Industry Case Study Series on IP-Management

WOM
Insufflators in minimally invasive medicine

By Alexander J. Wurzer & Stefan Kürbis

MIPLM Industry Case Study Series Nr.: ICSS2015-01-325
CEIPI, University Strasbourg in cooperation with
Steinbeis Transfer Institute for Intellectual Property Management
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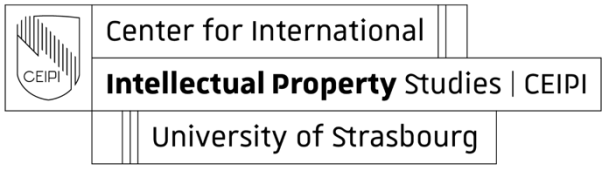

AUTHORS

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Prof. Dr. Wurzer is Chairman of DIN committees DIN 77006 for quality in IP management and DIN 77100 for patent valuation. He is a member of the Board of Directors of "Deutsches Institut für Erfindungswesen e.V." (DIE), Spokesman of the Board of Trustees awarding the Diesel Medal and Fellow at the Alta Scuola Politecnica at Milan/Turin Polytechnic. He is also a jury member for the 2018 German Innovation Award of the German Design Council and a member of the group of experts of the European Commission.

Stefan Kürbis

Stefan Kürbis is the Senior Vice President for Global HR and Innovation Management at WOM WORLD OF MEDICINE GmbH (WOM). In 1991 he began his career at WOM in the technical documentation department. From 2009 to 2016 he was Vice President Global Marketing. He founded 2013 WOM WORLD OF MEDICINE ASIA Ltd. in Hong Kong and was Executive Director for 3 years. In July 2016 he was appointed as Senior VP Glob-al HR and Innovation Management. In 2004 he was founding member and for 5 years speaker of medtecnet-BB (Berlin-Brandenburg). Since 2013 he is chairman of the Expert Group Medical Technology BB (Berlin-Brandenburg). Stefan Kürbis also initiated and is the organizer of the yearly symposium 'Trends in Minimally Invasive Medicine'.

PART I

About WOM

WOM is a subsidiary of Novanta, Inc., one of the world's leading suppliers of advanced technology solutions for OEM customers in industry and healthcare. WOM is a truly international company with a turnover of EUR 74m (2016).The company pursues a consistent growth strategy and its 450 employees (2016) are from more than 20 nations. WOM's customers are leading system providers in the field of medical technology, including Aesculap, Olympus, Smith & Nephew, Stryker and others. WOM develops and produces products in the corporate design of its customers. The company handles the design, development and manufacturing of modular turnkey solutions, OEM and private label products. Furthermore WOM offers its customer product training, customer ser-vice, maintenance and repair, service training, international logistics, production of precision parts and assemblies, medical contract manufacturing, cleanroom production and product certification of (e.g. with the U.S. Food and Drug Administration (FDA)).

WOM's product spectrum ranges from camera systems and lenses, light sources, lithotripsy lasers and gamma detection probes, insufflators and CO2 management, suction and irrigation pumps, fluid management, tube sets and filter systems to accessories. WOM has been dominating its market for more than 40 years. WOM founder Peter P. Wiest developed the world's first hysteroscopy insufflator in 1972. In 1985, the company entered the laparoscopy market and developed the world's first electronic laparoflator. In 1996, the world's first 40 l/min insufflator was launched. In 2011, the development of a new, unique generation of insufflators for MIC (minimally invasive surgery), the AirSeal® iFS Intelligent Flow System, was completed. This was followed by the launch of a multi-indication pump in 2015. In 2017 WOM launched a new platform for insufflator with new features like smoke evacuation, gas humidification and more flow performance for advanced laparoscopy.

In the insufflator and pump segment, WOM is market and innovation leader for CO2 management systems, multi-indication pump solutions as well as multi-functional tube sets. WOM offers expertise in laparoscopic, hysteroscopic, arthroscopic and endourology indications, metabolic and paediatric surgery as well as endoscopic vessel harvesting and cardiac surgery.

WOM defines itself as a company driven by innovation. Innovation is part of the company's business strategy. Professional innovation management takes place at the WOM InnoHub. Senior management is committed to actively fostering innovation among employees, customers and users. Within this scope, WOM intends to use and implement IP Design as a management tool. The R&D ratio at WOM is significantly higher than 10% and the company actively involves its customers and user in the development process from an early stage. WOM has received several TOP100 Innovator awards and holds more than 50 patents.

The challenge

In addition to pharmaceuticals, medical devices and medical technologies are the most important segments in industrial healthcare. In Germany, this industry is worth more than EUR 29 billion and accounts for approximately 4% of the gross value added of the healthcare industry as a whole. Given the high export rates, more than 22% of all exports of the German healthcare sector are attributable to medical devices and medical technology. Roughly one sixth of these exports go to the United States of America, making the country the most important export partner for this sector, followed by China. In a worldwide comparison, Germany is the third largest producer of medical technologies (after the US and China), with a global market share of approximately 10%.

The healthcare sector is a highly innovative industry. Innovations in this industry generate growth and structural change in other sectors. Demographic and technological change, globalization, the increasing burden on social security systems and increasingly demanding consumers require companies to continuously adjust to their changing environment. Advances in medicine and medical technology can be viewed from two perspectives: On the one hand, they provide relief from pain and suffering, including full recovery. On the other, new medical options regularly mean high diagnostic and therapy costs, forcing healthcare systems to budget and regulate healthcare expenditure. The operating environment of manufacturers of medical technology is therefore characterized by conflicting priorities and great price and margin pressure. According to a study by the German Federal Ministry for the Economy, innovations in healthcare and advances in medical technology have resulted in annual savings of EUR 22 billion.

The global market for medical technology is growing. North-western Europe accounts for a market share of 25% with constant annual growth rates of around 6%. This means that the medical technology sector is growing faster than world trade with industrial products in general. The value of the global market for medical technology is estimated at approx. EUR 320 billion. In Germany, the greatest demand for medical technology (34%) comes from the hospital sector, which is subject to strict remuneration rules as well as social and political framework conditions. Compared to Europe and the rest of the world, demand from this sector is relatively low. This suggests that the specialist care system in Germany is very good.

Product groups in medical technology range from orthopaedics and implants to dialysis and endoscopy, with the latter accounting for some 4% of the total market. The medical technology sector consists primarily of medium-sized companies, with 92% having less than 250 employees. Highly innovative companies generate 1/3 of their revenue with products which are no older than three years. The export rate is 65%.

Minimally invasive surgery has become common clinical practice in the last thirty years. Conventional surgical interventions cause patients greater postoperative discomfort, which can be reduced by means of minimally invasive surgery. Minimal invasive

surgery includes all interventions requiring minimal cuts through the skin or using natural access. The development of modern surgical instruments in laparoscopic and abdominal surgery has led to resounding successes in gallbladder or appendix resection. In laparoscopy an endoscope, which is connected to a video camera, a light source and an insufflator, is inserted in the abdominal wall through a small access port (trocar) getting access to the abdominal cavity. Minimally invasive surgical procedures are now the most common techniques used e.g. for gallbladder and appendix resection.

With minimally invasive surgery increasingly gaining ground in hospitals and surgeries, expectations from medical technology are steadily increasing, too. The development of new instruments, devices and techniques is a lucrative market for the industry. With MIS devices, German companies are at the forefront of this growth market.

Insufflators ensure the controlled introduction of CO2 into the abdomen. Good visibility and precise cuts are key in minimally invasive surgery. But this can only be achieved if there is enough room for an endoscope and medical instruments in the body cavity. Insufflators reliably extend body cavities to ensure sufficient surgical space by means of CO2. WOM is the world's innovation and market leader for insufflators in the field of laparoscopy.

An increasing number of surgical procedure across all medical specialisms are performed endoscopically. This requires further technical equipment in addition to the actual endoscopic instruments. In clinical practice inside the operating theatre, this equipment is arranged on a cart: the endoscopy tower.

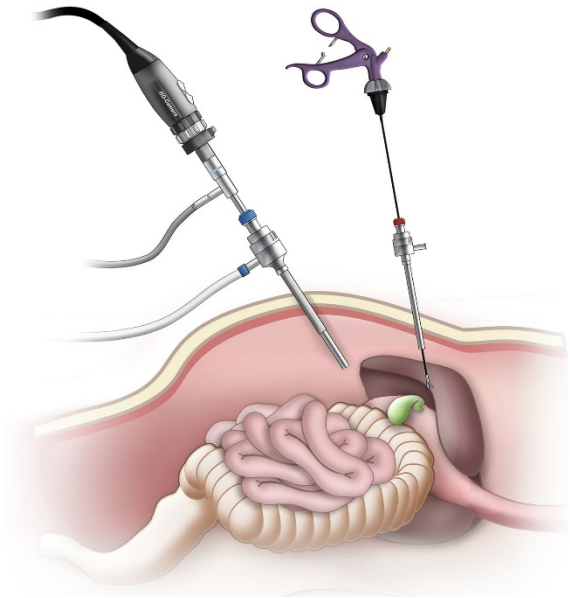

Figure 1: Schematic representation of minimally invasive gallbladder resection (cholecystectomy)

During a surgical procedure in the abdominal cavity, such as the removal of the gallbladder, space must be created first. This is done through a hollow tube called trocar, which is gently pushed through the abdominal wall and anchored in place. The sterile tubing of an Insufflator is connected to the trocar. Depending on the application, up to 50 litres of gas per minute (l/min) can be supplied and up to 12 l/min can be extracted. This innovative CO2 management makes it possible to keep surgical conditions in the abdomen very stable and lower the risks for the patient at the same time. The pressure in the abdomen should be high enough to provide adequate visibility and space in the body cavity, but also low enough so that no large quantities of CO2 reach the bloodstream (embolism).

Figure 2: Endoscopy tower in an operating room situation

The endoscopy tower consists of a geometrically adjustable, high resolution monitor which ensures an optimal viewing angle for the surgeon. The camera transfers the OR situs to the monitor and is prepared for medical requirements, for example, to depict more red hues and make vessels easier to see. A LED lamp serves as the cold light source inside the core of the light projector. Together, the camera and light source ensure monitors have natural colours and optimum resolution.

The CO2 insufflator is usually supplied with gas via a gas bottle. Alternatively, a wall socket for medical CO2 can be used. The CO2 is heated to body temperature by means of a heating technology in order to prevent the patient from cooling down during the procedure. There is also empirical evidence that the use of heated CO2 reduces postoperative pain intensity and thus patient discomfort after the procedure. The pressure-controlled insufflator releases the gas into a tube set with filter which is connected to the abdomen via a trocar. The insufflator produces a CO2-filled body cavity inside which a minimally invasive procedure can be performed. Trocars allow the surgeon to insert an endoscope for visualization, instruments for cutting as well as other instruments into the abdomen to perform minimally invasive procedures.

The pressure through which the body cavity is kept open for the minimally invasive procedure should not exceed 15 mmHg. If this pressure is exceeded, there is a risk of CO2 getting absorbed by the tissue, which can lead to embolisms. The relevant parameters are displayed and set on the insufflator itself: the pre-selected insufflation pressure and the actual pressure in mmHg, the flow rate in l/min as well as the currently insufflated gas volume in litres.

Insufflators and a profound understanding of the practical realities inside the operating theatre are one of the core competencies of WOM. This includes the characteristics of different patient types, for instance, and the possibility of applying a certain CO2 pres-

sure to them in the context of a minimally invasive procedure. Geriatric patients, toddlers or obese patients must be treated differently when it comes to pressure and flow control. Since WOM develops and manufactures insufflators for other labels such as Stryker (a company that fits out entire operating rooms), the company must not only adapt the design but also optimize the interfaces to other devices in the endoscopy tower. It is vital for the surgeon to create stable operating conditions by controlling the pressure and flow of CO2 whilst reducing the risks for the patient to a minimum. A state-of-the-art insufflator can de-liver up to 50 litres of gas per minute and extract up to 12 litres per minute.

In minimally invasive procedures, electrosurgical devices or lasers are often used, which generate smoke in the abdomen. This smoke obstructs the view and contains harmful substances in the form of gases, droplets or particles, which must be removed from the abdomen. Modern insufflators must therefore not only be able to introduce gas into the body, but also to extract smoke while maintaining the pressure in order to ensure stable surgical conditions.

Control systems therefore play a significant role for the success of insufflators. They must automatically compensate leakages, keep the abdominal pressure under control and adapt to specific operating conditions, e.g. when the patient is an infant or when specific surgical techniques are used. Automatic operating modes reduce the distraction caused to the surgeon by insufflator functions during the intervention and allow them to focus their full attention on the actual procedure. De-pending on the surgery type, the insufflator maintains a specific operating mode in specific operating conditions and ensures that the surgeon can rely on its functionality and optimal visibility.

WOM's corporate strategy is geared towards organic growth through innovation. The aim is to offer both new and existing customers greater efficiency in product care by strengthening the company's global presence and to increase revenues and profits through greater innovation. To this end, a new hardware and software platform was created, which contributes to more efficient workflows in hospitals and thus to lower costs for the customer. The feasibility of a platform strategy at WOM is limited by the diverse requirements of its customers. The platform is rather a modular kit in which software, hardware and tube set variants can be adapted to

Figure 3: Schematic representation of insufflation

individual customer requirements. For WOM, it is of crucial importance to optimize its own innovative power and to use its core competencies in the fields of control systems, pneumatics, usability and disposables in a focussed and goal-oriented manner in order to implement its own innovation and growth strategy.

Part II

WOM innovation management and IP design

WOM's innovation management is organized around the WOM InnoHub, where targeted solutions for minimally invasive surgery are generated. In order to identify the relevant questions and develop targeted solutions, WOM regularly invites target groups such as doctors, hospital representatives and representatives of research institutes from the life sciences sector as well as OEMs to share their know-how and opinions. The information provided by doctors and surgical staff is combined with the technological know-how of WOM in order to develop ideas and processes which are then developed further into solutions in a creative exchange. The WOM InnoHub format enables targeted innovation management. It provides the techniques required in order to find future-oriented solutions along the entire process chain – from the idea and its development through to production and after-sales service – and translate them into a gate process.

The WOM InnoHub uses an online-based trend and ideas platform for internal exchanges as well as regular workshops such as Design Thinking, held together with the company's partners. One of the key prerequisites is to give WOM employees opportunities to contribute their ideas on an ongoing basis. This results in an innovative production chain for customers and OEM partners with a direct interface to users. Doctors and users can be sure that their preferences and feedback are taken into account and the technology fully meets their surgical requirements. New product developments such as the new insufflator technology owe their existence precisely to this process. WOM's employees see the WOM InnoHub as an opportunity for interdisciplinary exchange and personal development. At the same time, the WOM InnoHub leads to a greater sense of ownership and enhances motivation by providing creative design opportunities. IP design capabilities are firmly integrated into this environment.

IP design as a management tool

The idea of IP design as a management tool was developed, tested and implemented in industrial settings by the Master School for IP

Law and Management (MIPLM) at the Center for International Intellectual Property (CEIPI) of the University of Strasbourg, the European training centre for representatives before the European Patent Office (patent attorneys), in collaboration with a number of internationally renowned European tech firms, institutions and research facilities with an interest in intellectual property. So far, industrial training partners have included ABB, Novartis, Philips, Airbus, Total, Unilever, BASF, Nestlé, Sanofi and SAP, to name but a few. The underlying idea for IP design is derived from the requirements arising especially for European companies from the digital revolution, the (mobile) Internet, the Internet of Things, Industrie 4.0 as well as the globalization of markets and value chains. IP design is a management tool designed to enable companies to adapt to sometimes radical and ever-changing competitive situations, business models and customer expectations, and to develop successful USPs.

Against this backdrop, the role of IP as a competitive tool has changed. IP management is less and less about protecting a company's inventions by abstract legal means, but rather about optimizing returns on innovation. In an IP design setting, the focus shifts from isolated efforts in patent de-partments towards a genuine and symbiotic integration of IP into the innovation process. Tradition-ally, patent applications at WOM were primarily based on technical functionalities (inventions) de-rived from the company's own development efforts rather than on the need for developing exclusive, market-relevant USPs within the scope of an innovation-based business model. The task of IP design is to actively develop IP which is compatible with the business model and the perceived customer benefit, and to achieve greatest possible exclusivity for this perceived benefit within the competitive environment. IP design enables WOM to optimize thinking in exclusivities and economic levers through systematic integration into the development process.

IP design as a management tool is based on four central pillars:

- **Thinking in terms of business models**

  IP design relies on an in-depth understanding of innovation as a business model. The approach is designed to systematically identify value levers in the business model, determine potential competitors, question value-creation architectures and verify the coherence of application scenarios at an early stage. This enables the identification of gaps in the business model and the creation of spheres of exclusivity by means of IP in areas where they contribute the greatest possible value.

- **Thinking in terms of customer requirements**

  IP design puts the customer of the innovation at the centre of all efforts and identifies their needs and the attributes they would be willing to accept premium prices for. It identifies the most important features of the innovation in a targeted manner and makes them exclusive by means of IP. This leads to a unique selling proposition which can be used in product marketing in order to leverage the customer's willingness to pay a certain price in an optimal way.

- **Overcoming mental silos**

  IP design requires intensive collaboration between different business functions which of-ten operate independently in everyday business life. It therefore serves as a communication tool which steers the dialogue between all relevant stakeholders (R&D, product management, marketing, sales, IP, etc.) in the right direction by looking at the innovation from different angles and translating between the languages of different disciplines in order to ensure a coherent overall concept.

- **Thinking in a more flexible and agile fashion**

  IP design enables a structured approach to innovations and makes the connections be-tween the individual components of the business model transparent. In this way, gaps and possible extensions can be revealed systematically and quickly, allowing all project participants to bundle their creativity and optimize the marketability of the innovation.

The IP design process combines three different competencies: informing, anticipating and generating. These competencies must be applied continuously in the course of the development and further development of the business model (see illustration).

The competency of informing includes, in particular, the ability to monitor the prior art and the competitive environment for relevant and desired market positions. This kind of competition monitoring goes far beyond the traditional approach of observing disclosure documents of direct market competitors as described in the patent literature. It therefore requires an alternative set-up to the traditional approach. The aim is not just to find the right information, but rather to draw the right conclusions from it, i.e. to

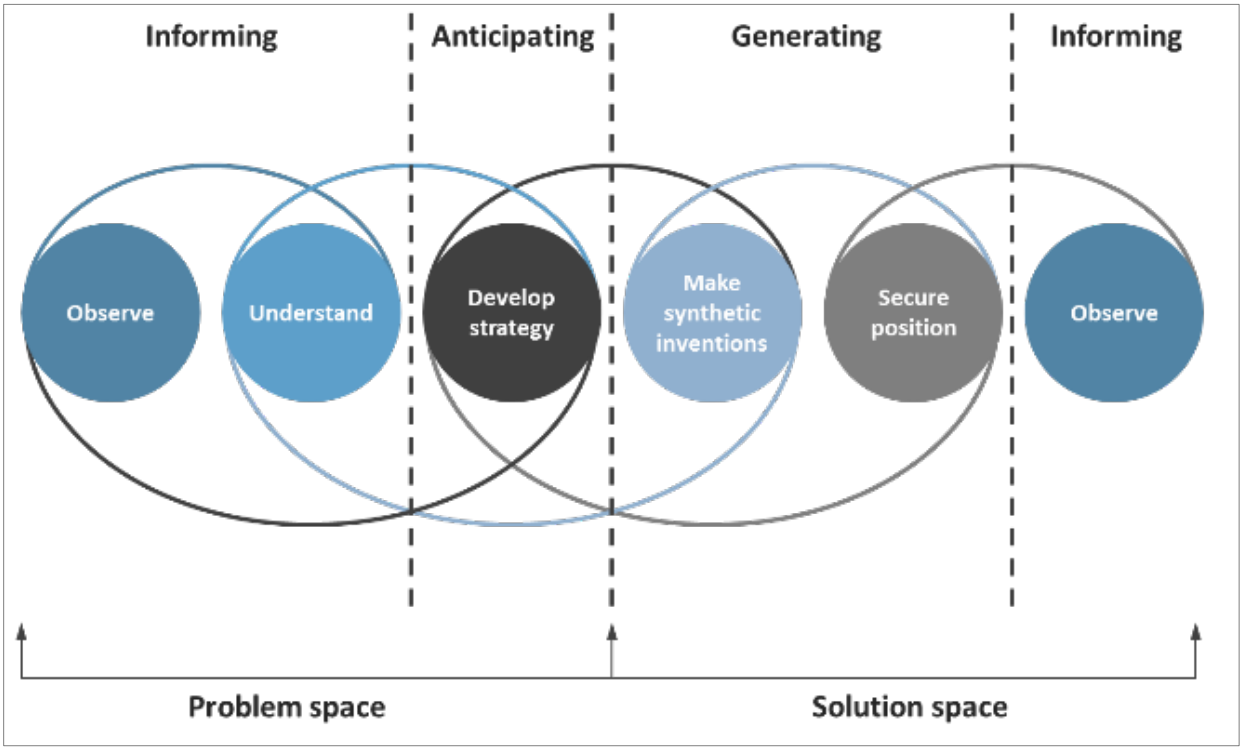

Figure 4: Schematic representation of the IP design process

gain a profound understanding. Information per se is of little value unless it is used in the right context and leads to an understanding of the market and the competitive situation. Obtaining such an understanding is the core task of the IP-FD methodology.[1]

An understanding of our own business model as well as the competitive and market situation leads to a strategic vision for the future of our company and anticipating this future enables us to draft a 360° IP strategy. [2] This IP strategy approach must include the tasks required for a differentiation strategy: [3] managing risks, suppressing imitation, designing a market position and communicating the USP.

IP generation is primarily based on the process of synthetic inventing. The invention cores in the innovation description are based on three central elements:

- The business model, i.e. the "why?"
- The usage situations/user scenarios, i.e. the "how?"
- The product and service, i.e. the "what?"

The identification of desired future exclusivity positions at WOM primarily relies on the application of usage scenarios, combined with the specific requirements of OR staff and doctors. Scenario analysis was developed as an integrative method comprising various methods used in the design-thinking process in order to analyse usage scenarios in IP design. WOM uses this tool to obtain a process-oriented view of OR procedures and

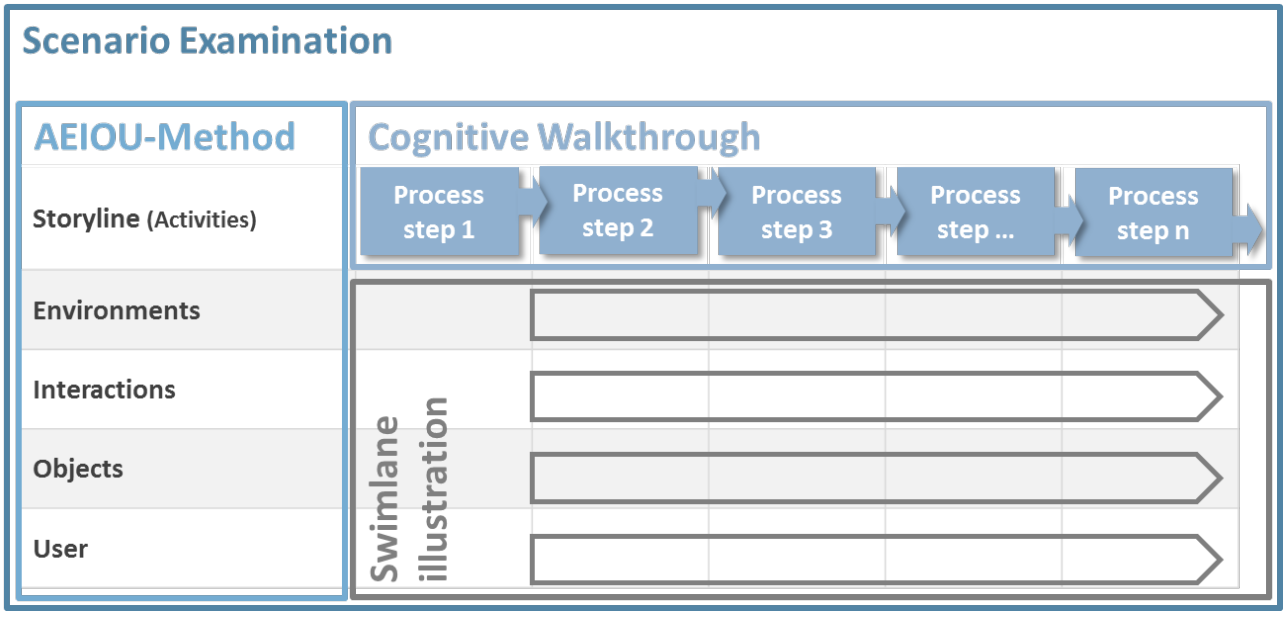

Figure 5: An integrative IP design method to support synthetic inventing based on usage scenarios.

[1] Cf. Wurzer/Becker, MIPLM Industry Case Study "Abus" Strasbourg: 2015.
[2] Cf. Wurzer/Grünewald/Berres, Die 360° IP-Strategie, Vahlen, Munich: 2016.
[3] Cf. Wurzer/Kraus, MIPLM Industry Case Study "Arri", Strasbourg: 2014.

the use of the insufflators during minimally invasive surgery. The precise and differentiated investigation of the relevant application environments, interactions (e.g. human-machine and machine-machine interactions), objects relevant to the scenario within predefined system boundaries as well as relevant users, allows the company to derive different invention environments from the process flow view, which must then be subjected to further investigation.

The identified invention environments must then be translated into technologies, bearing in mind the intended customer benefit. In other words, the customer benefit and its delivery must be translated into technological challenges and solutions. Potentially successful invention environments in terms of their contribution to the business model and potential

Figure 6: Usage scenarios in an OR environment

patentability and enforce-ability, must be identified and evaluated. The invention core is isolated from these invention environments by discarding comparable or disruptive solutions described in the patent literature.

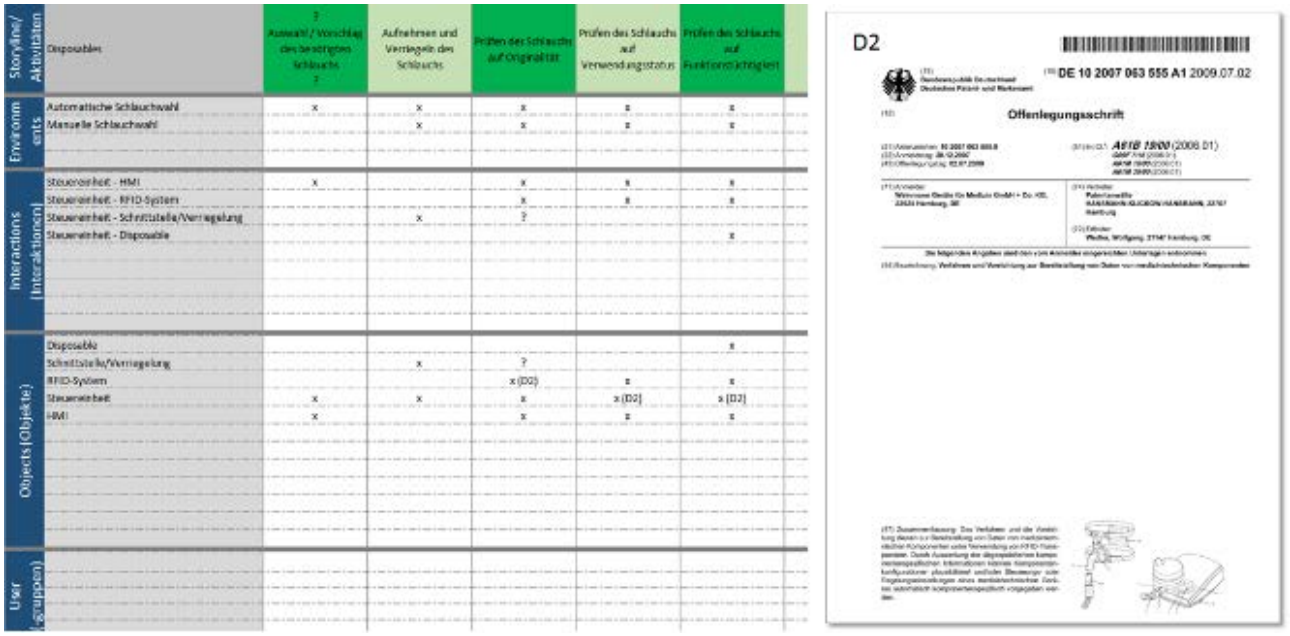

Figure 7: Example of a scenario analysis and an associated patent type.

PART III

Conclusion

Summary and benefits for WOM

Innovation is a key success factor for WOM's growth and market position. WOM's innovation management integrates the requirements and visions of the company's customers and OEM partners with its own technical capabilities. IP design was introduced at WOM in order to generate IP based on the company's business model and proposed customer benefit. Against this backdrop, IP design primarily serves the purpose of gaining a better understanding of customers' viewpoints and deriving a more precise understanding of customer benefits from it. The USPs along the eco-nomic levers in the business model identified in this way are subsequently patented in order to obtain an IP portfolio consisting of exclusive, sustainable and defensible competitive advantages. IP design helps WOM to make IP generation controllable. In addition, results are predictable and employees can focus on their creativity on superior customer benefits and on the value levers within the business model.

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What is the MIPLM?

The 21st century marks a new era as our economies increasingly rely on knowledge-based production processes and services. Consequently, the institutions responsible for education and research in the field of intellectual property law in Europe must provide appropriate training for staff from the respective professional environments to acquire or reinforce their ability to initiate, control, protect, exploit and increase the value of intangible assets. The knowledge-based economy integrates research and development activities, innovation, industrialization and the marketing of products and services including intangible assets and completely revolutionizes enterprise management. It creates new professions specialized in dealing with intangible assets: this branch of law attracts consultants and intellectual property experts from among managers, jurists and lawyers. Indeed, every innovation process generated by new economic activities assumes the intervention of the law, the installation of tools and structures for developing or planning in order to control the intangible assets and to optimize their valorization. It has therefore been the duty of CEIPI, University of Strasbourg, as a leading center for Intellectual Property Studies in Europe, to propose a master program on "IP Law and Management" (MIPLM) since 2005, which complements the existing training course for engineers, scientists and lawyers. This "European" master program features a continuous training scheme aimed at experts in the field of intellectual property. It provides a genuine education program based on an investigation carried out in large enterprises in Europe. The teaching staff comprises academics and experts from various countries, renowned for their work and competence in dealing with the impact of intellectual property on the policy of enterprises.

M. Yann Basire
Director General of CEIPI

Intellectual property has become a crucial factor and driving force in the knowledge-based economy. The economic development and the competitiveness of companies increasingly depend on the generation and exploitation of knowledge. Intellectual property can convert investment in corporate knowledge creation into economic benefits. Thus IP-based appropriation strategies form the basis for creating wealth and competitive advantages for companies from their R&D and innovation activities. The development and implementation of sustainable strategies for IP exploitation require a concerted integration of the disciplines involved in order to achieve an interdisciplinary perspective on IP. In a knowledge-based economy, companies can only achieve a competitive edge by combining the economic, legal and technological sciences. IP management within such a holistic approach provides optimized appropriation strategies and thus essentially contributes to the creation of wealth within a company. Accordingly, IP management needs skilled managers who can combine the economics of intangible assets in an intellectualized environment with multidisciplinary knowledge in order to maximize the benefits of IP. A new type of competencies, skills and underlying knowledge enters the arena of management and management education. The increasing impact of intellectualized wealth creation by investment in knowledge, R&D and innovation followed by its exploitation and IP-based appropriation calls for seminal new education concepts. The CEIPI program "Master of IP Law and Management" offers such a new type of management education. It follows an intrinsically multidisciplinary approach to meet the challenges and requirements of the knowledge-based economy. This master program combines legal, economic and management sciences and includes lectures from leading scholars in the field of IP law and management. Its ultimate objective is to qualify experienced IP professionals for acting as practically-skilled IP managers with a sound knowledge of the principles of wealth creation in our knowledge-based economy.

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Director of Studies, CEIPI | Adjunct Professor
Director of the Steinbeis Transfer Institute Intellectual Property Management

Concepts of the Studies

Intellectual property and economics in the present context are two disciplines that exist in parallel.

Experts are found in each discipline, but with a lack of mutual understanding and training. Both "worlds" are nowadays bridged by experts, called IP managers, who link both disciplines through knowledge and experience. The CEIPI studies pursue a holistic approach and engage experts for the developing market of an IP economy. They are experts for basic economic management processes with specific assets. Management is understood in the broad sense of an overall company management and accordingly divided into six general functions:

- 1. Strategy
- 2. Decision
- 3. Implementation
- 4. Organization
- 5. Leadership
- 6. Business Development

On the basis of this differentiation skills should be allocated to management functions, and relevant knowledge to the functions and skills. The teaching concept focuses on both areas, skills and knowledge, as relevant to business with intellectual property.

Skills can be allocated to the specific management functions as relevant to the practical work within IP management. The skills are thus determined by the daily challenges and tasks an IP manager encounters.

For example, the "Decision" function includes skills such as "valuation and portfolio analysis techniques", and "Organization" as a function requires skills to manage IP exploitation and licensing including economic aspects as well as contractual design and international trade regulations with IP assets.

Special knowledge of economy and law is required in order to implement and deploy these skills in business. This includes knowledge of economic basics such as function of markets and internal and external influence factors. Additional management knowledge is also included such as value-added and value-chain concepts.

The legal knowledge includes contractual and competition law, and special attention will be paid to European and international IP and trade law, e. g. litigation, licensing, dispute resolution. Following this concept, IP law and management can be combined in clusters formed of specific skills and knowledge defined within each management function.

The lectures have a high international standard; the lecturers possess a high reputation and long experience in the teaching subject with academic and practical backgrounds.

The top-level experts come from the fields of law, economics and technology. The experts and the students work closely together during the seminar periods. Exchange of experience and, as a consequence, networking are common follow-ups.

Participants & their Benefits

This European master's program was designed especially for European patent attorneys, laywers and other experienced IP professionals.

Its ultimate objective is to qualify experienced IP professionals to act as IP managers with the practical skills and knowledge to deal with the new challenges of wealth creation and profit generation. Participants acquire first and foremost a new understanding of how intellectual property works in business models and are conveyed the necessary skills to achieve the systematic alignment of IP management and business objectives.

The course provides an international networking platform for IP managers and in addition enables participants to build long-lasting relationships and to further develop relevant topics within the field of IP management. Being part of this international alumni network also offers new job opportunities and publication possibilities.

Past lecturers and academics

Prof. Jacques de Werra,
University of Geneva

Prof. Estelle Derclaye,
University of Nottingham

Prof. Christoph Geiger,
University of Strasbourg

Prof. Jonathan Griffiths,
School of Law, Queen Mary,
University of London

Dr. Henning Grosse Ruse-Kahn,
Faculty of Law, University of Cambridge

Prof. Christian Ohly,
University of Bayreuth

Prof. Christian Osterrith,
University of Constance

Prof. Yann, Ménière,
CERNA, École des mines de Paris

Prof. Cees Mulder,
University of Maastricht

Prof. Julien Penin,
University of Strasbourg, BETA

Prof. Nicolas Petit,
University of Liege

Prof. Alexander Peukert,
Goethe University,
Frankfurt/Main

Prof. Jens Schovsbo,
University of Copenhagen

Prof. Martin Senftleben,
University of Amsterdam

Prof. Bruno van Pottelsberghe,
Solvay Business School

Prof. Guido Westkamp,
Queen Mary University London

Prof. Alexander Wurzer,
Steinbeis University Berlin

Prof. Estelle Derclaye,
University of Nottingham

Prof. Ulf Petrusson,
Göteborg University

Past lecturers and speakers, practitioners and institutions

Arian Duijvestijn,
SVP BG Lighting Philips

Kees Schüller,
Nestlé S.A.

Thierry Sueur,
Air Liquide

Heinz Polsterer,
T-Mobile International

Dr. Fabirama Niang,
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Philipp Hammans,
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Dr. Lorenz Kaiser,
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Leo Longauer,
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Nikolaus Thum,
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Malte Köllner,
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KPMG

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Air Liquide
Airbus Defence and Space
Akzo Nobel NV
BASF Construction Chemicals
Boehringer Ingelheim Pharma
British Telecom
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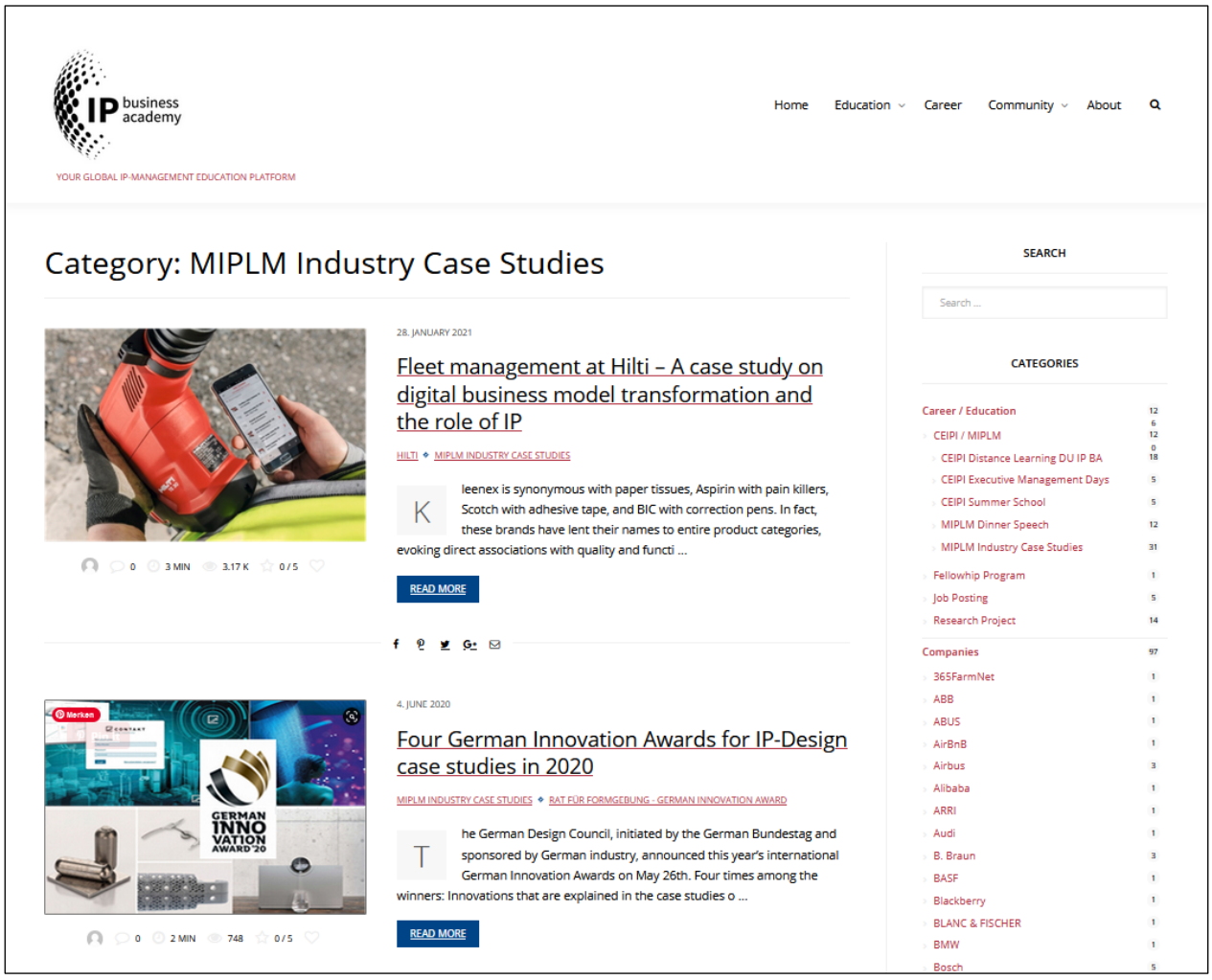

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