Intellectual property in the year 2025

Michael A. Gollin, Gwen Hinze and Tzen Wong[1]

Our literature survey identified two future scenario plans relating explicitly to IP in the year 2025. These plans highlight geopolitical trends and ambitiously try to map the future role of IP within these larger, tectonic shifts. The first plan resulted from the European Patent Office (EPO)'s scenario planning process completed in April 2007, the most extensive and innovative process of its kind in the IP sector. The other scenario plan consists of alternative stories on IP in the year 2025, by Halbert (2001). While not the outcome of an institutional scenario planning process, the latter scenario plan nevertheless presents a useful comparison with the EPO scenario plan.

1. European Patent Office scenarios on the future of IP

The EPO scenario planning took three years and involved interviews with approximately 100 academics, patent office officials, activists and practitioners in the field. The EPO's goal was to listen to a cacophony of voices from all over the world in order to find ways to ensure that the IP system 'remains fit for its purpose in support of innovation, competitiveness and economic growth for the benefit of the citizens of Europe' (Introductory letter from EPO President Alain Pompidou). The EPO paid particular attention to transformative innovation in biotechnology, nanotechnology, robotics and the patent system. However, they also pursued interconnections between multiple areas of IP, including the intersection between IP and ethics and the proper balance between the rights of developed and developing countries.

A 124-page report was completed and presented in April 2007 by the EPO. The report is entitled *Scenarios for the Future: How Might IP Regimes Evolve by 2025? What Global Legitimacy Might Such Regimes Have?* ('EPO Report').[2] Based on the extensive interviews it conducted, the EPO decided to identify several plausible holistic long-range IP scenarios. These scenarios are complex stories about the potential consequences of the decisions countries and organizations are being asked to make today.[3] A simplistic scenario – a world without any IP laws at all – was not analysed in detail because it was seen as not plausible in view of the history of IP law and practice as it has evolved over the past several centuries. Some of the current pressures shaping the future of IP systems, as identified in the report, include new technologies, territorial expansion, increased desire to protect even minor innovations with IP rights, and fears about the risks of new technologies.

The EPO identified five particularly influential driving forces that may shape the future of IP. First, power relationships are in flux – due in part to globalization and cross-cutting alliances formed between and among multinational corporations, global networks of civil society, special interest organizations and international bodies and trade blocs – such that it is not clear who will have authority over the IP system in the future. Second, a global jungle of competition emerges among local communities and countries, companies and industry groups and market sectors and workforces, making it hard to predict which ones will survive and which will not. Third, a faster rate of change in technology and economics contrasts with slower changes in human psychology, culture and the environment. Fourth, interdependence creates

massive systemic risks and poses a threat of regional, ethnic and cultural conflicts. Fifth, a paradox exists between the increasing use of IP rights to restrict innovation and the increased availability of knowledge around the world. The EPO refers to this fragmented but interconnected world with dramatic demographic shifts as a 'Kaleidoscope Society', one in which no trends dominate and accurate predictions are impossible. These five influential driving forces are said to affect both the legal systems and the practices organizations use to operate within them.

Based on its view of the present situation and the five driving forces, the EPO imagined four separate scenarios that could result from these driving forces. The assumptions in each scenario overlap. However, projecting the analysis in each case over a twenty-year period results in very different futures. The following is a summary of key points drawn from the EPO scenarios:[4]

(1) **Market Rules**: Here, business has its way. This is the most familiar scenario.[5] Projecting forward, new forms of technology are patentable, and more people seek patent protection. Corporations use patent portfolios to dominate particular technologies. Patents are traded as financial assets. Given the sheer volume of patent applications, a global patent treaty is finally implemented. Market forces dominate, with anti-competition laws as the principle tool for curbing abuse of the system and correcting problems such as boom-bust economic cycles. Successful business lobbying would signal a trend in this direction, where success would be defined by speed and efficiency.

(2) **Whose Game**: In this scenario, geopolitics dominates the IP agenda. Players in wealthy countries fail to maintain technical superiority with strong IP rights, and some developing countries catch up, while others migrate to a communal use paradigm. Differences among IP systems are increasingly used as weapons in trade wars between nations and trade blocs. Global enforcement becomes more difficult in an increasingly fragmented world. A trend in this direction would be signalled by assertiveness by new entrants (such as China, Brazil and India), and success would be defined in terms of a mindset of 'my society wins'.

The EPO Report discusses genetic resources and traditional knowledge (TK) in this scenario, observing that developing countries are asserting new forms of IP protection for these innovation assets (ibid., p. 55). Under the scenario, the expansion of IP rights under the TRIPS Agreement and more protective TRIPS-plus bilateral agreements has not satisfied the demand for technology transfer to developing countries for medicine and seeds, leading to tensions about compulsory licensing of drugs and other controversial initiatives for 'catch-up' development (ibid., pp. 59–63). Drugs are meanwhile freely available under this scenario. Projecting forward in this scenario, weak economies in the developed countries and low investment in research lead many scientists to move to intermediate countries like China and India. This scientific emigration dramatically increases the levels of innovation in

intermediate countries. This shift in innovation eventually leads to a bipolar world: a bloc of North America and Europe and an Asian-South American bloc. Africa is not highlighted in this scenario.

(3) **Trees of Knowledge**: Social groups are the dominant force in this scenario. Heightened criticism and distrust lead to an erosion of the IP system. In an increasingly kaleidoscopic society, fleeting alliances form around specific issues and crises, such as health, knowledge, food and entertainment. Popular movements and the media drive towards dominance an A2K (access to knowledge) approach, with reward for innovation being secondary. A rise in political impacts on the IP system would signal a move in this direction, where success is measured by broad social acceptance. The tension between private property and public good is emphasized in this scenario. The open access movement is examined in more detail than in the first two scenarios, as an example of conflicting and overlapping licensing practices, technological innovation and copyright and patent law restrictions. Tensions among artists, studios and media consumers polarize to a point where the debate becomes dominated by civil society interest groups (such as anti-IP pirates and copy-left advocates of freedom) who do not support IP for media. This change pushes the entertainment industry to explore new models. Similar tensions exist among scientific researchers who are not only pushing for open access to scientific information (like genetic sequence data) but also operating in collaboration with industry (e.g. under the US Bayh-Dole Act) and therefore pursuing patent protection. Technology causes tension because of its environmental, economic, philosophical and religious implications, and IP becomes a topic in resulting debates, for example, over medicine and whether strong patent protection promotes innovation or, instead, simply creates inappropriate incentives for incremental inventions.

Projecting forward to 2025 in this scenario, a flood of trivial patents leads to patents becoming available only for mechanical and chemical inventions, not for genetics and software. An open access political movement results in a weaker copyright regime for books and digital media. However, this weaker and highly digitized copyright regime is potentially advantageous because it supports widespread dissemination and sharing of information. Politicized patent offices evolve to serve as knowledge agencies implementing various incentive programmes. A global pandemic results in a ‘patents kill’ movement, and leads to demands for limitations on patentability and the expansion of compulsory licensing. Prizes, grants and advance purchase commitments are used in an attempt to fill in gaps in private research. Likewise, a global blight in maize and soybeans leads to a public model for agricultural research, in contrast to a concentration of the global seed market among very few multinational corporations (a situation which could have resulted in reduced research). Secrecy and branding become the primary protectors of innovation, and some areas like biotechnology wither in importance. Politics comes to dominate research and innovation, rather than science and market forces.

(4) **Blue Skies**: In this scenario, technology is the main driver in a fragmented world. Incremental innovations are protected under a legal system that is essentially the same as the current one. However, with fast-moving technology, patents become less important. Meanwhile, special IP practices apply to integrative technologies in biotechnology, information technology and nanotechnology. Integrative technologies are crucial to overcoming challenges like disease and hunger. Novel licensing practices such as pooling and compulsory licensing prevent blockage and profiteering, and promote collaboration and diffusion of these critical technologies. Looking ahead to 2025, a soft IP system (with access in exchange for mandatory payments) is applied to most technologies, including environmental technology addressing climate change and technologies in the telecommunications sector. Patent offices use technology to become more efficient, but are burdened by the need to administer complex licensing systems. An international IP court resolves some disputes. Soft patents work to foster collaboration in the pharmaceutical and other similar industries. Open source approaches become integrated into the international IP system. The Report predicts growing tension between the new and classic technology sectors, with success being measured in terms of technology diffusion and resilience.

The EPO Report concludes that dramatic change in the future of IP is likely, and that the results will resemble some hybrid of the aforementioned scenarios. The EPO Report furthermore invites readers to form workshops to develop their own scenarios (ibid., p. 111).

2. Analysis of EPO scenarios

In summary, the EPO's set of four challenging, relevant and plausible scenarios describes four possible future worlds. Each of the possible scenarios was defined in accordance with a strong driving force – the business market ('Market Rules'), geopolitics ('Whose Game'), civil society ('Trees of Knowledge') and technology ('Blue Skies') – that could come to dominate the future of IP and its role in our world.

The EPO Report is an excellent and inspiring example of creative thinking by a regional intergovernmental agency and the first large-scale effort applying scenario planning to the IP field. The success of the end product demonstrates the value of scenario planning in IP policy. However, the EPO Report has gaps that limit its usefulness for developing countries and future non-profit interventions. First, it operates at a level of abstraction which renders it difficult to apply towards concrete paths and strategic solutions for most organizations whose work overlaps with IP. Future scenario planning on IP should focus instead on closely defined themes in order to yield practical results to which stakeholders can both relate and contribute. It might be more helpful in some cases to conduct scenario planning according to innovation sector instead of by societal driver/political influence groups. For example, scenario planning on the future of traditional knowledge (TK) protection would be more useful for informing policies and strategies in TK-related areas than a general scenario planning study is. The EPO Report gives uneven amounts of attention to different sectors. Open source issues, science and entertainment were

given much attention. In contrast, agriculture was only dealt with in a few places. Of the sectors of interest to developing countries and marginalized groups, only health was singled out for separate treatment. Areas such as TK and biodiversity were only treated nominally.

Second, because of its European focus, the EPO report only deals with emerging economies peripherally and all but ignores dynamics within the least developed countries. For example, while the 'Market Rules' scenario envisions active participation by China and Korea in future patenting, it is largely silent about the impact of Brazil and other developing countries. It is notable in the 'Whose Game' scenario that the continent of Africa is not highlighted in the new bipolar world envisaged. Therefore, there is a need for scenario planning that more prominently brings to the fore the voices and concerns of developing and least developed countries, especially those of marginalized stakeholders within national borders. Such a process could visualize future scenarios from a perspective not only of economic development but also of sustainable human development, and might be helpful in informing future initiatives, for example, as background for the WIPO Development Agenda.

Third, while the EPO Report recognizes the power of politically active NGOs to shape the IP regime, it does not sufficiently highlight the dynamics and capacity building required of these players and developing country stakeholders to act effectively in this respect. The crucial role of technical assistance and capacity building of stakeholders in IP-related decision-making and management is dealt with only tangentially in the EPO report. In reality, the ability of developing countries, non-profit organizations and marginalized stakeholders to participate in or modify the IP system depends heavily on ready access to information about the IP system and professional expertise by these parties. Marginalized stakeholders, who are in greatest need of technical assistance and capacity building to tap into the decision-making processes in an informed manner, are precisely those who currently lack access to such information and expertise. Such access, as facilitated by Public Interest Intellectual Property Advisors (PIIPA) and others, could help to promote a more balanced system than one in which inequalities in the bargaining positions of stakeholders are accentuated by differential levels of access to legal support.

Despite these shortcomings, the EPO report stands alone as a uniquely detailed and creative evaluation, based on extensive research and a wide range of viewpoints on the options facing society and their potentially fateful consequences. Future scenario planning projects relating to IP will benefit greatly from the pioneering effort reflected in the EPO report.

3. Other scenarios on IP in the year 2025

In an article predating the EPO scenarios, Halbert (2001) describes the following three possible scenarios for the future in relation to IP:

- The first scenario, 'Chinese and Indian Hegemony – the Rise of the East', describes the rise of Asia as a hegemonic force in IP and technology.
- The second scenario, 'When Corporations Rule the World – Globalization and Western Hegemony', envisions a future where multilateral corporations and their Western hosts retain power over IP.

- The third scenario, 'The Open Source Revolution and the Demise of Intellectual Property', elaborates on parallel systems of protection and sharing that do not rely on property ownership to protect creative work.

According to Halbert, the third scenario is a desirable one in that it describes collaborative projects and hybrid models which attempt to balance protection for innovators and creators with the public interest. In contrast to the two earlier scenarios, the third scenario envisions the decentralization of rights over new creations and an accentuation of the value of the public domain (ibid., p. 45). Under this scenario, parallel systems of protection for work conventionally understood as IP would evolve to acknowledge the importance of creative work and reward the creators, while avoiding IP ownership and the centralization of IP assets implied by the other two scenarios mentioned earlier. Open source software is discussed as an example of such parallel systems (ibid., pp. 45–47).[6] The author comments that:

> The idea that open source software is based on helps to provide an alternative way to think about creative work and collaboration. Open source software can serve as an excellent model for overcoming the problems inherent in traditional copyright law by creating a true public domain where information is free to use and everyone contributes what they have created…It has created an alternative framework to understand creative work in an era dominated by private ownership. (Ibid., p. 52)

Other examples of scenario thinking on IP are discussed in the following sections. The future of the public domain, for example, is a common theme in scenario plans and other literature relating to IP. This largely reflects growing concerns over the privatization of IP assets and a perceived 'second enclosure' of the commons, as discussed in various sections of this study. At the same time, the discourse on the public domain has its own conceptual challenges, and the perspectives of different stakeholders are explored in Section 3. The challenges and opportunities posed by new technologies are then discussed in Section 4.

Notes

[1] Invaluable text and comments have been received from Claire Comfort, Graham Dutfield, Hans Haugen Morten, Fred von Lohmann, Savita Mullapudi Narasimhan, Manuel Ruiz and Matt Spannagle towards sections of this articler.

[2] EPO 2007, *Scenarios for the Future: How Might IP Regimes Evolve by 2025? What Global Legitimacy Might Such Regimes Have?*, EPO, Munich [hereinafter 'EPO Report']. See also EPO 2006.

[3] According to the EPO Report: 'Scenarios are challenging, relevant and plausible stories about the future, used as tools to generate policy dialogue. They do not attempt to predict the future, but set out the landscape of a wider environment…By taking a long-term view, it is possible to examine a range of possible realistic outcomes that might have to be faced and therefore make more informed decisions …Scenarios are concerned with the external driving forces over which an organisation or system has little or no control: the political, economic, societal, ethical, technological, environmental and historical pressures that could impact the system and the way it functions. The issues at stake and the most likely driving forces that might force change on the system are identified by a team of scenario builders as a collective brainstorming process' (ibid., p. 13).

[4] The synthesis and analysis of the EPO scenarios was contributed by Michael Gollin.

[5] But other scenarios are becoming increasingly plausible with more stakeholders ready to fight for their alternative approaches. 'This transition has happened so quickly that it has been hard for many inside the world of patents and intellectual property to recognise all the changes and adapt to the very different environment in which they now operate' (EPO 2007, p. 13).

[6] Halbert (2001, p. 47) notes of this scenario: 'The Open Source movement and the free software movement [have become] strong examples of the capabilities of innovation despite a clear lack of proprietary ownership over the [source] code. For computer programmers this brought back the good old days of programming before copyright got in the way…'.