IP and Technology Management for Universities

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Outline

- University and IP
- IP Policy
- IP and Technology Management
Industry Strategies

- R&D Budget Increase
- R&D Staff Increase
- Joint R&D with JP Univ.
- Joint R&D with Overseas Univ.
- Joint Venture
- Others

Source: Nikkei 2005

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Example: US in 2009

- $53.9 billion R&D expenditures
- 20,309 invention disclosures
- 5,328 total licenses and options executed, 4,374 of which were licenses
- 13,600 current valid licenses from Universities to Companies
- 658 new products introduced into the market
- 3,417 patents from university issued
- 596 new start-ups (435 of which have business in the licensing institution’s home state)
- 3,423 startup companies still operating as of the end of FY2009

Source: AUTM U.S. Licensing Activity Survey Summary: FY2009
   The Bayh-Dole Act allows the transfer of *exclusive* control over inventions generated from government funded researches to universities

Abolition of the Professor’s privilege
   Germany:  2001 Reform of Employee Law
   Austria:  2002
   Denmark:  2002 Act on Inventions at Public Research Institutions

University Law
   Japan:
   1995 Basic Law of Science and Technology
   1998 Law promoting tech. transfer from universities
   1999 Japanese version of Bayh Dole Act
   2000 Law facilitating univ.-industry collaboration
   2004 Change in legal status of public universities (semi-autonomous institutions)
Globalization

- Internet ➔ Easy access to information
- Global market
- More competition
- Need to improve efficiency
- Need to improve quality
- Fast technology cycle
- Technology interdependency ➔ Need to collaborate
- Intangible assets
- Knowledge based economy
In the past

- Education
- Generate new knowledge through research
- Transfer the knowledge generated to the public for the benefit of society

Today, additional roles of university include....

- Research funds management
- Drafting research contracts and agreements
- Evaluation of technology
- Protection of research results
- Due diligence
- Technology marketing
- Licensing negotiation
- Increased collaboration with industry
- Entrepreneurship development
- Incubation of spin-offs/start-ups
- IP training for researchers
- Administration of institutional IP policy
- Monitoring deals etc.

Source: Yumiko Hamano, Roles of University
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University and IP rights

Universities should **identify**, **protect**, **manage**, **utilize** and **profit** from IP rights in the fields of:

- Patents
- Copyrights
- Computer programs
- New biological materials
- Trade secrets
- Designs
- Trademarks
Stakeholders

- University and RI
- The managers of University and RI
- Professors and researchers
- Research assistants, post graduate students and visiting researchers
- Research collaborators and private sponsors
- TTO within the university
- Commercialization partners - Industry
- The national or state Government
- The public
IP and Technology Management

Technology Management

Legal aspects

Business
Technology Management

- Research strategy
- Research planning
- Research contracts
- Patent Information Search
- Technology evaluation (marketability/ Patentability)
- Invention disclosures
- Technology transfer process
IP and legal aspects

- IP information dissemination
- IP training
- IP awareness/capacity building
- IP guidelines/policies
- Research contracts
- Record keeping and management
- Patent application procedures
- Contracts and agreements
- Licensing agreement/negotiation
- Management of active patents/licenses
IP Management in Universities

Business

- Research funds management
- University-Industry collaboration
- Patent application decision
- Marketing
- Evaluation of commercialization potential
- Technology valuation
- Licensing negotiation
- Incubation (Start up/ Spin-off company)
- Research investment

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University-Industry Collaboration Infrastructure

Universities and R&D institutions
- IP Policy
- IP Committee
- TTO

Government
- Economic Development (SME Policies, market creation)
- National IP Infrastructure (laws and Regulations)
- Enforcement
- IP Strategy
- R&D Enhancement
- IP Education
- Research Funds

Industry
- Research Funds
- Research Collaborations
- Licensing
- Marketing
- Production and Commercialization

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IP Management in Universities

1. Infrastructure
   - Establishment of an TTO
   - IP Policies
   - R&D planning/strategy
   - Research funding

2. Capacity Building
   - IP training

3. Protection of IPR
   - Identification of IP
   - Invention disclosure
   - Patent application procedures
   - Patent Information search
   - Legal matters
   - Administration of legal issues

4. Exploitation of IPR
   - IP/ tech. Marketing
   - Licensing negotiation and monitoring deals
   - Commercialization
   - Incubation of start-up/ spin-off

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Institutional IP Policy

IP Policy:

Principles of actions adopted by an organization or an individual – often legal implication
Importance of IP Policy

IP Policy provides:
- Clear rules and guidelines for research operations
- The legal framework for commercialization
- Guidance for IP and technology management procedures
- Clear policy on ownership criteria and benefit sharing
- Consistency of approach (in a systematic manner) – e.g. invention disclosure, decision on patent filing, distribution of benefit etc.)
- Transparency in decision making process
- Objectivity in measurement
- Researchers with incentive
- Balance between conflicting interest of various stakeholders

and fosters:
- Transfer of technology generated in the university
- Innovation and creativity in the university
- (Local) economic growth

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Who the IP Policy Applied to?

- All university staff (i.e. the management professors, researchers, students and IP management units)
- Governments
- Partner Industries
- Partner universities
- Public
IP and Technology Mgt. Key Issues

- Ownership
- Benefit Sharing
- Collaboration with Industry
- Contracts and Agreements
- Government Rights
- Invention Disclosure Process
- Roles of Technology Transfer Office
- Commercialization Process
- Patent filing
- Costs (prototype, patent filing, attorney’s fee etc.)
- Conflict and interest
- Incentive

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Invention Disclosure Form

- Name of person completing and submitting this form:
  - Work phone number:
  - Fax number:
- TITLE OF THE INVENTION:
- CONCEPTION OF INVENTION
  - Date and place of conception
- TECHNOLOGY DESCRIPTION
- Prior Art
- INVENTOR(S)
  - INVENTOR:
    - Name:
    - Residence Address:
    - Citizenship:
    - Telephone Number:
    - Email address
- Signature
Ownership

Who owns IP generated by publicly funded research?

- Generally national law defines who owns IP (inventions) arising from work conducted for an employer.
- In some cases, national laws specifically address ownership of inventions arising from publicly sponsored research.
- Sometimes IP ownership covered in different laws.
Ownership

- Government
- University
  (e.g., Germany, Austria, Japan, China, South Korea, UK, France, US, Denmark)
- Creator/ Faculty
  (e.g., Sweden, Italy)
Benefit Sharing

How are the revenues from research commercialization shared among faculty, university, government funder and other stakeholders?

- The distribution proportions differ by institution
  - Inventor
  - Faculty
  - University
- On average,
  - Inventor: 25 - 85%
  - Faculty: 25 - 30%
  - University: 25 - 50%

(in many cases, the university provides part of its portion to the TTO (or the administrative unit) and the laboratories of the creator 1/3: 1/3: 1/3 – institution portion often used for funding research)

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How should universities and R&D institutions encourage and motivate scientists/researchers?

Training on IP knowledge
- Capacity building
- Involvement of scientists/researchers in the process of IP and technology management

Financial compensation
- Fixed percentage of royalties
- Lump sum
- Inventor’s award

Personal program
- Promotion scheme
- Framed certificate of inventors
- Dinner with dean/the senior management of university thanking inventor/research team
How are conflicts of interest and commitment handled?

- Mandate of universities vs. those of industries
- Social Concern
- Institutional Concern
- Individual concern
University general attitude is poor do not view industry as a ‘Customer’

Arrogance, do not like working with small firms

Complexity of deal & weird expectations

Too cumbersome

In some cases licensing fees for university technology are too high

Universities rarely license-in research from any source

University research is generally at a too early stage of development

Univ. rarely engage in research in our line of business

Univ. policies regarding delay of publication are too strict

University often refuses to transfer ownership to our company

We are concerned about obtaining faculty cooperation for further development of technology

Source: Jerry G. Thursby & Marie C. Thursby / Dato Mohamed Shariff
Addressing Conflicting Values and Common Interest

Source: Louis P. Berneman, 1999
Major Challenges to commercialize R&D results

- Lack of IP management infrastructure
- Lack of strategic research planning
- Gap between basic research and market needs
- Lack of funds for IP protection
- Lack of IP knowledge
- Lack of expertise to manage TT and commercialization process
- Lack of entrepreneurial culture among researchers
- Lack of business skills
- Lack of marketing skills
- Lack of support (Government, Senior managers) and incentive
- Culture gap (University vs. Industry)
Necessary Ingredients for effective Technology Transfer

- Adequate IP protection and enforcement legal framework
- Funds
- Marketable Technologies
- HR with Right Expertise
- Infrastructure
- Networking/Collaboration

Source: Yumiko Hamano
After the birth of a child there's always the temptation to say 'Yes, it's cute, but what can it do?' Until recently the answer was simply 'lie there and cry', but now babies can be put on the payroll, so to speak, almost as soon as they're born.

Just dress your young one in Baby Mops and set him or her down on any hard wood or tile floor that needs cleaning. You may at first need to get things started by calling to the infant from across the room, but pretty soon they'll be doing it all by themselves.

There's no child exploitation involved. The kid is doing what he does best anyway: crawling. But with Baby Mops he's also learning responsibility and a healthy work ethic.
Useful links

http://www.wipo.int/patentscope/en/

http://ep.espacenet.com/

http://www.piug.org/vendors.php

http://www.wipo.int/classifications/ipc
Thank you for your attention.