Hitotsubashi University
Institute of Innovation Research

RIETI

Japan's Patent System and Business Innovation: Reassesing Pro-patent Policies

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Outline of presentation

Goal:

- To provide an overview of changes in patent system (pro-patent policies) and its impact on firm's innovation activities

Contents:

- Characterizing recent developments of Japan's patent system: international harmonization and pro-patent policies
- Macro view on firm's patent activities and R&D
- R&D, patent and licensing: results from firm level survey
- Interviews to IP managers in IT and pharmaceutical firms
- Summary and issues of discussion

Japanese patent system after 1970's

	New technology patent	Wider range patent	Stronger patent	User friendly patent
1970s	microbe (1979)	chemical compound (1976)		Application laying open system (1971) Request for examination system
1980s	animals (1988)	multiclaim (1988) extension of patent period for drugs (1988)		
1990s	Definition of software patent (1993) e-money (1995) software media (1997) (gene related patent) (business model	doctrine of equivalance (Hall Spline case)	Post grant opposition system (1996) Raising penalty to patent infringement (1999) Review of panal provisions (1999)	Erectronic application (1990) Application in English (1995) Application fee reduction (998)* Application fee reduction (999)*
2000年代	software (2000)		Expansion of remedies against infringements (2000)	Shortening time limit for request for examination (7 yrs→3 yrs, 2001)

*:Until 1998, application and registration fees had been raised occasionally, which is not described in this table

R&D, patent application and GDP

Figure 2-1: R&D, Patent and GDP (1980=1)

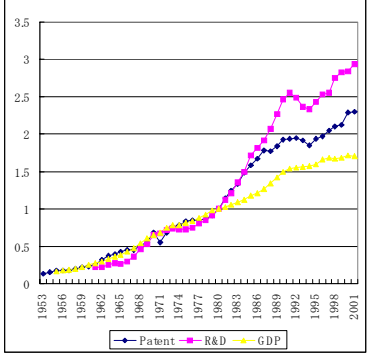
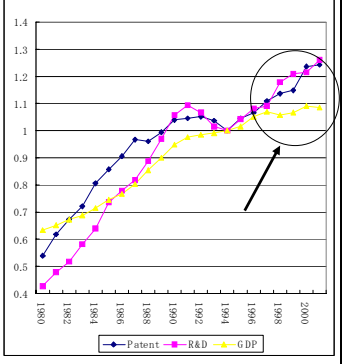


Figure 2-2: R&D, Patent and GDP (1994=1)



Breakdown of patent and R&D in late 90's

Figure 2-3: Increase in patent application from 1995 to 2000

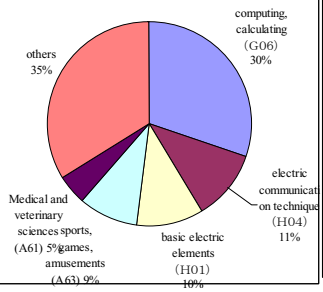
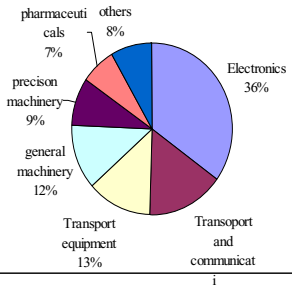


Figure 2-4: Incremental ammount of R&D from 1995-2000



Survey on Patent policy and innovation

Survey:

- Conducted by Institute of Intellectual Property (IIP)
- Sample: 373 firms (large firms + high-tech SMEs) out of 1398 population
- Timing: End of 2001

Questionnaire:

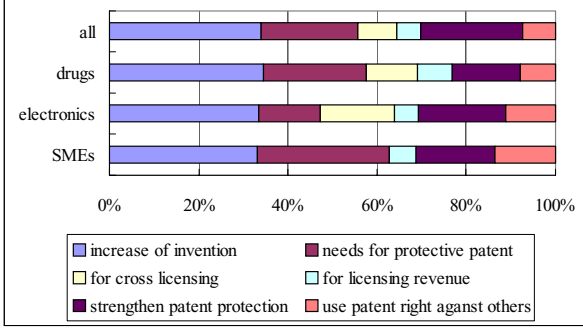
- Assessment of pro-patent policies in terms of firm's innovation activities (R&D, patenting)
- Patent application trend (3 years) and factors behind it
- Licensing activities, patent infringement trend etc.

Assessment of pro-patent policies in terms of innovation

		all	drugs	electronics
Wide patent (new technology)	Increase R&D	8.0%	34.6%	22.0%
	Increase patent application	24.1%	46.2%	26.1%
	Harmful effects	6.2%	23.1%	4.3%
Wide patent (not technology specific)	Increase R&D	5.9%	19.2%	0.0%
	Increase patent application	11.3%	23.1%	8.7%
	Harmful effects	11.5%	23.1%	6.5%
Strong patent	Increase R&D incentives	27.3%	30.8%	30.4%
	Increase patent application	14.7%	19.2%	17.4%
	More use of patent	17.4%	11.5%	23.9%
	Harmful effects	7.5%	11.5%	4.3%

Reason for patent application increase

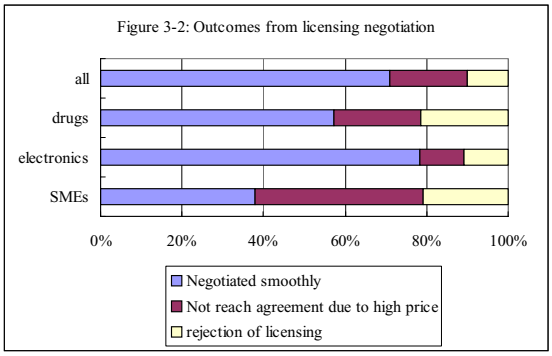
Figure 3-1: Reason for patent allication increase



Pro-patent policy and licensing activities

		all	drugs	electronics	SMEs
Incease licensing fees	Licensing out	14.7%	15.4%	19.6%	2.6%
	Licensing in	15.0%	26.9%	28.3%	1.3%
Increase of licensing out		51.5%	46.2%	69.6%	39.5%
Reason	Increase licensing needs	18.7%	30.0%	6.1%	37.0%
(increase firm only)	Seek for licensing revenue	57.8%	45.0%	61.2%	54.3%
	Necessity of cross licensing	23.6%	25.0%	32.7%	8.7%
Increase of licensing in		24.7%	42.3%	13.0%	11.8%
Reason	Increase licensing needs	13.3%	31.0%	6.0%	11.8%
(increase firm only)	R&D outsourcing	15.7%	17.2%	12.1%	26.3%
	Entry into new business	50.5%	44.8%	42.4%	47.1%
	Necessity of cross licensing	20.4%	6.9%	39.5%	14.7%

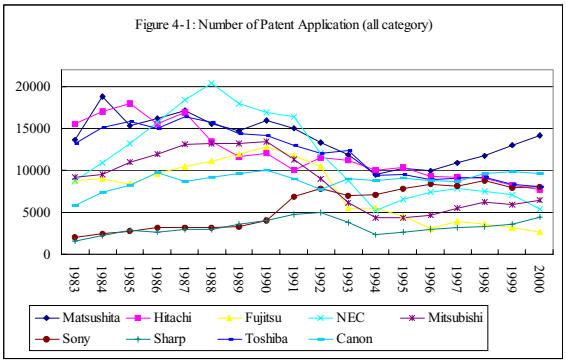
Outcomes from licensing negotiation



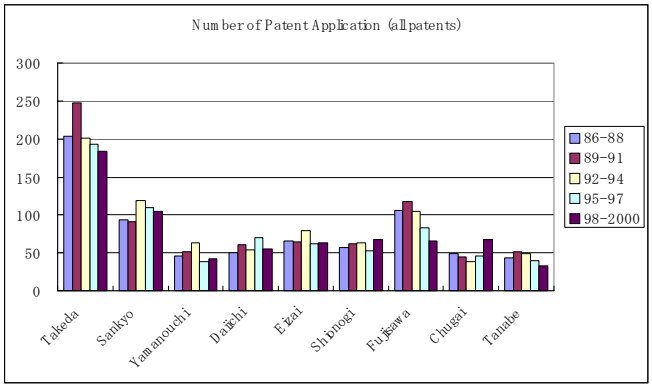
Information from IP manager interviews

	IT	Pharmaceutical
Important policy	Software and BM (but impact is not so big)	Chemical compound Extension of patent period
On Patenting	Re-focusing technology field	Increased bio-tech patent
On R&D	Not so strong link	Link, becoming strong However, cost of patent/RD small
On Licensing	Increased (cross) licensing	Increased licensing
Int'l dimension	Increased int'l application (US)	Almost All patent go to PCT first
Other comments	R&D breakdown does not happen Impact of fabless: not so strong	R&D breakdown does not happen Some concern about anti-commons

Number of patent application (IT firms)



Number of patent application (pharma)



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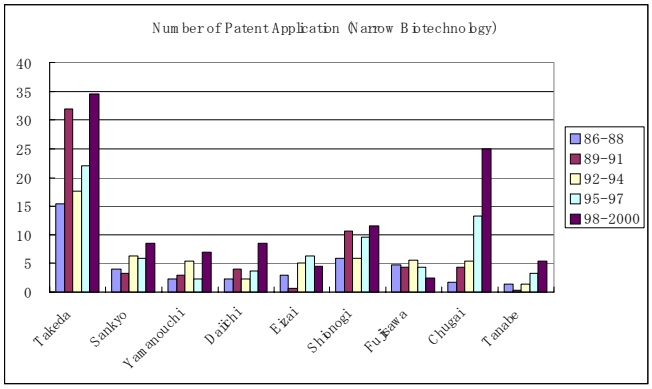
Number of biotech patent application



Summary of observations

- Increase in patent applications in the late 90's. Major contribution comes from IT patents (G06, H04, H01-about half of total number of increaess)
- Increase in innovative outputs of IT and pharmaceutical firms (# of per patent claims ↑, focusing on important technology area for patenting)
- Weak linkage with patent system < Technology opportunity in IT and pharmaceuticals
  - Patent protection comes after new technology (from interviews)
  - Increase in licensing activities (needs to tap on external sources)
- Importance of IP strategy inside firm ↑
  - Growing external technology sources: technology spillover and technology market maker as roles of IPR
- Globalization of business and increase in international patenting

Issues to be discussed

- Role of IPR in firm's innovation in era of technology revolution (IT and biotechnology): firm's innovation incentives and devices for technology diffusion (Historically, JP system stresses the latter)
- International harmonization of patent protection of new technology in era of globalization: Reason d'etre of national patent office
- Innovation performance and economic performance: missing link in Japan?