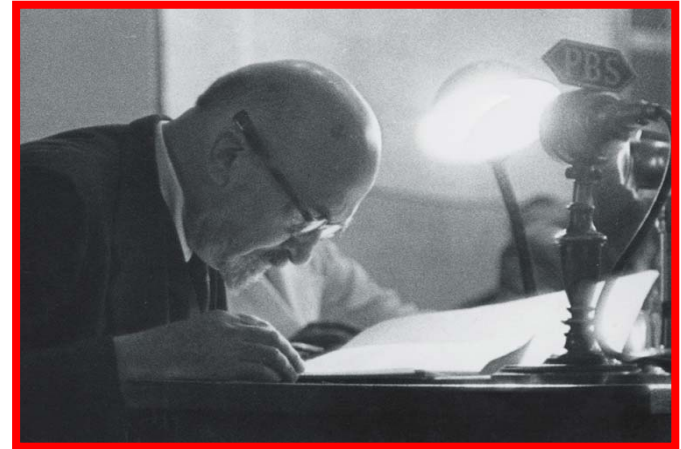


The Weizmann Institute
Science for the Benefit of Society

Mudi Sheves, Vice President of Technology Transfer
The Weizmann Institute

70 years ago...

1934, Dr. Chaim Weizmann, a well known chemist and later the first President of the state of Israel, decided to setup a research institute in Rehovot.



The Daniel Sieff Research Institute.

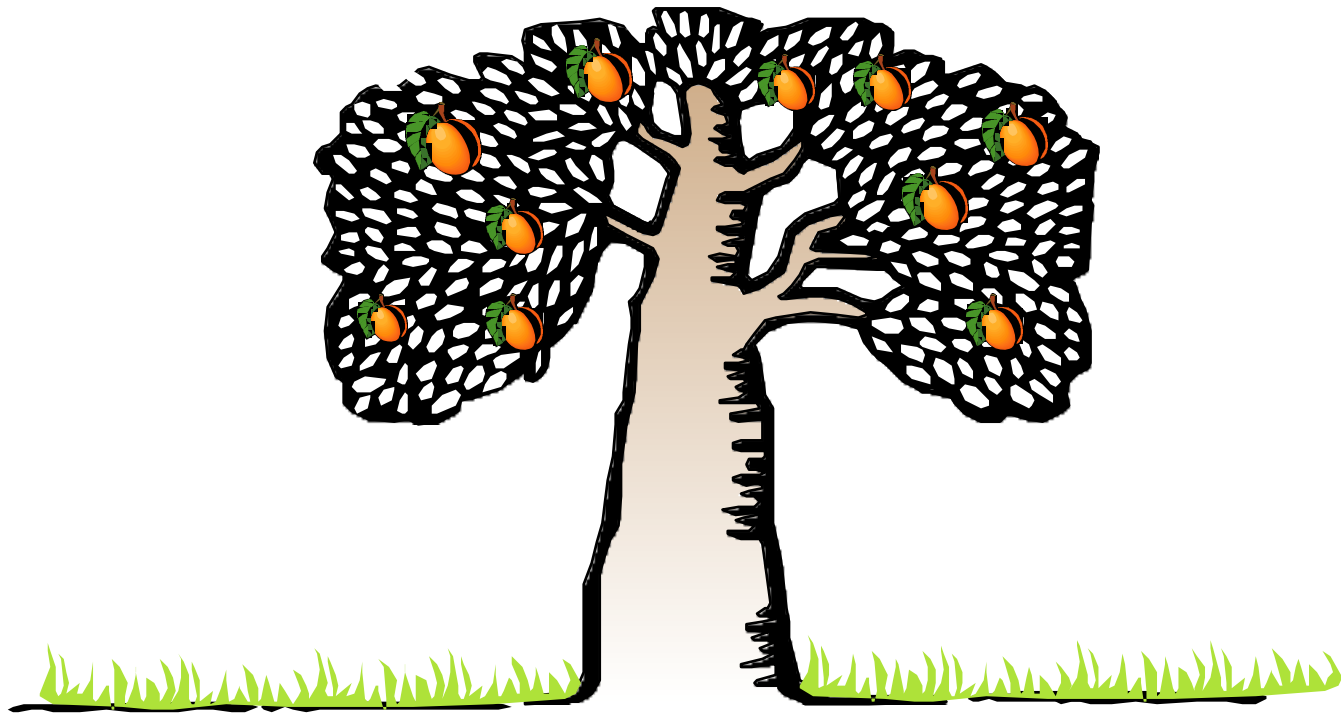
Dr. Chaim Weizmann 1874-1952



1934

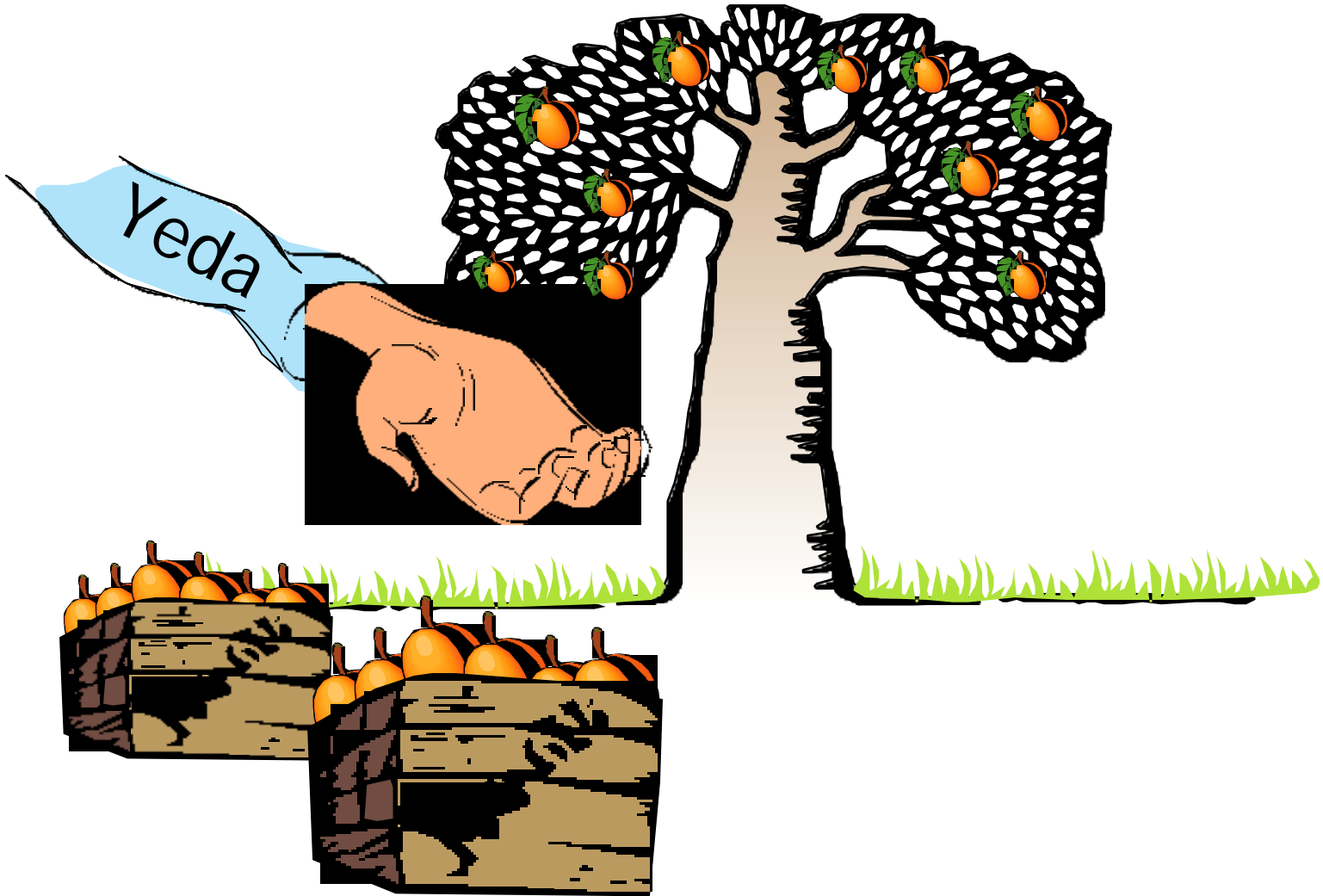


2006



Weizmann Institute's Goal is to excel in **basic science**,
not to develop technologies.





Yeda

• **"Everything that can be invented has been invented"**

CHARLES H. DUELL, Commissioner US. Office of patents, 1899.

• **"Airplanes are interesting toys but of no military value"**

MARSHALL FOCH, professor of strategy, Ecole Superieure de Guerre

• **" I think there is a world market for maybe five computers"** THOMAS WATSON, chairman of IBM, 1943

• **" There is no reason for any individuals to have a computer in their home"** KEN OLSEN, president, and chairman of Digital Equipment Corp, 1977



Technological developments are fueled by scientific innovations coming from academia. Therefore transfer of new ideas and discoveries from academia to the private sector is essential to the industry.

too little ✓
“Society, having funded much of the university based research, has an expectation that the fruits of that research will improve the human condition.”

Niels Reimers, 1987

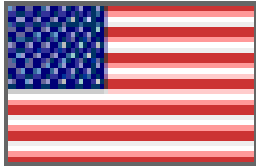

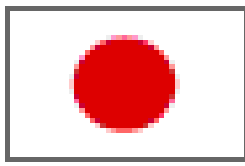
Why should academia transfer technologies to industry ?

- 1. It is their obligation as publicly funded organizations.**
- 2. It generates much needed funds to the university.**
- 3. Cooperation with industry may hold scientific advantages to academia.**

Israeli universities were among the first in the world to establish tech. transfer activities and license academic research to industry.

Academic tech. Transfer companies in Israel

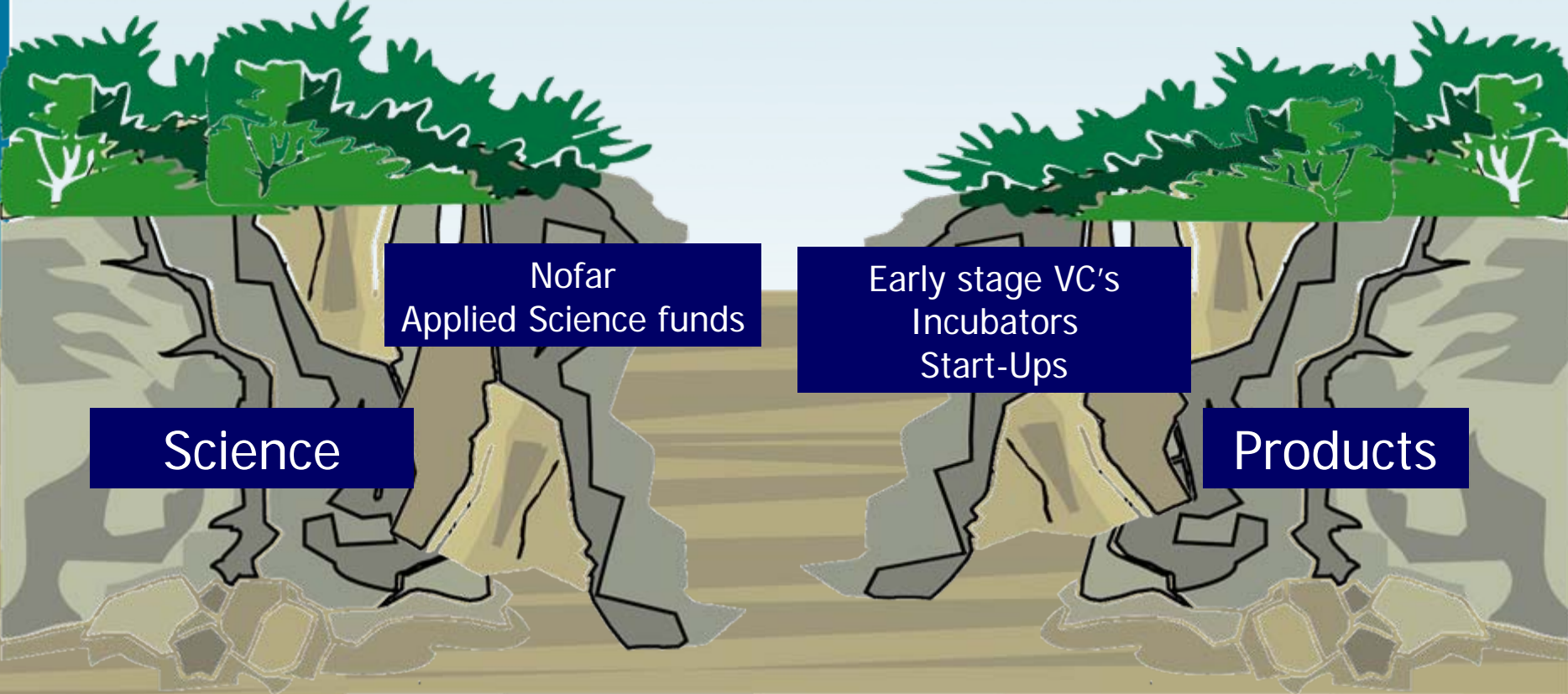
| | | |
|---------------------|---------------|------|
| Weizmann Institute | Yeda | 1959 |
| Hebrew University | Yissum | 1964 |
| Tel Aviv University | Ramot | 1973 |

| | | |
|---|--|---|
|  |  |  |
| 1980's | 1990's | 1998 |

Academia

Industry

"The death valley"



Yeda / Weizmann Success Stories

Selected Success Stories

▶ COPAXONE®

- ▶ Indicated for Multiple Sclerosis
COPAXONE represents **a new class of drugs** for the treatment of the disease
- ▶ Copaxone is a synthetic copolymer acting as an immunomodulator
- ▶ 1971: First Patent filed by Yeda
- ▶ 1987: Licensed to Teva Pharmaceuticals Ltd.
- ▶ 2006 Sales: **\$US 1.41 Billion**



Yeda / Weizmann Success Stories

Selected Success Stories

Encryption Algorithm

- Technology developed by Prof. Adi Shamir and colleagues.
- Patent filed by Yeda in 1986.
- Licensed in the early 90's to a start up company in Jerusalem, later purchased by NDS group.
- 52 million TV set-top box smart-cards in use worldwide.
- 2006 Sales: **\$US 660M**



Yeda / Weizmann Success Stories

Selected Success Stories

▶ NanoLub™

- ▶ NanoLub™ is the world's first commercial solid lubricant based on spherical inorganic nanoparticles.
- ▶ NanoLub™ reduces friction & wear significantly better than conventional lubricants.
- ▶ 2002: Licensed to Nanomaterials Inc.
- ▶ Potential Uses: • oils & greases • impregnating parts • polymer composite films & metal composite coatings
- ▶ ApNano Materials has been selected for the prestigious Red Herring Top 100 INNOVATORS Award for 2004.



NanoMaterials



Yeda Research & Development Co. Ltd. a world leader in Technology Transfer

- ▼ Dozens of “**Weizmann-Inside**” products on the market.
- ▼ Total annual royalty-generating sales in 2006:
Several **Billions \$**.
- ▼ **Over 40 new companies** were established around Yeda’s technologies – 22 in the last 6 years.
- ▼ Yeda owns a largest portfolio of patents in Israel:
600 live patent families, with over 1,500 patent families filed since 1971.



Yeda Research & Development Co. Ltd.

Licensing Income

Licensing Income Survey 2006 top 10 Universities *

| # | Institution | Licensing Income (\$M) |
|----|----------------------------|------------------------|
| 1 | Univ. of California System | 193 |
| 2 | NYU | 157 |
| 3 | Stanford Univ. | 61 |
| 4 | Wake Forest Univ. | 60 |
| 5 | Univ. of Minnesota | 56 |
| 6 | MIT | 43 |
| 7 | Univ. of Florida | 42 |
| 8 | Univ. of Rochester | 38 |
| 9 | Northwestern Univ. | 29 |
| 10 | Harvard Univ. | 20 |

* Source: AUTM Licensing Survey 2006



How?

Yeda Research & Development Co. Ltd.

Favorable **Environmental** Conditions

- ▼ **Legal structure similar to Bayh-Dole act**
 - ▶ IP owned by the Institution
 - ▶ Sharing royalty with the inventors
- ▼ **Government support programs**
 - ▶ Incubators
 - ▶ Direct tech transfer support programs
- ▼ **Developed VC community, Entrepreneurs**



Internal Conditions for successful Tech Transfer

- Scientists' focus on excellence in **Basic Science**, not on commercialization.
- A **pro-active** tech transfer operation.
- Tech Transfer officers: background in **Business and Academia**.
- A few years of investment by the University (patents, marketing, agreements) before income is generated.
- Clear **internal IP rules**, enforced by University management.

However!

Academy-Industry cooperation, as love making between hedgehogs, is a desired activity that has to be exercised with extreme caution.



UNIVERSITY

**Knowledge for
Knowledge's Sake**

**Academic Freedom
Open Disclosure**

INDUSTRY

**Management of
Knowledge for Profit**

**Confidentiality
Limited Public Disclosure**

**Conflicts of
Interest**

Conclusions

- Weizmann Institute is aimed at **basic** science excellence (not applied science).
 - Industrial funding (<15% of research budget) is **restricted**, in order to preserve integrity and academic freedom.
 - Scientists focus on **science**, not on commercialization.
 - Scientists are rewarded for success (40%).
 - Tech transfer team which knows the campus and the market: Weizmann graduates with industrial background.
-
- ⇒ More significant discoveries and inventions.
 - ⇒ better patents.
 - ⇒ Very high income from commercialization.
 - ⇒ More money for basic research.

Thank you for your attention