Industry Case Study Series on IP-Management

VORWERK Thermomix (I)
Strategy Development

By Alexander J. Wurzer & Kai Schäfner

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AUTHORS

Prof. Dr. Alexander J. Wurzer

Dr. Wurzer is Adjunct Professor for IP Management at the Center for International Intellectual Property Studies (Centre d'Etudes Internationales de la Propriété Industrielle, CEIPI) at the University of Strasbourg, where he has been Director of Studies for the Master's degree in Intellectual Property Law and Management (MIPLM) since 2007. Prof. Dr. Wurzer is Director of the Steinbeis Transfer Institute for Intellectual Property Management at Steinbeis University Berlin. He is Managing Partner at WURZER & KOLLEGEN GmbH, a consulting firm specializing in strategic IP management.

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.

Kai Schäffner

Senior Vice President Marketing at Vorwerk International in Wollerau/Switzerland. As a Member of the Management Board for the Thermomix division, he is responsible for international marketing and product innovation.

A PATENTED FOOD PROCESSOR

How did Vorwerk manage to turn its Thermomix into a cult object in Europe's kitchens? The answer is a whole new intellectual property strategy which no longer sees patents as a trophy for inventors, but rather as an instrument for protecting the exclusive perception of customer value.

It is considered the Porsche among food processors – a status symbol for home cooks and family managers, who lovingly refer to it as "Thermie" and take to online forums to rave about its "incredible addictiveness" or share their recipes for broccoli salad or home-made cough syrup for children. The Thermomix from Vorwerk does much more than just weigh, cut, blend, cook and steam. The latest model, called TM5, comes with an integrated feature that sets it apart from all other food processors: digital recipe chips which guide the user through the preparation process by providing step-by-step instructions on a display. Times and temperatures for each step are already pre-set. With this success guarantee, Vorwerk taps into a whole new customer segment, namely people who aren't the greatest cooks but would like to be or have to be.

This kitchen revolution comes at a price: the TM5, which replaced its predecessor TM31 in September 2014, costs EUR 1,109. Its price penetration is impressive. Vorwerk, who are represented in 70 countries worldwide, sell a Thermomix every 30 seconds, including in crisis-ridden countries like Portugal or Spain, where it costs nearly twice the monthly minimum wage. In Madrid, a Thermomix can be found in every fifth household. In order for this premium price strategy to succeed in a fierce competitive environment, the engineers at Wuppertal-based Vorwerk have designed numerous unique selling points into their food processor. After all, perceived exclusivity is a critical factor for price acceptance among customers. Although competitive high-tech devices such as the Philips Home Cooker, Taurus MyCook, Krups Prep & Cook or Kenwood Cooking Chef promise similar benefits, a protective wall consisting of 151 patent applications for the TM5 (more than ten times as many as for its predecessor) keeps the competition at bay.

How did Vorwerk manage to do that? The recipe for success behind the Thermomix is a new strategy for dealing with intellectual property (IP). In 2012, the company decided to modernise its IP strategy and to do many things differently to what's recommended in textbooks on innovation and IP management. Going forward, the starting point was going to be the customer benefit instead of tailoring patents exclusively to technical details and other features.

The competition never sleeps

It all began with the realisation that the competitive environment had become increasingly dynamic since the launch of the last product generation in 2004. The market had seen a proliferation of food processors across various performance and price categories. Although none of them represented a real threat to the dominant market position of the Thermomix, the strong presence of competitive solutions on the Internet and home shopping TV channels resulted in a loss of perceived exclusivity for the Thermomix.

Consequently, the Management Board of Vorwerk's Thermomix division decided to hold a strategy meeting in order to discuss the competitive situation in February 2012. The picture painted by the Competitive Intelligence team was rather bleak: the former uniqueness of the Thermomix in the market was about to erode.

Senior management was particularly upset at the largely identical blades found in competitive products. The blade is the central functional tool of a food processor – and not just for cutting, chopping and crushing, but also for stirring and kneading. Because its effect keeps changing throughout the cooking process, the shape of the blade in the Thermomix is based on complex calculations in order to ensure that it even withstands the forces involved in processing yeast dough and ice cubes. A look into the mixing bowls of a MyCook, Speedcook or Superchef, however, revealed that the shapes of the blades used by the competition were barely distinguishable. This meant that consumers were struggling to recognise the superior features of the Thermomix. The Competitive Intelligence team reached similar conclusions with regard to handling and accessories.

During a subsequent discussion, the CFO questioned the actual prohibitive effect of the existing IP portfolio in the light of considerable IP expenditure. While especially the product name was covered by trademark rights in its most important markets around the globe, it turned out that patent protection concerned mainly technical features such as the shock absorber of the drive shaft – in other words: features few customers are aware of. Conversely, numerous features of the Thermomix which were important to the customer (for example the shape of the blade) were not represented in the patent portfolio at all. This meant that there was nothing to prevent competitors from offering very similar benefits to those provided by the Thermomix as far as the display, the control elements or the use of stored recipes were concerned. In addition to legitimate competitive products, an increasing number of knock-off products imitating such features as the Varoma steaming attachment were appearing on the market. With the emergence of online shops selling food processors, Vorwerk was also increasingly confronted with the problem of counterfeit blades and accessories.

The need for a new IP strategy

As the launch of the new product generation TM5 in 2014 was just around the corner, Vorwerk had to decide whether to stick to its current IP strategy and take the risk of jeopardising the market position of the new Thermomix, or whether to look for a different solution. It didn't take long for the Thermomix CEO and the Vorwerk CTO (who was also responsible for the patent strategy at Vorwerk) to realise that a new IP strategy was needed. The aim for the new strategy was to restore the perceived gap in the eyes of the customer between the Thermomix and competitive food processors, and to enforce the premium price of the new Thermomix.

The CEO and CTO subsequently commissioned the authors of this article with the development and implementation of the new IP strategy. Together with the Head of the Patent department and the Vice President responsible for the Legal and Trademark department, they formed the core of the strategy team. The aim for the TM5 was to align IP strategy with marketing strategy. Going forward, Vorwerk's focus was no longer going to be on protecting technical features, but rather on designing a legal battleground in order to protect those features which set the Thermomix apart from its competitors. The rationale behind this new strategy was as follows: the greater the exclusivity of the food processor, the greater the perceived customer benefit and consequently the willingness of customers to pay a premium price. One of the authors of this article, Vice President Marketing Kai Schäffner, had already convinced the Management Board of a new strategic orientation for the product in 2008/2009, when the development of an agenda for the TM5 was still in its early days. As features such as motor power, torque, speed or heating rate played an ever-decreasing role among its predominantly female users, the new Thermomix was no longer going to distinguish itself based on technical performance alone. Much greater emphasis was being placed on the support the food processor was able to provide to its buyers in everyday life. Concrete customer benefits such as time saving, flexibility, safety and the guarantee of consistently good cooking results were going to be put in the foreground of sales pitches from now on.

The Thermomix is not available in retail stores or on the Internet but only via direct selling. During personal demonstrations called Thermomix® Demos, some 13,000 representatives in Germany and 34,500 worldwide demonstrate the benefits of the

food processor from the comfort of the customer's own home.

Prohibitive rights allow Thermomix representatives to achieve a comprehensive exclusive positioning of the product in all use cases of importance to the customer. Decisive arguments include its great flexibility in terms of foods and ingredients, for example. The device can be used for thousands of recipes: from soups and salads to meat dishes, desserts and pastry. Its digital connection to the fan community means that the device has access to one of the largest recipe platforms in the world. Because cooking with the Thermomix is largely automatic, without the user having to stand by, it also helps to save time. Guided cooking means that digital recipe chips take care of most process steps for inexperienced cooks. All the user needs to do is fill the device with the right ingredients and tap on the "Next" button on the touch display once a step has been completed. The unique safety concept of the TM5, on the other hand, is an important selling point for mothers because it prevents children from activating any hazardous operating modes when playing unsupervised in the kitchen and using the touchscreen of the device. In addition, the combination of a mechanical locking mechanism with an electronic one ensures a delayed release of the lid by the swing top, so that hot soup cannot spurt out.

Develeopers need to adopt a new way of thinking

The traditional sequence of the patent development process is to invent something first and then apply for a patent. With the Thermomix, Vorwerk turned this sequence upside down: because the customer benefit was going to be at the centre of the new IP strategy, the company now designed patents around the perceived benefit instead of the other way round. The reasoning behind this approach was simple: because patents are prohibitive rights, the crucial question for their design should be "Who should be prevented from doing what by patents?". Previously, Vorwerk had focused on preventing imitations of its own technological solutions, but the new strategic focus on customer benefits required a new way of thinking.

This called for a paradigm shift among in-house developers, who had to understand that patents aren't trophies for inventors but strategic competitive instruments. It didn't take long, however, to convince marketing and brand experts of this new order. In a first step, Vorwerk integrated the Thermomix Product Management and Technical Marketing departments into the Intellectual Property team. All members of the newly formed team participated in patent design workshops revolving around the questions of how competitors might be able to achieve a similar degree of flexibility, time savings, safety

and guaranteed recipe success, and what solutions competitors should be prevented from offering.

The developers took the technical solutions for the Thermomix as a starting point. Flexibility in the kitchen begins with the available recipes. If in a special data format, these recipes can also be used directly as a control protocol for the device. Key considerations in this respect include the prevention of unauthorised third-party access to the mechanical and electronic data interface in order to prevent unsafe operating modes. In addition, hackers must be prevented from accessing the control unit and recipe chips must be compatible. All patents held by Vorwerk are related to the company's business model. Running verified and quality-assured recipes on the Thermomix required a licence. The IP team examined every aspect perceivable by the customer and exploited the full range of intellectual property rights. An important feature which hadn't previously been protected by IP, for example, was the sequence of tones by which millions of Thermomix devices indicate the end of the cooking process. The idea that a food processor from a discount store would be allowed to sound just like a Thermomix triggered alarm bells among everybody involved. Sound marks play an extremely important role within the scope of acoustic brand management. Even toddlers are able to recognise the Thermomix by the ascending sequence of tones at the end of the cooking process. In the meantime, this four-tone sound has been protected by a sound mark.

To suppress knock-offs of the blade and the Varoma attachment, engineers have modified these parts in such a way that they can now be better protected from imitation by means of patents. Vorwerk protected the unique selling point of high data safety by covering the data compatibility of the Thermomix by means of copyrights and database rights, and the locking mechanism by means of patent rights. The company took a similar approach for protecting its guaranteed recipe success. The exterior design was protected by design rights, 3D trademarks and figurative marks. Accessories such as blades or the spatula now proudly carry the Thermomix logo.

The journey towards new IP

In order to understand what's so special about the Thermomix IP strategy, we must take a closer look. It is neither uncommon to apply for patents, trademarks and design rights for all sorts of features of a new device, nor is it uncommon to think about how

competitors might try to circumvent these rights. The modern IP approach for the Thermomix consists of three steps:

1. DETERMINING THE DESIRED MARKET POSITION

   Prior to defining a budget for the protection of intellectual property, it must be clear what effect a company hopes to achieve from its intellectual property rights in the market. At Vorwerk, the core objective for the Thermomix was to achieve the most unique positioning possible in terms of perceived benefits and exclusivity, as this allows the company to develop an optimised customer benefit compared to the competition.

2. INVOLVING MARKET EXPERTS IN PATENT DEVELOPMENT

   Only in exceptional circumstances should the R&D department invent new product features without the involvement of the IP department. Instead, the Product Management and Marketing departments start by defining the perceived customer benefit and determining which features of competitive products customers are actually aware of. Based on this information, the IP department then designs prohibitive rights to prevent the competition from offering similar customer benefits.

3. PATENTING CUSTOMER BENEFITS, NOT TECHNOLOGY

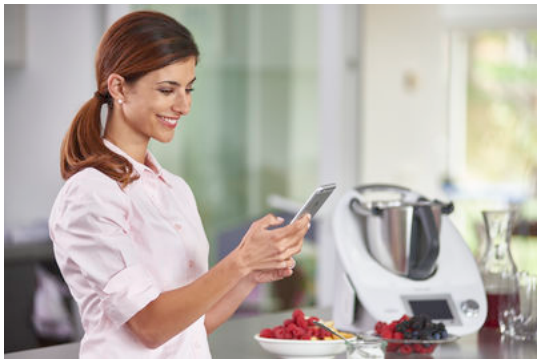
   It would be a mistake to put too great an emphasis on technical inventions when patenting a product, because it usually isn't the exact technology inside a product that closes a sale. The IP department must therefore generally develop worst-case scenarios in line with the customer benefit and ask themselves the following questions: What strategies are competitors going to use in order to imitate the customer benefit of our product? How can we block these attempts? Patent experts will then develop so-called synthetic inventions together with R&D. This refers to a product design which is derived from the desired customer benefit and can be distinguished from existing technical solutions. These novelties, provided they are novel and contain an inventive step, are patented regardless of whether or not the company also uses the specific solution in question for its own purposes. In any case, this permits the company to prohibit competitors from imitating a specific customer benefit. From the customer's point of view, it increases the exclusivity of the product.

The proof is in the pudding

How do Vorwerk benefit from all these measures? Can the success of intellectual property management be measured? The problem with prohibitive rights is that things that aren't happening are difficult to monitor. In addition, the dictum of Balanced Scorecard developers Robert Kaplan and David Norton applies: "If you can't measure it, you can't manage it." Companies focusing on technical features when designing patents

won't know whether they've used their IP rights effectively until knock-off products appear on the market. Simultaneously, companies like Vorwerk, whose IP strategy focuses on customer benefits, face additional difficulties when measuring IP success: What's the customer benefit of the original product compared to much cheaper knock-offs, for example?

When the Vorwerk Management Board decided to implement the new IP strategy, it set concrete goals which had to be achieved in order for budgets to be released. The main objective was to achieve the greatest possible uniqueness in terms of the perceived customer benefit, but this can neither be monitored nor measured. As a workaround, Vorwerk uses a variety of information sources in order to understand why customers have ultimately opted for the Thermomix: What benefit closed the sale? Which competitive products did the buyer consider? What's the buyer's attitude towards other food processors? In addition, the company monitors the opinions of users and non-users alike in chats, in forums and on recipe platforms.



The results confirm that Vorwerk is on the right track with its new IP strategy. While some competitors have since launched a series of similar devices such as the Krups Prep & Cook, a food processor with a cooking function which hit the shelves just a few weeks after the TM5, the premium value proposition of the Thermomix remains unmatched.

In fact, Vorwerk's order books for the Thermomix are bursting at their seams. Waiting times for the patented food processor are currently 12 weeks. Orders worth EUR 160 million had to be shifted to the following fiscal year in 2014, with the total turnover of the Thermomix division up 15 percent to EUR 920 million compared to 2013. In order to meet the high demand, Vorwerk is currently extending capacities at the main plant in Wuppertal and the production location in France.

Conclusion

Fascinated and astounded media reports describing the Thermomix as "The German Answer to Apple and Co." (Cicero) or "The Device of the Hour" (Frankfurter Allgemeine Zeitung) are proof that Vorwerk's IP strategy has paid off. The Thermomix has become a cult object in Europe's kitchens, which proves to anyone who finds patents boring that, if applied in the right way, patents can boost product success and keep the competition at bay in the long term.

COMPACT

THE PROBLEM

In 2012, Vorwerk managers began to notice the imminent erosion of the unique selling points of their premium food processor Thermomix. Too many copycat products had entered the market. Knock-offs of exclusive Thermomix features such as blade shape or the steamer attachment made customers question whether the market leader's premium-priced model was really the product of choice.

THE SOLUTION

The company therefore opted for a radical overhaul of its IP strategy with the introduction of the successor model TM5. Instead of patenting technical features, the household appliance manufacturer decided to put customer benefits at the centre of its patent strategy from now on, and to protect all perceivable features of the device that are related to flexibility, time savings, safety and guaranteed recipe success.

THE BENEFIT

The strategy has paid off: the TM5 launched in September 2014 has already become a cult object among home cooks and professional chefs. Vorwerk have received so many orders for the Thermomix that they are struggling to keep up with its production. Competitive products no longer play a significant role in customers' mindsets.

Contact
Alexander Wurzer
Alexander.Wurzer@ceipi.edu

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Thermomix (II)
Organizational implementation of a patent strategy

By Alexander J. Wurzer, Wolfgang Berres & Rolf-Jürgen Krämer

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Organizational implementation of a patent strategy – a case study

Alexander Wurzer /Wolfgang Berres** /Rolf-Jürgen Krämer****

The development of the fifth generation of the multifunctional Thermomix food processor at Vorwerk was accompanied by the development and organizational implementation of a new IP strategy. This article uses the strategy-structure-fit model to describe the organizational integration of the differentiation strategy developed for the Thermomix in an integrated patent development and management system. It describes the set-up of the differentiation center along with its system interfaces, and derives key success factors from the lessons learnt.

I. Strategy-structure-fit in the context of patent organization[1]

The starting point for aligning a company's operations with its patent development and management efforts is an adequate task distribution. The challenge is to distribute the required workload (from a quantitative perspective) and the different requirements for the work to be completed (from a qualitative perspective). A distribution of tasks creates interfaces and interaction between staff functions and organizational units. These must be optimized in accordance with managerial objectives such as efficiency, flexibility, goal orientation, effectiveness and controllability.[2] A framework objective should be to design an organizational structure which provides a fit with strategic requirements (strategy-structure-fit) and uses the organizational structure as a regulatory system and infrastructure for implementing the strategy.[3] The strategy-structure-fit thus becomes a quality criterion for an organizational structure.[4]

The discussion of organization in patent management primarily follows four different strands: structural organization,[5] process organization,[6] task and function organization[7] as well as IP culture.[8] While the first three strands only show a marginal interest in the strategy-structure-fit, the literature about IP culture calls for an organizational implementation of patent strategy, however, without specifying concrete structural requirements to be verified and optimized within the context of a strategy-structure-fit.[9]

Strategy and organizational structure are interdependent. According to Chandler, structure must follow strategy. At the same time, however, with organizational structures being slow to react to change, they limit a company's strategic flexibility.[10] From a practical perspective, it is key for patent management to establish and regularly verify an organization's strategy-structure-fit.[11] A company's business model defines its patent strategy and its objectives[12], and thus the organizational structure required for implementing that strategy.[13] It must be ensured that individual elements of organizational importance, such as patent and portfolio evaluation criteria, can be coherently and consistently derived from business objectives[14] and used as a basis for meaningful controlling.[15] A number of authors, however, describe a lack of such consistency and coherence in everyday practice. [16] This calls for an integrated patent management system in which effectiveness and efficiency goals are aligned with each other.[17] The literature

* Prof. Dr. Alexander J. Wurzer, Wurzer und Kollegen GmbH, Munich.
** Dipl.-Kaufm. Wolfgang Berres, Wurzer und Kollegen GmbH, Munich.
*** Dipl.-Ing., Rolf-Jürgen Krämer, Vorwerk, Wuppertal.

provides concrete examples for patent strategies with consistent organizational structures from various industries.[18]

The case of the organizational implementation of a strategy for the Thermomix, a multifunctional food processor manufactured by Vorwerk, described in this paper, relates to a differentiation center. A differentiation center is the organizational implementation of a differentiation strategy.[19] A market and competitive strategy of this kind focuses on customer-relevant USPs and thus prevents isolated price comparisons with competitive offers by the customer. In contrast to general product features, the tangible benefits of which are not always clear to the customer, such a strategy addresses the direct benefits perceived by customers and results in their willingness to pay a premium price.

II. The Vorwerk case – the implementation of a differentiation strategy

The differentiating features of the Thermomix oriented at customer benefits include integrated storage for recipe data guiding the user through the food preparation process step by step, a sophisticated safety concept, as well as an intuitive user interface which even enables users to pause the process, skip steps, and modify steps in order to stay on top of the process at all times. At the same time, the customer can rely on the recipes and functions of the Thermomix whenever needed. In comparison to competitive products, this so-called “guided cooking” leads to a substantially different customer perception and a clear differentiation advantage for the product.[21] In order to make the uniqueness of the product perceived by the customer sustainable and legally enforceable, the company has developed a patent strategy which is integrated with its differentiation approach. This was achieved by creating comprehensive patent positions which prohibit the competition from imitating the underlying technology for the perceived customer benefits. This creates a bias in favour of the Thermomix due to a lack of comparability.

It is important to anchor such a patent strategy oriented at the differentiation advantage perceived by the customer rather than at intrinsic product features in the organizational structure. The integration of strategy and organization is ensured by distinguishing between two operational components of patent management: identifying the effects required from patents and meeting those needs. In order to identify and qualify these requirements, the desired exclusive capabilities are derived from the business model as well as the market and competitive strategy related to the differentiation approach. These requirements for exclusivity are subsequently ensured by means of prohibitive rights which, in turn, are positioned in a goal-oriented manner by means of synthetic inventions.

The design of a patent strategy within the context of a differentiation approach and its implementation in the form of a differentiation center must be based on the following considerations when determining the need for patents:

- Can patents protect the return on innovation?

Certain prerequisites must be given in order to be able to use patents beyond protection from imitation, namely for creating exclusive and defensible competitive positions. Vorwerk customers are open to innovation. In fact, they expect continuous innovative product improvements and extensions. Vorwerk customers are also willing to pay for greater customer benefits. In addition, the company's substantial R&D expenditure provides a strong economic motivation for amortizing these investments by means of positions of exclusivity.

- Does the market offer customers a choice between product and service offers of different competitors?

Customer decision-making processes and the influence of prohibitive rights on the outcome of their decisions form the basis for using patents within the scope of a differentiation strategy. Product categories are defined by the similarity between marketing propositions being used by the competitors within a market and lead to the comparability of product offerings from a customer perspective. The need for patents arises from the necessity of being able to offer superior products and services and position them in their competitive environment in the most exclusive ways possible. This is the case with the Thermomix.

- Does a company's success largely depend on achieving a premium price with the customer?

The need for patents within the scope of a differentiation strategy increases with customers' willingness to accept price premiums for superior product features where price differentiation for the perceived differences between competitive products is a customary marketing strategy. In addition, brand personality plays a crucial role for product offerings and price acceptance in such markets. This is also the case for the Thermomix.

- Does the company rely on customer benefits in marketing its products and services?

Prohibitive rights help to create exclusive customer benefits in order to defend one's market position within the scope of the differentiation approach. This increases the freedom to operate in the marketing mix. A key prerequisite is to clearly distinguish one's products from the competition. Distinctive product features of the Thermomix include guided cooking, its human-machine-interface and its safety concept. In addition, it is important to be aware of and continuously reinforce the reasons why customers choose a specific product over another. This is the case with Vorwerk's distribution system.

- Does the competition also use customer benefit and/or price propositions?

In order to ensure greatest possible differentiation, protecting unique product features against imitation is not enough as this would allow competitors offering technologically inferior products to advertise the same customer benefits in their customer-facing communication. Especially with technologically complex solutions like the Thermomix, the quality of different solutions is difficult to assess for customers. Prohibitive rights oriented at a specific customer benefit, however, can turn marketing propositions into USPs. Prohibitive rights allow manufacturers to achieve a sustainable and goal-oriented competitive differentiation.

These basic considerations demonstrate the need for an organizational implementation of patent strategies. They show that the need for patents arises from market and competitive positions as well as customers' decision-making criteria rather than from the direct outcomes of a company's R&D efforts. From an organizational perspective, this means that the need for patents must primarily be derived from the need for exclusivity in the market, and subsequently integrated in the systematic development of the portfolio. It also means that a process must be in place at an early stage of the product development (PDP) and road map process in order to enable the identification of these needs. Vorwerk has integrated its patent process into the road map process and holds regular road map meetings in order to determine the need for patent development within the context of the further development of its product and service range as well as its business model.

III. Organizational components of an integrated patent management system

A patent management system creates a link between strategic goals, processes and tools for managing patents.[22] By additionally including other areas such as innovation management, corporate strategy, marketing, product management, controlling, etc. in a cross-functional management approach, a

patent management system similar to Vorwerk's can be achieved[23]. An integrated patent management systems comprises the following core elements:[24]

- Strategic objectives[25]

Strategy is defined as entrepreneurial action enabling the achievement of specific goals and leading to coherence in a company's decision-making processes. The central strategic objective of the Thermomix differentiation center is to achieve greatest possible uniqueness for the the perceived customer benefits of the company's product and service offer.

- Process landscape[26]

Processes are interlinked and interacting activities which can be categorized in groups and define the overall process landscape at Vorwerk. Identifying the need for patents in order to create USPs for future products or services is a central process within the differentiation center for the Thermomix.

- Tool landscape[27]

This includes methods and software-based support tools enabling the execution and linking of processes. An example of such a software-based tool is IP-FD (Intellectual Property Function Deployment), which matches the system elements for the technological implementation of a product or service with the corresponding customer benefit and delivers a systematic integration of market-oriented and technological considerations.

- Information architecture[28]

"Information architecture" refers to the overall information structures, contents, and specific tools such as processing and search options available within a company. The notion of information architecture also includes the monitoring of the competitive environment via publicly available patent information databases, which permits the mapping and evaluation of the patents of different competitors with products, markets, etc.

- Resources[29]

Key resources for patent management include personnel and its know-how, as well as financial resources and the asset portfolio as such. In addition, Vorwerk also includes infrastructural components in its definition of resources.

- Reporting and controlling[30]

The collection and documentation of process-related information as part of the reporting process creates transparency and provides controlling options for strategy implementation. For example, it enables an efficient comparison of the planned and actual costs of a patent portfolio related to a specific customer benefit with customers' willingness to pay for the underlying product feature. The capabilities of an integrated management system are further determined by the interaction

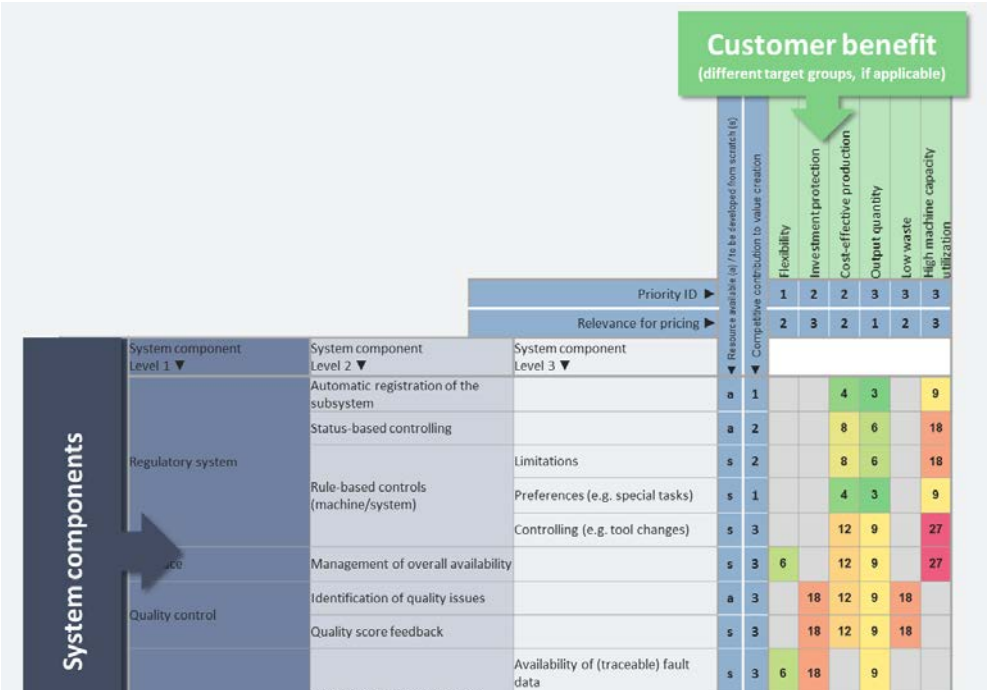

Fig. 1: Schematic representation of Intellectual Property Function Deployment (IP-FD)

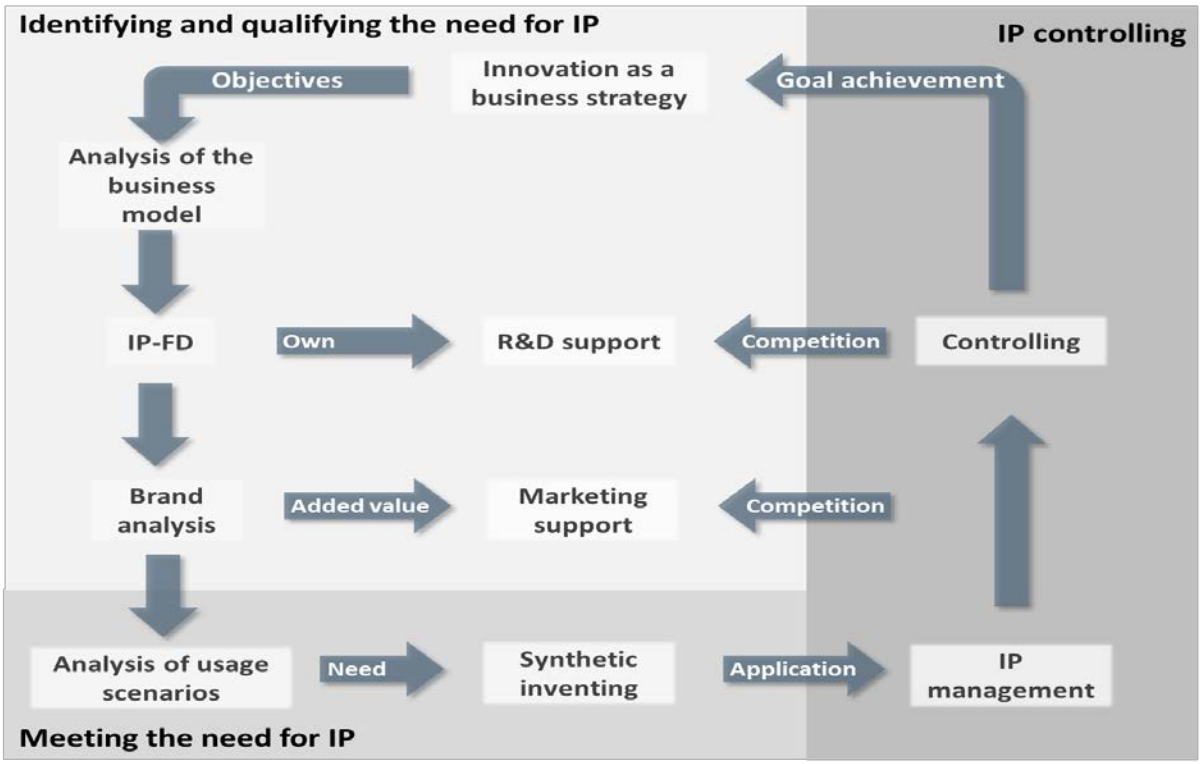

Fig. 2: Integrated IP management system

between its individual elements.[31] Nevertheless, the literature tends to discuss individual elements in isolation rather than providing explanations of meaningful integrated configurations and specific interactions between components in the context of a specific business strategy.[32]

The elements of an IP management system must lead to meaningful, interrelated activities in order to achieve effectiveness within the scope of defined strategic goals. DIN Spec 1060, which is related to service quality in intellectual property management, reflects the functional structure of an IP management system, and in particular the required interaction between these functions.[33]

DIN Spec 1060 distinguishes between IP generation, design, and commercialization. These areas of activity overlap, merge, and are arranged in a circle. In other words, IP generation is not the starting point of all IP-related tasks. DIN Spec 1060 describes the value-creation process for IP assets as a sequence of steps. This means that the sequence of operational steps a company implements should be optimized in such a way that the value created by means of each activity within the context of the business model can be traced and verified.[34]

Vorwerk implemented this basic consideration when configuring its differentiation center. The activities described in DIN Spec 1060 were optimized for optimal goal achievement and value creation with greatest possible efficiency in terms of the company's use of resources.

IV. Vorwerk's differentiation center

The configuration examples below demonstrate that the coordination between elements and tasks is of crucial importance for an excellent operational structure and effective goal achievement. The examples are arranged in three categories: need identification, need fulfilment, as well as reporting and controlling (see also Fig. 2).

The first category serves the identification and qualification of the need for IP within the scope of the business model.[35] This category comprises the tasks attributed to IP generation in DIN Spec 1060, and integrates the objectives attributed to IP commercialization by DIN Spec 1060. Need identification therefore provides

the contextual link between IP commercialization and IP generation.

A 360° IP strategy is used along the road map process in order to determine IP needs. This strategy system is based on core considerations related to customer decision-making. It comprises four task-oriented sectors: risk management, suppression of imitation, market position design, and USP communication.

The objectives behind each of these tasks for the 360° IP strategy are clearly defined for the Thermomix and lead to organizational consequences:

- The "risk management" sector:

The "risk management" sector primarily focuses on ensuring that the technologies used in the Thermomix (such as data interfaces, the touchscreen and the human-machine-interface) are protected from being compromised by third-party rights. The task of this sector is therefore to ensure immediate freedom to operate. A relevant FTO process is not only implemented along the PDP, but also for products which are already available on the market, in order to enable continuous product enhancements and extensions. The individual components are verified and approved via a database. This is where the verification status can be viewed and logged along the PDP.

- The "suppression of imitation" sector

The strategic objective of the "suppression of imitation" sector is to protect past investments from imitation in order to safeguard USPs of proprietary solutions in the market. The goal for the Thermomix is to exclude the availability of cheaper imitations based on technological or design-related solutions of the Thermomix (e.g. the steamer attachment) in the market. This requires a continuous and systematic analysis of competitive products and their evaluation from a legal perspective. At Vorwerk, this takes place within the scope of competitive monitoring in collaboration with the marketing department, supported by a competitive patent database. An additional prerequisite in this respect is the identification and protection of proprietary inventions and market-relevant solutions. This is ensured through the invention reporting and patent process managed by the R&D department in collaboration with the patent department.

- The "market position design" sector

The third sector comprises the future market position of the Thermomix. The patent department is integrated in the road map process. The patent literature provides potential solutions to this effect via development corridors, marketing, desired features, customer benefits, and R&D.[36] Desired future positions are protected by means of strategic patents.[37]

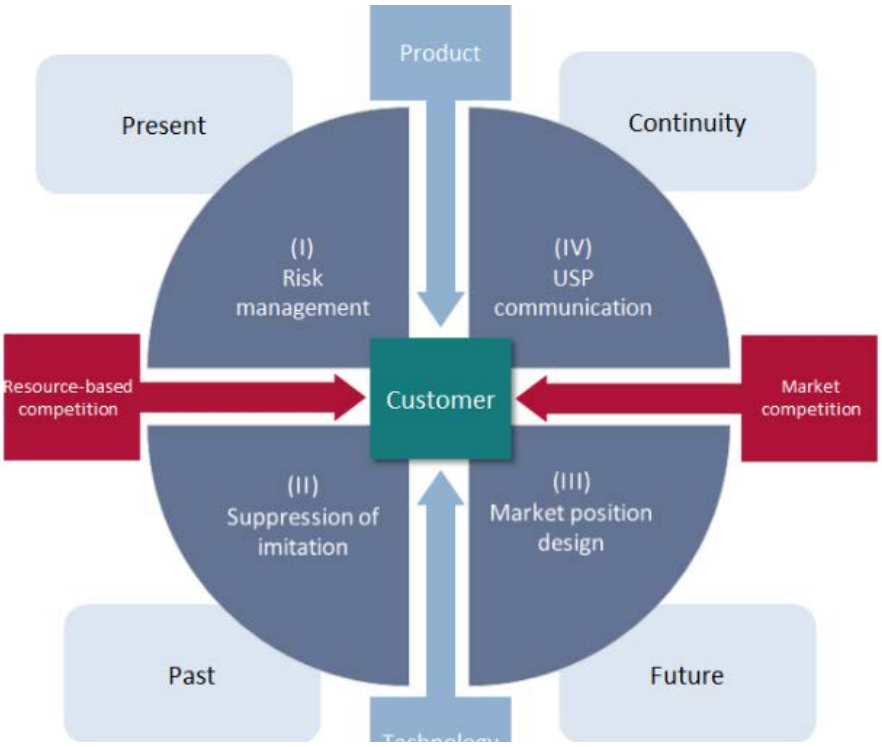

Fig. 3: Basic structure of a 360° IP strategy

- The "USP communication" sector

The fourth sector intends to ensure continuity of market presence in the eyes

of the customer and to communicate the USPs of the value proposition. This includes technological aspects such as the safety system or the human-machine-interface, which are tangible for the customer. The unique positioning of the Thermomix as a premium product had to be anchored in the customer's perception through designs and trademarks, including sound marks in order to create a unique user experience compared to the competition.[38]

Within a competitive environment based on differentiation, the primary task of a portfolio of prohibitive rights is to provide exclusivity in order to achieve a premium price. A prerequisite for an effective IP portfolio is the precise identification of a company's need for IP. The need for IP arises from the customer benefit proposition. In the case of the Thermomix, this includes such product features as the guided cooking function, automatic recipes, flexibility, and the success guarantee provided by the product. The challenge in this repect is to design prohibitive rights along these customer benefits in order to offer the customer a product and service proposition which is as exclusive as possible. In order to achieve this objective, the patent portfolio must be aligned with the customer benefits to be provided. Portfolio management requires precise tools such as IP-FD (Intellectual Property Function Deployment) shown in Figure 1. Mapping technological system components with customer benefits in a differentiated manner provides insights into which technological aspects must be protected from the competition by means of prohibitive rights.

Figure 2 shows to what extent this is achievable and highlights gaps in the company's own portfolio. Adding third-party IP to the mapping in IP-FD demonstrates where IP efforts are required within the company in order to achieve relevant prohibitive positions, e.g. by means of synthetic inventing. In addition, IP-FD offers the option of verifying the IP relevance of market activities (e.g. competitors' advertising claims) in order to derive suitable countermeasures from it.

The second field of activity is aimed at covering the need for prohibitive rights. According to DIN Spec 1060, this is included in IP design. Within the scope of the 360° IP strategy, the tasks of the patent department go beyond the protection of R&D results: the core task is to protect Vorwerk's desired and required market positions by means of synthetic inventing. In contrast to the second sector of the 360° IP strategy comprising the protection of R&D results, synthetic inventing is about an inventive process initiated by the patent department based on the need for IP; the availability of concrete R&D results is not required at this stage.[39]

After defining the precise prohibitive scope required from the patent, the novelty of the inventive idea is ensured by means of relevant literature searches, and the actual inventive contribution is defined in joint workshops by the employees responsible for the markets and technologies in question. Until such time as all intended features are integrated in the patent and the expected prohibitive scope also includes prospective customer benefits, this can also be an iterative process in individual cases. In order to support the road map process, a specific tool kit was developed, which integrates the required market and technology-related human resources in the patent design process in the most efficient manner possible.

The third field of activity relates to the reporting and controlling of patent activities. These activities ensure that the three different fields of activity according to DIN Spec 1060, namely IP generation, IP design, and IP commercialization, are aligned with each other in the patent management system and therefore lead to results that meet the objectives. IP controlling provides transparency on whether the defined objectives have been met and enables active portfolio control.

Concrete commercial objectives are defined in the 360° IP strategy and specific spheres of exclusivity are prioritised by means of IP-FD. This permits an analysis of the patent portfolio and the use of financial resources along these objectives.[40] After four years of systematic

patent development and management efforts, and the definition of precise exclusivity goals in the 360° IP strategy, approx. 70% of the patents and applications included in the patent portfolio for the Thermomix are related to the defined objectives and approx. 30% of the inventions are not directly linked to these goals but were registered and are maintained for higher strategic reasons.

During the implementation of the differentiation center, the alignment of some elements and tasks proved to be particularly challenging for Vorwerk. It is known from the implementation of strategies in other companies[43] that typical interfaces exist whose configuration is particularly important for strategy implementation. If their configuration is unsuccessful, these interfaces result in

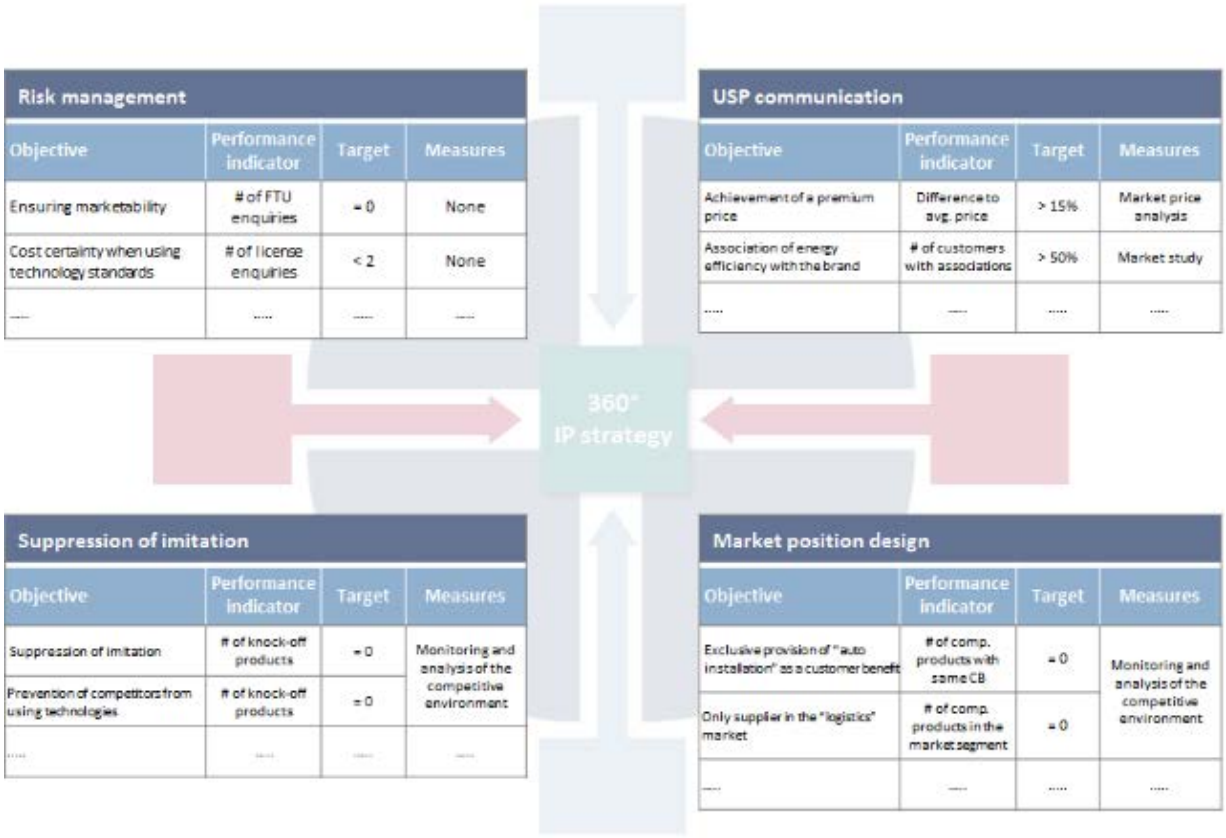

Fig. 4: Example of a 360° scorecard for controlling the effectiveness of IP

Figure 4 shows examples of portfolio KPIs along the strategic sectors. The corresponding patents are mapped with exclusivity goals. These goals are important for the customer benefit and for generating added value within the company's value chain. A continuous controlling of IP-related costs and benefits, their documentation, and their analysis permits a targeted design/optimization of the IP portfolio and the necessary budgets based on effectiveness criteria.[41]

V. System interfaces and system gaps[42]

sensitive system gaps. Critical interfaces and typical system gaps include:

- Taxonomy

An effective taxonomy within the differentiation center must allow for a mapping of proprietary and third-party IP with product features and customer benefits. Otherwise an effective monitoring of the portfolio and the competitive environment cannot be guaranteed.

- Monitoring of the competitive environment

The competitive environment must be monitored systematically and continuously, both through market observation and product

analysis, and by means of patent analysis. Any monitoring which does not map products with patents and does not take into account and share the opinions of engineers with the relevant parties on an ongoing basis is inefficient.

- Portfolio management

The criteria for portfolio analysis must be operationalized based on the objectives of the IP strategy and must be measurable.[44] This requires a common understanding of benefits and effects among the different business functions such as product management, R&D, marketing, and IP, as well as documentation by means of easy-to-understand performance indicators.[45]

- Synthetic inventing

A critical component of synthetic inventing is the integration of market intelligence in combination with a company's technological intelligence. Since patents are designed in workshops as and when needed, the necessary human resources must be deployed for this specific purpose and equipped with the necessary motivation.

- Links to the road map

IP must be included and taken into account in the very early stages of the road map process, even if no actual inventive intent exists. This requires certain competencies and resources within the road map team. In addition, a certain degree of technological understanding with regard to the possibilities offered by IP must be given in order to define claims for future market positions as early as possible.[46]

- Employee invention remuneration

Especially in the third sector of the 360° IP strategy ("market position design"), prohibitive rights are created which, at the time of patent application, are not linked to specific product activities, and which may never result in the development of corresponding product or service propositions. These patents may, however, be necessary in order to protect the company's market position. Employees must be adequately remunerated for the invention of such strategic positions.

VI. Summary: Key success factors of Vorwerk's IP organization

The Thermomix owes its successful unique positioning and the resulting enforcement of premium prices along with a continuous expansion of its market presence not least to the corresponding patent portfolio.[47] The differentiation center for implementing the IP strategy has been in operation for more than four years and manages the portfolio in line with the company's strategic needs. Some of the lessons learnt with regard to successful IP development and management are summarized below:

- Integration of market intelligence: From identifying needs to designing patents and reporting: the integration of market intelligence in the patent development and management process is key.
- Design of prohibitive rights along the customer benefits of product and service propositions: The prohibitive effect of patents must ensure the exclusivity of the perceived customer benefit in the differentiation center.
- Customer decision-making as the basis for IP: It is crucial to identify the tangible competencies and product features in the eyes of the customer which can be influenced by means of IP.
- Use of response data in order to continuously improve the IP design: Control loops from effectiveness monitoring to IP design are the basis for a continuous improvement and optimization of the effect of IP in line with the business model.

1 While an actual IP organization was developed for the implementation of the IP strategy for the Vorwerk Thermomix (cf. footnote 24), describing that strategy in full would exceed the scope of this article. We are therefore focusing on the patent-related part of Vorwerk's integrated IP management only (cf. section (III)).
2 *Schreyögg*, Organisation: Grundlagen moderner Organisationsgestaltung, 2006, pp. 4ff.
3 *Schuh*, Change Management – Prozesse strategiekonform gestalten, 2005, pp. 22 ff.
4 *Liu/Chin*, Development of audit system for intellectual property management excellence, Expert Systems with Applications 37 (2010) 4504.
5 cf. *Gassmann/Bader*, Patentmanagement, 2006, pp. 103 ff. and references.
6 cf. Kahn/Thompson/Freedman/Venturino, Intellectual Property Benchmarking Survey: Current and best practices for patent processing, Les Nouvelles 6 (2012) 174 and references.
7 cf. *Günther/Moses*, Patentaktivitäten und deren betriebliche Umsetzung – Ergebnisse einer Befragung von Technologieunternehmen in Deutschland, Österreich und der Schweiz, ZfBF, Vol. 62.2010, 6, 680 and references.
8 cf. *Sullivan*, Extracting Value from Intellectual Property, in: Sullivan (Ed.), Profiting from Intellectual Capital, 1998; *Davis/Harrison*, Edison in the Boardroom, 2001; *Pike*, Virtual Monopoly, 2001.
9 cf. *Plischke*, Grundzüge erfolgreicher Patentstrategien in Unternehmen, Mitt. 2005, 407.
10 *Vahs*, Organisation: Einführung in die Organisationstheorie und -praxis, 3rd edition, 2001, p. 183; Chandler, Strategy and Structure, Chapters in the History of Industrial Enterprise, 1962.
11 *Mittelstaedt*, IP-Cert – das IP-Management, seine Auditierung und Zertifizierung, Mitt. 2014, 204.
12 *Burr/Stephan/Soppe/Weisheit*, Patentmanagement, 2007, p. 90; Schulze, Patent-Portfoliomanagement für große Unternehmen, Mitt. 2015, 417.
13 "Strategy implementation inevitably involves many parts of the organization", *Sullivan*: Extracting Value from Intellectual Property, in: Sullivan, Profiting from Intellectual Capital, 1998, p. 111; *Frey/Wurzer*, IP-Managers in Strategy Development: Integrating IP into Business Models, in: Wurzer, IP-Manager, 2009, pp. 101 ff.
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15 cf. Metrics and Indicators for IP-Strategies and IP-Management, Hunter, A management perspective, in: Bosworth, Webster (Ed.), The Management of Intellectual Property, 2006, pp. 77–80.
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17 *Wurzer*, Integriertes Innovations- und Patentmanagement, in: Gleich/Rauen/Russo/Wittenstein (Ed.), Innovationsmanagement in der Investitionsgüterindustrie treffsicher voranbringen, 2006, pp. 34 ff.; *Wurzer*, Integriertes Innovations- und Patentmanagement, in: Gleich/Rauen/Russo/Wittenstein (Ed.), Innovationsmanagement in der Investitionsgüterindustrie treffsicher voranbringen, 2nd edition, 2012, pp. 376 ff.
18 *Wurzer/Kaiser*, Patente, Produkte und Profite, Harvard Business Manager, 6 (2006) 23–35.
19 *Grant*, Contemporary Strategy Analysis, 7th Ed., 2011: p. 211; *Wurzer/Köllner*, Wertorientiertes Patent-Design, Mitt. 2015, 351.
20 The differentiation center is a specific type of cost center, cf. for strategic nomenclature *Davis/ Harrison*, Edison in the Boardroom, 2001, p. 19.
21 *Wurzer/Schäffner*, Patente Küchenmaschine, Harvard Business Manager 8 (2015) 59–63.
22 cf. MTU example: *Grünberger*, Vom IP-Management zum Intellectual Asset Management, EPI, Munich: 8 March 2012; cf. Henkel example: *Kucken*, Strategisches IP-Portfoliomanagement, Patente, Munich: 12 March 2014; *Langfinger*, Strategisches IP-Management, IP-Bewertung, Frankfurt: 27-28 March 2006.
23 cf. *Niethammer*, Integratives Patentmanagement, Patente, Munich, 5 March 2013; *Germeraad*, Integration of intellectual property strategy with innovation strategy, Research Technology Management 5/6 (2010) 10–18; *Granstrand*, corporate management of intellectual property in Japan, Technology Management, 19 (2000) 121–148; *Granstrand/Holgersson*, Multinational technology and intellectual property management – is there global convergence and/or specialization?, Int. J. Technology Management 64 (2014) 117–147.
24 cf. "Strategy implementation inevitably involves many parts of the organization", *Sullivan*: Extracting Value from Intellectual Property, in: Sullivan, Profiting from Intellectual Capital, 1998, p. 112.
25 *Burr/Stephan/Soppe/Weisheit*, Patentmanagement, 2007, p. 90.

26 cf. *Kromm*, Process Optimization in Corporate IP Departments, IP Service World, Munich: 25 November 2013; *Mohnkopf*, Wissenssicherung im Ideen- und Erfindungswesen, in: *Mohnkopf/Moser*: Wissensmanagement für Schutzrechte und ihre Bewertung, 2014, p. 17; *Gassmann/Bader*: Patentmanagement, 2006, pp. 37 ff.

27 *Wurzer*, Integriertes Innovations- und Patentmanagement, in: Gleich/Rauen/Russo/Wittenstein (Ed.), Innovationsmanagement in der Investitionsgüterindustrie treffsicher voranbringen, 2006, p. 48.

28 cf. *Jewess*, Inside Intellectual Property, 2013, pp. 53 ff.; *Burr/Stephan/Soppe/Weisheit*, Patentmanagement, 2007, p. 155; *Moses*, Faktoren einer erfolgreichen Patentsteuerung im wertorientierten Controlling, 2007, pp. 123 ff.

29 cf. *Hundertmark*, Nutzen und Management von Schutzinstrumenten, 2012, pp. 141 f.; *Gassmann/Bader*, Patentmanagement, pp. 115 f.; *Moses*, Faktoren einer erfolgreichen Patentsteuerung im wertorientierten Controlling, 2007, pp. 119 ff.; *Wurzer*, Patentmanagement, 2004, pp. 61 ff.; *Eppinger/Vladova*: Intellectual Property Management Practices at Small and Medium-Sized Enterprises, Int. J. Technology Management 61 (2013) 64–81; *Fabry*, IP Asset Management, Planung, Verrechnung und Kontrolle von Patent- und Markenkosten, Mitt. 2008, 399.

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31 cf. *Mittelstaedt*, Strategisches IP-Management – mehr als nur Patente, 2009, pp. 39 f.; *Gassmann/Bader*: Patentmanagement, 2006, pp. 103 ff.

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33 DIN Spec 1060: 2010–04, DIN Deutsches Institut für Normung e.V., Innovation: 2009.

34 cf. *Wurzer*, Wertorientiertes Patent-Portfolio, Mitt. 2005, 430.

35 cf. Nestlé's approach: *Adams/Mollet*, Integrating IP and Business Processes for Management, Example Nestlé, EIRMA, Madrid: 20 November 2009; von Bühler: *Kuffer*, Business Driven Intellectual Property Management, TOPInsight, University of Ulm: 4 March 2012; *Carlsson/Dtunitriu/Glass/Nard/Barrett*, Intellectual Property (IP) Management:
Organizational Processes and Structures, and the Role of IP Donations, J Technol Transfer 33 (2008) 549, 553

36 cf. *Jeong/Yoon*, Development of patent roadmap based on technology roadmap by analyzing patterns of patent development, Technovation 39–40 (2015) 37–52; *Hundertmark/Reinhardt/Wurzer*, Portfoliosteuerung im strategischen Patentmanagement, Mitt. 2007, 105.

37 cf. Elring Klinger patent strategy: *Nedele*, Patentarbeit im Mittelstand, Patente, Munich: 07 March 2012.

38 This is part of the IP process.

39 cf. *Wurzer/Köllner*, Wertorientiertes Patent-Design, Mitt. 2015, 350. 40 footnote 35.

41 *Fabry*, IP Asset Management, Planung, Verrechnung und Kontrolle von Patent- und Markenkosten, Mitt. 2008, 399.

42 *Berres/Fischer/Wurzer*, Betriebliche Organisation von Know-how-Schutz, in: *Wurzer/Kaiser*, Handbuch Internationaler Know-how-Schutz, 2011, pp. 142 ff. 43 footnote 21.

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45 cf. *Reinhardt/Wurzer*, Value and Quality Based Patent Portfolio Management, Les Nouvelles 12 (2006) 266–273; *Joppich*, Patentportfolio-Projektmanagement: Kann das Patentportfolio wie ein Projekt geplant, überwacht und gesteuert werden?, Mitt. 2005, 439.

46 cf. BASF's approach: *Bieberbach*, Schutz zahlt sich aus, Wissenschaftsmanagement, 3 (1999) 47–49.

47 *Stein*, Die deutsche Antwort auf Apple und Co, Cicero, 8 May 2015; *Dierig*, Alle 38 Sekunden wird ein Thermomix verkauft, Die Welt, 15 May 2014; Vorwerk, Annual Report 2014, Wuppertal: 2015, p. 14.

Industry Case Study Series on IP-Management

VORWERK Thermomix (III)

Exclusivity monitoring:

Controlling the effectiveness of the IP strategy

By Alexander J. Wurzer & Thomas Rodemann, Sebastian Stephan & Theo Grünewald

MIPLM Industry Case Study Series Nr.: ICSS2015-01-323
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AUTHORS

Prof. Dr. Alexander J. Wurzer

Dr. Wurzer is Adjunct Professor for IP Management at the Center for International Intellectual Property Studies (Centre d'Etudes Internationales de la Propriété Industrielle, CEIPI) at the University of Strasbourg, where he has been Director of Studies for the Master's degree in Intellectual Property Law and Management (MIPLM) since 2007. Prof. Dr. Wurzer is Director of the Steinbeis Transfer Institute for Intellectual Property Management at Steinbeis University Berlin. He is Managing Partner at WURZER & KOLLEGEN GmbH, a consulting firm specializing in strategic IP management. 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.

Dr. Thomas Rodemann

He started his career at Vorwerk in 1997 as an engineer in the R+D department, where he also held his first leadership positions before moving to LUX Asia Pacific as board member in 2005. When he came back to Engineering in September 2008 he took over the position as a board member for Purchasing, Logistics, IT and later for R+D and Quality Management. From January 2014 on he has taken over in addition the responsibility as Chief Executive Officer of the Division Engineering. From January 2017 on the position President and CEO of the Division Kobold at Vorwerk International Switzerland.

Dr. Sebastian Stephan, Patent Consultant at OLBRICHT Patentanwälte

Sebastian Stephan, born in 1984, has a degree in natural sciences with a specialization in applied geophysics. In parallel to his doctorate studies, he went to business school and completed an MBA program. His thesis covered the assessment of the IP strategy implementation at hand. Sebastian Stephan is now working as Patent Consultant at OLBRICHT Patentanwälte in Frankfurt on track to obtain the admission as German and European Patent Attorney.

Theo Grünewald

He is senior consultant at WURZER & KOLLEGEN GmbH and a research fellow at the Steinbeis Transfer Institute for Intellectual Property Management at Steinbeis University Berlin. He is a lecturer at the Master's degree course in Intellectual Property Law and Management (MIPLM) at the Center for International Intellectual Property Studies at the University of Strasbourg. Mr. Grünewald has authored numerous publications on IP strategy development, IP management, and IP valuation and is also a member of the DIN committees DIN 77006 for quality in IP management and DIN 77100 for patent valuation.

The 360° IP strategy for the Thermomix

In this third part of our case study about the Thermomix TM5, a multi-functional food processor from Vorwerk, we explain Vorwerk's approach to controlling the effectiveness of the IP strategy for this product and its implementation. Part 1 explained the development of the IP strategy in collaboration with *Kai Schäffner*, Senior Vice President Marketing & Product Development and Board Member Thermomix, [1] and was published in Harvard Business Manager in 2015. The IP strategy in question is a 360° IP strategy[2] for the differentiation approach of the TM5 and its ecosystem (World of Thermomix, see Fig. 2). The differentiation approach[3] according to Porter was implemented in the 360° IP strategy by creating a monopoly for added value as described by *Pike*.[4]

The second part of the Thermomix TM5 case study, written in collaboration with Rolf-Jürgen Krämer (Head of Patents & Licenses) and published in the Bulletin of German Patent Attorneys (*Mitteilungen der deutschen Patentanwälte*) in 2016, explained the implementation and incorporation of the IP strategy in the organizational structure.[5] The implementation follows the structure-strategy-fit paradigm according to *Chandler*.[6] In order to implement the 360° IP strategy as part of the organizational structure, a differentiation centre was set up.[7]

The key empirical results of this third part of the IP management case study for the TM5 was submitted to the University of Bremen as a Master's thesis entitled "*Wirksamkeitskontrolle einer nutzenorientierten IP-Strategie*" (Controlling the effectiveness of a benefits-oriented IP strategy) by one of the authors (*Dr. Stephan*) in 2016. The Master's thesis was supervised by Prof. Dr. *Freimuth* and one of the authors of this study (Prof. Dr. *Wurzer*).

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[1] *Wurzer/Schäffner*, Patente Küchenmaschine, Harvard Business Manager, 8/2015, pp. 58-63
[2] *Wurzer/Grünewald/Berres*, Die 360° IP-Strategie, Vahlen, Munich:2016, pp. 51 ff.
[3] *Porter*, Die Wettbewerbskräfte neu betrachtet, Harvard Business Manager 5 (2008) 20-26
[4] *Wurzer/Köllner*, Wertorientiertes Patent-Design, Mitteilungen der deutschen Patentanwälte 106, 8/9 (2015) 351f; *Pike*, Virtual Monopoly, 31 ff., London: 2001
[5] *Wurzer/Berres/Krämer*, Organisatorische Umsetzung einer Patentstrategie – ein Fallbeispiel, Mitteilungen der deutschen Patentanwälte, 4/2016, pp. 163-171; *Wurzer/Köllner*, Wertorientiertes Patent-Design, Mitteilungen der deutschen Patentanwälte, 106, 8-9/2015, pp. 350-355.
[6] *Vahs*, Organisation: Einführung in die Organisationstheorie und -praxis, 5th edition 2005, p. 183; *Chandler*, Strategy and Structure, Chapters in the History of Industrial Enterprise, MIT, Cambridge, Mass.: 1962.
[7] *Wurzer/Kaiser*, Patente, Produkte und Profite, Harvard Business Manager, 6 (2006) 23-35.

World of Thermomix: daily usage as a success factor

The Thermomix TM5 was launched in September 2014 to replace its predecessor, the TM31, which had already been on the market since 2004. The TM5 represents Vorwerk's digital transformation.[8] Not only is this food processor able to weigh, cut, mix, boil and steam food, but it can also process digital recipe data stored on recipe chips or downloaded directly from the Internet. By means of these data, the TM5 automatically processes recipes and guides the user through the cooking process via its graphic user interface (see Figure 3).

Vorwerk uses a direct distribution concept for the TM5. Over 16,500 representatives demonstrate the TM5 directly to potential buyers in a domestic setting. These representatives are themselves avid users of the device and are therefore able to communicate the differentiating features and USPs of the product with passion and a personal touch in a live cooking experience. This marketing and customer acquisition approach relies on the exact same knowledge of customer needs and preferences as is required from Key Account Managers in B2B settings.

The marketing of the TM5 is based on current trends such as simplicity and individuality, including simple and intuitive operation with the possibility of adapting recipes to one's own preferences or cooking one's own creations.[9] A key customer benefit is derived from the support users receive in terms of their daily dietary choices for themselves and their families. Two moments in the customer journey are of central importance for the success of the business model for the TM5: 1) product presentation and subsequent purchase; 2) product recommendation and/or becoming a representative. The first decision, i.e. the purchase decision, requires the perceived customer benefit to be superior to those provided by the competition and the representative/brand ambassador to convey it in a credible fashion. This leads to another decision, i.e. whether to recommend the product and to become an active representative. This decision is primarily based on the customer's own user experience.[10]

Market analyses performed by Vorwerk show a very strong correlation between customer satisfaction and intensity of product use: the greater the frequency of use, the greater the customer's satisfaction. There is also a correlation between customer satisfaction and recommendation rates. The happier the customer, the higher the recommendation rate. These correlations largely hold true across all countries in which the product is distributed. According to a German study dating back to 2012, the likelihood of customers preparing between

[8] *Rohwetter*, Das iPhone aus Wuppertal, Die Zeit 42, 29/10/2015.

[9] Cf. for example "*Gesund abnehmen mit Thermomix*" [Losing weight the healthy way with Thermomix] (only available in German): https://thermomix.vorwerk.de/ideenreich/food/gesund-abnehmen-mit-thermomix-ernaerungstrends-im-ueberblick/

[10] *Schäffner*, Digitization of Cooking - The Thermomix Ecosystem, Marketing Club, Speech, Munich: 07/07/2016.

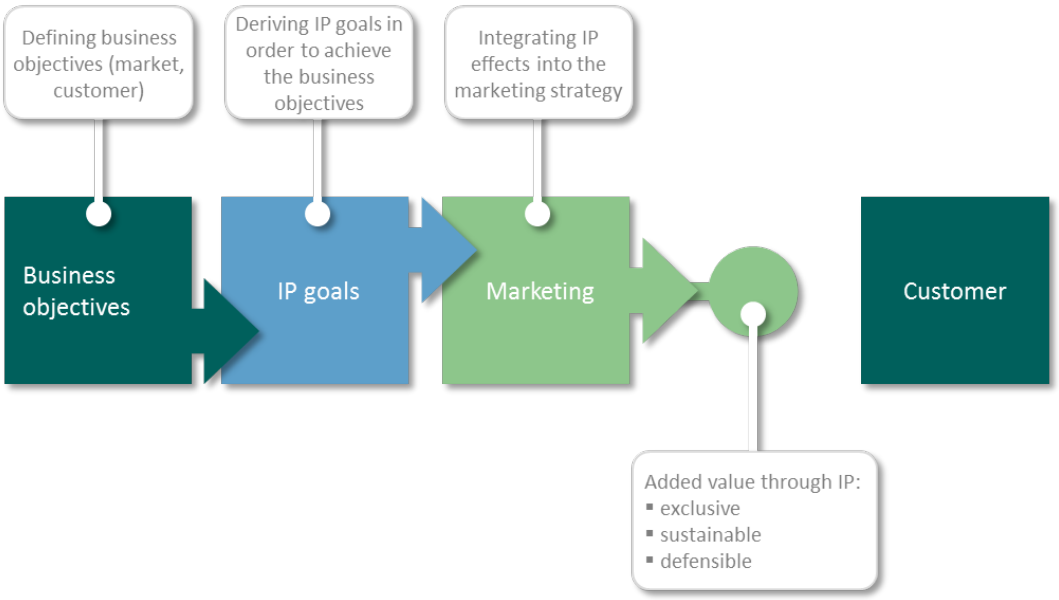

Figure 1: Schematic representation of the hierarchy of goals for integrating IP and marketing

76% and 100% of their daily meals with the Thermomix to recommend the device is 91%.[11]

The marketing goal for the TM5 is therefore derived from its business model: turning the Thermomix into an essential part of daily life and people's daily dietary choices. "Daily usage" is the central marketing goal because it leads to greater satisfaction and therefore to an increase in recommendations and the desire to become a representative. Figure 1 shows the relationships between the various goals in a schematic representation.[12] In order for IP to have an observable effect on the market, IP goals must be convertible into marketing activities and IP effects must be translatable into customer benefits. This is one of the basic prerequisites for controlling the effectiveness of an IP portfolio.

Recipe availability and quality are central levers for the "daily usage" goal. Vorwerk's value proposition for the TM5 are recipes with a success guarantee. It is extremely important for users to associate a successful outcome with the cooking process. The Thermomix enables users to prepare dishes which would otherwise exceed their competences and possibilities. In addition, users can use the time freed up by the automated phases of the cooking process outside of the kitchen. The trigger for customer satisfaction is a successful outcome combined with great flexibility and time savings. Recipe data are therefore the driver of the business model for the TM5.

Users' "recipe journeys" often begin with the following question: "What should I cook today?". This is the most frequently asked

[11] Idem.

[12] *Wurzer/Grünewald/Berres*, Die 360° IP-Strategie, Vahlen, Munich:2016, p. 36

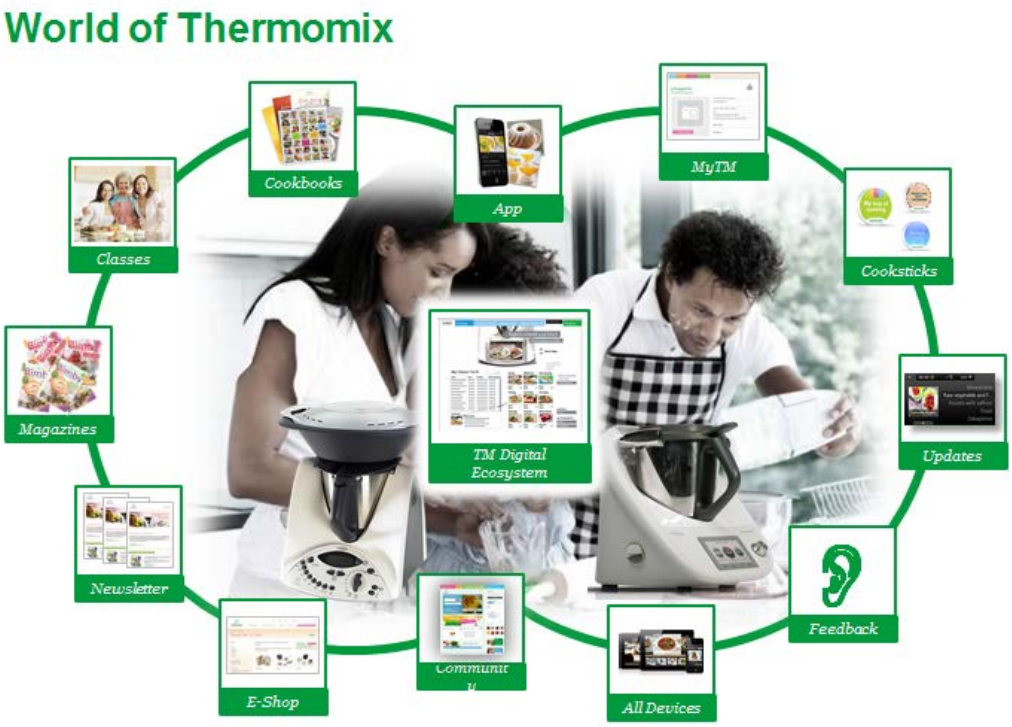

Figure 2: "World of Thermomix" – The digital ecosystem around the Thermomix.[14]

question on Google in Germany. [13] The intensive analysis of the recipe journey from the recipe search to the cooking process, commenting, customizing and saving recipes has shown Vorwerk that this journey is characterized by inconsistencies, media disruption and gaps. In addition, dietary requirements must also be taken into account in the quest for a suitable recipe. This includes replacing specific ingredients for people with food allergies, for instance. What is more, users tend to follow dietary trends such as low carb, weight loss, healthy or vegetarian diets when looking for recipes.

In order to satisfy these requirements and to create the recipe-related basis for "daily use", Vorwerk has created a complex, varied and integrated digital ecosystem called "World of Thermomix" around the Thermomix, including a recipe search function, dietary advice and grocery delivery (see Fig. 2).[15] The central component is the recipe platform called "Thermomix Rezeptwelt" (in English: "Thermomix Recipe Community")[16] with hundreds of thousands of registered users and thousands of recipes. In Germany alone, approx. 5 million recipes are downloaded from "Thermomix Rezeptwelt" every month.

[13] *Eisenbrand*, "*Umsatzwunder Thermomix: So erschafft man ein Marketingphänomen*" [Blockbuster Thermomix: How to create a marketing phenomenon] (only available in German), Online Marketing Rockstars: https://omr.com/de/thermomix-marketing/, 01/03/2016.

[14] Schäffner, Digitization of Cooking - The Thermomix Ecosystem, Marketing Club, Speech, Munich: 07/07/2016.

[15] https://thermomix.vorwerk.de/hellofresh/ (only available in Germany)

[16] www.rezeptwelt.de (English version: www.recipecommunity.co.uk)

Figure 3: Integration of hardware and software in the TM5 through different cooking modes.[17]

In order to guarantee success when following the individual steps of a recipe, Vorwerk has integrated the recipe software with the hardware of the TM5. The TM5 receives its recipes initially via recipe chips and then via the Internet and guides the user through the cooking process. This "guided cooking" leads to a special self-directed and autonomous cooking experience which, at the same time, leaves the user feeling confident not to make any mistakes when following the individual steps. Simple, quick and flexible cooking combined with quality-assured recipes is at the core of the Thermomix success guarantee.

The IP concept in the context of competitive differentiation for the TM5

The IP strategy developed for the Thermomix[18] is based on the core ideas of the 4P concept.[19] The starting point is competitive differentiation, based on the simplified notion that competition is due to the fact that customers will select those products and services from the different options provided by different companies which offer them the best perceived benefit. This fundamental customer choice is crucial because this component is exactly what needs to be influenced by means of IP. The customer's willingness to pay a certain price will ultimately depend on whether a product or service offers the best perceived benefit. In

[17] Schäffner, Digitization of Cooking - The Thermomix Ecosystem, Marketing Club, Speech, Munich: 07/07/2016.

[18] *Wurzer/Schäffner*, Patente Küchenmaschine, Harvard Business Manager, 8/2015, pp. 58-63

[19] *Wurzer/Grünewald/Berres*, Die 360° IP-Strategie, Vahlen, Munich:2016, p. 5

order to successfully enforce premium prices, it is necessary to create a position of exclusivity which, in the view of the customer, offers the perceived customer benefit. One of the essential positions in the case of the Thermomix is "guided cooking" in connection with a smooth and hurdle-free "recipe journey".

The role of IP in the 4P concept is schematically illustrated in Figure 4.[20] A differentiated communication of customer benefits is required in order to leverage customers' willingness to pay. One way of conceptualising this strategy is the 4P concept derived from the "4Ps" of marketing (product, promotion, price, point of sale). It is important to note here that the 4P concept is not just a concatenation of terms but rather a concept consisting of integrated and interrelated elements.

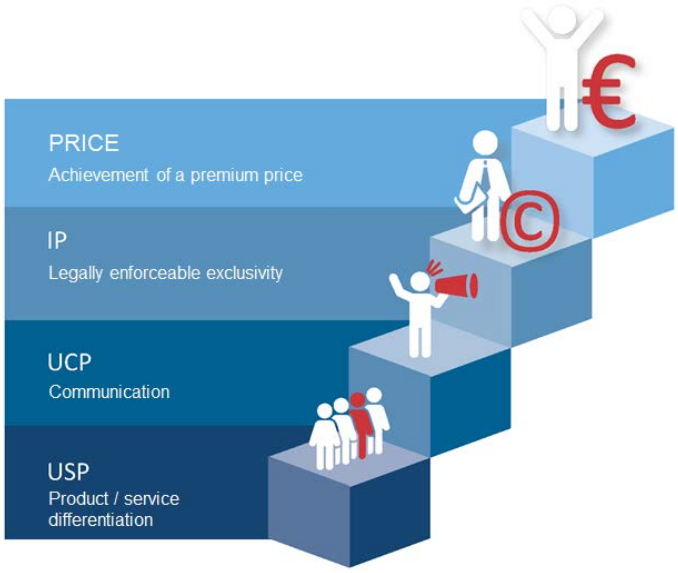

Figure 4: The 4P concept.

Customer-centric IP generation begins with the USP (unique selling proposition). This selling proposition must be communicated to the customer in a suitable and comprehensible manner. This is best achieved by means of a UCP (unique communication position). IP ensures legal enforceability for both unique positions.

The ideal conditions for achieving premium prices are given when a legally protected unique selling proposition is met with the customer's willingness to pay.

The 360° IP strategy for the TM5

A 360° IP strategy[21] was used in order to implement the 4P concept and translated into a differentiation centre structure[22].

The 360° IP strategy is organized around the central meeting point between the customer's willingness to pay and the product and the associated customer benefit. In the case of the Thermomix, that includes the everyday dietary support received by users as well as the cooking experience and the success guarantee.

Starting from this central point, the 360° IP strategy extends horizontally in two directions: resources towards the left and market/market competitors towards the right. The left-hand side therefore corresponds to the inward-facing or resource-oriented perspective (also known as "resource-based view")[23], while the right-

[20] *Idem.*
[21] *Wurzer/Grünewald/Berres*, Die 360° IP-Strategie, Vahlen, Munich:2016, pp. 51 ff.
[22] *Wurzer/Berres/Krämer*, Organisatorische Umsetzung einer Patentstrategie – ein Fallbeispiel, Mitteilungen der deutschen Patentanwälte, 4/2016, pp 163-171.
[23] *Barney* etc. Core Competency Approach…(lecture slides Module 1)

hand side represents the outward-facing or market-oriented perspective (also known as "market-based view")[24].

The 360° IP strategy is used in order to obtain a simultaneous and consistent overview of the different IP perspectives[25], the focus being on the different instruments for influencing customer decision-making provided by IP. The 360° view is divided into four segments. Each segment pursues a different generic goal and has a different temporal focus. Time is key for the IP strategy. The basic idea that whoever is first to originate or patent an invention should also be the one who holds the rights to that invention applies around the globe. By default, each IP strategy therefore operates within an existing IP environment. What is more, developing a strategy itself typically involves the origination of more or less specific inventions such as (previous) proprietary technologies or predecessor products such as – in the case of the TM5 – the TM31.

Since the strategy has the purpose of highlighting the path to the future and shaping that future, it is crucial that it captures this temporal component. Due to a company's resources, its market environment, and its competitive environment, past, present and future play a central role in the continuous development

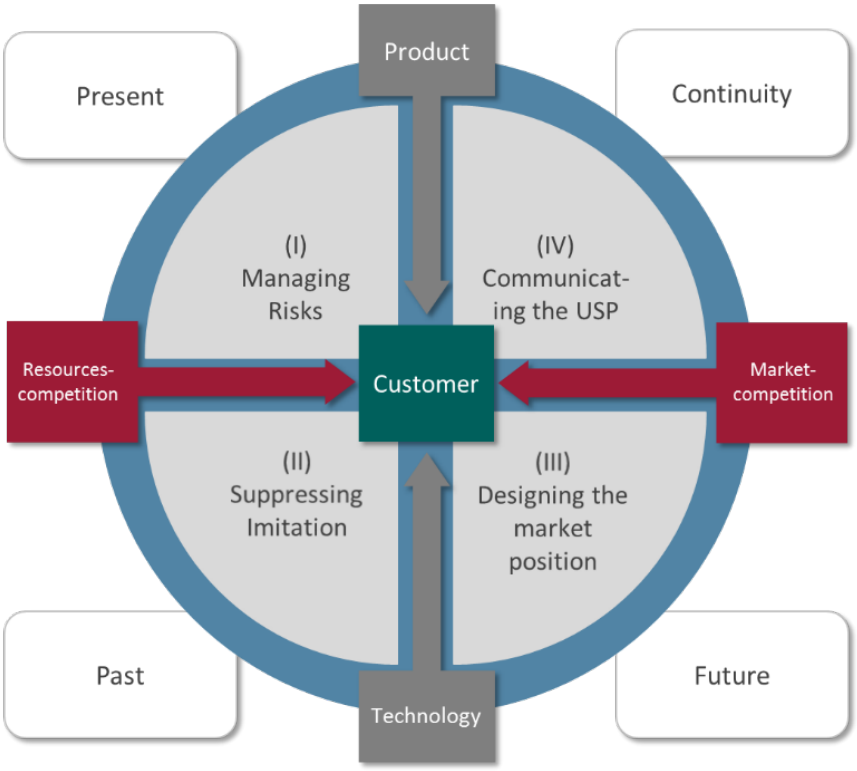

Figure 5: General principle of a 360° IP Strategy.

[24] *Porter,* The Five Competitive Forces That Shape Strategy, Harvard Business Review, 1 (2008) 25-40.

[25] *Wurzer/Grünewald/Berres*, loc. cit. pp. 54ff.

process. The origination of IP must follow the temporal constants which are intrinsic to this asset. A powerful portfolio does not emerge overnight. Creating a specific portfolio for the TM5 took about three years until the product was launched and the further development of the portfolio is ongoing.

Turning brands like "Thermomix" and "Vorwerk" into strong brands takes years. The process from filing a patent application to the patent being granted takes at least several months. In Germany, it takes approximately two years. In other countries, it sometimes takes considerably longer. An essential component for the creation of an IP portfolio as part of an IP strategy is sustainable continuity – especially when it comes to customer communication. The goal of establishing and managing customer relationships is longevity. And this is the starting point for continuity in communication. The four temporal dimensions of a 360° IP strategy are outlined below:

- Segment (I): Present
- Segment (II): Past
- Segment (III): Future
- Segment (IV): Continuity

Within these four segments, the priorities for the IP strategy lie in different generic tasks. Segment (I) deals with risk control, i.e. risks related to current action. The core idea of segment (I) is to establish freedom of action. Vorwerk creates added value or intends to develop further and operate its value-creation architecture as part of the TM5 innovation project. Vorwerk must be able to control the risks that can emerge from third-party IP, along this value-creation architecture in order to maintain the necessary freedom of action for implementing its own business model.

Segment (II) is backward-looking, i.e. it focuses on the existing development expenses and results available at the time of strategy development and/or implementation. Imitation can only take place when something already exists. The orientation towards the past is equally important, because strategies must always take into account the available resources, skills and competencies. To a certain degree, these resources are already available to Vorwerk and determine its options for action. Segment (II) is concerned with the options for suppressing imitation of the results obtained by using IP.

Segment (III) is forward-looking. The special advantage of IP is that applications filed today can provide a company with immediate exclusivity for future products and services as well as the related customer benefits. To this end, however, we need to be able to describe that future. Such a description provides the groundwork for

synthetic inventing[26] in order to generate patents and other IP assets. When developing IP to design future market positions, we must consistently think in terms of prohibitive rights. It is also necessary to ensure that the market is described objectively and that the competition for this market position is analyzed from the customer's perspective. From an IP perspective, the competitive situation for the TM5 and its ecosystem differs fundamentally from that of its predecessor TM31.

Segment (IV) focuses on the continuity between the different time perspectives. All segments focus on the customer: their decision-making is at the core of all considerations. A company is only able to provide its offerings if it enjoys freedom of action in the value-creation architecture. The suppression of imitations ensures comprehensive value generation based on the company's available resources. The customer perceives the performance of the TM5 as unique. Especially future market positions must be designed in such a way that they can be made exclusive. It is also important to include the customer in the ecosystem developed for them. In segment (IV), all efforts are directed at ensuring that the effects derived from IP in segments (I)-(III) are, in fact, detectable for the customer and communicated in a consistent manner. While segments (I)-(III) essentially deal with the USP and its operational implementation, segment (IV) deals with the UCP, i.e. the use of IP in order to create a unique communication position.

Structure-strategy-fit: Organizational implementation of the 360° IP strategy

In their most basic forms, IP strategy and organizational structure are interdependent. According to *Chandler,* (organizational) structure must follow strategy. At the same time, however, the slow response of organizational structures to change limits a company's strategic options.[27] The decisive factor for managing IP in practice is to create a strategy-structure-fit and to review it on a regular basis. Vorwerk's business model for the TM5, for example, determines the IP strategy and its objectives and thus also the organizational structure required for the implementation of this strategy. [28] Individual organizational elements such as patent or portfolio evaluation criteria must be

[26] Cf. synthetic inventing: *Wurzer/Köllner*, Wertorientiertes Patent-Design, Mitteilungen der deutschen Patentanwälte 106, 8/9 (2015) pp. 352f.
[27] *Vahs*, Organisation: Einführung in die Organisationstheorie und -praxis, 5th edition 2005, p. 183; Chandler, Strategy and Structure, Chapters in the History of Industrial Enterprise, MIT, Cambridge, Mass.: 1962.

[28] Cf. *Sullivan*: "Strategy implementation inevitably involves many parts of the organization" from: Extracting Value from Intellectual Property, in: *Sullivan* [ed.], Profiting from Intellectual Capital, 1998, p. 111; *Frey/Wurzer*, IP-Managers in Strategy Development: Integrating IP into Business Models, in: *Wurzer*, IP-Manager, 2009, pp. 101 ff.; *Wurzer/Kaiser, Patente, Produkte und Profite, Harvard Business Manager, 6 (2006) 23*-35.

consistently and constantly derived from business objectives[29] in order to provide meaningful measures for controlling purposes.[30] This can result in a challenge for integrated patent management where effectiveness and efficiency goals must be aligned.[31]

In the present case of the Thermomix, a multi-functional food processor from Vorwerk, a differentiation centre was chosen for the organizational implementation of the strategy. A differentiation centre is the organizational implementation of a differentiation strategy.[32] This differentiation strategy forms the basis of the 4P concept (see (I.2)) and the associated 360° IP strategy (see (I.3)).

The differentiation strategy as a market and competitive strategy focuses on customer-relevant USPs and thus prevents a purely price-based comparison with competitive offers by the customer. This added value, which can be perceived by the customer and is reflected in the customer's willingness to pay, addresses the direct benefits for the customer, while the benefits of general product characteristics when using the product are not always immediately clear from the customer's perspective.[33]

[29] Cf. IP management system: *Davis/Harrison*, Edison in the Boardroom, 2991, p. 15; *Pike*, Virtual Monopoly, 2001, pp. 178 ff.

[30] Cf. metrics and indicators for IP strategies and IP management: *Hunter*, A management perspective, in: *Bosworth*/*Webster* (ed.), The Management of Intellectual Property, 2006, pp. 77–80.

[31] *Wurzer*, Integriertes Innovations- und Patentmanagement, in: *Gleich/Rauen/Russo/Wittenstein* (ed.), Innovationsmanagement in der Investitionsgüterindustrie treffsicher voranbringen, 2006, pp. 34 ff.; *Wurzer*, Integriertes Innovations- und Patentmanagement, in: *Gleich/Rauen/Russo/Wittenstein* (ed.), Innovationsmanagement in der Investitionsgüterindustrie treffsicher voranbringen, 2nd edition, 2012, pp. 376 ff.

[32] *Grant*, Contemporary Strategy Analysis, 7th edition, 2011: p. 211; *Wurzer/Köllner,* Wertorientiertes Patent-Design, Mitteilungen der deutschen Patentanwälte 106, 8/9 (2015) 351.

[33] The differentiation centre is a specific type of cost centre, cf. strategy nomenclature in *Davis/Harrison, Edison in the Boardroom, 2001, p. 19.*

The contribution of IP to commercial success

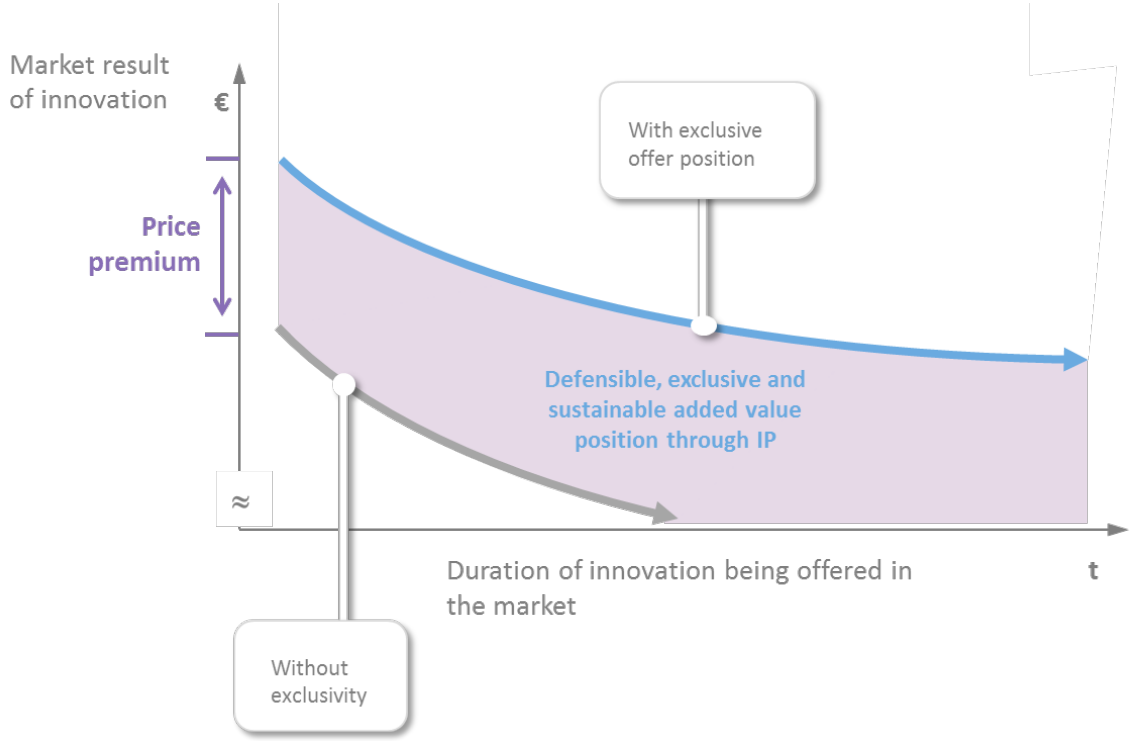

Figure 6: Commercial effect of IP in competitive differentiation.

The 4P concept and its implementation in the 360° IP strategy ensure that the intrinsic economic lever in IP is used in a targeted and systematic manner. The commercial effect of IP within the scope of a competitive strategy based on differentiation must be compared to a situation without any defensible, exclusive and sustainable added value. The added value position corresponds to the customer benefit for which the customer is willing to pay and which becomes exclusive and defensible through IP. Such exclusivity ensures that premium prices can be achieved at the point of sale compared to similar products without such a USP. The exclusivity perceived by the customer will erode across the life cycle of a product as an increasing number of alternative customer benefits which are perceived as identical or at least comparable appear on the market. But for USPs protected by IP, the price position is more sustainable than without such legally enforceable added value.

These effects result in the commercial added value represented by the grey area between the two curves in Figure 6. This effect also bears the possibility of observing and controlling the commercial impact of IP. This transparency allows innovation and product management to optimize the input and output relationships of their IP work directly in line with the market result. By aligning IP with the commercial result in this way, the implementation of the 360° IP strategy leads to success significantly faster than with the traditional patent process. The price

premium effect leads to improved margins and the sustainability of the process provides long-term control over the added value position. This must be monitored by means of IP asset controlling.

The commercial success of the Thermomix is undisputed and impressive[34]: 50% sales increase for Vorwerk to EUR 1.4 billion[35] with the Thermomix within a year. Over 2 million TM5 units sold worldwide and on average one home selling party in Germany every 22 seconds. These home selling parties serve the purpose of learning how to use the Thermomix without having to consult a user manual. This is probably the most obvious way of documenting the "easy to use" aspect. The representatives are themselves passionate users and evangelists of the product. What is more, intensive competitive activity is easy to recognize. Especially since the TM5, the Thermomix has been recognized as a dominant design within its competitive environment.[36] Imitations and lookalikes attempt to position themselves as closely as possible to the dominant product in the market.

This situation inspired the research questions for the Master's thesis of *Dr. Sebastian Stephan* on the subject of exclusivity monitoring in order to determine the effects of the IP strategy for the TM5:

- Is IP suitable for securing the market position? How sustainably can benefits be protected?
- How long does it take for the exclusivity to erode?
- Can the exclusivity achieved through IP be described by means of KPIs?

The thesis was based on the following hypotheses:

- A value-oriented IP strategy is suitable in order to achieve legal protection of USPs.
- Legally protecting USPs via a value-oriented IP strategy allows us to justify a premium price over competitive products with customers' preference for the protected product features.

The following section will briefly explain the fundamental challenges of IP controlling and subsequently describe the specific approach and the empirical results for the TM5.

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34 http://www.focus.de/finanzen/experten/engl/thermomix-was-die-autoindustrie-vom-thermomix-erfolg-lernen-kann_id_6079633.html (only available in German)

35 http://www.wiwo.de/unternehmen/mittelstand/vorwerk-der-thermomix-boomt-weiter/14821644.html (only available in German)

36 *Abernathy/Utterback*, Patterns of Industrial Innovation, Technology Review 80/7 (1978) 2-9.

IP as a controlling challenge

Controlling is an integral part of an operational management system. The main tasks include planning, steering and controlling in all areas which are relevant for business success. The central objective of controlling is to manage all information which is relevant for success and goal attainment and to make this information available to senior management. To this end, it is necessary to specify the objectives as precisely as possible in order to verify and ensure their achievement in a targeted manner. The interaction of management control systems (MCS) and company performance has been subject to extensive examination and has been found to be positive.[37]

Controlling of intangibles

Ever since the increasing importance of intangible assets (IA)[38] was discovered in the 1990s and the impact of IA on shareholder value and corporate growth was confirmed[39], there has been intensive debate on how to control such intangible and non-financial assets.[40] The value structures of companies have seen a dramatic transformation over the past 30 years. Depending on the evaluation methods and metrics used, intangible assets account for the lion's share of a company's value (sometimes even more than 90%).[41] The inclusion of such assets in companies' finances[42] triggered a debate about "value" and "valuation" which was, to some extent, resolved in DIN-ISO 1066 (the international standard for trademark valuation) and DIN77100 (the international standard for patent valuation). [43]

[37] Cf. *Peljhan/Tekavcic*, The Impact of Management Control Systems – Strategy Interaction on Performance Management: A Case Study, Organizacija, 41, 9-10 (2008), 174-184 and corresponding literature.
[38] Intangible assets include: intellectual property, intellectual capital, goodwill, cf.: *Ch'Ang, Yastrebroff*, Discover Your Invisible Advantage, Les Nouvelles 03 (2003) 32-37 Intangible Assets (intellectual property, intellectual capital, goodwill)
[39] *Duhr/Haller*, Management Control and Reporting of Intangibles, Schmalenbach Business Review, Special Issue 4/13 – see corresponding literature.
[40] *Grünewald/Köllner/Petersen/Wurzer/Zwirner*, Bilanzierung von Patenten, Cologne: 2010, pp. 25ff. *Intangible Assets Anson*, Drive capitalization, Les Nouvelles, 9 (1999) 133; *Baum*, the Intellectual Property Audit, Les Nouvelles 12 (2002) 193-198.
[41] Cf. *Wurzer/Grünewald/Reinhardt*, Valuation of Patents, Alphen aan den Rijn, Frederick MD, Bedfordshire: 2012, p. 70, line 127 and corresponding literature.
[42] *Wurzer/Grünewald/Stübiger*, Patente in der Unternehmensfinanzierung, Mitteilung der Deutschen Patentanwälte 7-8 (2011) 336-344.
[43] *Menninger/Wurzer*, Bewertungsstandards für Patente und Marken, Kommentare zu DIN77100, DIN ISO 10668, IDW S5 und IVS 210 Wiley, Weinheim: 2014; *Grünewald/Wurzer*, Monetäre Patentbewertung nach DIN 77100, DIN-Beuth, Berlin, Vienna, Zurich: 2012 and corresponding literature.

A direct monetary valuation of intangible assets, and especially of intellectual property, is usually unsuitable for operational purposes. Operations management and senior management as well as supervisory bodies much rather require a summative overview of a company's IP situation.[44] The core tasks of the operational IP controlling can be summarised as follows:

- Transparency
  IP controlling provides information which is of relevance for planning, steering, target achievement, budgeting and controlling.
- Resource allocation
  Definition of specific objectives and prioritization of specific areas in which exclusivity is to be achieved. Ensuring that the resources are used to achieve these goals.
- Controlling
  Definition of specific objectives and monitoring of goal achievement lead to a systematic integration of IP with the company's business model and thus ensure maximum benefits.
- Optimization
  Continuous monitoring, documentation and analysis of IP-related costs and benefits permit a goal-oriented design and optimization of the IP portfolio based on KPIs.

Definition of controlling objectives

Strategy implementation requires the definition of specific controlling objectives. These must be defined in accordance with the specific characteristics of IP. The definition of controlling objectives in order to design meaningful controlling tasks is therefore of critical importance when managing IP in a corporate environment. We must distinguish between three different perspectives in this respect:

- Efficiency perspective
  Monitoring and steering of the efficiency of the IP process by identifying potentials for optimization.
- Learning perspective
  Monitoring of the degree to which the goals defined for the IP strategy are being attained. Analysis of deviations from the target in order to improve future IP activities.
- Optimization perspective
  Optimization and steering of the degree to which the goals defined for the IP strategy are being attained and summarization of the information for future IP budgeting.

The design of IP controlling should be embedded in the company's existing information structure. By defining suitable KPIs (Key Performance Indicators), the wealth of information available can be

[44] *Wurzer/Wieselhuber*, Informationsbedarf im Aufsichtsrat zur Bewertung der Innovationsleistung des Unternehmens, Board 5 (2014) 203-206.

compacted to just a handful of metrics. In addition, it is necessary to integrate an IP controlling process which continuously captures, documents and evaluates the relevant data in defined intervals and prepares them for decision-making.

KPIs are a well-established management tool. They condense the information measured in the form of ratios or absolute figures and provide quantitative information about the situation. However, an appropriate and success-relevant picture of the situation can usually not be obtained by using a single KPI but rather by employing several KPIs and looking at their interrelations and quantitative correlations (also known as KPI systems).[45]

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IP asset controlling with a 360° IP strategy

The implementation of the 360° IP strategy for the TM5 is associated with the consumption of substantial resources. To implement the strategy, internal and external experts spend time generating synthetic inventions, patent attorneys are regularly commissioned with preparing and supervising patent applications, lawyers supervise trademark applications and the registration and the relevant authorities charge fees for the registration and maintenance of IP assets. The value contribution of IP to the business model, however, cannot be readily determined from regular business information by persons (including senior management) who have not been actively involved in developing the strategy.

Traditional metrics and reporting systems are usually unsuitable for verifying the success of the IP created, including meaningful resource allocation. Modern IP management therefore also provides for the use of controlling tools which measure and communicate the relevant effect.

IP asset controlling and balanced scorecard

IP asset controlling seeks to control the success of the 360° IP strategy and its implementation and map it by means of an IP scorecard. By verifying whether the objectives set in the strategy development process have been achieved, the value contributions made by IP in the business model are brought to the fore. This type of reporting highlights the benefits of these measures in a direct and credible way. IP experts no longer have to rely on

[45] *Küting/Weber*, Die Bilanzanalyse, Beurteilung von Abschlüssen nach HGB und IFRS, 10th edition, Stuttgart: 2012.

assumptions regarding the value contribution to the operative business, which are difficult to verify and sometimes prone to speculation. IP asset controlling therefore provides the basic information required by such entities as senior management in order to assess whether an investment in IP was justified. In addition, being able to recognize unmet IP goals provides an opportunity for further analysis of the reasons for such lack of success. The lessons learned can in turn be used for future strategy development and implementation. Last but not least, success monitoring and analysis also provide the possibility of determining future IP budgets in a goal-oriented manner.

The outcomes of the IP asset controlling are mapped onto an IP scorecard. This tool was derived from the so-called balanced scorecard[46], a tool for communicating, monitoring and controlling the implementation of business strategies. The balanced scorecard was developed by Robert P. Kaplan and David P. Norton in the 1990s. Its inventors had realized that traditional systems of metrics, which were exclusively focusing on financial aspects, were no longer an adequate recipe for success in the light of an increasingly tough competitive environment and the ever-increasing importance of intangible value drivers. Kaplan and Norton therefore added further, non-monetary performance indicators to these management systems. These KPIs

[46] *Kaplan/Norton*, Using the Balanced Scorecard as a Strategic Management System, in: Focusing Your Organization on Strategy – with the Balanced Scorecard, 2nd edition, Harvard Business Review, 2000, pp. 38-47.

clearly define the company's business goals and the measures required for implementing its strategy. By sharing the balanced score card with all employees, everybody obtains a clear picture of the chosen course and can make their contribution towards achieving the required results.

The KPIs of the balanced scorecard relate to the company's strategy. According to Kaplan and Norton, there are four main strategic perspectives: the learning and development perspective, the process perspective, the customer perspective and the financial perspective. For each of these perspectives, quantifiable indicators are defined which describe the company's objectives in the best possible way. Each indicator is, in turn, attributed measures which highlight the path to goal achievement. Fixed setpoint values for the indicators show the target ranges for the individual aspects. Measuring the ACTUAL values and comparing them with the TARGET values provides an indication of the company's success in pursuing its goals as well as a starting point for actively controlling its activities.

While the balanced scorecard focuses on steering the implementation of a strategy, the IP scorecard is aimed at measuring the degree of goal attainment by means of implemented IP measures. The 360° IP strategy consists of four perspectives: managing risks, suppressing imitation, designing the market position and communicating the USP.[47] These four areas are represented on the scorecard. In addition,

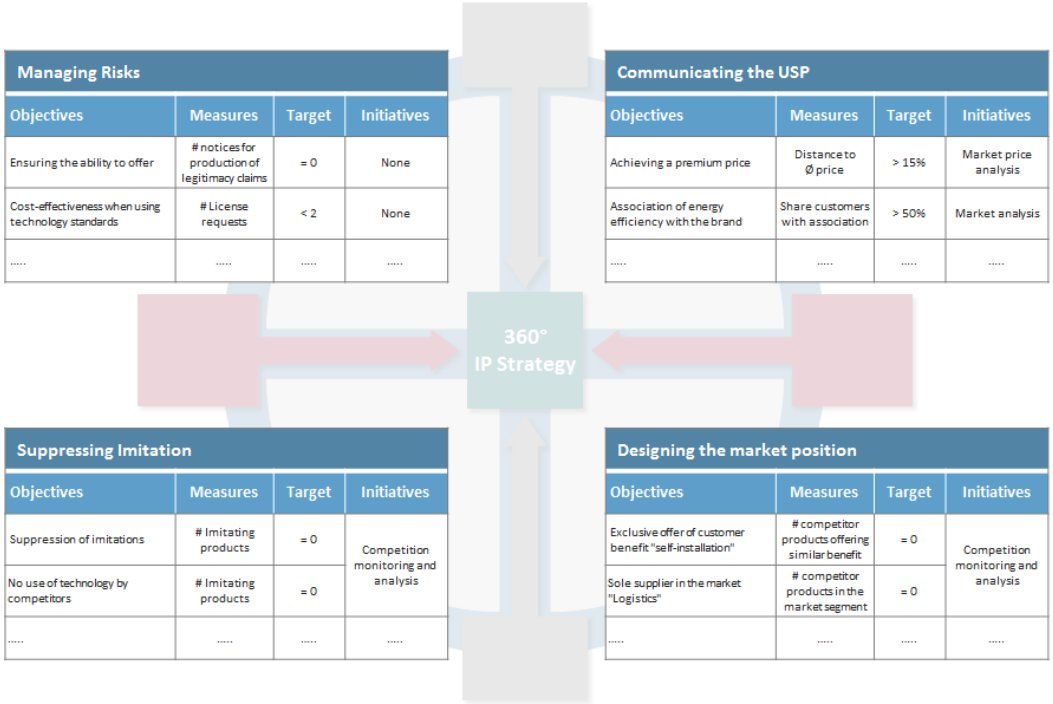

Figure 7: Excerpt from an IP scorecard.

[47] *Wurzer/Grünewald/Berres*, Die 360° IP-Strategie, Vahlen, Munich:2016, pp. 51 ff.

goals to be achieved by designing IP assets are defined within the scope of strategy development.

This demonstrates that the development of a 360° IP strategy is a prerequisite for the development of an IP scorecard – a fact which is immediately obvious because a meaningful evaluation of the success of an objective is only possible if that objective has been defined prior to taking specific measures. Once objectives have been defined, they must be translated into indicators which allow us to visualize success in terms of the contribution of IP within the business model.

When defining KPIs, it is essential that they focus on the desired market effect rather than the IP rights as such. The basic information required in order to quantify these KPIs is usually not provided by the patent department but by business functions which are close to the market.

Integrated IP management system in the form of a differentiation centre at Vorwerk

IP asset controlling is a functional component of an IP management system. A management system for IP combines strategic goals with processes and tools in order to manage IP.[48] An integrated IP management system[49] as implemented at Vorwerk can be achieved by additionally involving other functions such as innovation management, corporate strategy, marketing, product management, controlling... in a cross-functional management approach. Such an integrated management system for patents comprises the following basic elements:[50]

- Strategic goals[51]

  Strategy can be defined as entrepreneurial action which enables the attainment of desired goals and ensures coherence in company decisions. The central strategic goal at the Thermomix differentiation centre is to achieve greatest possible

[48] Cf. MTU example: *Grünberger*, Vom IP-Management zum Intellectual Asset Management, EPI, Munich: 08/03/2012; cf. Henkel example: *Kucken*, Strategisches IP-Portfoliomanagement, Patente, Munich: 12/03/2014; *Langfinger*, Strategisches IP-Management, IP-Bewertung, Frankfurt: 27-28/03/2006.

[49] Cf. *Niethammer*, Integratives Patentmanagement, Patente, Munich, 05/03/2013; *Germeraad*, Integration of intellectual property strategy with innovation strategy, Research Technology Management 5/6 (2010) 10-18; *Granstrand*, Corporate management of intellectual property in Japan, Technology Management, 19 (2000) 121-148; *Granstrand/Holgersson*, Multinational technology and intellectual property management – is there global convergence and/or specialization?, Int. J. Technology Management 64 (2014) 117-147.

[50] Cf. "Strategy implementation inevitably involves many parts of the organization", *Sullivan*: Extracting Value from Intellectual Property, in: *Sullivan*, Profiting from Intellectual Capital, 1998, p. 112.

[51] *Burr/Stephan/Soppe/Weisheit*, Patentmanagement, 2007, p. 90.

exclusivity for the perceived customer benefits of a company's offerings.

- Process landscape[52]

  Processes are operational sequences which are interlinked, interact with each other, can be grouped, and together form a company's process landscape. The identification of patent needs in order to achieve exclusivity for a future offering is a central process within the Thermomix differentiation centre.

- Tool landscape[53]

  This includes methods and software-based support tools which enable the performance and interaction of processes.

- Information architecture[54]

  Information architecture refers to all information structures, contents and specific tools such as processing and search options available in a company. Competition monitoring via publicly accessible patent information databases which allow companies to map patents of different competitors with products, markets... and to evaluate them, is also part of a patent-related information architecture.

- Resources[55]

  The key resources for patent management are staff and know-how as well as financial resources and the asset portfolio. In addition, infrastructure components are also included in the resource definition at Vorwerk.

- Reporting and controlling[56]

  Gathering and documenting process information as part of a company's reporting system creates transparency and control options for strategy implementation. This permits an efficient target-actual comparison of the cost of a patent portfolio for a specific customer benefit with the customer's willingness to pay for the underlying product attribute, for example.

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52 See *Kromm*, Process Optimization in Corporate IP Departments, IP Service World, Munich: 25. 11/2013; *Mohnkopf*, Wissenssicherung im Ideen- und Erfindungswesen, in: *Mohnkopf/Moser,* Wissensmanagement für Schutzrechte und ihre Bewertung, 2014, p. 17; *Gassmann/Bader*: Patentmanagement, 2006, pp. 37ff.

53 *Wurzer*, Integriertes Innovations- und Patentmanagement, in: *Gleich/Rauen/Russo/Wittenstein* (ed.), Innovationsmanagement in der Investitionsgüterindustrie treffsicher voranbringen, 2006, p. 48.

54 Cf. for an overview: *Jewess*, Inside Intellectual Property, 2013, pp. 53ff; *Burr/Stephan/Soppe/Weisheit*, Patentmanagement, 2007, p. 155; *Moses*, Faktoren einer erfolgreichen Patentsteuerung im wertorientierten Controlling, 2007, pp. 123ff.

55 See *Wurzer*, Patentmanagement, 2004, pp. 61ff.; *Hundertmark*, Nutzen und Management von Schutzinstrumenten, 2012, pp. 141f; *Gassmann/Bader*, Patentmanagement, pp. 115f; *Moses*, Faktoren einer erfolgreichen Patentsteuerung im wertorientierten Controlling, 2007, pp. 119ff; *Eppinger/Vladova,* Intellectual Property Management Practices at Small and Medium-Sized Enterprises, Int. J. Technology Management 61 (2013) 64-81; *Fabry*, IP Asset Management, Planung, Verrechnung und Kontrolle von Patent- und Markenkosten, Mitteilungen der Deutschen Patentanwälte 9 (2008) 399-405.

56 *Möller/Menninger/Robers*: Innovationscontrolling, 2011, pp. 39ff.

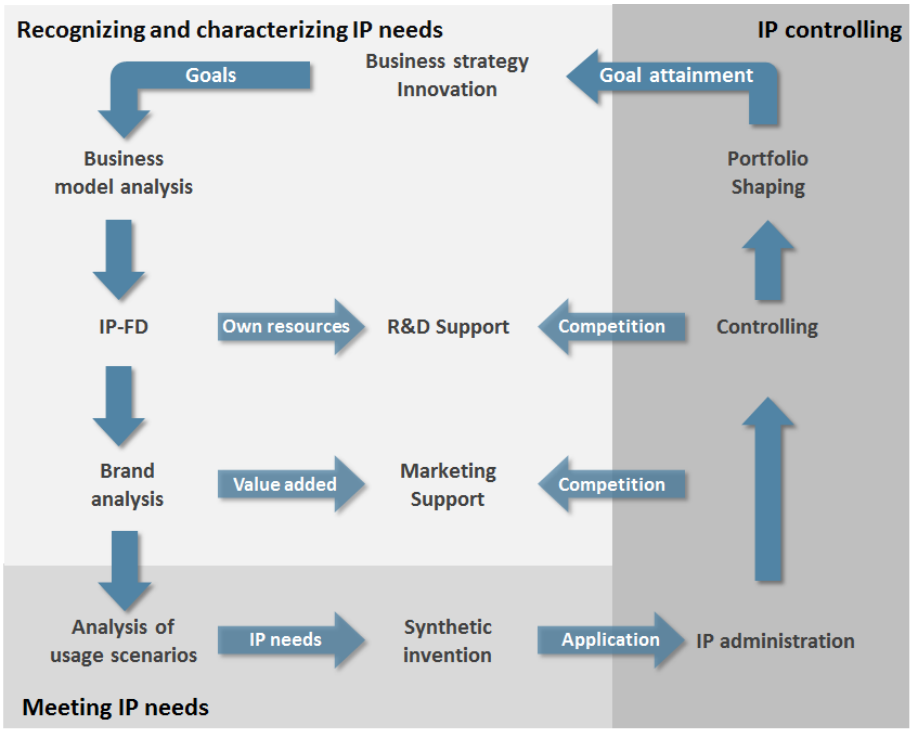

Figure 8: Integrated IP management system.

The performance of an integrated management system depends on how well the individual components work together.[57] However, the literature tends to provide isolated examples of the elements rather than explanations of meaningful configurations for a specific business strategy and the specific interactions between its components.[58] The elements of the management system must lead to meaningful interconnected activities in order to achieve efficiency within the scope of predefined strategic goals. DIN Spec 1060 dealing with Service Quality in Intellectual Property Management specifies the structure of the functions of an IP management system, in particular the necessary interactions between these functions.[59]

The DIN Spec 1060 distinguishes between IP generation, IP design and the commercialization of IP. These activities overlap, merge and are arranged in a circle. In more concrete terms, this means that IP generation is not the starting point of all IP activities. DIN Spec 1060 describes a value creation process, i.e. a sequence of steps, for IP as an asset. By means of this process,

[57] *Mittelstaedt*, Strategisches IP-Management – mehr als nur Patente, 2009, pp. 39f.; *Gassmann/Bader*: Patentmanagement, 2006, pp. 103ff.

[58] Cf. US study, only 1/3 of all applications come with a business case: *Khan/Thomxon/Freedman/Venturio*, Intellectual Property Benchmarking Survey: Current and best practices for patent processing, Les Nouvelles 6 (2012) 174-179.

[59] DIN Spec 1060: 2010-04, DIN Deutsches Institut für Normung e.V., Innovation: 2009.

operational sequences within a company are to be optimized in such a way that verifiable added value is created by the activities carried out within the scope of the business model.[60] This basic principle was also applied in the configuration of Vorwerk's differentiation centre. The activities of DIN Spec 1060 were optimized for optimal goal attainment and value creation and utmost efficiency in using the available resources.

Exclusivity monitoring: monitoring the uniqueness of customer benefits

The practical implementation of IP asset controlling for the Thermomix was achieved by means of exclusivity monitoring.[61] The starting point for this exclusivity monitoring are those product features which, in the eyes of the customer, lead to purchases and recommendations. In other words: the perceived customer benefits. For the Thermomix, these product features were assigned to the following categories: time savings/simplicity, flexibility, safety and success guarantee as well as guided cooking. Subsequently, the individual product features were matched with a portfolio of IP rights in order to create an IP rights structure with the corresponding customer benefits. Finally, competitors' customer communications were analyzed for the potential promotion and/or implementation of product features related to those customer benefits.

The design of the controlling function aims at verifying whether the competition steers clear of using product design and communication features which are similar to those of the TM5 or whether they use similar sales arguments to those used by Vorwerk. Since the hugely successful TM5 is a dominant design and therefore defines customers' expectations from a multifunctional food processor, it would be an obvious choice for the competition to adjust their communication of customer benefits to that of the TM5. It is known from the above-mentioned market studies that customers make their decisions related to purchase and recommendation based on the benefit communication for the TM5. Customers ultimately expect competitive products to provide the same benefits, but at a lower price. The circumvention of customer benefit arguments on the part of the competition despite the obvious dominance of the market-leading design when making purchase decisions can be attributed to the prohibitive effect of the corresponding IP asset portfolio.

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[60] Cf. *Wurzer*, Wertorientiertes Patent-Portfolio, Mitteilungen der Deutschen Patentanwälte . 9-10 (2005) 430-439.

[61] *Stephan*, "*Wirksamkeitskontrolle einer nutzenorientierten IP-Strategie*" [Verifying the effectiveness of a benefit-driven IP strategy], Master's thesis in Business Administration, University of Bremen, Bremen: 29/09/2016.

A competitive study was performed on the German market for 8 products and 10 customer benefits. To this end, 74 IP rights from the TM5 portfolio were analyzed and mapped as described above. A total of 39 product features were analyzed and categorized according to customer benefits and IP rights.

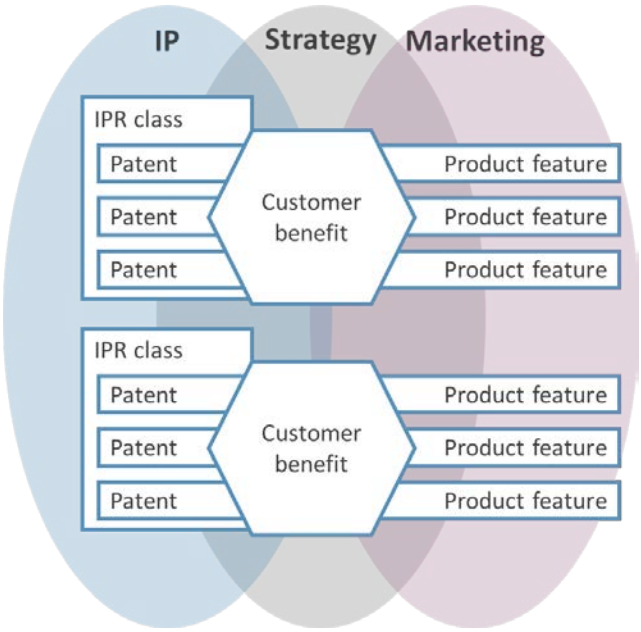

Figure 1: Schematic representation of the assignment of patents to customer benefits

The success guarantee through guided cooking is a central selling proposition of the TM5 and can be directly observed by the customer during a sales presentation. Another important reason for the high level of customer satisfaction and therefore the high recommendation rate is the consistent fulfilment of the selling proposition of the TM in daily use. The user experiences guided cooking as a combination of intelligent menu navigation with instructions and responses as shown in the figure below.

Guided cooking as part of the success guarantee can be experienced in different customer benefit categories. This includes, for example, the automatic processing of entire recipes or the processing of recipes based on the ingredients and device settings used.

In turn, this includes product features such as the digital presentation of recipe data, the step-by-step completion of processing steps such as stirring, chopping, mixing... or weighing during the cooking process. Such product features were assigned to IP right families from the TM5 portfolio. These include documents related to machine responses on the one hand and documents concerning the actual processing of recipes on the other. Machine responses include the geolocalization of the Thermomix in order to adapt cooking times or heating with occasional stirring in order to ensure an optimal heat distribution in the cooking chamber. The step-by-step completion of processing steps includes methods for creating control programs or the verification of recipe data for validity while the machine is in operation.

Figure 10: Guided cooking as experienced by the customer during a presentation of Vorwerk's TM5.[62]

Competitive activities related to the communication of customer benefits were monitored and Vorwerk's exclusivity in the market in terms of a genuine uniqueness of customer benefits leading to purchases and recommendations was analyzed.

One of the outcomes is presented in Figure 11. Explanation of the colour coding used: Green: Product feature not mentioned in customer communications. Red: Product feature implemented and communicated by the competition. Blue: Probably implemented but not mentioned in customer communications.

Exclusivity in the market was analyzed for the following three customer benefits:

- Success guarantee for recipes
- Automatic and complete processing of a recipe
- Processing of a recipe depending on ingredients and device settings

Exclusivity monitoring was performed for the period from 2011 to 2016, also comprising the model change with the launch of the TM5 in 2014. As shown in Figure 11, the degree of exclusivity achieved in the marketplace varies for each customer benefit in relation to

[62] *Schäffner*, Digitization of Cooking - The Thermomix Ecosystem, Marketing Club, Speech, Munich: 07/07/2016.

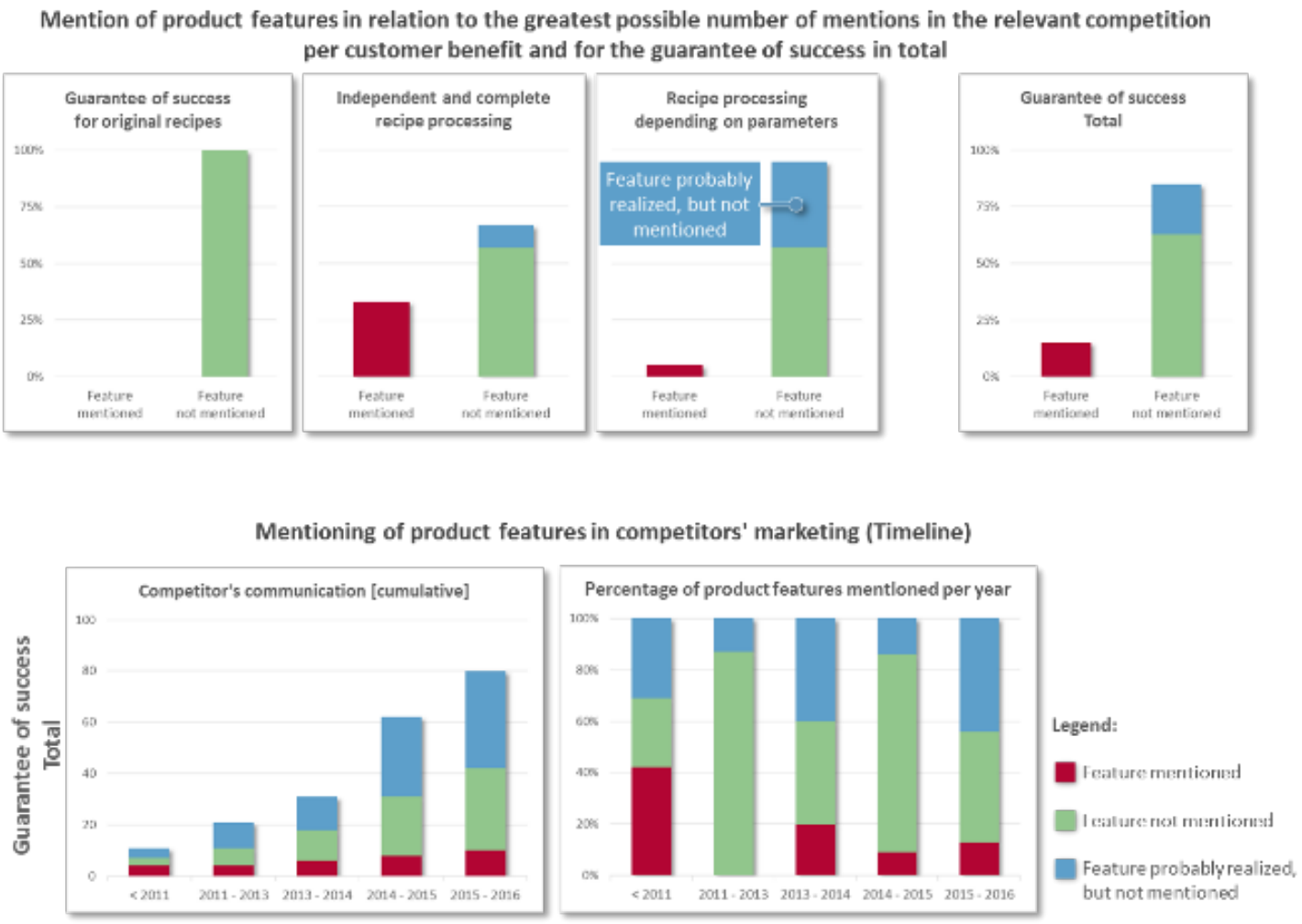

Figure 11: Results of exclusivity monitoring.

a reference parameter from the IP strategy (e.g. flexibility, simplicity, etc.). It is obvious that competitive intensity has increased over time and that – as a result of a significantly improved IP portfolio which is systematically aligned with the customer benefit – the TM5 has achieved significant gains in perceived exclusivity compared to its predecessor TM31.

Conclusion

The 360° IP strategy for the Thermomix TM5 was consistently and systematically designed in such a way that it covers all key customer benefits in its proprietary IP portfolio. The TM5 is not just a market leader in terms of the physical device, but it is also a dominant design in terms of the entire ecosystem which surrounds it. This means that customer expectations are based on the features and the user experience of the TM5. The normal reaction of the competition in an attempt to increase its market share would be to align itself as closely as possible with the TM5 as regards the benefits expected by the customer, while at the same time offering a lower price.

All relevant product features from the customer's perspective, i.e. those capabilities viewed by customers as “magic”, are protected by the IP portfolio. Ultimately, the IP protection of the Thermomix covers its look and feel. This means that the competition is excluded from using the central selling proposition of the TM5. The TM5 therefore effectively enjoys a high level of exclusivity in terms of those features which are relevant for purchase decisions or recommendations in the eyes of the customer. Our verification of the effectiveness of the IP strategy for the TM5 has shown that the corresponding IP portfolio significantly contributes to the value created within Vorwerks business model for the Thermomix.

Contact
Alexander Wurzer
Alexander.Wurzer@ceipi.edu

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.

Alexander J. Wurzer
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

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University of Geneva

Prof. Estelle Derclaye,
University of Nottingham

Prof. Christoph Geiger,
University of Strasbourg

Prof. Jonathan Griffiths,
School of Law, Queen Mary,
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Dr. Henning Grosse Ruse-Kahn,
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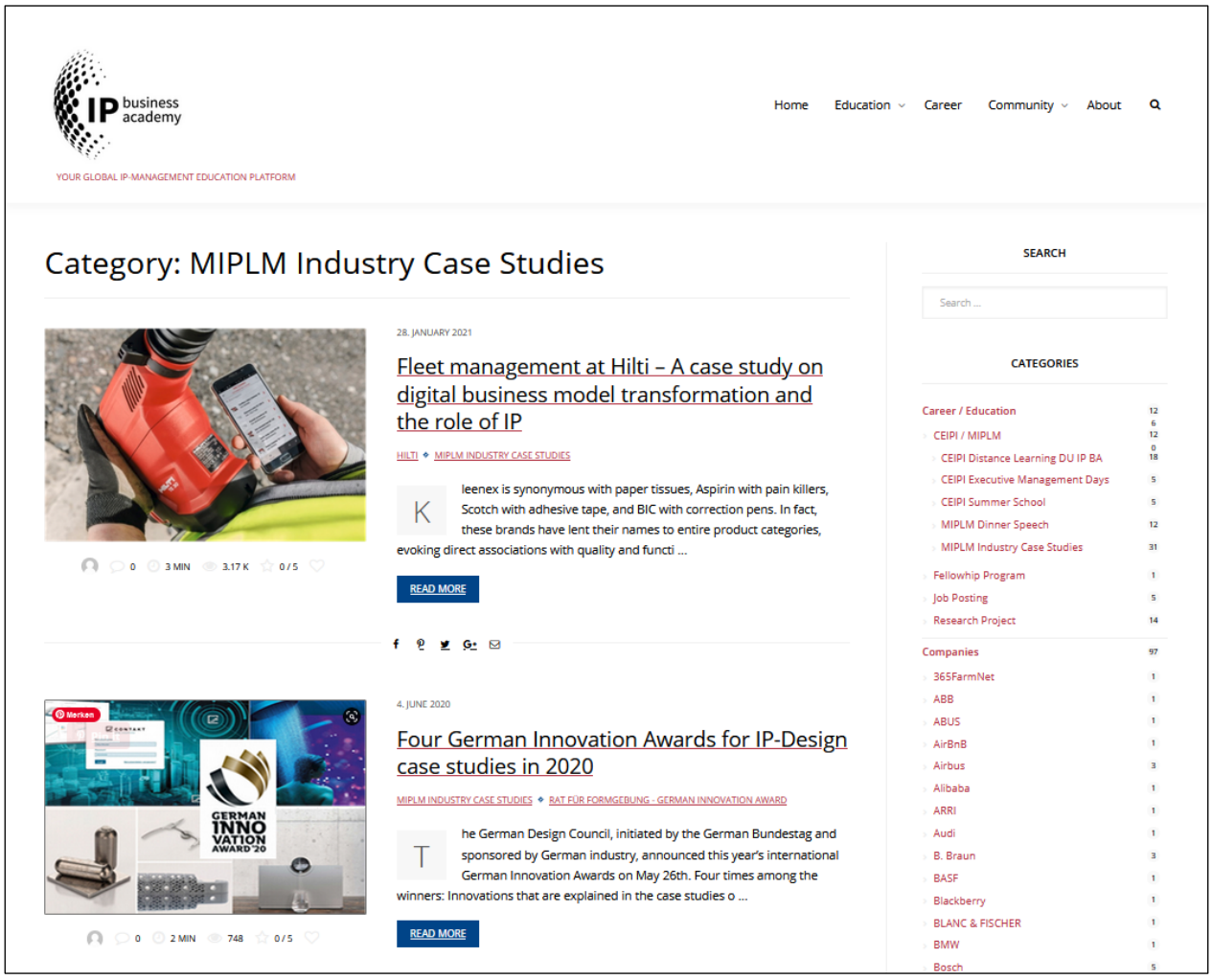

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