

3-1. TLO セミナー時配付資料

3-1-1. セミナーアジェンダ

3-1-2. Knowledge Commercialization (NESDB)

3-1-3. Role and Importance of TLO, Experience in Japan
(産総研イノベーションズ)

3-1-4. New Mechanism for University-Industry-Government Collaboration
(NASTDA)

3-1-5. Technology Licensing: Problems & Challenges (Chulalongkorn Univ.)

3-1-6. 技術の実用・サービスセンター(マヒドン大学)

3-1-7. Discussion Paper for the Closed Meeting (JICA)

3-1-8. タイ王国王立特許権法「特許権に基づいた権利仕様事項」

**Seminar on Technology Licensing Offices (TLOs):
New Mechanism for University-Industry-Government Collaboration
Siam City Hotel, 1 February 2005
Co-organized by Intellectual Property Service (IPS) and Japan International
Cooperation Agency (JICA)**

8.30-9.00 Registration

9.00-9.15 Opening Address

Prof.Dr.Pairash Thajchayapong
Permanent Secretary
Ministry of Science and Technology of Thailand (MOST)

9.15-9.30 Opening Address

Ms.YOSHIDA Atsuko
Deputy Director, Technical Cooperation Division, Trade Promotion Division,
Trade and Economic Cooperation Bureau,
Ministry of Economy, Trade and Industry of Japan (METI)

Mr.OZAWA Junichi

Executive Technical Advisor to the Director General Economic Development
Department, Japan International Cooperation Agency (JICA)

9.30-10.00 Strategic Policy on Knowledge Commercialization

Mr.Panithan Yamvinij
Senior Advisor in Policy and Plan
Office of National Economic and Social Development Board (NESDB)

**10.00-10.30 Role and Importance of Technology Licensing Offices:
Experience in Japan**

Dr.ISHIMARU Kimio
Representative, AIST INNOVATIONS,
National Institute of Advanced Industrial Science and Technology (AIST)

Coffee Break

**10.30-12.30 Technology Licensing Offices in Thailand:
Problems and Challenges**

Kajit Sukhum, Ph.D.
Director, Div. of Promotion and Development of Intellectual Property,
Ministry of Commerce

Dr.Prasitt

Representative of Higher Education Board

Assoc.Prof.Wisanu Subsompon,Ph.D.

Director General, Intellectual Property Institute, Chulalongkorn University

Prof.Amaret Bhumiratana, Ph.D.

Dean, Faculty of Science, Mahidol University

Prof.Dr.Chachanat Thebtaranonth

Vice President, National Science and Technology Development Agency

Mr.Prayoon

Vice President, Bank Thai. Executive Board, FTI

12.30-13:00 Discussion and closing ceremony



知的商用：
テクノロジー認可

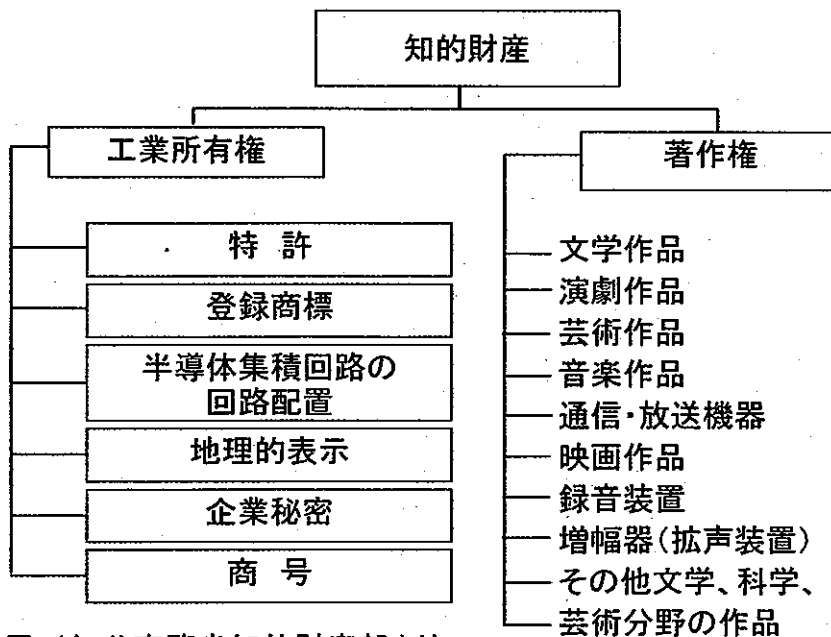
2005年2月1日

パニターン ヤームウィニド
戦略・企画コンサルタント
産業省競争政策局長代理
産業省競争政策局
経済社会開発委員会

提 案

- 知的財産と認可
- タイのテクノロジー認可状況
- 事例
- タイのテクノロジー認可開発傾向

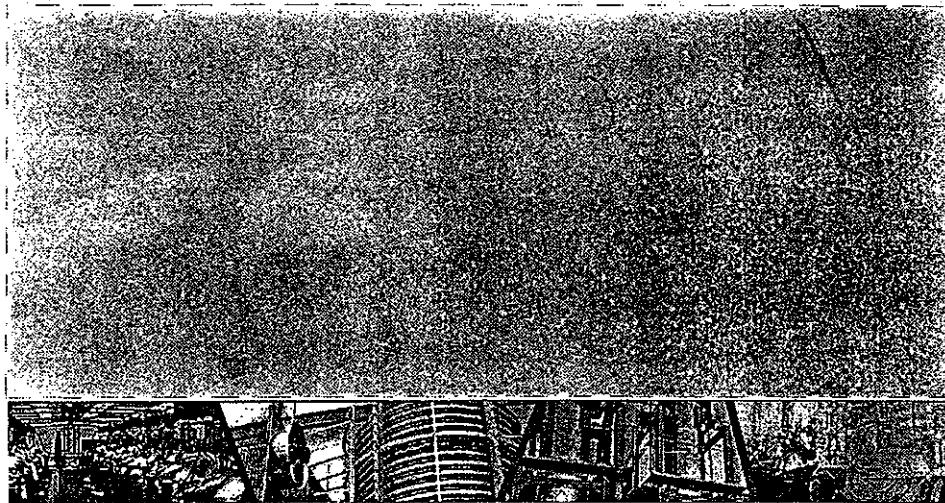
知的財産とは不動産と動産以外の人間の発想によって生まれる成果である。



引用: (タイ)商務省知的財産部より



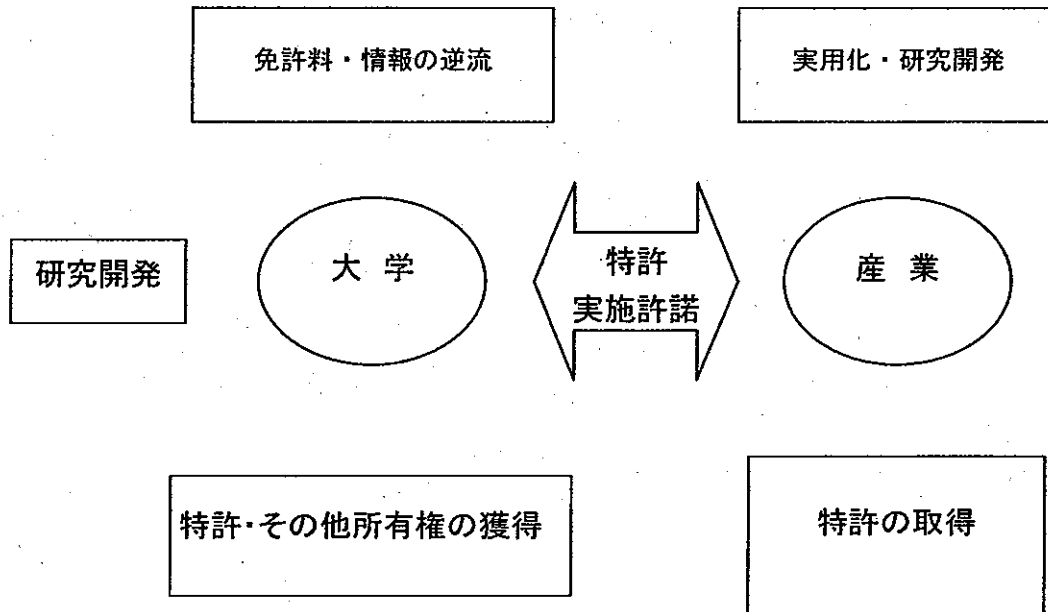
使用許諾



ที่มา: องค์การทรัพย์สินทางปัญญา (www.wipo.org), www.MyCouncil.com

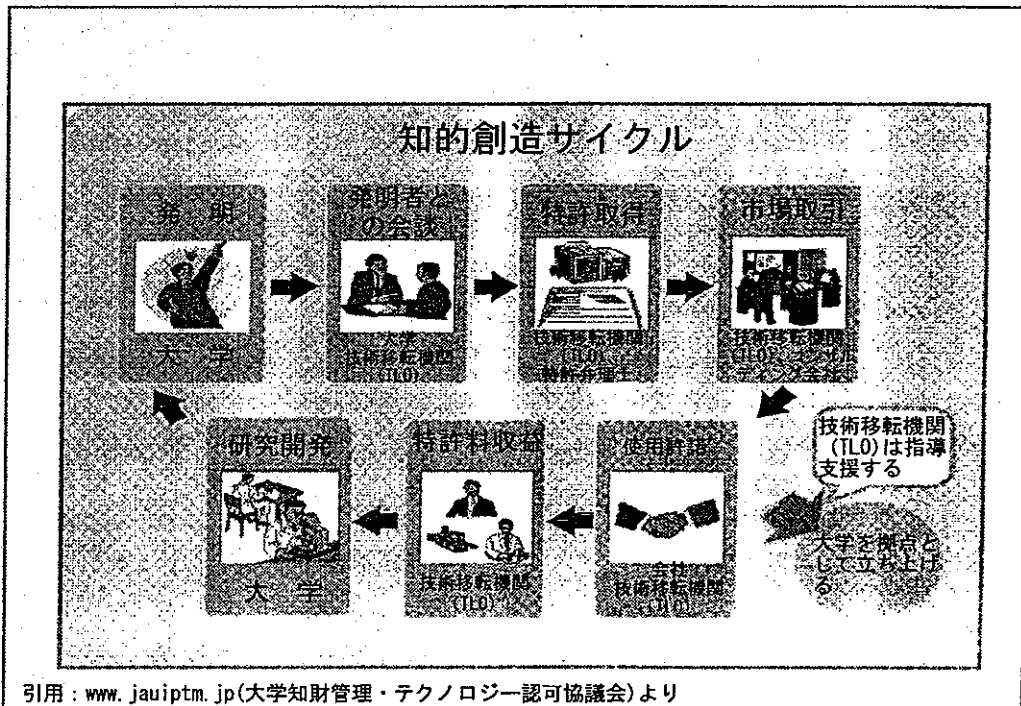
引用: 知的財産機関 (www.wipo.org) www.MyCouncil.com より'

知的財産の仕組み



引用：日本知的財産戦略会議より

発明からテクノロジー認可にいたるまで



引用：www.jauiptm.jp(大学知財管理・テクノロジー認可協議会)より

有効的にテクノロジー認可することは多方面で国の開発につながる
影響

新しい製品とサービス
新しい とビジネスを築く
研究予算の有効性
大学研究所と地元の集結の発達



企業分割によって4000社
以上の会社が新設
11万人以上の採用
ビジネスの売上が20万米
ドル以上

「(研究搾取)体制を正さなければ日
本の産業は沈没船のようになってし
まう」



大学の収入が年間千万米
ドル以上
企業分割がハイテク業界
で起きる

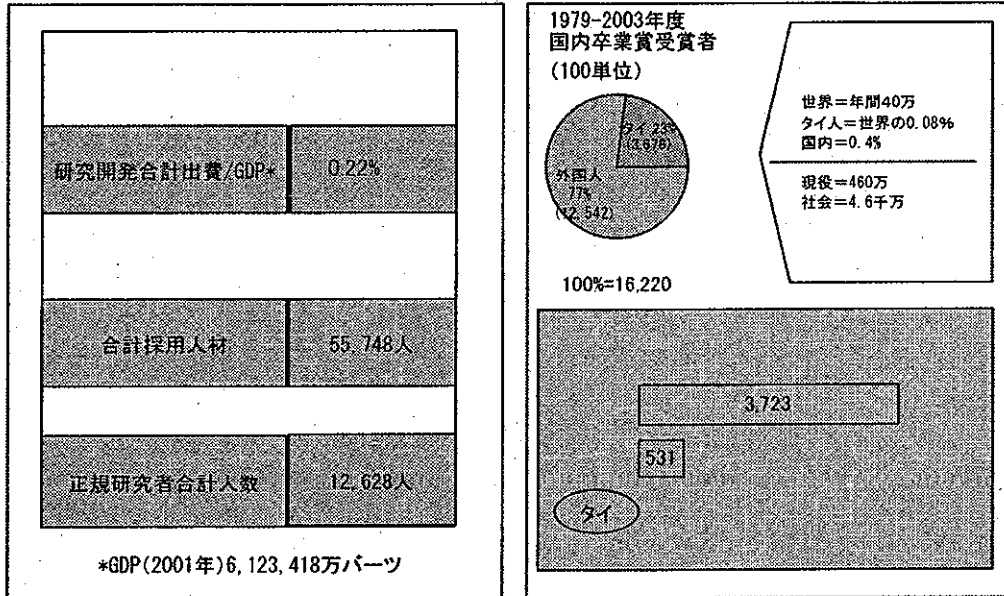
株式会社東京大学TLO 代表取締役
社長 山本貴史

引用：2002年MITでのテクノロジー認可面談より

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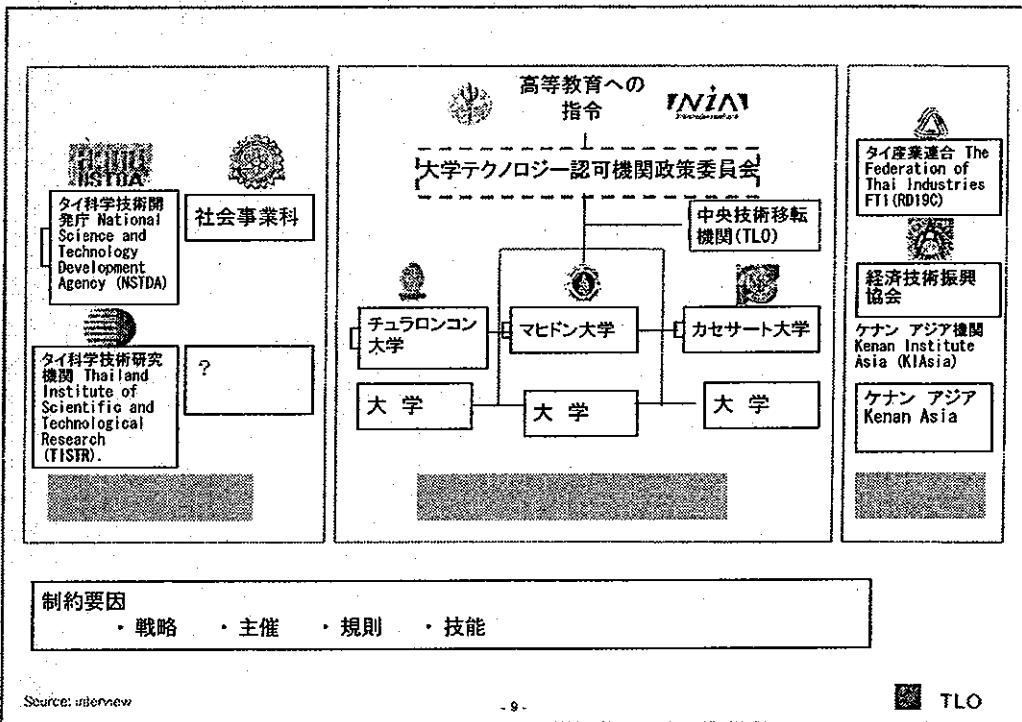
研究開発状況・特許取得方法・研究内容をタイの経済状況に役立てる方法



引用：2001年タイ研究・人材出費実態調査 www.uspto.gov, www.ipthailand.org

<http://gb.espacenet.com>

業種別テクノロジー認可



提 案

- 知的財産と認可
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- 事例
- タイのテクノロジー認可開発傾向

アメリカ、日本、韓国のテクノロジー認可事例



議 題

- | | | |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ・ 米国産業の競争力を強化する(1980年代) ・ 国際知的財産商用化を普及させる | <ul style="list-style-type: none"> ・ 知的財産(IP)国(2004) ・ 世界一の経済力(2010) ・ 日本産業の競争力を高め、経済を復興させる | <ul style="list-style-type: none"> ・ 2005年展望 ・ S&Tトップ12 ・ アジア太平洋の拠点となる科学研究(2015年) |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|

キープレイヤー

- | | | |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ・ 国家テクノロジー認可センター(1989年) ・ 大学技術管理者協会(AUTM 1974年) | <ul style="list-style-type: none"> ・ 大学知財管理・テクノロジー認可協議会(JAUIPTM) ・ 特許流通促進事業 ・ 中小企業庁(METI) | <ul style="list-style-type: none"> ・ 韓国テクノロジー認可機関センター(MCIE)(2000) ・ テクノロジー認可機関組合(MOST) ・ 韓国テクノロジー認可機関協会(KATLO) |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|

事例：日本と知的財産国の課題



景気低迷
(1990年代—2000年)



知的財産国
(2010年)

収穫期
(2009—2010年)

改革時期
(2005—2008年)

種まき時期
(2002—2004年)

- ・ 日本を「知的財産国」とする国家計画の宣言
- ・ 産業へ貢献するために国家予算による研究成果を大学のものとするという規制を再び強調する
- ・ 技術移転機関 (TLO) 設立の促進

- ・ 知的財産高等裁判所の設置
- ・ 人材を増やすために知的財産法学校の設置

- ・ 知的財産による成果の利益を得ることによって、経済では世界先端を目指す。

- ・ NCIP^{*}設立によって財務と人材の支援

事例：韓国



韓国技術移転センター

「2000年技術検証促進法令の目標を実施するために KTTTC は設立された。」(産業資源部)

洞察

- ・ 技術市場の設置と管理による技術商用化とM&Aの促進
- ・ 技術供給者・購買者・投資者の利潤最大化

使命

- ・ 商用化中央部

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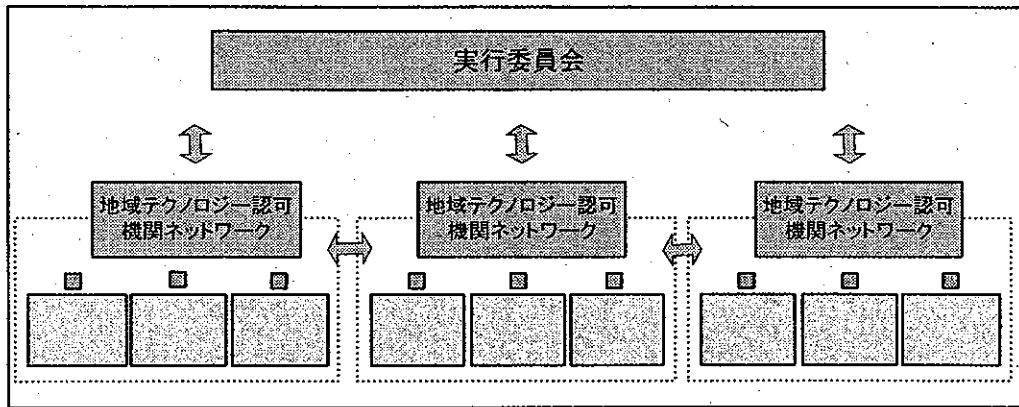
提 案

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- タイのテクノロジー認可開発傾向

タイのテクノロジー認可開発方針は次の要因に基づく

1. 目標を高く持ち、2010年までに地域の知的財産中核となることを目指す。
2. 国内競争において
 - 受動的: 国際特許出願方法(特許情報)
 - 活動的: テクノロジー認可機関(TLO)を発展させることによって研究開発と知的財産の商用化を支援する。

タイのテクノロジー認可機関 (TLO) 発展方針



重要点

- ・ 事務局のある国立委員会を持つことによるテクノロジー認可機関 (TLO) 体制の発展
- ・ 地域テクノロジー認可機関 (地域型または技術基盤方) がある
- ・ 制限要因となる規制の分析と問題解決
- ・ 他国と協力し合う

引用：円卓会談と土地開発地域事務局による分析

ご清聴ありがとうございました。

Role and Importance of Technology Licensing Offices Experience in Japan

Feb. 1, 2004

Dr. Kimio Ishimaru, Representative
AIST Innovations

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Contents

1. Technology Licensing Organization (TLO) Activities at Japan's Universities and National Research Institutes
2. Industry-Academia-Government Collaboration and Technology Transfer at AIST
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 - (2) Collaboration Department and technology transfer
 - (3) AIST Innovations
 - (4) Venture support at AIST
3. Reference Materials
 - (1) Outline of AIST
 - (2) Licensing income at U.S. universities

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TLO Activities at Japan's Universities and National Research Institutes

In 1998, Japan passed a new law related to technology licensing: "The Law Promoting Technology Transfer from Universities to Industry," commonly called the "TLO Law," which is a "law to promote the transfer of technology research findings from universities, etc. to the private sector." This law actively promotes collaboration and technology transfer between academia and industry to transfer research findings from universities and national research institutes to society (industry) and develop these findings into new businesses.

TLO: Technology Licensing Organization
(OTL: Office of Technology Licensing)

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Approved (Educational) TLOs

- Approved (Educational) TLOs transfer technologies that result from research conducted by universities and other educational organs.
- Approved TLOs are approved by the Ministry of Economy, Trade and Industry (METI) and by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) based on the TLO Law (Chart 1).
- Approved TLOs may have two-thirds of their operating costs subsidized (up to a maximum of ¥30 million), and may have several patent distribution advisors dispatched from the Japan Institute of Invention and Innovation.

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Authorized (Government) TLOs

- Authorized (Government) TLOs transfer technologies based on patents owned by the government of Japan.
- AIST Innovations became Japan's first Authorized TLO on April 13, 2001.
- There are now four Authorized TLOs in Japan (Chart 1).

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(Chart 1 TLOs in Japan)

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■ Approved (Educational) TLOs (38 Organizations)

2004.10.18

Universities	Approved	Founded	Organization
Tokyo Univ. (http://www.casti.co.jp/)	1998/12/4	1998/8/3	Private Company
Kyoto Univ. Ritsumeikan Univ. (http://www.kansai-tlo.co.jp/)		1998/10/30	Private Company
Tohoku Univ. (http://www.t-technoarch.co.jp/)		1998/11/5	Private Company
Nippon Univ. (http://www.nubic.adm.nihon-u.ac.jp/)	1999/4/16	1998/11/15	Univ.
Univ. of Tsukuba (http://www.tliaison.com/)		1997/5/20	Private Company
Waseda Univ. (http://www.waseda.ac.jp/ipc/)		1998/6/1	Univ.
Tokyo Inst. of Tech. (http://www.titech-tlo.or.jp/index.html)	1999/8/26	1946/9/6	Foundation
Keio Univ. (http://www.ipc.keio.ac.jp/)		1998/11/1	Univ.
Yamaguchi Univ. (http://www.crc.yamaguchi-u.ac.jp/tlo/)	1999/12/9	1999/11/1	Private Company
Hokkaido Univ. (http://www.h-tlo.co.jp)	1999/12/24	1999/12/6	Private Company

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Kobe Univ. , KanseiGakuin Univ. (http://tt.niro.or.jp/)	2000/4/19	1997/3/18	Foundation
Nagoya Univ. , Nagoya Inst.of Tech. (http://www.nisri.jp)		1943/7/1	Foundation
Kyushu Univ. (http://www.k-uip.co.jp/)		2000/1/17	Private Company
Tokyo Denki Univ. (http://www.dendai.ac.jp/crc/)	2000/6/14	1997/4/1	Univ.
Univ. of Yamanashi, (http://www.yamanashi-tlo.co.jp/index.jsp)	2000/9/21	2000/8/22	Private Company
Kogakuin Univ., Toyo Univ., Tokyo Metro. Univ. (http://www.tama-tlo.co.jp/)	2000/12/4	2000/7/12	Private Company
Meiji Univ. (http://www.meiji.ac.jp/jigyoka/tlo.html)	2001/4/25	2000/10/17	Univ.
Yokohama National Univ., Yokohama City Univ., Yokohama College of Commerce (http://www.yokohamatlo.co.jp)		2000/12/20	Private Company
Univ. of Tokushima, Kagawa Univ. , Ehime Univ. (http://www.s-tlo.co.jp)		2001/2/15	Private Company

Inst. Of Industrial Science, Univ. of Tokyo (http://www.iis.u-tokyo.ac.jp/shourei/fpis-tlo/)	2001/8/30	1953/12/25	Foundation
Osaka Univ. (http://osakatlo.mydoms.jp/)		1984/7/10	Foundation
Kumamoto Univ. (http://www.kmt-ti.or.jp)		1971/7/2	Foundation
Tokyo Univ. of Agri. and Tech. (http://www.tuat-tlo.com/)	2001/12/10	2001/10/1	Private Company
Niigata Univ. (http://www.niigata-tlo.com)	2001/12/25	2001/11/16	Private Company
Shizuoka Univ. (http://www.stlo.or.jp)	2002/1/17	1999/5/10	Foundation
Kyushu Inst. of Tech. (http://www.ktc.kstp.or.jp/tlo)	2002/4/1	2001/3/1	Foundation
Mie Univ. (http://www.mie-tlo.co.jp)	2002/4/16	2002/2/7	Private Company
Kanagawa Univ. , Ishikawa National College of Tech. (http://kutlo.inc.kanazawa-u.ac.jp)	2002/12/26	2002/10/31	Private Company

Univ. of Electro-Communications (http://www.campuscreate.com)	2003/2/19	1999/9/1	Private Company
Nippon Medical School, Nippon Veterinary of Animal Science Univ. (http://www.nms.jp/tlo/)		2001/12/1	Univ.
Kagoshima Univ. (http://www.ktlo.co.jp/)		2003/1/9	Private Company
Shinshu Univ., Nagano National College of Tech. (http://www.tlo.shinshu-u.ac.jp/)	2003/4/18	2003/2/28	Private Company
Univ. of Miyazaki (http://www.miyazaki-tlo.jp/)	2003/5/16	2003/4/1	Private Company
Oita Univ. (http://tlo.radc.oita-u.ac.jp/index.html)	2003/8/26	2003/6/27	Private Company
Tokyo Univ. of Science (http://www.tlo.tus.ac.jp/)	2003/9/30	2003/1/1	Univ.
Hiroshima Univ. (http://www.hiwave.or.jp/tlo/)	2003/10/9	1983/11/24	Foundation
Okayama Univ. (http://www.optio.or.jp/)	2004/4/28	1968/8/8	Foundation
Nagasaki Univ.	2004/10/15	1941/1/29	Private Company

■ Authorized (Government) TLOs(4)

(2004.7.1)

National Institutes	Authorized	Founded	Organization
National Inst. Of Advanced Industrial Science and Tech. (AIST Innovations) (http://unit.aist.go.jp/intelprop/tlo/index.htm)	2001/4/13	1969/7/30	Foundation
Ministry of Health, Labour and Welfare (http://www.jhsf.or.jp/)	2003/5/1	1986/4/1	Foundation
Ministry of Agriculture, Forestry and Fisheries of Japan (http://www.afftis.or.jp/)	2003/6/2	1977/11/17	Foundation
National Inst. of Information and Communication Tech. (http://www.scit.or.jp/)	2004/4/1	1988/10/26	Foundation

(<http://www.jpo.go.jp/kanren/tlo.htm>)

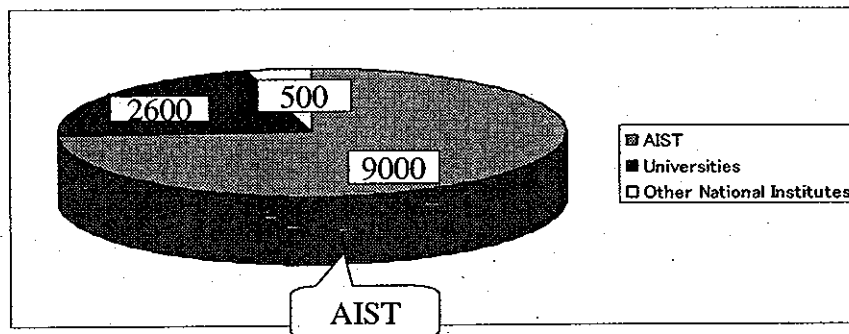
Change of National Universities into Independent Administrative Institutions

- From April 1, 2004, all national universities throughout Japan became independent administrative institutions.
- Because the universities are now legal persons, they may serve as patent applicants.
 - (1) Discoveries by university researchers belong to the university.
 - (2) Universities establish intellectual property offices which conduct all related works from patent application through patent maintenance.
 - (3) University TLOs are responsible for technology transfer, but some are also responsible for patent applications.

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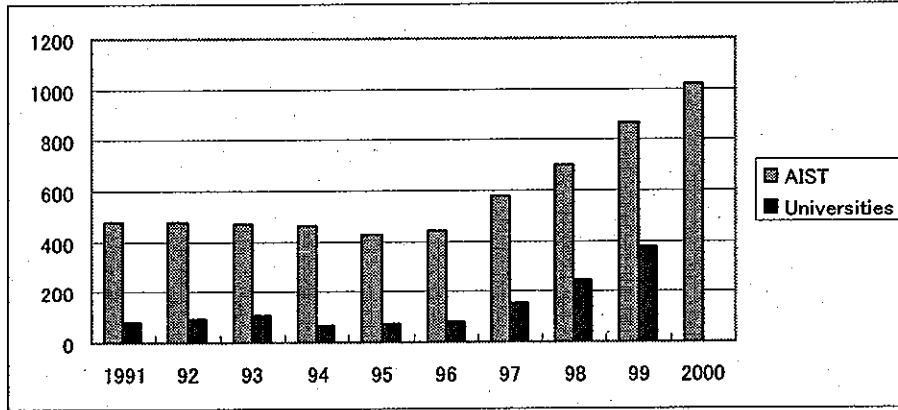
Number of Patents (Universities and National Institutes) (1998)



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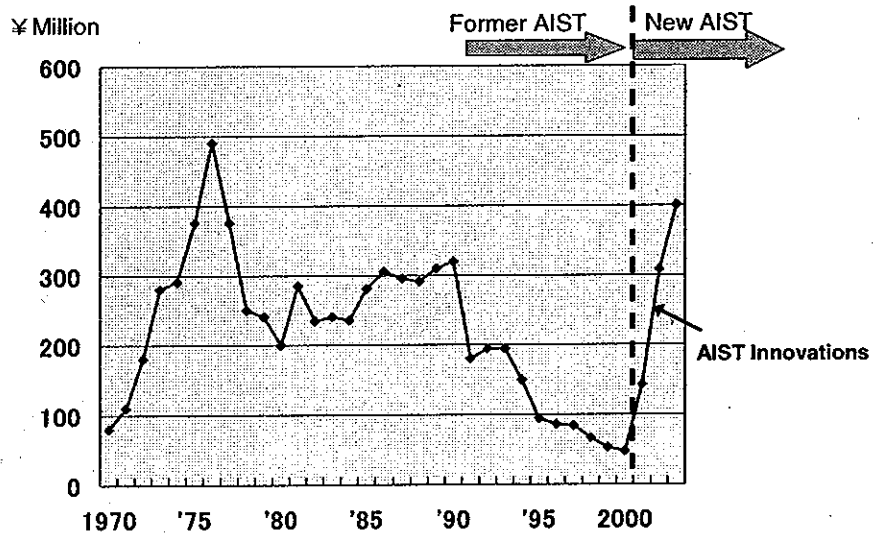
Number of Patent Applications



13

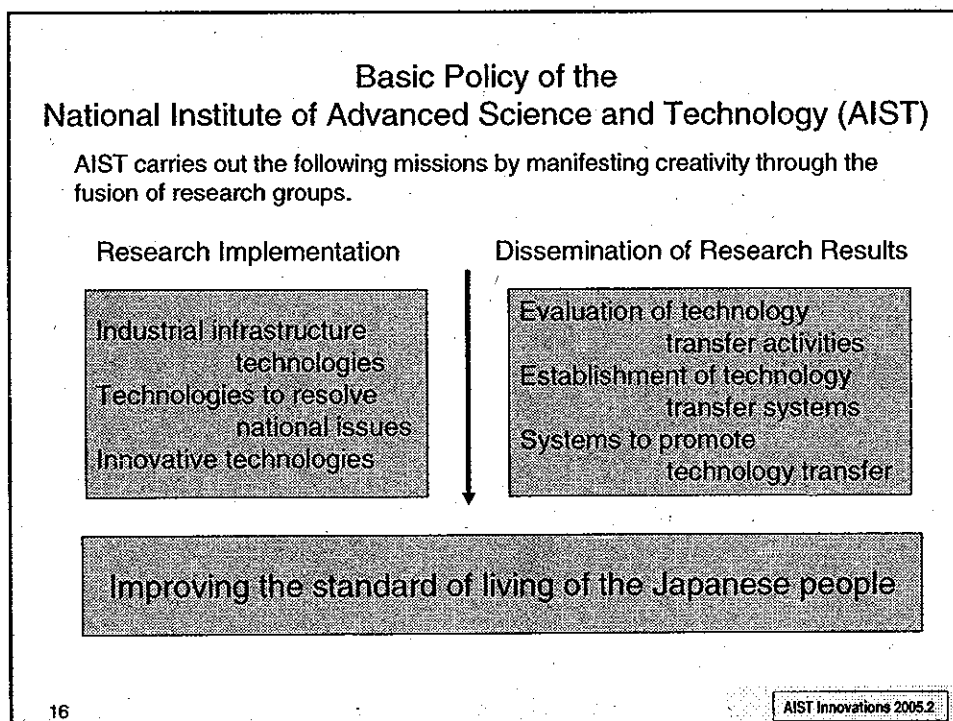
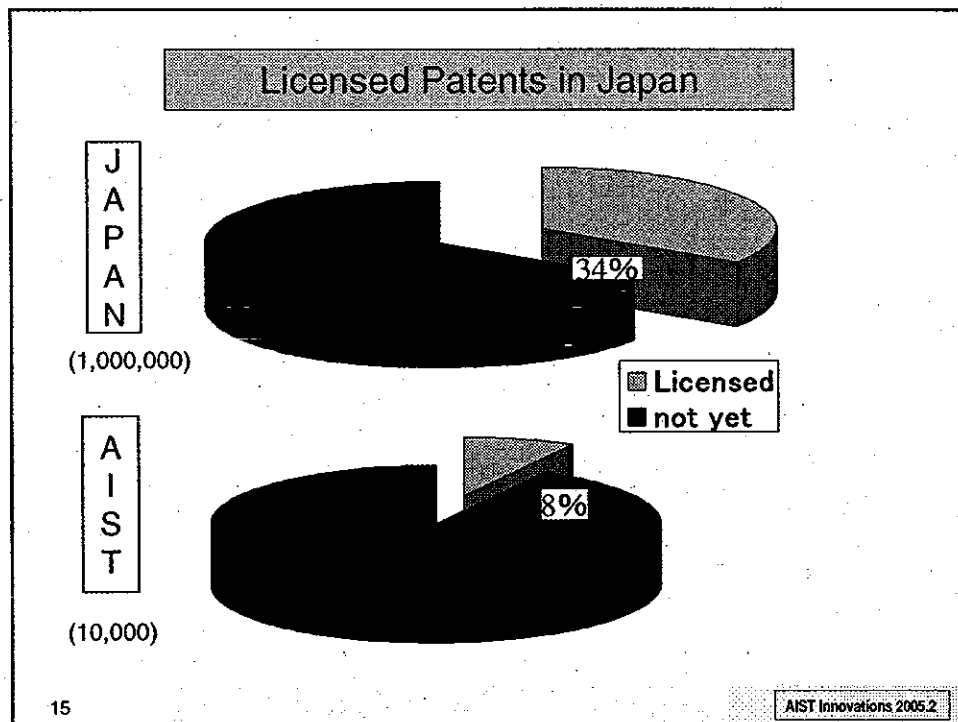
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AIST's Royalty Income



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AIST Patent Policy (as of June 27, 2001)

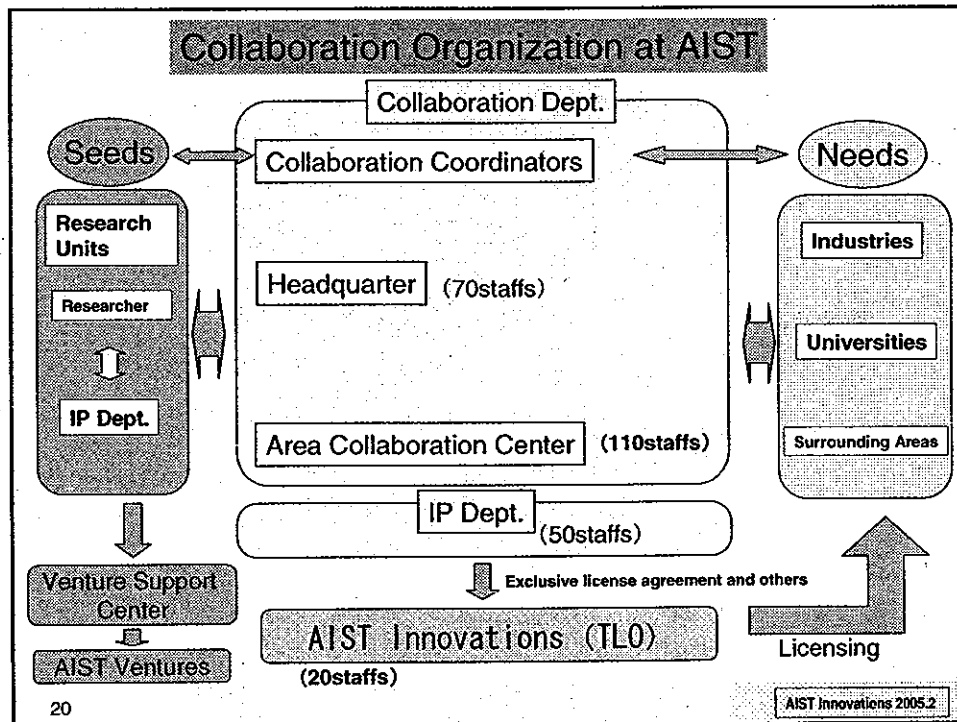
- 1) Basic Approach:
Give the same status to intellectual property and research papers
- 2) Rationale for Securing Intellectual Property Rights (Need For Filing Patent Applications):
 - Industry development
 - Launch of venture businesses
 - Protection of creators' rights
 - Return of royalties
 - Achievement of research results
- 3) Making good use of research results as the property of all Japanese citizens
- 4) Incentives to promote the acquisition of intellectual property rights
- 5) System and organization to promote the acquisition and use of intellectual property rights
- 6) Strategic patent acquisition

Importance of Patents for Economic Development

- (1) Patents are given for new concepts and technologies that the government recognizes as novel. When claims are based on research papers, it may be difficult to stipulate the timing. In the past, there were often disputes about which discovery came first. (The U.S. is an exception in awarding patents to whoever makes the discovery first. The other leading nations all award patents to the first applicant, and application dates can easily be confirmed.)
- (2) The main purpose of patents is to disclose technologies so they can be widely used all over the world. In exchange for the use of their patents, inventors receive licensing fees.
- (3) For patents that involve ethical issues, such as when patents are awarded for genetic-related technologies, ethical restrictions can be added at the time of licensing.
- (4) Respecting patents greatly contributes to a country's technological and economic development. Countries that do not respect patents do not gain access to state-of-the-art technologies from other countries.

AIST Technology Transfer Policy (as of June 27, 2001)

- 1) AIST actively transfers research results to industry, etc.
- 2) Promoting technology transfer is one of the duties of AIST employees.
- 3) AIST encourages its employees to contribute to technology transfer activities, and such efforts are rewarded in their performance evaluations.
- 4) AIST uses joint research, contract research, and technology training to foster the transfer of research findings to industry, and promotes the implementation of intellectual property rights.



Industry-Academia-Government Collaboration Coordinators



- ◇ Plan and coordinate collaborative projects linking enterprises, universities, and AIST (joint research and contract research).
- ◇ Match the needs of enterprises and other bodies with AIST's technology seeds.
- ◇ Support efforts (in cooperation with the Intellectual Property Department) to ascertain, find, and secure rights for research results held by AIST.
- ◇ Support efforts (in cooperation with AIST Innovations) to transfer to the private sector and commercialize intellectual property rights held by AIST.

Please consult with the collaboration coordinators if you want to conduct joint research with AIST but do not know who the appropriate AIST researchers are for the project, or if you want to dispatch researchers to AIST to conduct research but do not know which research unit is appropriate for their work.

Main System Changes from AIST's Gaining Status as an Independent Administrative Institution

Item	Old	New
Use of intellectual property	Use based on government property	Use based on AIST
Transparent, fair, and smooth technology transfer	Belongs to the individual	Belongs to AIST
Incentives (subsidies)	Maximum of ¥6 million/year	25% of license fee (50% of the first ¥1 million)
	—	Subsidy for program and other copyrights
Venture support	—	Provision of research space, measures to support reduced license fees
Promotion of technology transfer	—	Use of AIST Innovations (TLO)
Expansion of contract research	Contract research difficult in practice	Contract research is easily implemented

Characteristics of the Technology Transfer System

- 1) Upgrading of the Collaboration Department and the Intellectual Property Department
 - Industry-academia-government collaboration and research coordinators
 - In-house patent attorneys and consigned attorneys
 - Assistant unit chiefs in charge of intellectual property
 - Establishment of the Venture Support Center
- 2) Establishment of AIST Innovations

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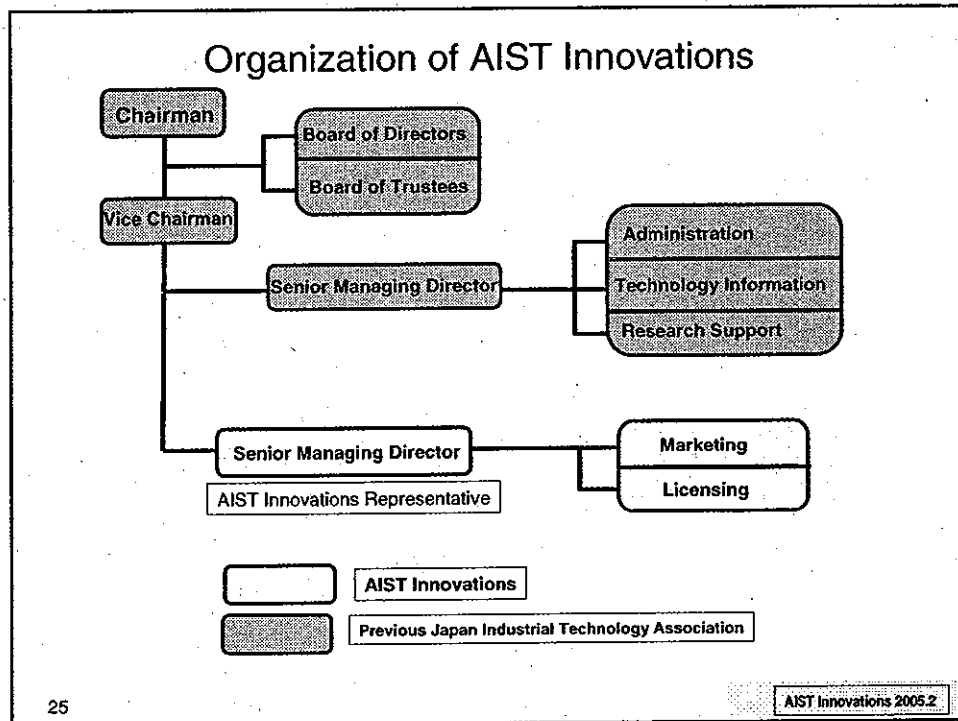
Authorized TLO

AIST INNOVATIONS

<http://unit.aist.go.jp/intelprop/tlo/index.htm>

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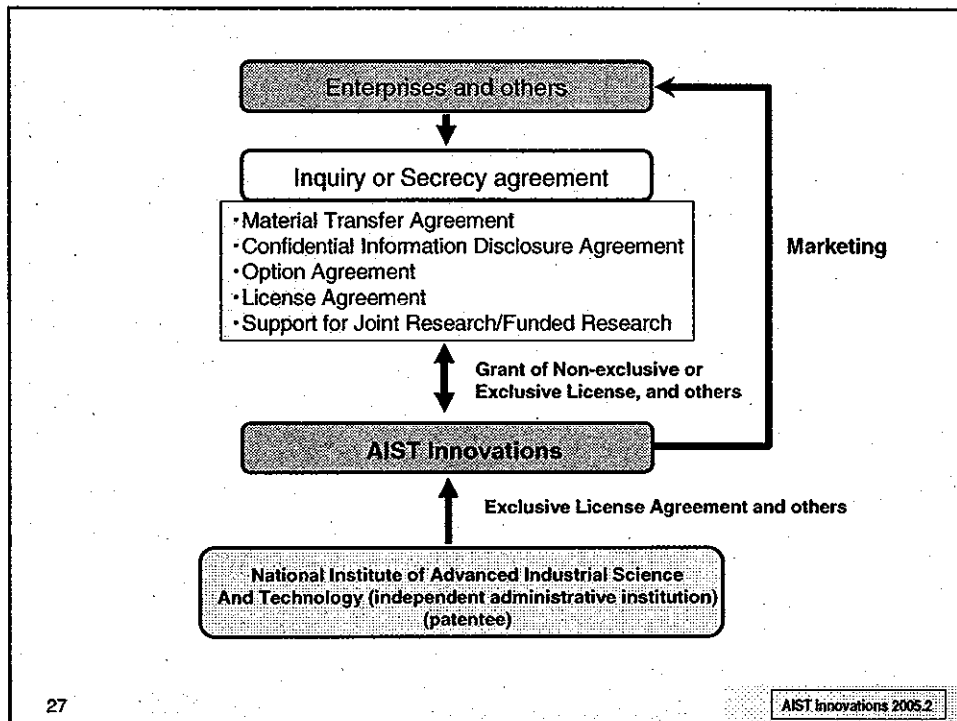


AIST Patent Strategy

- (1) Intellectual Creation Cycle
- (2) Patent first, Publish later

<http://unit.aist.go.jp/intelprop/index.htm>

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AIST Innovations: Organization and Work Contents

1. Joint government-private sector organization

24 persons, as follows:

- AIST Intellectual Property Department general managers (TLO only) (4)
- Patent distribution advisor (1)
- Employed from AIST (1)
- Newly employed from the private sector (13)
- Members of the JITA (Japan Industrial Technology Association) Intellectual Property Department (5)

(The work locations of the 24 persons are 4 at the Tokyo office, 3 at the Osaka office and 17 at the Tsukuba office.)

2. Assignment of 13 employees hired from the private sector

- Licensing Dept. – 4 persons: Experts with over 30 years at private-sector intellectual property departments
- Development Dept. – 7 persons: Individuals with experience working in research planning departments, new business departments, and operations development departments
- General Affairs Dept. – 2 persons

Relationship between AIST and AIST Innovations

- (1) AIST Innovations concludes consigned technology transfer contracts with AIST and carries out the consigned work in accordance with the implementation directives given by AIST.
 - Patent application works, joint research contract works: AIST
 - Secrecy agreements: AIST, AIST Innovations
 - Material Transfer agreement: AIST Innovations (AIST negotiates the terms)
 - Confidential disclosure agreement: AIST Innovations
 - Options agreement: AIST Innovations
 - License agreement: AIST Innovations
- (2) To maintain close relations with AIST, the AIST Innovations representative is an AIST senior technical counselor and the AIST Innovations associate representative is an AIST counselor.
- (3) Four AIST Intellectual Property Department general managers are permanently assigned to AIST Innovations.
- (4) Assistant research unit chiefs responsible for patent and technology transfer are assigned to each AIST research unit.

[Reference Document 1: Outline of AIST] Personnel, Budget, and Facilities

Personnel

Total AIST employees (researchers + general staff)	Approx. 3,200
Research staff	Approx. 2,500
(of which, limited-term researchers)	Approx. 260
Others	
Post-doctoral researchers	Approx. 500
Researchers from enterprises	Approx. 700
Researchers from overseas	Approx. 1,000

Budget

Total budget	Approx. ¥90 billion
Total subsidies (from METI)	Approx. ¥70 billion
Budget from NEDO and other government ministries and agencies	Approx. ¥20 billion

Facilities

Total land area	Approx. 2.4 million m ²
Total floor space	Approx. 0.6 million m ²
Total assets	Approx. ¥229 billion

[Reference Document 2 : US Patents (1997-2001)]

US

1. Univ. of California Systems	1,904
2. US Navy	1,640
3. US Army	772
4. Health and Human Services	636
5. Massachusetts Institute of Tech.	595
6. NASA	469
7. California Institute of Tech.	454
8. Univ. of Texas	442
9. US Air Force	427
10. Stanford Univ.	401

JAPAN

1. AIST	334
2. RIKEN	62
3. Japan Atomic Energy Research Inst.	43
4. NIMS	24
5. National Food Research Inst.	20
6. Super Silicon Research Inst.	19
7. Nuclear Fuel Cycle Research Inst.	18
8. Univ. of Tokyo	8
8. Railway Technical Research Inst.	8
8. Tohoku Univ.	8
8. Hiroshima Univ.	8

[Reference Document 3: Royalty Income of US Universities]
(2002)

	Royalty Income	No. of Licenses	Income/License
Univ. of California System	\$82,048,000	837	\$98,026
California Institute of Technology	\$11,218,000	70	\$160,257
Univ. of Washington	\$22,956,137	418	\$54,919
Univ. of Florida	\$31,597,753	102	\$309,782
Brigham Young University	\$2,708,207	68	\$39,827
Univ. of Oklahoma, All Campuses	\$2,341,525	18	\$130,085
Univ. of Utah	\$4,787,800	77	\$62,179
NIH	\$51,000,000	N/A	N/A

[Reference Document 4:]

Patent Applications of Nobel prize winners(2002)			
			Patent Application
Chemistry	K.Tanaka	Japan	14
	John B.Fenn	US	40
	Kurt Wuehrich	Swiss	11
Physics	M.Koshiba	Japan	0
	Raymond Davis Jr.	US	0
	Riccardo Giacconi	US	1
Medical	Sydney Brenner	UK	96
	H. Robert Horvitz	US	15
	John E. Sulston	UK	0

Patent Applications of Japanese Nobel Prize Winners			
			Patent Application
2001	R.Noyori	Chemistry	279
2000	H.Shirakawa	Chemistry	46
1987	S.Tonegawa	Medical	15
1981	K.Futai	Chemistry	29
1973	R.Ezaki	Physics	75
1965	S.Tomonaga	Physics	0
1949	H.Yogawa	Physics	0

Bio Venture Vol.3, No.3(2009)



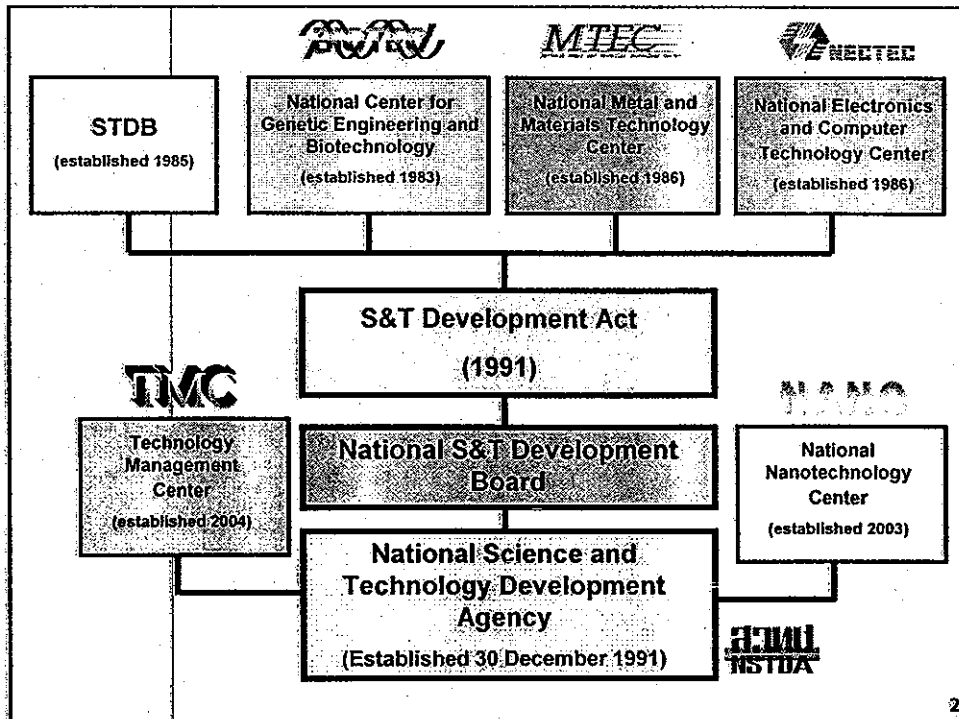
National Science and Technology Development Agency

Seminar on Technology Licensing Offices: New Mechanism for University-Industry- Government Collaboration

February 1, 2005



The first technology hub for Thailand is now ready to serve the country with its world-class facilities and pool of talented people.





National Science
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Development
Agency

Missions of NSTDA

- Support and Conduct RD&E
- Human Resource Development
- Technology Diffusion
- S&T Infrastructure

Thailand
Science Park
December 2003



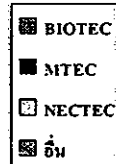
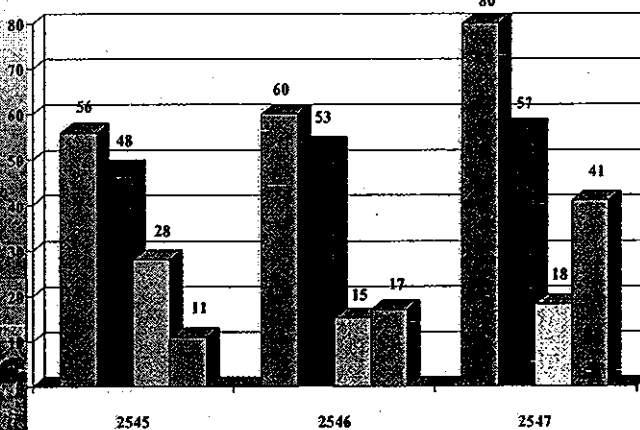
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Development
Agency

Number of R&D projects supported by NSTDA during 2002-2004

Projects

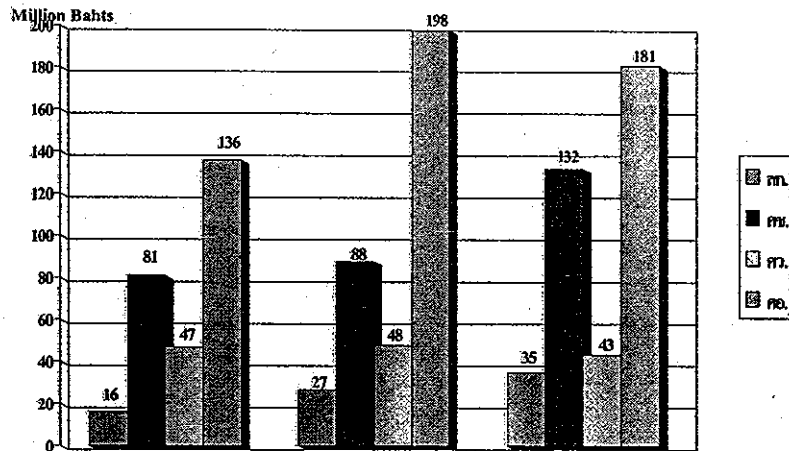


Thailand
Science Park
December 2004



4

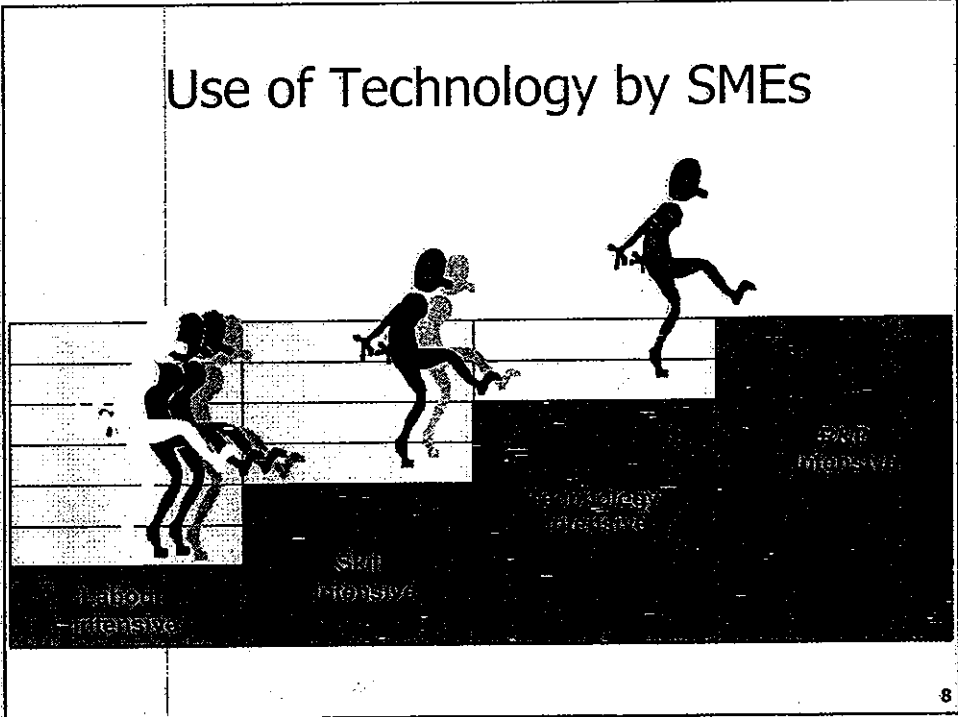
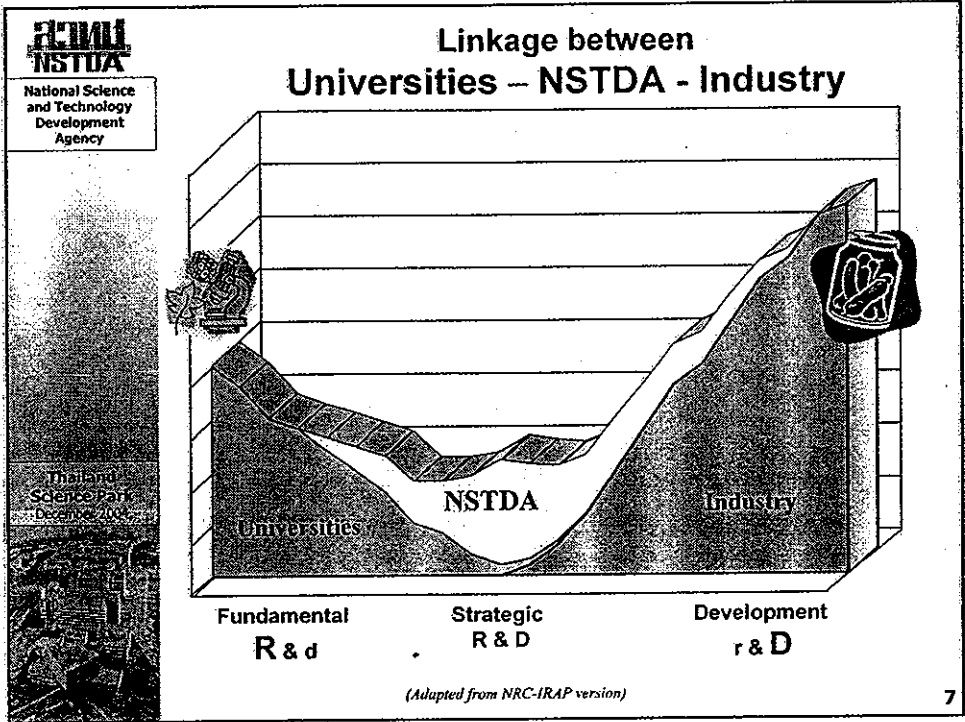
R&D budget supporting to public sector during 2002-2004



NSTDA Private Sector Support

NSTDA provides :

- Financial Support
- Technology Support
- R&D Facilities
- Human Resource Development



Private Sector Support

Financial Support

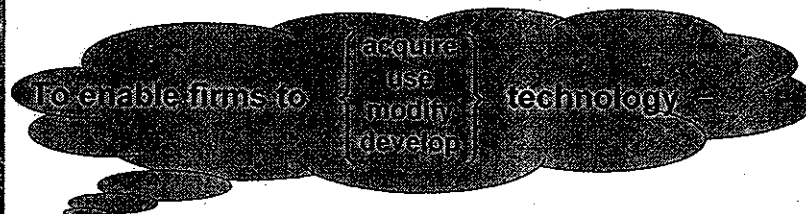
- grants
- soft loans
- investment

Technical Support

- information service
- training
- Testing & analytical services
- industrial consultancy
- technology acquisition
- intellectual property service
- commercialization of S & T
- contract research

Facilities Support

- " Science Park "
- " Software Park "



Industrial Technology Assistance Program (ITAP)

" ...investigates and solves technical problems, upgrades technology in firms."

- Diagnose production problems, source local or overseas experts to solve problems, subsidize expenses
- Attach local university people to overseas experts, help technology transfer to firms and universities
- Promote university researchers as experts, create industry-university linkage, encourage collaborative and contract R&D

Contacted.....	4,090 firms
.....	757 firms
Diagnosed problems.....	521 firms
Long-term projects.....	10 countries
	20 : 80
Overseas experts from.....	





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Development
Agency

Industrial Technology Assistance Program (ITAP)

" ... assists the private sector to search for, and acquire appropriate technology.."

Technology trips	34
Host countries	13
Participating firms	406

Thailand
Science Park
December 2006



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National Science
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Intellectual Property Services (IPS)

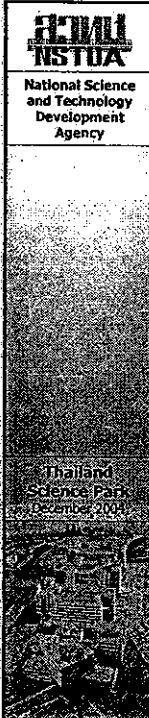
" .. files patents and provides IP consultancy services to organizations and the private sector; and disseminates intellectual property information and promotes its use in research;.."

Filed	210	Thai patent applications
Granted	33	Thai patents
Registered	84	copyrights
Registered	87	trademarks

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Science Park
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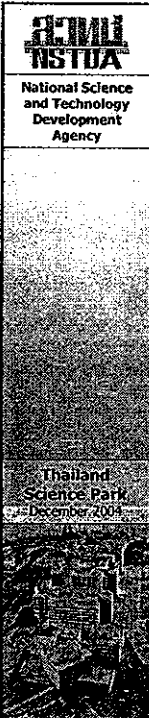


12



Intellectual Property Services (IPS)

- In 2003, NSTDA commissioned Dr. Lerson and Khun Sunti to conduct feasibility study for Technology Licensing Office of NSTDA
- NSTDA has been reorganized at the end of 2004 and set up TLO within Technology Management Center (TMC)
- New TLO will consist of staff from IP units and Business Development units from 3 National Centers
- New IP policy and management will be introduced in TLO operation



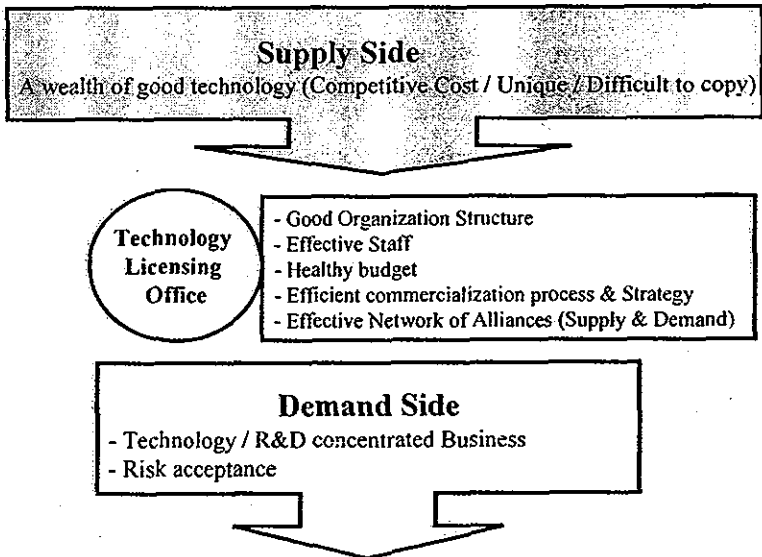
NSTDA R&D Facilities : Thailand Science Park (HUB for R&D)

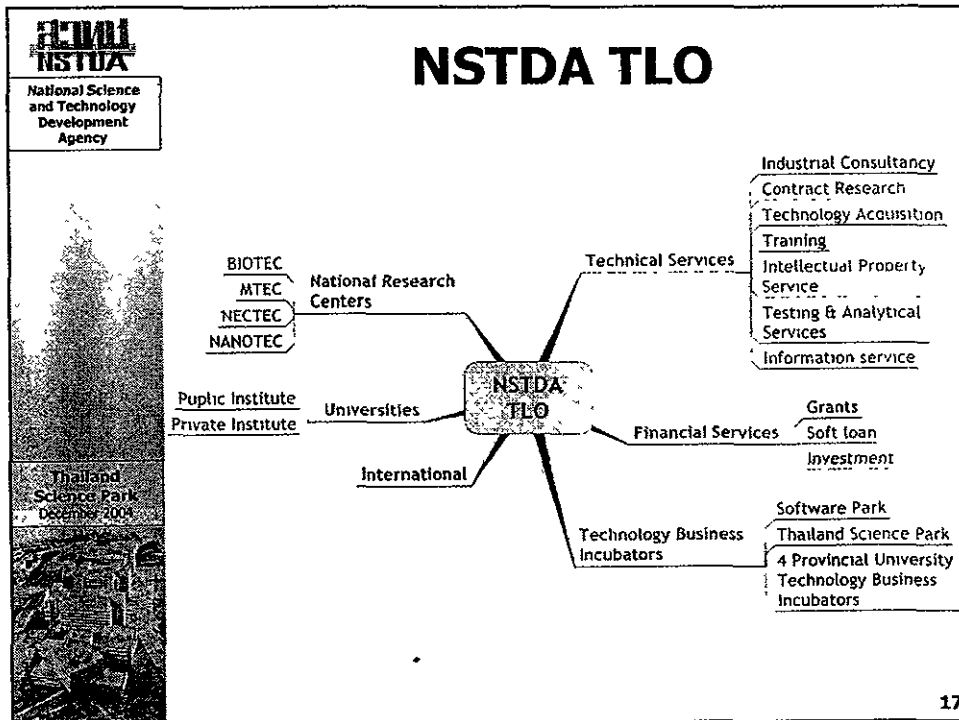
- Total Area: 80 acres
- Location: Rangsit District, northern suburb of Bangkok
- Building Area: 20 buildings planned (>200,000 sqm.)
- Offering:
 - Incubators, Multi-tenant Buildings, Land for Lease
 - High speed internet, ISDN, Video conferencing, etc.
 - Access to labs, equipments, technicians
 - Pool of specialists & researchers
- Housing: 3 National Research Centres in Biotechnology (BIOTEC), Metal & Materials Technology (MTEC), Electronics & Computer Technology (NECTEC)

NSTDA R&D Facilities : Software Park

- Incubator for development of software
- Market information service
- Training center for software engineering
- Software testing and certifying service
- Provision of hardware and software for shared use
- Tenants 48 firms

Success Factors of TLO






NSTDA
National Science and Technology Development Agency

Examples of NSTDA Technology Transfer

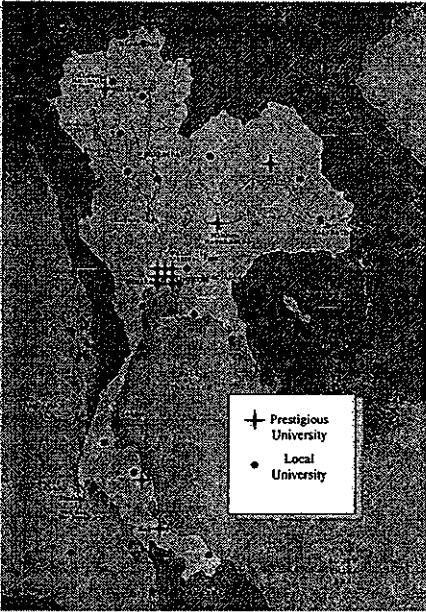
<p>Agri-Food Industry</p> <ol style="list-style-type: none"> 1 Active Packaging for Post-Harvest 2 Diagnostic kit for detection of yellow-head virus in Shrimp 3 Nondestructive Technology for Fruit Quality Evaluation (NDT) 4 Use of Dry Powder Starter Culture for Nham Fermentation 	<p>Medical related</p> <ol style="list-style-type: none"> 1 Rapid Diagnostics test Kit for Influenza virus 2 Production of Dental Alloy 3 Production of Medical Grade Chitin and Chitosan for Woundcare 4 Diagnostic kit for Bird-Flu influenza
<p>Automotive</p> <ol style="list-style-type: none"> 1 Electronic ignition CDI (Capacitive Discharge Ignition) for Motorcycle 2 DC Motor Drive Unit for Small Electric Vehicle 3 High Frequency Battery Charger 4 Design and Manufacturing of Sheet Metal Hand Brake Levers 	<p>Energy & Environment</p> <ol style="list-style-type: none"> 1 Hybrid Silicon Solar Cell System 2 Production of Ceramic Filter for Home Use 3 Chlorine Test Spectroscopic Kit 4 Multipurpose environment meter

Thailand Science Park December 2004




National Science and Technology Development Agency


NSTDA's Network



Thailand Science Park
December 2004

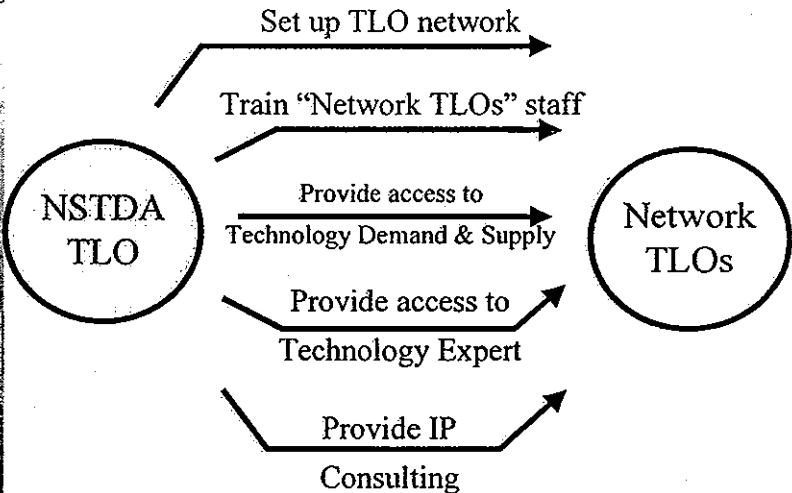


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National Science and Technology Development Agency

Proposed Thailand TLO Network



Thailand Science Park
December 2004



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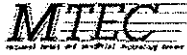


National Science
and Technology
Development
Agency

THANK YOU

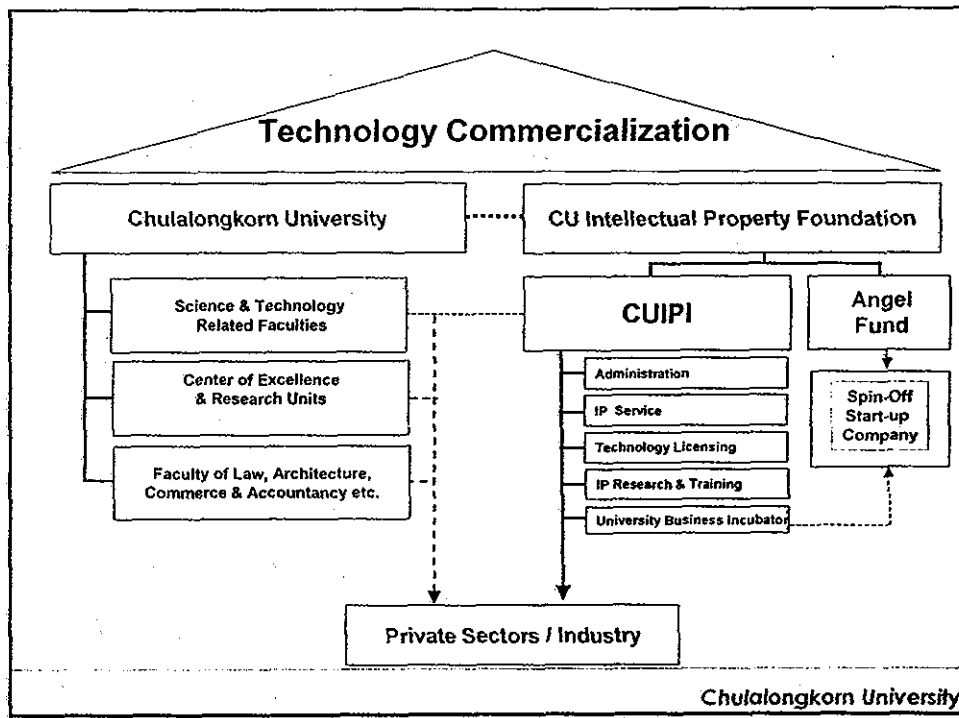


Thailand
Science Park
December 2014



Technology Licensing: Problems & Challenges

Assoc.Prof.Wisanu Subsompon, Ph.D.
Assoc.Prof.Usanee Yodyingyuad, Ph.D.
Chulalongkorn University Intellectual Property Institute
February 1, 2005



CUIPI Overview

- Established in 1995 by the University Council as a non-profit Foundation
- Separated legal entity from the University

3

CUIPI's Mission

- To promote and support technology transfer of research and innovation at CU for the benefit of the University, the inventor(s), and society as a whole through IP commercialization.

4

Different Roles

- Chulalongkorn University
 - Educator and degree grantor
 - Recipient of government grants
 - Recipient of commercial funding
 - Recipient of materials from commercial entities and academic researchers
 - Holder of title for intellectual property
- CUIPI
 - Matchmaker between commercial entities and academic researchers
 - Patenting and licensing agent of faculty generated intellectual property
 - Incubator for start-up company
 - Stockholder in licensee companies

5

Critical Success Factors of IP Commercialization

- Proactive in promoting and supporting IP commercialization
- Confidence of commercialization service among inventors
- Understanding of business process and industry background
- Network and partnership among industry and IP organizations

6

Licensing Problems

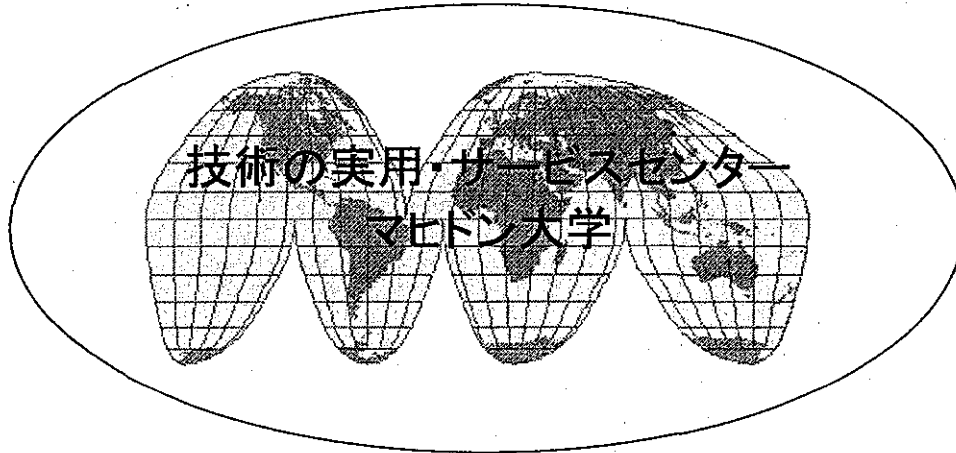
- Understanding of licensing culture from both inventors and licensees
- Lack of experienced staff in this field
- Work loads (invention & licensing) are inconsistent
- Long-term benefit, lack of supporting fund
- Insufficient qualified invention for licensing and many are not ready to be licensed
- Results may become property of sponsor
- May result in trade secret
- Conflict of interest e.g., researcher may hold equity in companies that sponsor their research

7

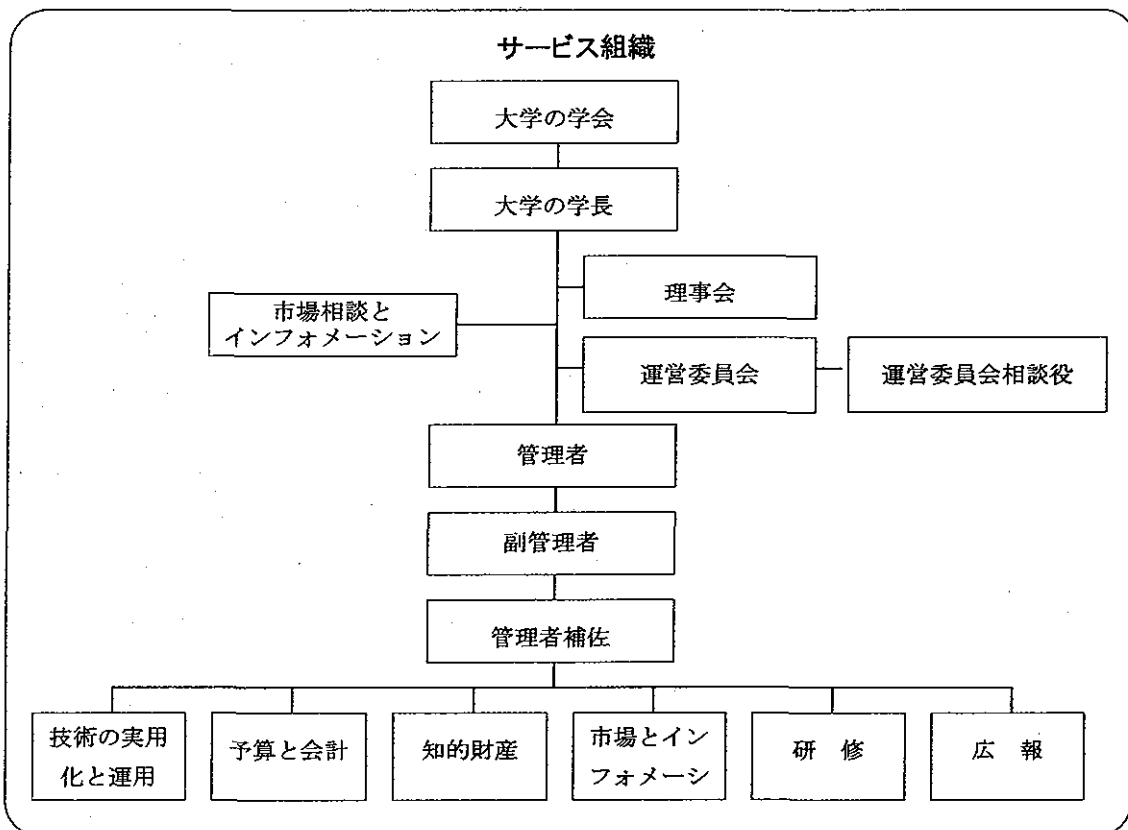
Challenges

- Increasing number of IP for licensing
- IP society & culture
- Show cases
- Researcher, facilities & resources for both basic & applied research
- Seed money for product development
- Connections with industrial partners

8



ドクター・エムレート・プーミラット 教授
マヒドン大学理学部 学部長



実用化センター設立主旨

1. 新たな創造や生産、そして研究・開発・分析による新たな手法を奨励し、商業の基底とし、生産競争へと反映させる。
2. 官民両方の事業への技術提供サービス。
3. 主旨に従い事業を奨励する資源と機械を召集する。(第1項)

技術提供サービス

- | | |
|---------------|------|
| ○ 技術の実用化とサービス | — 調査 |
| ○ 研修 | — 分析 |
| ○ 知的財産 | — 研究 |
| | — 検査 |
| | — 予測 |
- 公的研修と学内研修の両方の
タイプを各々の事業で実施する。

知的財産

1. 知的財産権の取得、知的財産権の認可、著作権の登録・申請、登録商標の登録。
2. 仏暦2541年(西暦1998年)～仏暦2547年(西暦2004年)迄、43件の特許知的財産局の審査を受ける。
3. それ以外にも、3件の知的財産権の登録を遂行する。
4. 大学の知的財産権を侵害する者を法律に基づく控訴を遂行する。

知的財産(続き)

- * 57名の知的財産委員会委員を選任する。全部で、55組の委員会とする。



知的財産(続き)

- * 正式に、特許知的財産局から、知的財産権や、知的財産権としての認可を得た成果としては、13件ある。
- * 特許認可申請中の成果は、56件ある。
- * 実用化センターの事業下にある成果は、29件ある。

知的財産

1. 知的財産権の取得、知的財産権の認可、著作権の登録・申請、登録商標の登録。
2. 仏暦2541年(西暦1998年)～仏暦2547年(西暦2004年)迄、45件の特許知的財産局の審査を受ける。
3. それ以外にも、3件の知的財産権の登録を遂行する。
4. 大学の知的財産権を侵害する者を法律に基づく控訴を遂行する。

知的財産権侵害事件

- デックデーン店 専門書の著作権侵害
 - 刑事訴訟費用 25,000パーツ
 - 民事訴訟審議中
- Master Copy (マスター・コピー)店 専門書の著作権侵害
 - 受領損害賠償金 100,000パーツ
- ユーピーメディカルソードオン株式会社 著作権/知的財産権の侵害
 - 受領損害賠償金 250,000パーツ

5. 実用化される知的財産権の成果について

1. 民間との交渉(Technology Licensing Office – TLO)は、開示費、ロイヤリティー、コンサルタント費、共同研究で、成果を上げている。
2. 試作品生産に投資する。
3. 知的財産の利用を奨励する、そして、ベンチャー資本が生まれて来るレベルまでの知的財産の利用を推進するための新事業や新技術会社(STANG)、会社設立より共同出資する。
4. 組立会社に共同投資する。
5. 創造者と大学に成果全体の見返りを用意する。

民間に対抗するライセンスを有する成果の例

■ Purified Natural Rubber Grove

- 開示費 1百万パーツ
- ロイヤリティー 売上の3-5%
- 研究費 5百万パーツ

■ 歯槽膿漏を治療に共に用いるため、薬草 (Herbal Chip) と蓮の葉と柘榴を混ぜたもの。

- 開示費 € 40, 000
- ロイヤリティー 売上の4. 5%

■ マラリアのウィルスの viral antigen からコオームビタミンプロテインの精製と、マラリアの検査セット

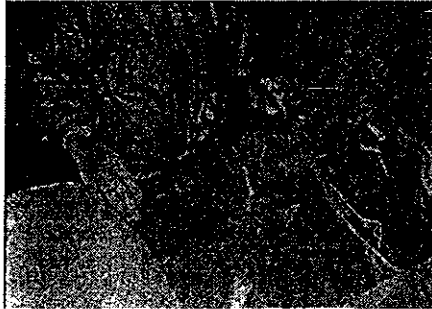
- 開示費 200, 000パーツ
- ロイヤリティー 売上の3%

5. 実用化される知的財産権の成果について

1. 民間との交渉 (Technology Licensing Office - TLO) は、開示費、ロイヤリティー、コンサルタント費、共同研究で、成果を上げている。
2. 試作品生産に投資する。
3. 知的財産の利用を奨励する、そして、ベンチャー資本が生まれて来るレベルまでの知的財産の利用を推進するための新事業や新技術会社 (STANG)、会社設立より共同出資する。
4. 組立会社に共同投資する。
5. 創造者と大学に成果の報酬を設定する。

共同出資した成果の例

- 前腹部クリーム色の手術着
- 防臭微香剤



5. 実用化される知的財産権の成果について

1. 民間との交渉(Technology Licensing Office – TLO)は、開示費、ロイヤリティー、コンサルタント費、共同研究で、成果を上げている。
2. 試作品生産に投資する。
3. 知的財産の利用を奨励する、そして、ベンチャー資本が生まれて来るレベルまでの知的財産の利用を推進するための新事業や新技術会社(STANG)、会社設立より共同出資する。
4. 組立会社に共同投資する。
5. 創造者と大学に成果の報酬を設定する。

共同出資会社の設立
新事業革新科学技術株式会社
Science Technology And New Business Innovation Group
(STANG)共同

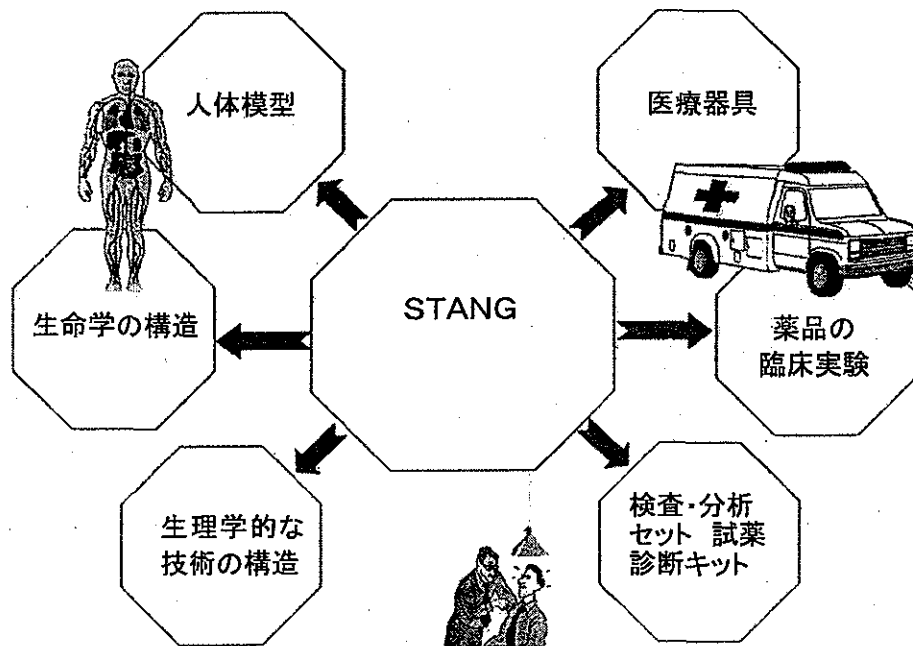
■ マヒドン大学	9%
■ 科学委員会団体	51%
■ タイ王国中小企業開発銀行(SMEs Bank)	20%
■ 国立新事業革新事務所(NIA)	20%

合 計 初期資本金 100百万バーツ

5. 実用化される知的財産権の成果について

1. 民間との交渉(Technology Licensing Office – TLO)は、開示費、ロイヤリティー、コンサルタント費、共同研究で、成果を上げている。
2. 試作品生産に投資する。
3. 知的財産の利用を奨励する、そして、ベンチャー資本が生まれて来るレベルまでの知的財産の利用を推進するための新事業や新技術会社(STANG)、会社設立より共同出資する。
4. 組立会社に共同投資する。
5. 創造者と大学に成果の報酬を設定する。

共同出資会社と組立会社の組織図

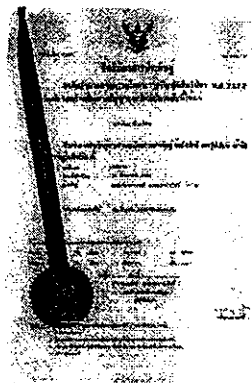


5. 実用化される知的財産権の成果について

1. 民間との交渉 (Technology Licensing Office – TLO) は、開示費、ロイヤリティー、コンサルタント費、共同研究で、成果を上げている。
2. 試作品生産に投資する。
3. 知的財産の利用を奨励する、そして、ベンチャー資本が生まれて来るレベルまでの知的財産の利用を推進するための新事業や新技術会社 (STANG)、会社設立より共同出資する。
4. 組立会社に共同投資する。
5. 創造者と大学に成果の報酬を設定する。

知的財産権の実用化案件の報酬

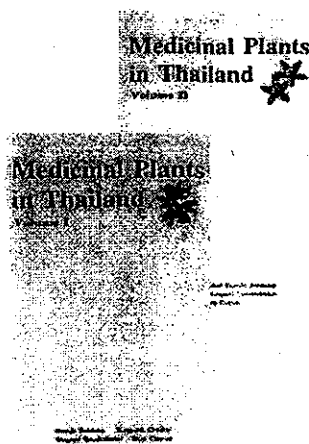
■ 創造者	50%
■ 大学	30%
■ 所属する母集団	10%
■ 学部	10%



該当する学部がない場合は、母集団へ

著作権の実用化案件の報酬

■ 著者	70%
■ 実案者	20%
■ 大学	4%
■ 所属する母集団	3%
■ 学部	3%



該当する学部がない場合は、母集団へ

栽培・養殖事業
マヒドン大学
(南部SKA奨励事業)

■ 実施室の奨励事業開始

予 算 1.5百万バーツ

■ 実験検討事業

予 算 3.5百万バーツ

実用化センターは、皆様に、研究成果をご提案します。

と共に、商業の基底となるような、又、研究を発展させるような実用化に向けての皆様からのご提案を歓迎しております。

マヒドン大学の皆様のお仕事は、最も高度に、最善の成果となりますよう努めます。

どうもありがとうございます。