



Intellectual Property, Knowledge Policy and Globalization

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Outline

- I. Intellectual Property has been globalized
- II. IP System has been characterized by radical change at the International Level
- III. The System is under Severe Stress
- IV. Some Reflections on the Challenges



I. The Globalization of Intellectual Property

- IP has been both a cause and an effect of globalization
 - Inherently international character of IP as an intangible asset
 - Ubiquitous
 - marks
 - fashions
 - cultural, sporting and entertainment icons and phenomena
- IP has become a matter of universal, as opposed to local, interest
 - While technologies of communications have been converging, communication about IP has not



II. Radical Change in the World of Intellectual Property

- Economic
 - Centrality of IP in the knowledge economy
 - Demand explosion
- Political
 - Networked society and enlarged participation in policy discussion
 - A matter of trade, as well as internal economic, policy
 - anti-intellectual property movement
- Legal
 - From unimodular to interactive
- Geographical
 - Explosive growth of demand from North East Asia
- Technological
 - The problem of quantity and its implications for quality
 - The convergence of science and technology



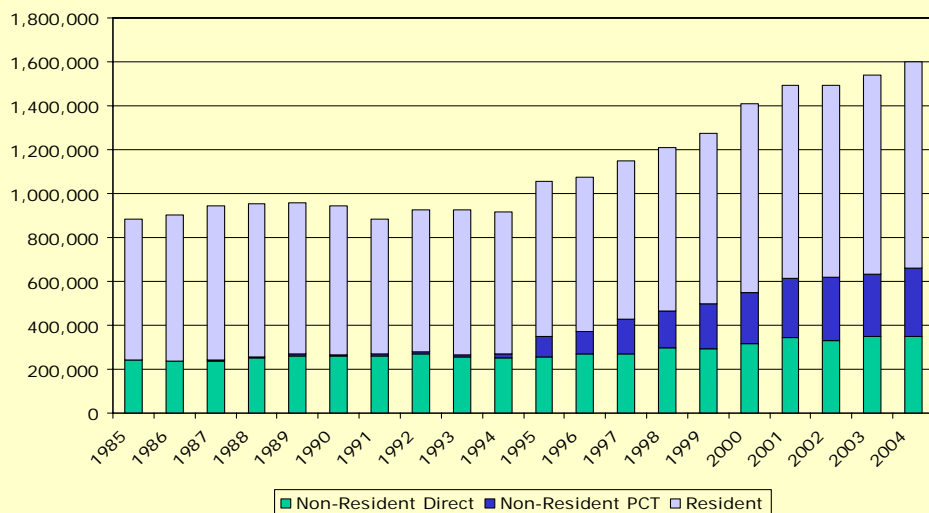
Economic: The Expansion of Demand

- Existing rights
 - Massive increase in worldwide demand for patents and trademarks since the 1990s, driven by
 - heightened awareness of value of IP
 - desire for protection over broader geographical range corresponding to opening of global markets
 - Patents:
 - number of new inventions per year: 834,000
 - 1.6 million patent applications worldwide
 - Trademarks: over 470,000 marks on International Register
- New rights
 - Information technology
 - layout designs of integrated circuits (TRIPs)
 - database protection (EU)
 - expansion of rental right, communication right (TRIPs, WCT, WPPT)
 - Broadcasters Rights (under discussion)
 - Traditional knowledge and traditional cultural expressions (under discussion)
 - Expanded coverage of geographical indications (under discussion)
- 1989-2000
 - 10 new multilateral IP treaties
 - In EU, seven Copyright Directives, one Biotech Directive and failed Computer Implemented Inventions Directive

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Number of Patent Applications Worldwide by Residents and Non-Residents 1985 - 2004



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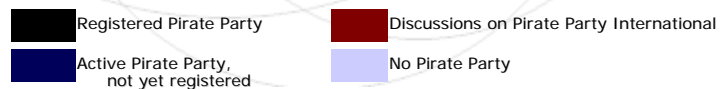
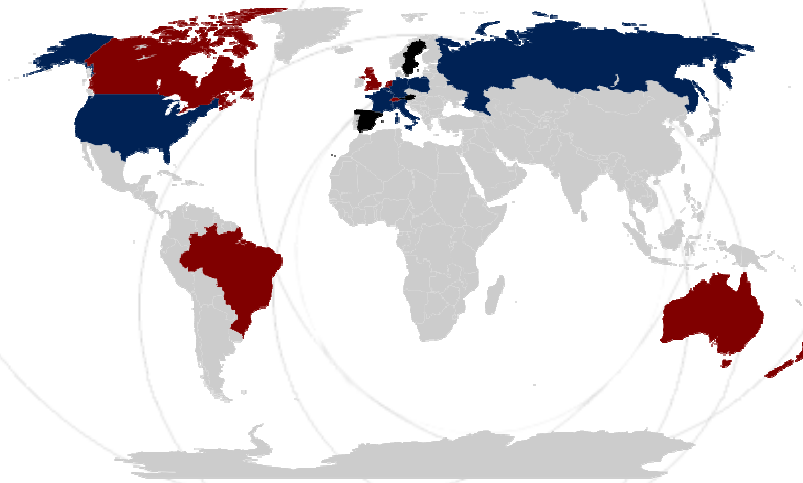
Political Transformations

1. The empowerment of broader range of participant groups by the networked society
2. The emergence of horizontal global alliances
 - > activist NGOs and activist States
 - > experimentation in innovation models
 - open source, open publication, Creative Commons
 - > anti-intellectual property movement

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Pirate Parties



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Source: English Wikipedia

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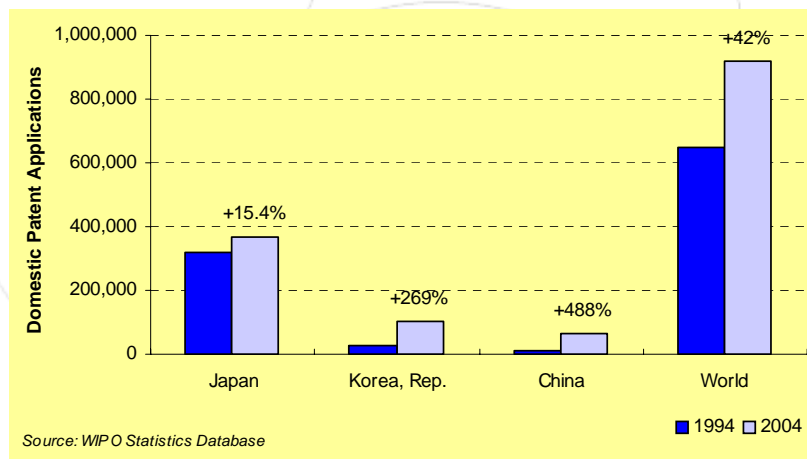


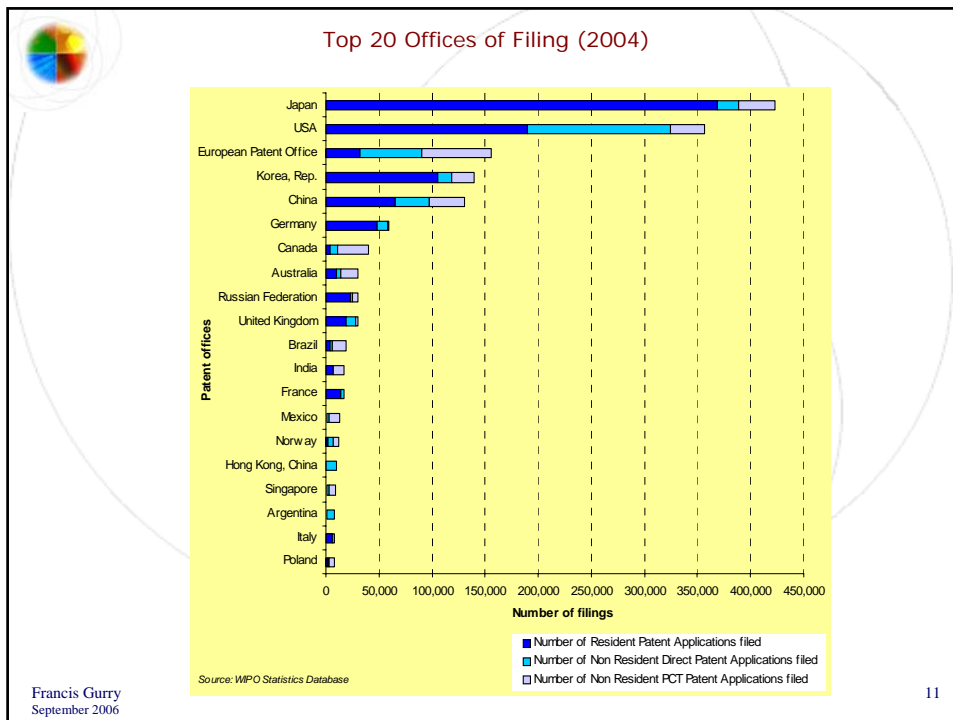
International Legal Framework: From Unimodular to Interactive

- Single Model Phase (1886-1992)
 - > exclusively IP incentives
 - > more complexity at the national level
 - competition policy, *ordre public* (morality), national security
- Recognition of Relationship to other Public Policies (1992-1998)
 - > TRIPs Agreement
 - > subject matter flexibilities
 - Art 27.2 (*ordre public*; protection of human, animal or plant life or health; avoidance of prejudice to the environment)
 - Art 27.3 (plants and animals)
 - > usually IP treaties dealing with the interface (*cf* CBD)
- Increasing Complexity and Interaction in the Relationship (1998 - present)
 - > Work Programs of increasing number of international organizations include IP components
 - WIPO, WTO
 - WHO, UNESCO, CBD, FAO, ITU
 - > IP considered from the perspective of other public policies
 - > attempts to use the patent system to achieve objectives other than patent policies
 - disclosure of genetic resources



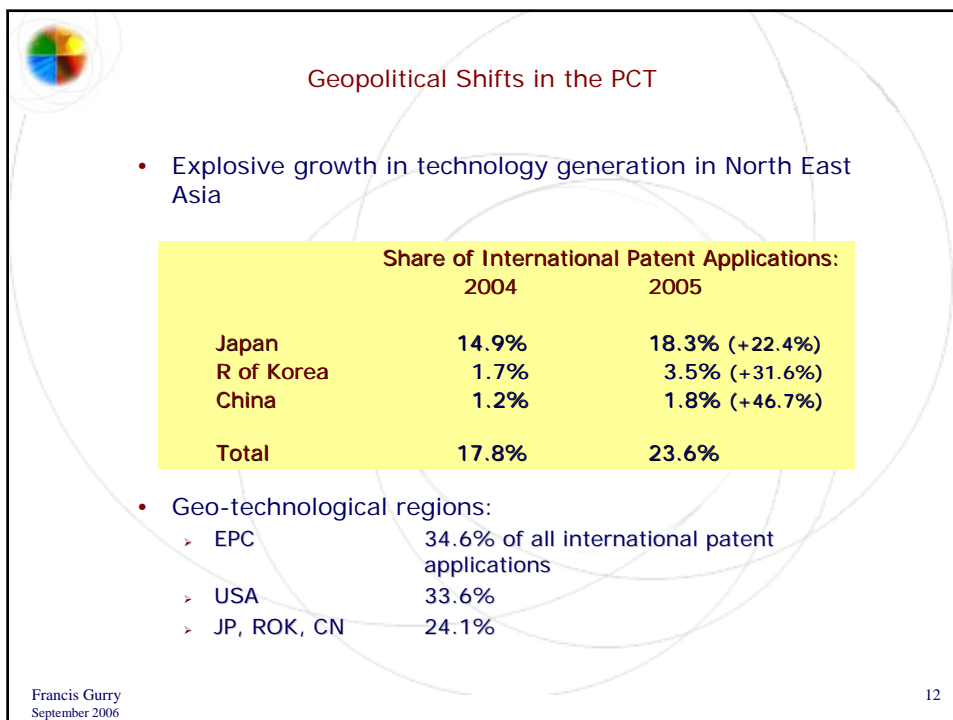
Geopolitical Shifts in Technology Generation Resident Patent Applications in North East Asia





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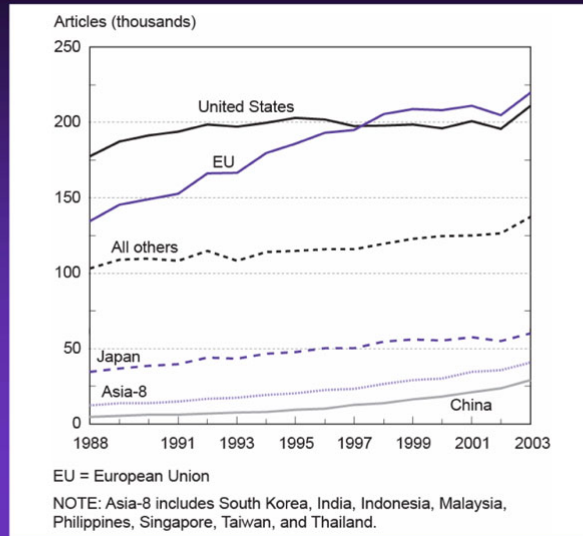
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Scientific and technical articles, by country/region: 1988–2003



SOURCE: National Science Board, *Science and Engineering Indicators 2006*



Technological Transformations

- The quantity of technological output is increasing significantly. Each year:
 - > 850,000 new patent documents (applications)
 - > 1.3 million STM peer-reviewed articles
- Technology is reaching further back into science
 - > Citations of S&E articles in US patents

1987	0.21 average citations per patent
2004	1.42 average citations per patent
 - > University patenting

1988	800 US patents to US universities
2004	3,200 US patents to US universities
 - > University licensing

1991	\$130 million gross royalties to US universities
2003	\$1,033 million gross royalties to US universities



III. A System in Stress

- Functional stress in system
 - Growing backlogs and processing time
 - Quality is in issue, both in practice and in rhetoric
 - Changing business models and litigation
 - Counterfeiting and piracy explosion
- Political stress
 - Attention from much broader public
 - A political issue
 - Intellectual property is a convenient battleground
- Competing agendas
 - Functional –v- political
 - Parallel or convergent?



IV. Selected Challenges

1. Broadening the policy focus
2. Geography
3. Development
4. Functionality and the management of demand
5. Multilateralism



Broadening the Policy Focus

- The basis of IP: the underlying interest
 - The encouragement of innovation and creativity
- Shifting the focus to the underlying interest
 - Permits a more inclusive discussion of models of innovation
- Knowledge policy
 - Policy on the
 - Transmission (education and diffusion)
 - Generation (R&D)
 - Use (commercial and non-commercial) of knowledge



Geopolitical Shifts in Technology Generation Some Consequences

1. Accessibility of Technology
2. Some Aids
 - PCT Abstracts
 - PatentScope
 - Full back-file of PCT applications (1.2 million) available in searchable form online
 - Search system, terminology database and automatic translation tools
3. Comprehensive nature of the PCT international search
 - Proposal for Supplementary Search Facility within the PCT



Development

- Contextualizing the role of IP
 - Knowledge policy and resources and economic development
- “Developing countries”, more a political and less an economic concept
 - the diversity of circumstances in developing countries
- The democratization of technology
 - Patent system has generated the most comprehensive and systematic historical record of humanity’s technology
 - In paper and not accessible across the world 15 years ago
 - Now available online with superior search facilities



Differences in the Knowledge Economy

- Five corporations spent more on R&D in 2004 than the GDP of 53 countries in 2002
 - Microsoft \$7.8 billion R&D
 - Pfizer \$7.7 billion R&D
 - Ford \$7.4 billion R&D
 - DaimlerChrysler \$7 billion R&D
 - Toyota \$7 billion R&D
- Top 1000 public corporate spenders on R&D spent more in 2004 (\$384 billion) than GDP of Sub-Saharan Africa in 2002
- Resources available for the generation and transmission of knowledge
 - a problem preceding intellectual property
 - IP is part, but only part, of knowledge policy

Sources: Booz Allen Hamilton Global Innovation 1000
World Bank, *World Development Indicators 2004*



Differences in Conditions among Developing Countries

	Population	GNP \$ Billions	Rank	Per Capita Income (PPP)	Rank
Brazil	174	494.5	12	2,830	91
India	1,049	494.8	11	470	161
Kenya	31	11.2	85	360	174
Laos	6	1.7	153	310	176
Mozambique	18	3.6	128	200	195
PNG	5	2.8	140	530	158

Source: World Bank, 2004 World Development Indicators

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Patented July 26, 1932 1,868,548

UNITED STATES PATENT OFFICE

JOSEPH C. TURNER, OF OKLAHOMA CITY, OKLAHOMA
ROLLER SKATE

Application filed March 6, 1931, Serial No. 820,685.

My invention relates to improvements in roller skates having ice skate action.

The principal objects of my invention are to provide a device of this character which is new, novel, practical, useful and of evident utility; which is strong, positive in action, free sturdy parts, is easily operated, cannot easily get out of order and is efficient for the purpose for which it is intended; to provide a roller skate having a U-shaped housing for a plurality of rollers arranged in tandem or single file, said housing being rocker or bow-shaped so that only two of said rollers may be in contact with the floor at one time; to provide a device in which the weight of the skater is supported on a single, narrow, curved surface formed of rollers in tandem analogous to the runner or blade of the rocker type of ice skate; a device in which only a short section of said curved surface is in contact with the floor at any one instant, thus permitting the skater to change his direction and make sharp turns by merely leaning the front roller which is of special use when skating backward as well as for bracing the skater to a stop when going forward; to provide a tip or point at the extreme front end of the skate to serve the double purpose of causing frictional action by contact with the floor when the skate is held in a certain position and also provide a means for turning or spinning on the skate without moving forward or backward; to provide a roller skate analogous to an ice skate which will permit the skater to take sharp corners at landing angles, which will glide smoothly and easily over the floor, which will permit racing speed, stunting and fancy skating not now possible with the present four wheel skate.

With these and other objects in view as will more fully appear, my invention consists in the construction, novel features, and combination of parts hereinafter more fully described, pointed out in the claims hereto appended, and illustrated in the accompanying one-sheet drawings, of which,

Figure 1 is a side elevational view showing a fragment of the shoe; Fig. 2 is a bottom

July 26, 1932. J. C. TURNER
ROLLER SKATE
Filed March 6, 1931 1,868,548

view of the rollers and housing; Fig. 3 is a rear elevational view showing a fragment of the heel; Fig. 4 is a perspective view looking lower and brake roller housing; Fig. 5 is a section on the line 5-5 of Fig. 1 and Fig. 6 is a section on the line 6-6 of Fig. 1.

Like characters of reference designate like parts in all of the figures.

It is understood that various changes in the form, proportion, size, shape, weight and other details of construction, within the scope of my invention may be resorted to without departing from the spirit or broad principle of my invention and without sacrificing any of the advantages thereof, and it is further understood that the drawing is to be interpreted as being illustrative and not restrictive.

In my improved roller skate, it will be evident that the weight of the skater is supported by a short section of the rocker or curved surface in contact with the floor at any one instant, and that this arrangement allows the skater to change his direction or make sharp turns, by merely leaning the skate. This is impossible with the present four wheel type of roller skate, as there is no so-called fifth wheel means of guiding the skate, so that any appreciable change in direction can be made only by pushing the skate up from the floor and setting it down in the new direction.

My front roller, or wheel, is fitted with an adjustable brake. The most important use of this feature is in skating backward. When going in this direction, especially when skating on one foot, the common tendency is for the skate to get ahead of the point of balance of the body. The common method of overcoming this tendency when skating on ice skates is to raise up on the point or toe of the skate so that the teeth or the notch, with which most ice skates are provided, will engage in the ice and retard the motion of the roller. This same effect can be had on my improved roller skate by raising up on the toe of the skate until the wheel or roller which is fitted with the brake means in contact with the floor.

The tip, point or pivot which is provided at

Joseph C. Turner *INVENTOR*

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The Management of Demand

- The present model is unsustainable
 - unnecessary duplication of work by patent offices
 - 5,800 examiners in USPTO, 4,000 examiners in EPO
- Internationalization?
 - How to intensify international cooperation in the mechanics of the system while, at the same time, leaving public policy flexibilities in sensitive areas

Legislative Measures

- Substantive patent law harmonization
- Further development of regional systems
- Reinforcing the credibility of the PCT international search

Practical Measures

- Digital Access Service for Priority Documents
- Central Publication of Search and Examination Reports



Whither Multilateralism?

- The shift from à la carte to menu du jour
 - Paris (and Berne) –v- TRIPs
- Article 19, Paris Convention (*cf.* Article 24, Berne Convention)
 - Framework Convention
 - Special agreements, eg.

▫ Madrid System	1891	78 parties
▫ PCT	1970	133 parties
▫ IPC (Strasbourg Agreement)	1971	56 parties
▫ Budapest Treaty	1977	65 parties
▫ PLT	2000	14 parties
- TRIPs: the changed scenery
 - bilateral FTAs
- A multi-speed or multi-track system?