

Volvo's road to business-driven IP management

Swedish company Volvo Group has completely re-engineered its IP strategy over the last two years. This is how it happened

By Jens Bördin

“Why are we doing 200 new patent filings per year? Why not 400, 800 or 100? Why is 200 the right number for our business right now?” It was a simple question, but nobody knew the answer when it was asked just over two years ago at Volvo Group's trucks technology division.

The Volvo Group filed its first patent in 1949 and has had a patent department for decades. It has more than 9,000 patents and 3,000 design rights under management and roughly 45 full-time employees dedicated to intellectual property, spread across the globe. However, like many other similar companies, this support organisation and culture were focusing mainly on creating and maintaining IP rights and less on using them for business returns.

The patenting process had the traditional set-up, with a global team of patent coordinators receiving new inventions that were disclosed. Evaluations of whether to file new patent applications were made in a typical patent board process, with quantitative filing targets influenced by legacy and budget, rather than expected business contribution. No one was responsible for the business use of the IP portfolio and IP processes were mostly separate from the rest of the business. This meant that actions to improve poor IP performance indicators received only a low priority; for example, it took over 40 weeks on average from invention disclosure to filing.

Yet despite this, everyone in the group was convinced of the positive contribution that technology made to the group's competitiveness and hence the value of exclusivity in key features. With sourcing expenditures of more than €22 billion per year, many within the purchasing department knew that intellectual property could be valuable leverage in negotiations with suppliers. There was also a strong consensus that Volvo's aftermarket business could benefit from additional IP protection.

In addition, executive management and corporate strategy were developing the company's long-term strategic move towards integrated transport solutions. With an ever-expanding number of technology areas needed for future competitiveness, it was obvious that there was a need to prioritise and to decide on where to develop in-house, where to collaborate and where to buy from others.

“Convergence in the information and communication technology sector presents an opportunity, but also a key challenge, on the journey towards electrification, connectivity and autonomous driving. The lesson from

the electronics and telecoms industries, and early indications from the car industry, are that intellectual property will play an increasing role going forward,” says executive vice president and chief technology officer Torbjörn Holmström.

New management and new organisation

In conjunction with a larger reorganisation in 2012, the patent department – which up to that point had been part of a separate engineering company – was moved to the newly formed Volvo Group division, group trucks technology, and its legal department (GTT legal), headed by the new senior vice president, Anna Bjerkelund.

As in many similar companies, IP management at Volvo was distributed over several functions and roles. The IP department was a staff function serving the rest of the company with trademark, design and patent drafting and prosecution. In addition, there were cross-functional patent steering groups which made all patent filing and portfolio maintenance decisions, as well as patent coordinators distributed across the engineering organisations.

In the early years following the reorganisation, the basics were set up in the form of IP policy and directives clarifying mandates, roles and responsibilities within the IP area. However, a discussion soon began regarding the need for a group-wide IP strategy.

Laying the foundations

In Spring 2014 Volvo kicked off a project to develop a group IP strategy and commissioned Konsert Strategy & IP to drive it. The purpose was to create the framework for a harmonised, impact-focused IP plan for the entire Volvo Group, anchored in its business strategies. The framework was also to be applied in select pilot areas.

Bjerkelund placed great emphasis on creating the right conditions for the project and worked on anchoring the new IP strategy both with her peers and with key stakeholders in executive management.

Management buy-in is important for any project to succeed. Intellectual property's cross-functional nature, along with the generally limited awareness of intellectual property in a company, makes this not merely desirable, but crucial.

The project team started interviewing relevant stakeholders across functions and business areas. It also got full access to Volvo documents and collected relevant business strategies and plans – including

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product strategies, purchasing strategies, technology strategies and aftermarket strategies. The project team also studied strategy frameworks and planning processes adjacent to intellectual property in order to identify the correct interfaces to link up with the rest of the business organisation.

In the months that followed, the project team – in close cooperation with the IP department and Bjerkelund – laid the foundations for the strategy framework, as well as drafts for the pilot areas.

Building backbone

A critical point for any IP strategy is adaptation to context – especially in a company which deals with everything from vehicle automation and big data management to engine blocks. Several structured breakdowns of Volvo’s product system, component hierarchies and organisation charts were therefore studied to finally make a decision on what Volvo decided to call an ‘IP business domain structure’. This systematically captured all current product and technology areas relevant to Volvo’s business, while being aligned with the rest of the organisation to enable ownership and efficient interfaces. As such, the different business domains could be used for granular IP strategy development.

Defining a business-to-IP Rosetta Stone

To enable full alignment with business strategy, Volvo defined a set of value models, with each representing a distinct perspective on and mechanism for realising either increased income or reduced costs from intellectual property. Together they constituted the sole reason why Volvo should engage in IP management and thus also helped to exclude anything extraneous to this. On top of these models, Volvo created a translation mechanism defining circumstances under which a certain model was to be applied. This helped to ensure that intellectual property was always tightly and intimately linked with both strategic business priorities and contribution to the bottom line.

Setting static principles, dynamic priorities and operational plans

The strategy included three essential layers. The top layer defined general static principles for IP management at Volvo Group, including the business domain structure, the Rosetta Stone and principles regarding issues such as risk management and enforcement. The second layer outlined the long-term strategic priority drivers for IP management, as defined by Volvo’s business strategy for each sub-domain within the business domain structure. The third layer set operational plans for which portfolio to build and how to use these once they were established. Together they comprised an impact-focused IP strategy,

anchored in the business strategies and plans, which could provide guidance to all concerned internal stakeholders.

Anchoring across and from top to bottom

In parallel with the drafting of the strategy framework and pilot areas, the process for development and governance was finalised. It defined a U-shaped process where top-down business priorities first defined the drivers for the IP strategy and highlighted strategic areas. The plans for portfolio development and use within strategic areas were then defined from the bottom up. Through the process, key business decision makers were engaged to ensure proper quality and anchoring before it was presented for approval to the CEO and his executive team.

Turning strategy into action and changed behaviour

The new strategy introduced a step change in IP management at Volvo, as well as placing tough new requirements on the organisation for its execution.

“When working with the development of the IP strategy, it became obvious that we needed to make changes in how we work,” Bjerkelund explains. “The IP strategy was clearly anchored in the business strategy and had broad management support. As such, it was instrumental in helping us to understand which changes to make and why”.

After the group executive team approved the group IP strategy framework, a new project was initiated early in 2015 to design and prepare for the implementation of a new IP operating model, including a new organisation, new processes and new governance. Its purpose was clear: to enable execution of the new IP strategy and its further development beyond the pilot areas.

A cross-functional steering group was set up – primarily at senior vice president level across the group – with regular meetings scheduled. It oversaw the project which was responsible for proposing changes to the organisation and working practices, while keeping the total IP spend within the current budget. Another tough requirement was that Bjerkelund wanted the new organisation to be live by January 1 2016.

In the months that followed, the project focused on designing a new operating model which could deliver on three key features required by the strategy for its successful execution.

Business accountability and business integration

To execute strategies and plans, someone must be responsible and authorised – that is, there must be

TABLE 1. IP departments in industry companies are often set up to create and maintain an IP portfolio to protect products, with limited responsibility for other needs, including the creation of business returns

	Build the IP portfolio	Use the IP portfolio
Product competitiveness	✓	
Supply-chain competitiveness		
R&D competitiveness		

accountability. In addition, return on investment is the ultimate purpose. A litmus test of whether a company has a business-driven approach to IP management is therefore to find out whether anyone can explain why a business's IP portfolio is the size it is in terms of business returns (ie, why a certain IP investment has been made).

Methods to consolidate business accountability for the group's IP management were evaluated in terms of both where in the organisation such accountability should be placed and which current or new positions should shoulder the task. One key consideration in the process was to avoid silos and thereby enable use of the full group IP portfolio for any business objective in any part of the company. Another was to make IP portfolio management unbiased to specific functional interests.

The steering group decided on a new set-up, consolidating accountability for IP strategy, IP portfolio development and IP portfolio use with Bjerkelund's organisation, Volvo Group IP (VGIP). IP resources in other parts of the company were consequently reallocated to VGIP. Within VGIP, a new IP strategy and portfolio branch was then created, to be led by a new group director. The new branch had five new portfolio heads, each responsible for an IP portfolio, which reflected the business domain structure. Thus, patent, trademark and design right attorneys, along with other key IP staff, started to work in 'horizontal' teams that mirrored the business, under the leadership of the new portfolio heads.

Another important design principle for business accountability was to ensure that the new portfolio heads had access to the right input and contact interfaces and received the proper mandate from the rest of the organisation. Given the company's size and geographical reach, it was important that this be possible without having to spend time talking to everyone in all concerned business functions across the world.

A management and planning role within product planning, with a broad overview of strategies and with responsibility for their synthesis into holistic product system roadmaps, was established as the IP business partner. This role represented cross-functional business interests from the top-down perspective across all truck brands; a similar role was identified for the other business areas. On the operative level, a similar management and planning role within the engineering organisation was established as the peer for business domain-specific IP planning and decision making. This gave the new portfolio heads direct access to key business planning and management interfaces and ensured that IP strategy had the same business starting point as any other key decision.

With a context-specific, well-anchored strategy as a starting point, the group director and portfolio heads received a strong mandate to act. This also meant that patent boards and other decision support groups were no longer needed. Therefore, lead times could be significantly reduced and decision making streamlined, building clear authority and responsibility for the portfolio heads to act together with the IP business partners within the framework of the IP strategy.

Proactive IP creation

The new IP strategy shifted the perspective on IP creation from waiting for new invention disclosures to

FIGURE 1. IP strategy as a set of operational plans for portfolio development and use, derived from business objectives across key functional plans and strategies

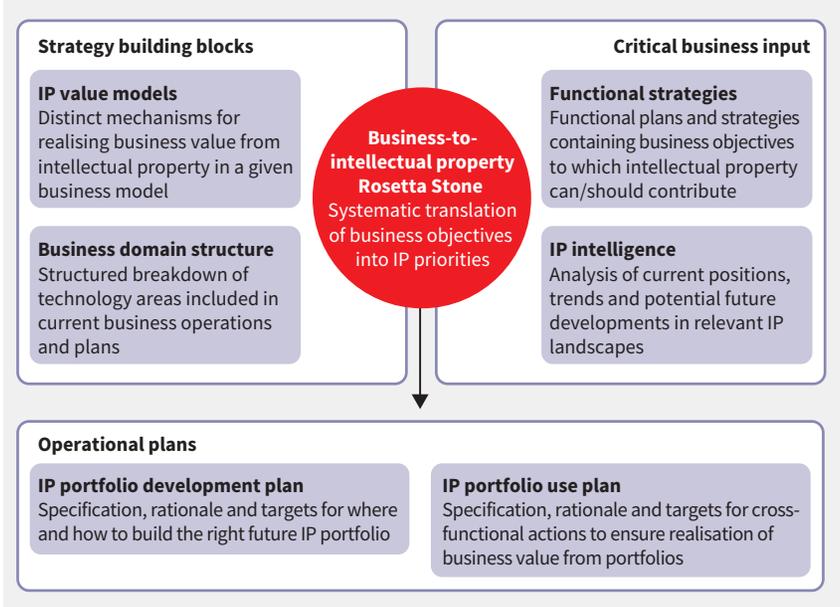


FIGURE 2. Achieving IP business accountability through portfolio heads leading IP teams and partnering with IP business partners for domain-specific IP planning and decision making

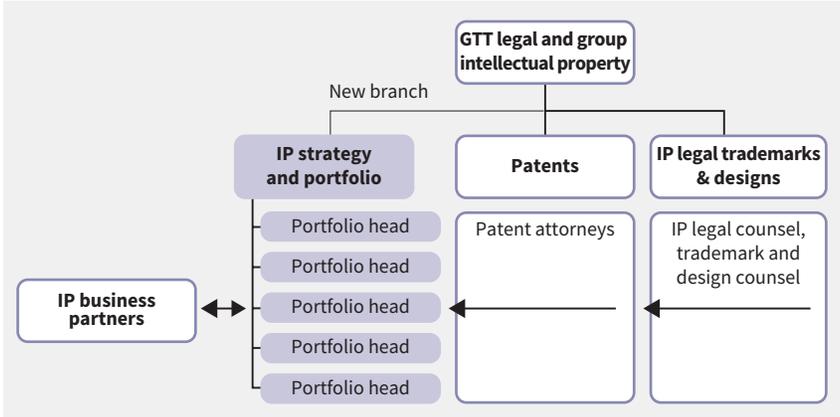
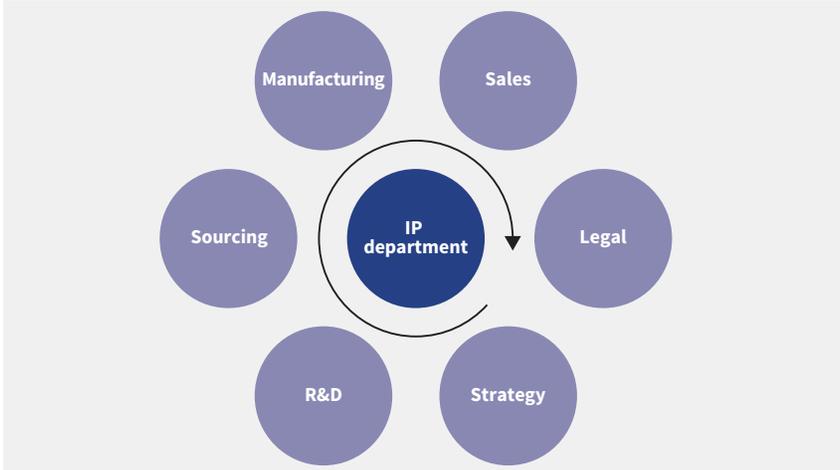


FIGURE 3. Realising the potential business value of intellectual property requires the IP department to interact closely with multiple internal stakeholders



come in and then evaluating them for relevance and patentability to proactively planning for and building the desired portfolio. Since the entire organisation had been constructed to await inventions disclosures across R&D sites and then to make reactive evaluations of relevance, this proactive approach involved a significant change.

Not only did it mean that workflows needed to change; it also meant that intellectual property needed to become a priority and considered in parallel with other business priorities in R&D planning. Since all development work at Volvo is carried out in projects, it meant that VGIP was introduced as a new stakeholder alongside other key business stakeholders when it came to setting targets for new R&D projects.

With an IP strategy highlighting which portfolio to build using which R&D projects, VGIP can now reallocate its attorneys and other resources to address the relevant areas. IP awareness among engineers and R&D project managers for selected areas is also increasing. The new set-up provides clear guidance as to why Volvo wants certain patentable inventions and professional support to deliver. For development, together with suppliers, purchasing can receive clear guidance on priorities in contract negotiations, knowing which intellectual property the company wants for which business purposes.

Cross-functional IP use

In the new set-up, the use of intellectual property for business returns include both use as an asset in competition with third parties and use in established or planned business relationships (eg, with licensees, licensors and joint ventures). Both categories require engagement by multiple stakeholders outside of VGIP to function and make it possible for the portfolio heads to deliver on the strategy.

Torbjörn Holmström

Torbjörn Holmström is executive vice president of Volvo Group Trucks Technology, Gothenburg, Sweden, as well as chief technology officer of AB Volvo. Holmström is also a member of AB Volvo Group's executive board. Volvo Group Trucks Technology has overall responsibility for the group's research and product development, with approximately 7,000 employees spread globally over nine main R&D sites. He has been with Volvo since 1979.



Anna Bjerkelund

Anna Bjerkelund is senior vice president of legal and group intellectual property at Volvo Group Trucks Technology (GTT), with overall responsibility for all legal matters within GTT and for the entire Volvo Group's IP organisation. Ms Bjerkelund is also part of the GTT executive team and reports to Torbjörn Holmström, the executive vice president of GTT and chief technology officer for the Volvo Group. Her team comprises around 50 legal counsel, patent attorneys and administrators, as well as the newly formed IP strategy and portfolio function. The majority of the team is located in Sweden, but she also has personnel in the United States, France, Japan and Korea. She has been with Volvo since 1999.



Volvo Group

The Volvo Group, founded in 1927, is one of the world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines. It employs about 100,000 people and has production facilities in 18 countries and sales of products in more than 190 markets. Apart from the Volvo brand, products are sold under the brands of UD, Mack, Renault Trucks, Prevost, Nova Bus and SDLG, as well as the joint ventures Eicher Trucks and Dongfeng. The group spends almost €1.7 billion on R&D annually and holds more than 9,000 active patents and 3,000 active design rights.

The introduction of IP business partners was a critical step in securing proper engagement from the rest of the organisation. Volvo has a cross-functional team around each business partner, with regular meetings to anchor the priorities of the respective product systems, including the IP priorities and the corresponding expectations. Changes were also made to the role descriptions of the business partners to formally recognise the expanded responsibility.

Volvo also updated and defined all IP-related processes to make authorities and responsibilities clear, including who should perform which work, who is accountable and who makes the decisions. This also greatly supported communications with the rest of the organisation and created clarity in the implementation decisions made by management.

In addition, the purchasing organisation was targeted specifically as a key player in ensuring increased business returns from intellectual property. The input and output exchange between the IP strategy and the sourcing strategies was defined, key steps in sourcing processes were adapted and new contact interfaces were introduced.

Continued implementation and long-term improvement

In under two years, Volvo Group upgraded its IP management from a typical industrial company level to a business-driven engine with a clear focus on business returns. Managed in the right way, it now has the foundation to become an IP leader in an industry where intellectual property is increasingly important for profitability and competitiveness.

Great emphasis is put on building the right team with the right mix of experience, skills and networks. The philosophy is that the complex, multi-disciplinary and cross-functional character of business-driven IP management requires a tightly interconnected group of people jointly addressing all relevant aspects. The new team of portfolio heads sharing responsibility for the different business domains was put together through internal and external recruitment.

"We needed a progressive team with skills and experiences at the intersection of business, technology and IP, which also had sufficient understanding of our business and industry, and the ability to drive change," says Bjerkelund. "Since it is impossible to find this mix in every single person, we worked hard to build a team

Action plan



Companies looking to upgrade their IP strategy to become truly business driven and increase the financial returns from intellectual property should consider the following key steps:

- Adopt an expanded view of intellectual property, including both how to build the right portfolios (control) and how to use these to support competitiveness, growth and profitability (value). Business-driven IP management is a cross-functional responsibility extending far beyond the typical domains of an IP department.
- Develop a business domain structure that facilitates the adaptation of the IP strategy to the business context. This involves a hierarchical breakdown of all technology areas relevant to the business, enabling ownership of intellectual property and efficient interfaces, and functions as a container for IP portfolios.
- Develop a business-to-intellectual property 'Rosetta Stone', enabling true alignment with business strategy using value models that represent distinct perspectives on and mechanisms for using intellectual property to realise either increased income or reduced cost.
- Develop context-specific operational plans for each prioritised business domain, providing guidance to all concerned internal stakeholders regarding which IP portfolios to build and how to use portfolios to generate financial returns.
- Ensure an effective process for business anchoring and approval by executive management, so that top-down business priorities define the drivers for

the IP strategy while actionable plans for portfolio development and use within strategic areas are created from the bottom up.

Companies looking to turn strategy into action to implement a business-driven way of working and ultimately realise the financial potential of intellectual property should consider the following key principles:

- an organisation with business accountability for intellectual property, able to answer in terms of business returns why the company should have a portfolio of a certain size, and with responsibility, mandate and capacity to deliver the financial results promised in the IP strategy;
- direct integration of intellectual property in cross-functional business forums, expanding key business and technology decision makers' responsibility to be IP business partners, responsible for providing the right business input to develop and execute on the IP strategy;
- proactive and goal-driven IP creation, shifting the perspective from waiting for new invention disclosures to come in and then evaluating them for relevance and patentability to proactively planning for and building the desired portfolio based on business needs and intended use; and
- cross-functional engagement in the use of intellectual property, ensuring the active involvement of multiple stakeholders outside the IP department in using intellectual property to generate business returns in established or planned business relationships and in competition with third parties.

which jointly ticked all the boxes.”

During the change process and moving forward, communication with the rest of the organisation has been a priority. Therefore, a comprehensive communication plan was established and rolled out during Autumn 2015, followed by an ambitious training plan for 2016.

Early results

Six months into the transition to the new IP operating model, the initial results are promising. Qualitative improvements can be observed across all IP management processes.

Lead times from invention disclosure to filing have dropped significantly from the previous 40 weeks. Key R&D projects which commenced after January 1 have received IP targets, while project stakeholders demonstrate increased understanding of both IP generation priorities and risk-management considerations.

Targeted portfolio evaluations in non-strategic areas have been carried out in light of the new IP strategy, to free up resources and funds for reallocation to strategic areas. Enforcement opportunities are increasingly being identified proactively, as portfolio heads become more familiar with their areas. Improved communication with purchasing has also resulted in more nuanced strategy-based guidelines for managing IP rights in

collaborative development.

Of course, a change of behaviour in a company the size of Volvo Group will take time and there is still a long way to go before the entire organisation has adapted. Over time it aims to introduce more advanced key performance indicators to systematically measure business returns and to continue adapting IP investments and capability to the needs of the business.

Says Bjerkelund: “We have taken some major steps forward and now have a good foundation to play our part in keeping the company competitive. This, however, is not the end, but rather a new beginning to the journey to come.” *iam*

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