

A revolution launched on the back of IP

It is the fastest-selling consumer electronics device ever, with 18 million units sold worldwide as of January 2012. The Kinect story shows that by linking the IP function with all internal divisions and putting IP strategy at the heart of corporate culture, Microsoft has been able to offer the world something truly revolutionary

By Jack Ellis

Alex Kipman is not so much engineer as imagineer: his principal task is to survey the marketplace and come up with ideas for radical new products. But although this may seem far removed from the nuts and bolts of IP, he would be the first to tell you that he lives and breathes the subject every working day.

Kipman is general manager of incubation in Microsoft's Interactive Entertainment Business (IEB), the division at the company that develops the Xbox gaming console platform and its attendant software and accessories. It was from Kipman's team that the original concept for the futuristic Kinect entertainment system evolved. "We looked at the state of the computer industry today, and we realised that we have reached a point of sophistication where providers are putting more and more gadgets and gizmos into people's hands," he says. "This is rather complicated, and it's actually keeping people from fully enjoying this art form."

The eureka moment

The team's vision was simple, yet profound, explains Kipman: "What if we could make

technology disappear? What if we could turn it on its head, and instead of adding more gadgets and gizmos, we could take them away altogether?"

By combining the latest breakthroughs in skeletal tracking, voice recognition and 3-D mapping, Kinect would trigger a paradigm shift in the computing industry. Rather than humans having to learn to understand technology, it would learn to understand us. This embryonic technology is known as natural user interface (NUI).

Intellectual property was crucial to the Kinect project from the very earliest stages of brainstorming and market surveillance. For Kipman, the creation of groundbreaking technologies and IP strategy are inextricably intertwined: "It's all the same story, in a sense. If you are going to have a vision to create a brand-new world, there is a lot of invention and creativity required if you want to make the impossible possible. The only thing that holds us back is lack of imagination - which is why this is a field that is so rich from an IP perspective."

Kipman believes that where corporations seek to pioneer new worlds and create disruptive innovations, they need an overarching appreciation of the strategic value of intellectual property. "If you look at all of the companies in our industry and really boil down to what the most important assets are for all of them - they are all IP assets," he elaborates. "And if you are going to set out with the objective of generating a whole new world, you will need to see sustainable differentiation if you are coming up with the investment in people and resources to make that objective happen. If you look at it through that kind of lens, IP becomes paramount in the process."

Kipman plots out the common evolutionary pattern of IP awareness in technology-based companies: "As they start





creating IP, the first thing that they tend to do is to become more reactive about it. They start treating IP mainly as a protection issue and a purely legal issue, and the approach to it is somewhat *ad hoc*.” But as companies get more sophisticated, he says, they start thinking about IP in the context of a journey: “They look at the technology ecosystem as a whole and start asking questions like: ‘Where am I creating?’; ‘Where am I deficient?’ and ‘How can I ensure that I have a credible way of protecting my inventions?’” Microsoft’s IP

team was already addressing these questions as the Kinect idea began to take shape.

A plan comes together

When the Kinect initiative began in earnest in late 2008, a significant amount of the IP groundwork had already been laid. The teams working on Kinect could tap into a vast seam of technology that had been developed in Redmond. However, the radical nature of the project meant that there were still plenty of gaps to fill, and Microsoft’s

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engineers went into overdrive. “Kinect is the result of a massive R&D effort that has seen a number of breakthrough inventions,” says Bart Eppenauer, Microsoft’s chief patent counsel and associate general counsel. “With this project, the IEB team had set out to go in a completely new direction – to create a gaming system that was very different from what was already offered by competitors in the marketplace.” Microsoft, Eppenauer explains, wanted to leapfrog its competitors to fundamentally redefine the way in which consumers interact with technology. “We had to address the highly significant technical challenges associated with that, and at the same time get the product to market as quickly as possible,” he says.

The IP team began pooling resources with colleagues from the IEB and Microsoft Research, as well as corporate and marketing functions, to start laying out a patent strategy for Kinect. “From the outset, we worked with the business executives, the technology leaders and a wide range of people, both business and legal,” explains Eppenauer. “We looked at the landscape comprehensively, to identify where Kinect’s key points of differentiation would be and where we needed to invent.”

By the time of Kinect’s release in November 2010, Microsoft had filed around 600 patents to protect innovations related to the device. The vast majority of these were prosecuted by outside counsel. “We carefully selected a number of firms to prepare and prosecute patents for Kinect,” says Eppenauer. “The in-house team integrated closely with them throughout the venture so that they had a broad understanding of the technology and of our strategy.”

For Eppenauer and his group, patent profiling and landscaping were pivotal in establishing a solid IP footing for Kinect. “From the earliest stages, we wanted to understand where the patent hotspots might be, so that we could develop a well-rounded strategy to ensure that we would be able to bring the product forward in light of those hotspots,” he says. “We certainly were developing a lot of our own IP, but we also knew that Kinect was going to involve a wide range of technologies that we didn’t already have extensive coverage in.”

Comprehensive patent planning gave Eppenauer’s team a bird’s-eye view of the landscape. This allowed them to avoid areas with an overabundance of filed and pending patents, so that potential disputes could be forestalled. Meanwhile, the more sparsely populated areas on the map served to

highlight future value creation opportunities. “This process also helped us to identify where other entities had strong technologies relevant to Kinect,” continues Eppenauer. “In some cases, that led to us licensing in IP. We also made some strategic IP acquisitions, including purchases of whole companies.”

As one example, in March 2010 it was announced that Israeli company PrimeSense would make its scalable 3-D sensing and recognition technology available to Microsoft – the only Kinect-related collaboration publicly confirmed by Redmond. This technology constitutes one of the main underpinnings of the device.

Alliances with other organisations can make a lot of sense when time is of the essence. “As you are approaching any product development, time to market is massively important,” explains Kipman. “You want to make sure that you are doing the appropriate level of diligence to create the best consumer product in the shortest amount of time, at the best price point. So from that point of view, in some places it was easier to partner with someone; in some places we had the best expertise in-house; and in some places we wanted to accelerate internal development, so we made acquisitions.”

Kipman points out that, along with valuable technology, an outright acquisition can bring invaluable know-how. “We believe in the long-term benefit of actually having these people inside the tent,” he says. “So with a project like this, we needed to look at where we could partner, where we needed to build and where we needed to buy.”

Brand new

To complement its ground-breaking technology, the nascent Kinect device needed a brand that would resonate powerfully with consumers. The process of creating and protecting that brand had to start at the earliest opportunity. “We wanted to roll this product out globally as soon as possible, and have a sufficiently unique brand in place that we could take to various markets,” recalls Eppenauer. “It was going to be a very significant undertaking from a trademark perspective.”

Tom Rubin, chief counsel for IP strategy, heads Microsoft’s trademark, copyright and trade secrets group. His team joined forces with the marketing function to start carving out the Kinect brand as the concept took shape. “The innovation that is inherent in the product helps to lay the foundations of a great brand in itself,” says Rubin. “But there is also the need to market the product



Xbox 360 console (background) and Kinect sensor (foreground):
“After Kinect went on general sale as an Xbox add-on, the more inventive users began to adapt it for their own purposes”

and create a brand around it. A great name like Kinect is only as good as the ability to use it and to protect it, so trademarks add massive value because they are the key ingredients that consumers will identify with the amazing technology that underlies the device.”

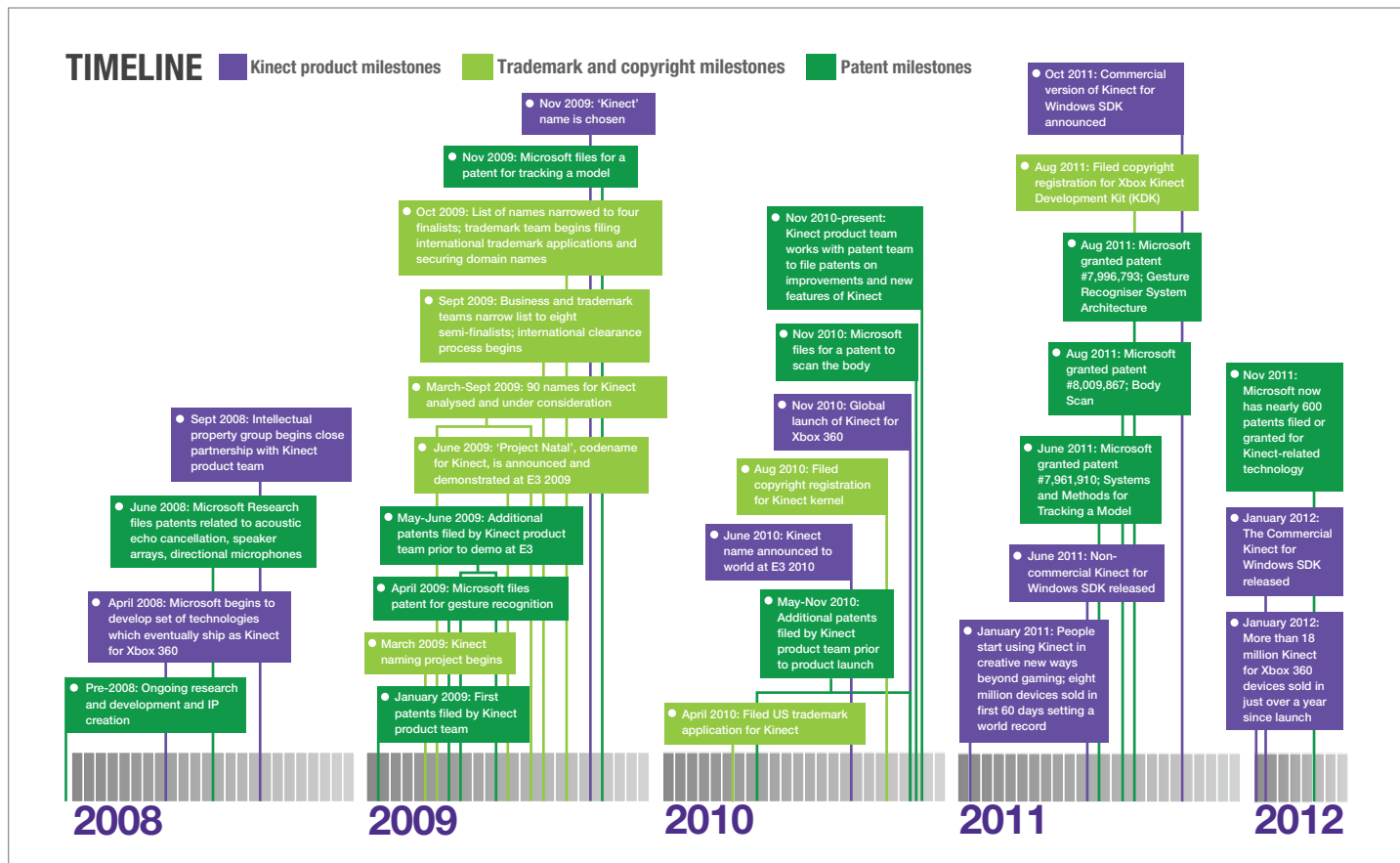
Rubin’s team worked to a strict timetable. The first public demonstration of what would eventually be dubbed Kinect was at the Electronic Entertainment Expo (E3) in June 2009. At the time, they were doing worldwide trademark searches on around 90 potential names for the product. Through this process, the team figured out which candidates would provide the smoothest path to market.

With input from the marketing and product groups, these 90 names were whittled down to just eight over a three-week period. At this point, a fully fledged international trademark clearance process began, with around 100 independent legal

opinions sought from IP lawyers and trademark attorneys across multiple jurisdictions. “By partnering with external advisers, we were able to get a good view of the landscape with regards to uses of these eight names throughout the world,” says Rubin. “This helped us reduce them down to four finalists. Once we had those, we began filing trademark applications for all of them, including filings outside of the United States. We also worked with our domains team to secure domain names for the final four.”

By November 2009, ‘Kinect’ had been chosen as the product’s moniker. “Fortunately, Kinect was one of the cleanest international searches I’ve seen – unusually so,” says Rubin. “It also happened to be the name that the marketing and product groups liked most.”

The team now had to obtain the necessary protections without arousing too much curiosity. If public attention were



Key points in Kinect's development history, from early stage research and patent filings through the branding process to product launch and beyond

attracted to the trademarking process, the eventual product launch could be undermined and trademark and domain squatters could exploit a golden window of opportunity to frustrate Microsoft's carefully laid plans.

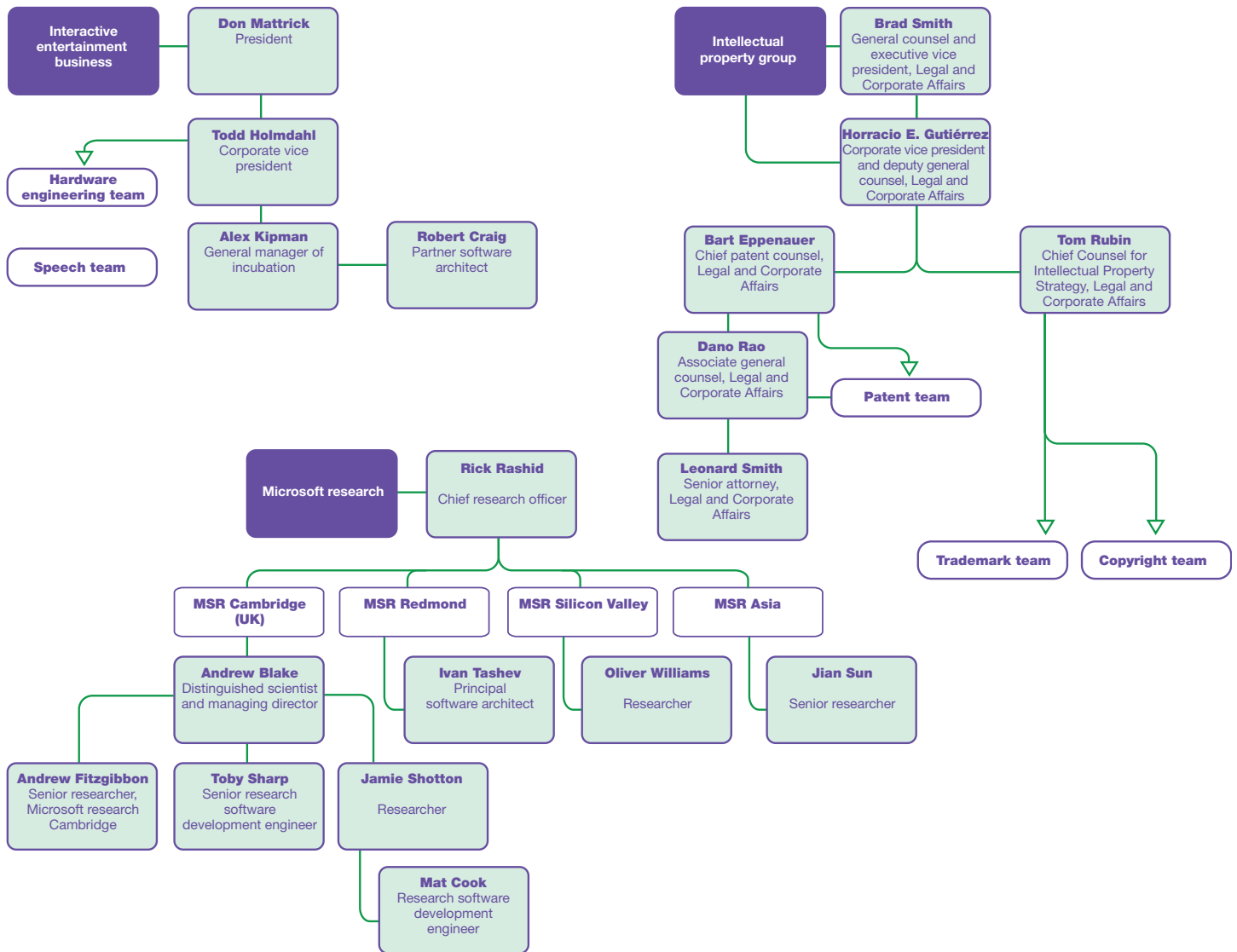
US trademark applications for Kinect were filed in April 2010, with the product publicly unveiled at that year's E3 convention in June. "There were a couple of months after we filed the US applications when we tried to do everything possible to keep things under wraps," says Rubin. "We didn't want the public to connect our applications with the product. Our work paid off, because there wasn't really any speculation."

Integration, integration, integration

Intellectual property played a fundamental role in Kinect's journey from concept to reality. This is in no small part due to the way in which Microsoft has built its IP function into the wider organisation. The advantages of close interplay between the IP group and other business units are not lost on Kipman. "Companies in the early stages

of sophistication usually have their IP folks sitting in a different area of the organisation - you might talk to them once in a while; you don't really know who they are; you have some loosely coupled touch points," he says. "As the company starts getting more sophisticated, the IP specialists become team members, just like anybody else. Then you are essentially creating the product together, and intellectual property becomes an equal participant in terms of the deliverables, the workload and how you approach things. When I first came to work here a decade ago, that level of sophistication and integration was already in place."

Well before the Kinect idea grew legs, IP legal support on a business unit basis was already an established part of Microsoft's overall corporate strategy. Although they are part of Eppenauer's 105-strong group, both organisationally and structurally, dedicated teams of patent specialists are assigned to each business across the company. "For example, we have different teams for Windows, for Office, for Research, for our server business, for Bing, for Windows



Phone and so on,” explains Eppenauer. “Those teams are aligned with each business to assist in the development of IP strategies, to handle filings and to provide counsel.” The IEB patent team is led by associate general counsel Dana Rao. Rubin’s group of around 35 professionals follows a similar model, with attorneys partnering with specific business units. Additionally, each business has a general legal team that works closely with the IP attorneys on corporate transactions, acquisitions and related matters.

Eppenauer and Rubin report directly to Horacio Gutiérrez, corporate vice president for IP and deputy general counsel. Gutiérrez

heads Microsoft’s IP group, which is part of the Legal and Corporate Affairs department. He reports to general counsel Brad Smith. This ensures that IP strategy has a permanent voice in the Microsoft boardroom.

Culture club

An understanding that intellectual property is absolutely crucial to product development is thus enshrined in the culture in Redmond. “By the time you recognise that IP is going to be important to a product like Kinect, you’re already too late to the game,” Kipman points out. “We are a very sophisticated IP company, and it’s not a matter of recognising

Organogram showing the three teams that worked together on Kinect’s technological development: the Interactive Entertainment Business, the IP group and Microsoft Research



Natural user interface

“By combining the latest breakthroughs in skeletal tracking, voice recognition and 3-D mapping, Kinect would trigger a paradigm shift in the computing industry. Rather than humans having to learn to understand technology, it would learn to understand us”

the importance of intellectual property on a project-by-project basis. It’s really more a matter of IP being a state of mind at Microsoft. Everyone here is wired that way.”

So what has happened at Microsoft which means that everyone – even those outside of the IP department – have such an instinctive appreciation of intellectual property? “It is ingrained in us,” says Kipman. “I know it’s something that Bill [Gates] has been passionate about for quite some time.” Kipman also acknowledges that his boss, Don Matrick, places great significance on the importance of intellectual property to the business’s output. As IEB president, Matrick reports directly to Microsoft’s CEO - further reflecting how IP strategy is prioritised at the highest levels.

Rubin agrees that Microsoft’s top senior management have fostered a top-down awareness of the strategic value of intellectual property by positioning it within

the C-suite: “IP is in Microsoft’s DNA. The people who work here are motivated by the desire to innovate and empower others around the world. They also appreciate that the basis of all of that is the IP that makes up the value in our products.”

To ensure that the message filters down, the IP group runs education schemes to keep employees abreast of developments in the field and the company’s own strategic direction. For this message to be effective, it needs to be contextualised for its diverse audiences. “We really try to make clear to folks at any level and in any job the relevance of IP to their position and their goals,” says Rubin. “There’s carefully tailored training across the company on the importance of IP to different job functions, because the relevance for a software developer, for instance, will be different for a marketer or a host of other job functions.”

Players from both outside and inside the IP function agree that IP management must

Microsoft's shifting strategy

Once upon a time, it might have been strange to think of Microsoft's IP strategy in terms of collaboration, inclusivity and openness. In the 1990s and early 2000s, Microsoft had a reputation for its aggressive IP approach towards competitors and was the subject of high-profile antitrust investigations in the United States and Europe.

Joe Beyers, current chairman and CEO at InventErgy and former vice president of IP licensing at Hewlett-Packard, identifies two major transformations in Microsoft's IP strategy over the past two decades. The first occurred during the late 1990s. "At that time, Microsoft was aspiring to become the world's largest software company, but it had a very modest patent portfolio," says Beyers. "It was faced with increased pressure from competitors and even partners, which resulted in several IP litigations as well as costly and unfavourable cross-licences. In response to this situation, Microsoft made a concerted effort to rapidly expand its patenting."

The second major shift started in the early 2000s. By this time, Microsoft was fending off attacks from numerous smaller competitors, as well as from non-practising entities. It took a few key steps to counter this position, including initiating an aggressive cross-licensing programme, matched with the systematic settlement of the vast majority of patent litigations it was embroiled in. "The rationale behind this was that, given Microsoft's market position, the risk of patent litigation was more severe than the risk that a small competitor would copy its products and depose it from its place in the market," explains Beyers. "These suits were becoming costly, disruptive and distracting to management and customers."

Microsoft also began to foster an environment where 'loose' patents that might pose some future threat to the company would be corralled into patent holding entities - for example, it provided seed funding to launch Intellectual Ventures.

At around this time, Microsoft brought in Marshall Phelps to overhaul its IP strategy. Béatrix de Russé, head of IP and licensing at Technicolor, suggests that Phelps' input has had a powerful and lasting effect: "Since Phelps' departure, Microsoft has continued his aggressive approach by filing many patents, considerably increasing its portfolio and acquiring IP from other companies."

In de Russé's opinion, the company mainly uses its intellectual property to support its traditional business. "Microsoft's IP strategy is centred on protecting its product offering from third parties' assertions through cross-licences, and to promote its own software solutions through licence grants," she says. "One current example of this is its continuing campaign to make every wireless device

manufacturer using Android enter into a licence agreement."

While de Russé acknowledges that this robust strategy has been a smart move, she suggests that its success may have as much to do with Microsoft's image as a market superheavyweight as with the strength of its patents. "Microsoft's patenting strategy is still relatively young and much of its portfolio hasn't yet been significantly challenged. But when Microsoft approaches a company and offers a licence and favourable conditions for use of its IP, who would resist?"

By the end of 2011, Microsoft had over half of Android-based wireless device manufacturers as licencees. In February 2012, it filed an antitrust complaint with the EU authorities regarding Motorola Mobility's alleged misuses of standards-essential patents. Critics have pointed out the paradox in Microsoft leveraging its business on its own intellectual property, while trying to constrain that of others. "There are many companies that use FRAND-pledged standards-essential patents far more aggressively than Microsoft leverages the many non-standard-related patents in its portfolio," says patent consultant and author of the FOSS patents blog Florian Mueller. In the mid-2000s Mueller successfully led the campaign against the introduction of the Computer Implemented Invention Directive in the EU and at that time, it would have been hard to imagine him one day working alongside Microsoft. However, Redmond's shift in IP strategy has seen him collaborate with the company on a study of FRAND licensing. "In my observation, Microsoft's IP licensing programme is a true success story, and recently it's been validated again by the US International Trade Commission, which decided to dismiss claims of patent misuse raised by Barnes & Noble."

However, strategies must be flexible enough to adapt to changing circumstances in the company itself or in the economy at large. "Most companies use IP to defend their products, to improve financial results or as a leverage for partnerships," says de Russé. "All of these uses are legitimate and probably most of them are rather reactive. But building an IP portfolio is a long-term effort, and seldom do corporations follow a linear strategy." The consensus is that Microsoft's ability to shift and revitalise its IP strategy at crucial times has served it well. "Had Microsoft not taken the steps it did, it is my opinion that you would see it with a market cap of less than half of what it is today," says Beyers. "The dot-com era flooded the industry with IP whose primary residual value was embodied in an assertion against the large surviving companies - like Microsoft. The strategic action that it took definitely mitigated the negative effects of this environment on its operations and bottom line."

be part of the company's wider commercial strategy, rather than an adjunct to it. "The business decisions we make are consumer driven," says Kipman. "That's the true north star for us. Every resource we have, including IP, is a tool that we can use to get to the desired end goal." Developing revolutionary products and services is Microsoft's *raison d'être*, and IP strategy should ultimately contribute towards that. "We invest a lot of energy into developing a high-quality patent portfolio that's very focused and aligned with the business strategy," says Eppenauer. "We believe that is key to bringing innovative products forward to the market."

The future's bright

But the Kinect story did not end when the product hit the shelves at the end of 2010. Microsoft's IP team now faces a new set of challenges going forward - not least, enforcing the Kinect brand. "There is an ongoing need to police and protect against misuse of the technology and the brand," says Rubin. "For example, we've recovered over 150 domain names since the project began. This has largely been achieved through friendly outreach, as well as a handful of UDRP actions. With the future we envision for Kinect, the goal is to protect our intellectual property, but also to foster an ecosystem that encourages innovation by

Action plan



When a company is undertaking an ambitious project to get a new product to market, the IP function can contribute significantly to the success of that project by taking the following steps:

- Build an effective relationship with product teams early in the project.
- In partnership with business leaders, review the patent portfolio to get a grasp of where key areas of differentiation are.
- Use patent landscaping to understand which areas of technology are heavily patented, which areas present opportunities for future value creation and where potential collaborations/acquisitions can be made.
- Work with product teams and business leaders to make timely decisions on where to build and protect the company's intellectual property, where to partner with other entities and where to acquire IP from elsewhere.
- Strategise carefully when seeking to license the brand and technology for further adaptation and reworking by independent developers.
- Beyond the project phase, continually educate other parts of the organisation on the importance and relevance of intellectual property to the business.

others on top of our technology.”

Patent disputes are another hurdle that may have to be overcome. Eppenauer points to the smartphone industry and the high-stakes litigation continuing in that space: “Some of the technologies combined in NUI - gesture recognition, voice recognition and touch sensitivity - are already prevalent to some degree on smartphones and tablet computers. I think time will tell in terms of how we structure our outward approach to Kinect's IP; for now, we have to focus on supporting the business as it hands Kinect to the market and develops the next versions.”

Beyond enforcement and protection work, licensing and collaboration have been further areas of focus post-launch. After Kinect went on general sale as an Xbox add-on, the more inventive users began to adapt it for their own purposes. Increasingly diverse applications were discovered as independent developers customised the technology.

“It really took on a life of its own in a lot

of ways,” says Eppenauer. “Kinect started showing up outside of the living room. People in healthcare, education, robotics, rehabilitation and a host of other fields started to develop a wide range of uses. It rapidly became apparent that Microsoft should put out more tools to expand on this effect.” In January 2012 the company released the Kinect for Windows software development kit (SDK). “The SDK gives people the tools to directly build all of these different applications, fully supported by Microsoft,” he continues. “Hopefully, they will have some interesting uses of the Kinect technology and will build some vibrant businesses.” Those businesses will also require trademark licences from Rubin's team if they wish to market products built using the SDK as Kinect-compatible.

For Kipman, the capacity for people to take Kinect beyond the gaming framework and apply its technology elsewhere chimes perfectly with his team's original vision for the product – and with Microsoft's overall approach to intellectual property. “If I had to explain Microsoft in two words, I'd say that we're a platform company,” he says. “We create platforms, and platforms are palettes. They are sets of coloured paints and paintbrushes. Paints and paintbrushes are pretty cool, but without painters they are not amazingly cool. We have a few of our own painters who test out the palette so that we can hone it and learn from it. Kinect is one of those palettes, and since its launch we have seen people from outside of Microsoft using that same palette to paint their own pictures.” If you are going to pioneer a new world you have to recognise that you can't do it alone, Kipman says. Instead, a company needs to have a healthy ecosystem of people who are using its products creatively to do things that it would not necessarily be doing itself. “Those people are really ushering in a new era of how people interact with machines,” he concludes. And, thanks to its IP expertise and insight, it is Microsoft that will reap the rewards. **iam**

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