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Technology Transfer in public-private partnerships: The case of Government- owned hospitals in Israel

**Meeting of the Tech-Transfer Group, 4
September 2007, Ministry of Health**

By Rachel Diamant and Meir Pugatch

Yaron Zelicha (Comptroller General) to the state employees: report on the Intellectual Property you have stolen



TheMarker

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קופות גמל קרנות גידור מט"ח חדש אירופה וול סטריט נגזרים חדש בעודות סל

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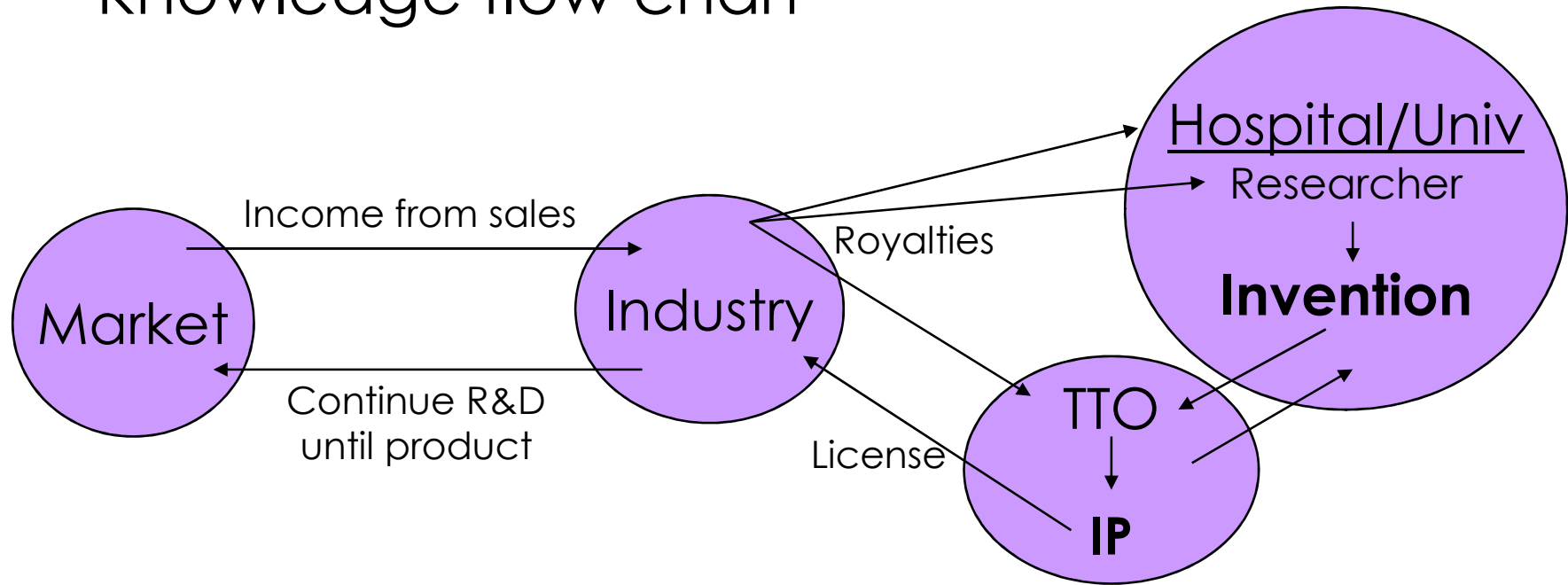
זליכה לעובדי מדינה: דווחו על קניין רוחני שגנבתם

14.8.2007 | 18:55 **רן רוזניק**

תגיות: ירון זליכה, משרד המשפטים, רפואה

החשב הכללי במשרד האוצר, ירון זליכה, הודיע אתמול על מבצע חסר תקדים שיימשך שלושה חודשים, שבו כל עובדי המדינה ומשרדי הממשלה ייקראו לדווח על נכסי קניין רוחני גנבים - כגון פטנטים, זכויות יוצרים, סימנים או סודות מסחריים והמצאות. מההודעה עולה כי לא יינקטו נגדם צעדים משפטיים או פליליים. החוק מחייב עובדי מדינה לדווח על קניין רוחני שהושג במסגרת עבודתם ולרשום אותו על שם המדינה. זו הפעם הראשונה שהמדינה יוצאת במבצע כזה דוגמת המבצעים להחזרת רכוש גנוב הנעשים לעתים ביחידות צה"ל.

Knowledge flow chart



A study tracing back the origins of 32 major innovative drugs found that the contribution to their development of industry (53%) and non-industry (47%) is roughly equal [\[1\]](#)

[\[1\]](#) Chin-Dusting, Jacques Mizrahi, Garry Jennings and Desmond Fitzgerald, Finding improved medicines: the role of academic-industrial collaboration. *Nature Reviews Drug Discovery*, **4**, 891-897 (2005)

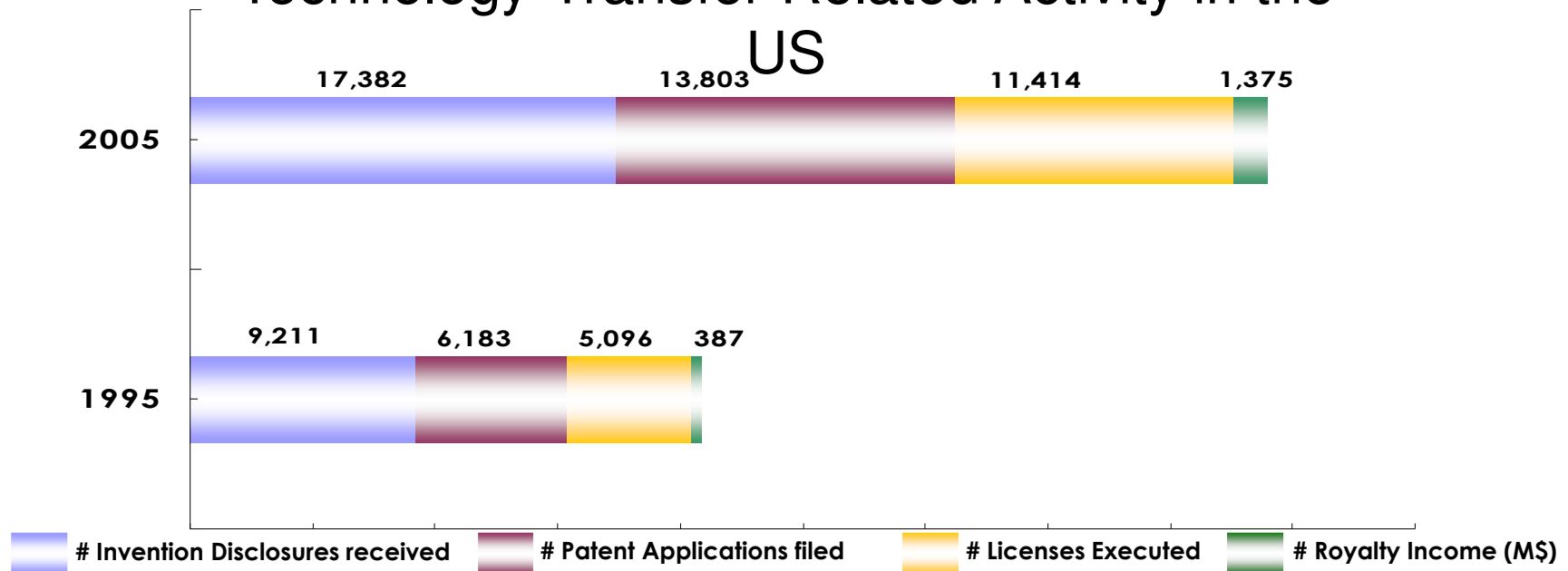
Benefits of academia / industry collaboration

- Transformation of academic research into new life saving treatments and medicines
- Faculty obtains access to state-of-the-art technologies, while industry benefits from ingenuity of academic researchers.
- Creation of new companies
- Infrastructure for economic growth, employment and investment
- Royalty income, to expand research capabilities

The Bayh-Dole Act – Brief History

- At the beginning of the 20th century, almost no technology-transfer activity
- In 1950, Congress invest \$15 million for the National Science Foundation to conduct research at universities
- In 1968, the University of Wisconsin obtain “Institutional Patent Agreement” (IPA)
- Enacted on December 12, 1980, the Bayh-Dole Act (P.L. 96-517, Patent and Trademark Act Amendments of 1980)
- Bayh-Dole like legislation enacted in other countries: Canada (1985), Japan (1998), Great Britain (1998), Germany (1998, 2001), France (1999), Austria (2002), Italy (2001), Belgium (1999), Spain (1986), Denmark (2000), Switzerland (2002), Netherlands (1998) and Korea (1998, 2000 and 2001).

Technology-Transfer Related Activity in the US



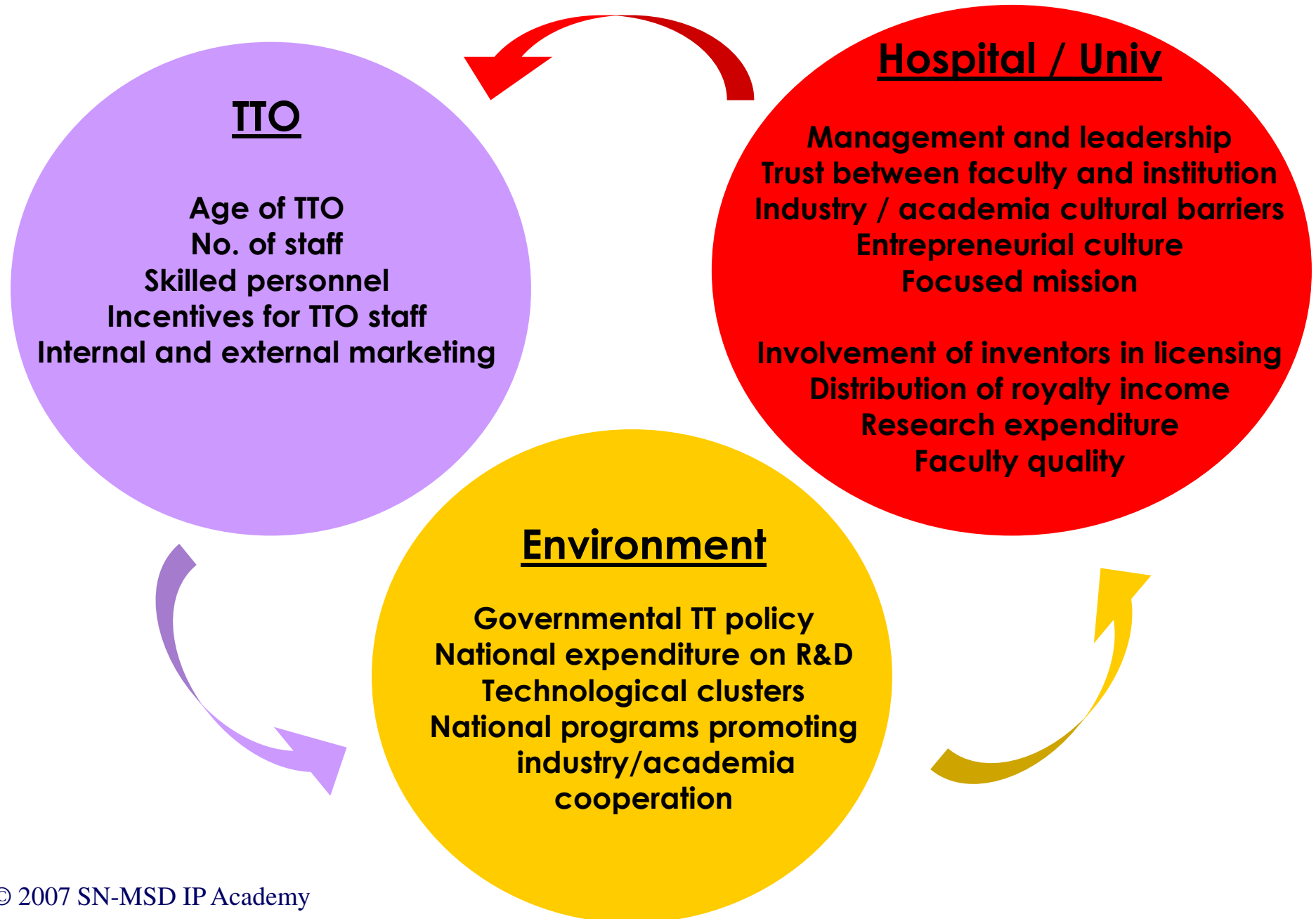
According to AUTM 2005 licensing survey, since 1998:

- 3,641 new products based on University research launched to the market
- 5,171 new spin-off companies created

In 2005:

- 3,278 US patents issued
- 527 new products launched
- 627 spin-off companies created
- The total income of research institutes was estimated at 1.4 billion USD

Factors influencing Tech-Transfer efficiency



The potential of Hospitals

US Universities and hospitals - comparing Tech Transfer activity			
	US universities	US hospitals & research institutes	Univ / Hospitals Ratio
Inputs			
No. of programs started 1985-2000	120	26	5
FTEs in Technology Transfer Office	727	68	11
Research Expenditures: Industrial Sources (\$)	2,554,419,927	383,895,937	7
Research Expenditures: Federal Govt. Sources (\$)	25,159,914,841	2,561,123,475	10
Total Sponsored Research Expenditure (\$)	37,162,153,394	4,082,415,081	9
Invention Disclosures Received	15,002	1,790	8
Total U.S. Patent Applications Filed	12,347	1,445	9
Outputs			
Licenses/Options Executed	4,087	671	6
Startup Companies Formed	425	37	11
Licenses/Options Yielding License Income	9,543	1,638	6
Gross License Income Received (\$)	1,088,469,003	345,798,231	3

Current issues for discussion:

1. Royalty distribution formula in governmental hospitals – What is the appropriate share for inventors?
2. What is the appropriate level of risk that governmental hospitals should undertake, when engaging in technology transfer activity
3. Level of government involvement and supervision on technology transfer activities in hospitals

State employees remuneration – International comparison

Country	Legislation	Max	Min
USA	Stevenson-Wydler Technology Innovation Act - §15 USC 3710c(b)	\$150K per year	First \$2,000 for commercialization then minimum of 15% of net income.
Canada	Chapter 1-11 - Award Plan for Inventors and Innovators Policy	35% Not more than the highest annual wage in any case	First \$1,000 for commercialization then minimum of 15% of net income.
UK	Department of Health – NHS Policy on IPRs	Share of income to the inventors is obligatory. Recommendation for fixed 30% of income (un-limited), or sliding scale; 75% up to \$100K, 50% of next \$200K, 25% of any next sum	
Denmark	Danish Act on Inventions at Public Institutions	Share of income to the inventors is obligatory, no limit is specified	
Singapore	National Agency for Science Technology and Research (A*STAR). A*STAR Policy on Intellectual Property	Un-limited	Fixed 33% of Income

Source: Pugatch, M.P. Management and Exploitation of Intellectual Property Rights in Government- owned Hospitals in Israel, prepared for the Gertner Institute (February 2005)

Royalty Distribution Policies in Israeli universities

University	Inventor	Institute	TTO
Ben-Gurion	60%	40%	
The Technion	50%	50%	
Tel-Aviv	40%	60%	Tel-Aviv
The Hebrew University	40%	40%	20% (Yissum)
The Weizmann Institute	40%	40%	20% (Yeda)
Bar Ilan	40%	60%	

Source. Shefer, D. Frenkel, A. *Analysis and Policy Recommendations for Technology Transfer from Universities to Industry. Final Report* (Shmuel Neeamn Institute:2003)

Suggested Royalty Distribution Policy in government-owned hospitals

Net Income	Inventors	Hospital	Research Fund	The State
Up to 150K \$	35%	30%	25%	10%
150K \$ - 10M \$	20%	35%	35%	10%
Above 10M \$	10%	40%	40%	10%

Ministry of Finance – April 2007

Examples of Royalty Distribution Policies

Hospital	Cumulative Net Lifetime Revenues	Inventors	Inventor's Department	Institution	Inventor's Laboratory
Brigham & Women's Hospital, Inc.	NA	25%	25%	25%	25%
Children's Hospital Boston					Office of Research Administration
	up to \$100K	70%	0%	20%	10%
	\$100K-\$500K	45%	20%	25%	10%
	above \$500K	25%	25%	40%	10%
Children's Hospital, Cincinnati					
	up to \$100K	50%	10%	40%	
	\$100K-\$300K	40%	15%	45%	
	above \$300K	30%	20%	50%	
University					
Harvard University's Royalty Policy					Inventor's Laboratory
	First \$50K	35%	15%	35%	15%
	Above \$50K	25%	20%	35%	20%
Vanderbilt Univ.					Office of Research Administration
	First \$100K per year	50%	20%	20%	10%
	above \$100K per year	40%	25%	30%	5%