



Deeltoets Innovatietheorie 2

GEO4-2230

NW&I masters

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Vraag 1: Nieuwe economie

Chris Freeman bespreekt in zijn artikel "A hard landing for the 'New Economy'? Information technology and the United States national system of innovation" de mogelijkheden en eigenschappen van een eventuele vijfde Kondratiev golf. Hij wil hierin de opwindende over de 'nieuwe economie' in een historisch perspectief zetten.

- Welke overeenkomsten tussen de jaren '90 en de jaren '20 noteert Freeman? Bespreek er drie.
- Freeman bespreekt ook een drietal kenmerken van het innovatiesysteem van de VS waarin het zich onderscheidt van Europese of Japanse omstandigheden. Welke kenmerken zijn dat; licht je antwoord toe.
- Wat zijn de beleidsimplicaties voor de VS van de analyse van Freeman van de 'nieuwe economie'? Waarin verschillen die van de Europese uitdagingen die Luc Soete aan de orde stelt in zijn hoofdstuk over 'The New Economy: A European Perspective'?

Vraag 2: Globalisering en patenten

Bijgaand artikel uit *The Economist* stelt dat het huidige patentsysteem niet meer werkt.

- Waaruit blijkt volgens het artikel het disfunctioneren van het patentsysteem?
- Archibugi & Iammarino onderscheiden in het hoofdstuk over "Globalization of Technology" drie vormen van globalisering. Welke zijn dat en welke zie je terug in de analyse van *The Economist*?
- Hoe zou je de ontwikkelingen in het patentsysteem moeten analyseren volgens het theoretische perspectief dat je voor opdracht 3 hebt onderzocht? (max 1 A4)

Vraag 3: Kennisproductie

De manier waarop kennis geproduceerd wordt is de laatste twintig jaar zodanig veranderd dat in dit verband ook wel wordt gesproken over zogenaamde Mode 1 en Mode 2 kennisproductie.

- Geef vijf verschillen die doorgaans tussen Mode 1 en Mode 2 worden aangebracht en geef steeds een voorbeeld (uit bijvoorbeeld de nanotechnologie).
- De laatste twintig jaar zijn het aantal fusies en allianties sterk toegenomen. Wat betekent deze trend volgens Mytelka voor de mogelijkheden van leren en innoveren? Bespreek drie punten.
- Göransson en Söderberg stellen in hun artikel over de opkomst van de informatiesamenleving over de lange golftheorie:

"A major contribution of the paradigm theory to the discussion on Kondratiev waves is that it offers an alternative explanation of the relationship between technology and economic downturns. In other models, the relationship is relatively straightforward; a large number of innovations generate (or is generated by) high economic activity, while economic downswings are the result

The cost of ideas

The Economist, Nov 11th 2004

It is becoming ever more apparent that the patent system isn't working

INTELLECTUAL property is the cornerstone of the modern knowledge economy. But one of the main forms of intellectual property, the patent—a temporary monopoly designed to provide an incentive to innovate—is increasingly being found wanting, even as the number of applications soars at patent offices around the world. America's patent system has "become sand rather than lubricant¹ in the wheels of American progress", argue Adam Jaffe and Josh Lerner in a new book, "Innovation and its Discontents: How our broken patent system is endangering innovation and progress and what to do about it" (published by Princeton University Press). The world's patent system remains splintered along national lines, yet the system's defects are felt everywhere.

"Patent offices are under incredible pressure," says Dominique Guellec, the chief economist at the European Patent Office in Munich. Applications at many patent offices have doubled in the past ten years, and the average length of each submission has increased by 50%. The average quantity of work required to examine an application is three times greater than it was a decade ago. "Of course that can't be neutral in terms of quality," says Mr Guellec.

In recent years, the scope of patents has broadened to encompass new technologies, as well as software, and in some instances business methods. Meanwhile, the legal power of patents, once awarded, has increased, and they are more zealously² sought. This, combined with an alleged decline in the quality of patents—that is, how accurate their claims are and whether they are truly novel or non-obvious—is deeply troubling, especially as, once awarded, a patent is hard to revoke³.

Patently absurd

In America, several controversial business-method patent awards, notably Amazon's one-click payment process, have fuelled the perception that the Patent and Trademark Office (PTO) is under strain. A study by M-CAM, an intellectual-property consultancy, found that over 30% of patents make duplicate claims, raising questions about their validity. America's PTO dismisses the criticism as anecdotal. "We're seeing lots of new industries being born, that is why there are a lot more patent applications," says Mary Critharis of the PTO.

The number of patent applications to the PTO is growing at around 6% a year. The wait for a decision is on average 27 months—and much longer for complex applications in advanced sciences. Last year, the PTO received around 350,000 applications and currently has a backlog⁴ of over half a million to review. It is a global concern: foreigners account for around half of all patents granted.

Similar growth is occurring elsewhere, including in countries that previously showed little interest in intellectual property. Applications to China's patent office increased fivefold from 1991 to 2001. As countries such as China, South Korea and India spend more on research and development, they are filing more patents.

The mission creep⁵ of America's patent system into more contentious areas is also spreading elsewhere. Later this month, the European Council of Ministers will discuss draft legislation on harmonising policy on computer-implemented innovations. Many small software companies in Europe, as well as "open-source" software developers that make non-proprietary software, oppose the initiative. They fear that it is a first step towards adopting controversial software patents, already awarded in America.

look no further than the mighty software monopolist, Microsoft, whose chairman, Bill Gates, has called on employees to increase the number of patents that the company files.

The rising importance of patents has led both to an arms race and a game of bluff. Many firms in the information-technology and life-sciences industries say they have an incentive to obtain as many patents as possible as bargaining chips in litigation⁶. The patents are used to reach a cross-licensing agreement, usually with some cash thrown in, so that both firms can continue to do business. Those firms that lack patents are thus disadvantaged.

Countries increasingly complain to the World Trade Organisation and the United Nations World Intellectual Property Organisation (WIPO) that the patent system discriminates against them. Indeed, WIPO recently adopted a "development agenda" to consider different intellectual-property regimes appropriate to the circumstances of a particular country or region. This was hailed as a boon⁷ for reassessing patent protections on drugs and for open-source software. Poor countries have long complained that America is trying to export its tough intellectual-property protections.

The growing debate about America's patents is focused on the process of examining applications and the difficulty of challenging dubious patents. Patent examiners typically know less about an invention than the applicant. Moreover, their workload is far higher for rejecting than granting an application. This creates a perverse incentive for examiners to "dispose" of applications by granting rather than rejecting them, argue Messrs Jaffe and Lerner in their new book. To resolve this, they call for a pre-grant notice period when third parties can come forward with "prior art" that would invalidate⁸ the patent.

As for the second problem, legislation introduced into America's Congress last month seeks to make patent opposition

legislation would also curb⁹ the granting of many forms of business-method patents.

As these reforms are debated, the scale and central importance of the patent system are also coming under assault. "The innovation system is broken in that there is too much emphasis on intellectual-property rights," says Suzanne Scotchmer, the author of "Innovation and Incentives" (MIT Press), a book on the role of patents to be published soon. More than ever, she says, inventions that would otherwise go into the public domain because they are funded by taxpayers or charities become "cordoned off"¹⁰ by the patent system. If so, perhaps the patent system not only needs to be repaired, but shrunk?