

# Use it or lose it

If patent owners want to generate maximum returns from the monetisation of their rights, they need to look beyond well-worn money-making strategies

By Anton Arts

Companies take pride in their standing in the patent league tables. How intellectual property translates into business value is much harder to analyse and to compare. Technology corporations should look at the wider use of their IP beyond putting it into inventory. However, IP business models, general out-licensing and assertion are becoming less interesting these days. Real value comes from someone investing to build a solution and leveraging the innovation in a new business or product ecosystem.

Corporate patent portfolios have long been regarded as a defensive asset, attempting to cover every eventuality of competitors duplicating prized technology or asserting their own IP. That is why less than 1% ever gets tested in court. Outside of the biotechnology and chemical sectors, where the periodic table offers a semantic anchor, few patents control a critical bottleneck in the solution domain that stop others from delivering the same customer value proposition. Instead, many patents just cover features and implementation details of a specific technology roadmap of one of the company's product lines.

This worked well in the era of cross-licensing strategies where entire portfolios were swapped and quantity was most important. Patent counts became the basis of benchmarking research productivity between companies and nations. But today,

that logic is questioned. This article attempts to look beyond the generic way in which IP has been viewed and understand the real value-creation process that happens after the invention takes place.

## IP business model of the future?

Considering the number of IP-related service providers, traders, aggregators and other interested parties, the market for IP must be booming. Such a claim is often made in the context of a value migration from the supply of actual goods and services to the owners of the ideas, the designs and the inventions behind them.

It is an ideal that has come closest to realisation in the semiconductor industry. A sizeable, albeit not dominant, sector of the industry sells designs rather than chips, led by ARM Ltd. For a fair comparison, semiconductor IP is more about entire designs than just patents, but they typically go hand in hand. Often hailed as the first wave of a generation of fixed asset-free companies, this sector has some unique characteristics that are unlikely to be replicated elsewhere. The requirement to integrate ever more functionality on a single chip now vastly exceeds the design capabilities of even the largest vendors, so collaboration and re-use are mandatory. Furthermore, the highly standardised definitions between all the links in the value chain promote portability and make it feasible for companies to share technology components even if end products compete. But a similar decomposition of the value chain that would create leverage for IP suppliers in other industries has not happened. How many major chemical companies no longer run a plant?

Standardisation has historically been another driver of IP revenue – specifically, reasonable and non-discriminatory

licensing (RAND). It is widely recognised that standards drive growth and help to establish infrastructure for competing products to interoperate. By defining a minimum set of common requirements, standards simplify development and enable new business opportunities and potentially even new markets to evolve. In the past, companies with an interest in an emerging field would team up into consortia. By pooling research contributions and the resulting patents, they were in a strong position to extract licensing income from the implementers of the standard. Some of these consortia have become wildly successful, such as the collection of audio and video standards known as MPEG, one of the most profitable patent collections in recent history. But this type of RAND licensing has always been most effective for large operating companies that could leverage their standards interest with product strategies.

More and more standardisation takes place on a royalty-free basis. That trend is not only cultural: the traditional royalty-bearing standards in telecommunications and consumer electronics are losing ground to unencumbered internet standards. As the challenge for getting to a standard shifts from gaining consensus among a few large companies to the mobilisation of large numbers of adopters, free standards are far more likely to gain the ubiquity and universality that make them useful. Few companies have the motivation to put their weight behind a standard that is going to make someone else a lot of money.

### **Licensing non-strategic technology**

Companies have started to manage their intellectual assets in a more advanced way to capitalise on an array of emerging monetisation models. The rising popularity of open innovation has fostered the idea that corporations can and should use both internal and external ideas in their business strategy, but they also need to find ways to monetise their own under-utilised innovations through external exploitation.

This powerful concept was strongly embraced by the research community because it held the promise of developing independent revenue streams that could be used to offset budget pressures from headquarters. Countless conferences have been held about the best ways for buyers and sellers of these ideas to connect and transact. However, opposite the enticing argument that licensing income is 100% profit is the reality of significant overheads

associated with continued technology development, promotion, transaction costs, IP protection and prosecution.

Many companies have set up licensing programmes that seek to generate additional income by recruiting licensees for technology no longer deemed strategic to internal operating businesses. The hypothesis is that external parties are either already infringing on the existing patent portfolio or eager to access the technological treasures of the corporation on a licence basis. However, these programmes are often run on an as-is basis, focusing on salvaging value from discarded research and development projects. This means that the starting point is not a particular customer need, but rather the point where the original team left off when the decision was made to stop. For lack of funding and domain expertise, this is usually closer to a proof of principle than a solution that is ready to go.

There are other challenges associated with this kind of model. While most projects would not have started without a compelling high-level rationale for an attractive market opportunity, the sale of a licence to the technology requires a much more precise definition of the target customer and need. Internally, the quality of the technology would rarely be challenged, but external customers have higher expectations about demonstrators and reference designs that are costly to generate. Also, few project teams remain intact after the decision is made that a technology will not be applied within the company. The real intellectual capital is usually in the aggregated know-how of the people, not just in their work product.

Consequently, the offer to the prospective customer is not an ongoing relationship, but a one-time technology-transfer process. Licensees tend to recognise the considerable risk that is passed on to them and typically negotiate aggressively with regard to the level and timing of the licence fees, pushing cash flows far into the future.

### **Assertion and litigation**

The most successful example of a corporate licensing model would be at IBM. No report on licensing strategies leaves its US\$1 billion in licence income on an annual basis unmentioned, to underpin the promise of a large market opportunity. But this strategy is not easily replicated. For most companies, there are very few obvious co-called Rembrandts in the attic. According to IBM's annual report, over half

## Horizontal versus vertical strategies

So how to convert patents into business opportunities? There is a phenomenon that large corporations frequently encounter when evaluating research projects. Starting out with an abstract idea of a large market opportunity, it often seems easier to work towards a platform concept that can be customised for individual target applications than to take the risk of defining a complete proposition without a clear understanding of what the market requirements will be. This results in a technology push concept that has little practical use until compelling applications reveal themselves.

In the mindset of the corporate technologist, this task is part of the go-to-market strategy of the business unit that wants to launch a product and not something he should have to worry about. At an even larger scale, this is exactly what happened when the telecom industry spent years standardising an IP multimedia subsystem (IMS) for a new generation of exciting converged services. Five years later, few operators have achieved anything more with IMS than streamlining fixed-line voice calls, while focused competitors like Google Voice are revolutionising unified communication.

Open standards have long been the rallying cry of the computer and telecommunications industry to drive

innovation at breakneck speed. Standards such as Internet Protocol, SQL and XML allowed each layer of the technology stack to be optimised independently from the rest of the ecosystem. Many start-up ventures have achieved phenomenal growth by being first to market with horizontal platform technologies such as faster networking technology or better databases. But as the number of independent layers needed to work seamlessly together increases, so does the likelihood of a glitch that interferes with the end-user experience. What was mobile internet like before Apple came along? A massive puzzle of cellular data networking technologies, operator settings, incompatible applications and a poor user interface.

This dynamic of open standards having an impact on innovation is rapidly changing. Some of the most successful companies of the last few years, such as Apple, Facebook and Skype, have focused first on providing a compelling end-to-end solution, and only then opened up the platform to third parties. Yes, the platform is open to others, but only on the company's terms. Consequently, these companies are in a powerful position to control and price the access to their user community. Taking into account the complexity of technology markets, this is not mutually exclusive with the selective use of

standard and open technology; the big difference is the focus out of the gate on the complete solution, not the platform capabilities.

So when Apple collects huge licence fees from iPod and iPhone accessory vendors in order to use its proprietary connector and software protocol, these partners are paying not for the Apple technology, but for access to the world that Apple has created. Similarly, the critical part of an MPEG patent is not the cleverness of the underlying invention, but the value of the installed base of users, media and expertise that licensees can connect with.

That is the difference between the upfront licensing of a technology concept, versus the downstream licensing to access an existing ecosystem that the licensor controls. Few corporations provide the level of transparency to their licensing income streams that would allow a quantitative analysis of these two segments, but practical experience shows that the scales would tip strongly in favour of the latter. So the really big numbers associated with IP revenue streams are generally derived not from licensing innovative new technologies, but rather by licensing the ones that have already become successfully established in the market.

of its IP revenue stream comes from custom development activities. The other half includes divestitures, trademark licensing and other categories that are much broader than the kind of research monetisation that we are looking at here. For most companies, the low-hanging fruit is gone and there is not likely another MPEG in sight in a world of open source and royalty-free standards.

That leaves the option value of future assertion: hoping that someone else does the work to develop the market and can be hit with an infringement suit years later. Assertion is the original concept behind patents, giving the inventor the legal right to prohibit others to practise his invention. Recognised as a legitimate strategy towards competitors, major corporations have long recognised the public relations and business downside of aggressive assertion strategies that may end up targeting customers and partners of their core businesses.

But insofar as companies have tried to outsource this function by selling or

renting patents to independent agents, one could argue they have contributed to the emergence of an entire industry of non-practising entities (NPEs), also known as trolls. They are biting their own tail: at the macro level, sellers of patents are essentially feeding the NPE ecosystem even if they get indemnified at the transaction level. For corporations, this is the ultimate prisoner's dilemma – their patents become worth more if it becomes easier to extract large settlement payments, but of course that leaves them just as exposed towards the patents held by other owners. Thus, the promise of predictable and profitable extraction of licence fees from third parties for extra margin has largely become a gamble on complex, high-stake litigation.

It is outside the scope of this article to comment on patent reform or emerging patent defence strategies. However, assuming that on aggregate, the exposure of large corporations will be reduced, it is unlikely that research departments will

consider the creation of IP strictly for the purpose of resale to be a sustainable strategy. The market for commodity IP that is not demonstrably infringing anyone right now has cratered and corporate IP departments are cleaning out their portfolios to reduce the maintenance burden. IP has therefore not become a generically tradable item as predicted a few years ago. This has contributed to the declining popularity of open IP auctions and the failure of various online trading mechanisms.

### **Disruptive innovation: someone needs to make the effort**

Research focused on disruptive innovation is serendipitous by nature. From a productivity perspective, it can be a wasteful effort if its intention is to generate multiple strategic options for the corporation. Because the commitment to take a product to market significantly exceeds the initial development investment, the finite nature of new business creation budgets results in many successful projects not making it to the market. And while the number of patents in corporate portfolios grows, the utilisation rate measured by how many patents are applied in commercial products and services declines. Henry Chesbrough estimates in his book *Open Business Models* that anywhere between 75% and 95% of patented technologies remain dormant. Of course, patent quality may also play a role in this outcome, but undeniably companies need to find ways for themselves or others to invest in the process of bringing IP to market through the launch of successful products and services.

Patent accumulation strategies without the support of substantial development capital will not be attractive for corporate research organisations. If a market does not yet exist, it is going to take effort, money and dedication to develop it to a point where a patent is protecting something of value. Going back to the earlier point that very few patents represent fundamental obstacles, the value creation happens at the point of use, not the invention of the abstract concept.

Given ever-increasing marketing and sales focus on the corporation's proven market segments and loyal customer base, some of these exciting innovations, while continuing to consume further needed investments, do not fully fit into the strategic product portfolio and do not get the right management attention required

for their market success. The shortening of the time window of market opportunities further diminishes the market success potential for these innovations in spite of large invested capital and capable research and development teams.

Licensing is a good option for transferring an established technology to a company that already is active in a specific market; the company will know how to assess, apply, and incorporate it into its own product portfolio. However, to find commercialisation paths for their more disruptive innovations, corporations need to become more creative. Here are some examples of possible strategies:

- Internal ventures. Many companies have established new business incubators that can provide funding to accelerate new business creation. Some IP departments, such as Philips IP & Standards, have started to recognise the opportunity to add value to their core licensing activities and have set up internal ventures to fund business development strategies around promising IP.
- Joint ventures. If other companies can be identified with a common interest in developing a new market, pooling resources can be a good option. A good example is Venyon, a company established by Nokia and German smart card supplier Giesecke & Devrient to act as trusted service manager ensuring the efficiency and openness for the evolving NFC wireless payment ecosystem. Venyon acts as neutral hub within the stakeholders by providing a white-label business model through a hosted service.
- Spin-out ventures. For the most disruptive, forward-looking ideas, spin-outs may be the best option to attract entrepreneurial leadership and risk capital. The spin-out can provide a focused culture and the necessary resources to commercialise these ideas that would not otherwise be available inside the corporation. Freescale decided to spin off its MRAM advanced memory technology by partnering with venture capital investors. By spinning off the unit rather than continuing to develop technology in-house, the newly formed company, Everspin, will accelerate its adoption by expanding the product base into new semiconductor products and widening the pool of potential customers worldwide.

Besides the monetary value generated by these strategies, it is equally important to consider the strategic benefits of improving the productivity of corporate research. Even if commercialised externally, many of these ideas could become strategic value generators to the corporation by providing components, enabling technologies or market-driving applications for its core businesses. Beyond that, there are many positive externalities, such as winning allies that influence industry direction, building a vibrant entrepreneurial ecosystem, and effective research collaborations.

#### Not a static asset

Intellectual property is not a static asset with unlimited shelf life. As described in this article, it becomes valuable in relation to the underlying value of the business it is meant to protect. Unless they are interested only in litigation arbitrage, patent owners need to figure out who is going to invest the capital to drive innovation forward.

Unpractised IP rapidly declines in value, not only because it may be overtaken by

superior inventions, but more importantly, because users may have flocked to other ways of solving the problem or decided it was not a problem after all.

Research groups will have to stop thinking of the number of granted patents as a measure of achievement, either individually or for the organisation as a whole. Given their opportunity cost, it would make more sense for them to focus on those ideas that someone internally or externally is prepared to take to market. **iam**

**Anton Arts** is a partner with New Venture Partners. He is based in the Netherlands and focuses on investment opportunities arising from relationships with Philips and other European corporate partners



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**Office address:** 162 J, Nowoursynowska Str.,  
02-776 Warsaw, Poland

**Tel.:** (48 22) 644 96 57, (48 22) 644 96 59,  
(48 22) 644 96 68, (48 22) 644 96 79

**Postal address:** P.O. Box 168,  
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**Fax:** (48 22) 644 44 02, (48 22) 644 96 00  
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**IP Contacts:** Katarzyna Karcz (Managing Director), Anna Zakrocka (Trade Marks), Jolanta Hawrylak (Patents and Design), Bartłomiej Kochlewski (Law Team), Sławomira Piotrowska (IP Manager),