Summer 2013 | Vol. 55, No. 4 | REPRINT SERIES

California Management Review

Value Articulation: A Framework for the Strategic Management of Intellectual Property

James G. Conley
Peter M. Bican
Holger Ernst

University of California
Berkeley
Haas School of Business

Value Articulation:
A Framework for the Strategic Management of Intellectual Property

James G. Conley
Peter M. Bican
Holger Ernst

This article introduces a framework that helps to assimilate intellectual property management activities with the practices of marketing and strategy. With the framework, the management of IP rights is explained within marketing constructs such as the unique selling proposition. The article presents case studies that explore the applicability of the framework in a diversity of industry contexts and firm sizes. (Keywords: Intellectual Property, Licensing, Brand Equity, Patents, Strategic Management, Marketing, Product Life Cycle, Case Method, Value Transference, Multiple Industries)

> "I have a general principle that I follow: I don't go into any area that I can't get a patent on. If you don't stick to that approach, you quickly find yourself manufacturing commodities."[1]

Ray Dolby (quoted above) has a clear understanding of the usefulness of intellectual property (IP) in managing a business. Under his stewardship, Dolby Laboratories grew from a London-based technology startup to a globally recognized source of high-quality digital audio and video experiences.

Since 1966, the firm's intellectual property has been combined with multiple other competencies to grow and reposition Dolby amongst waves of media market consumption technologies. Central to these transformations is an IP strategy combining patents and trademarks that enabled Dolby to successfully fight off competition in its existing markets and facilitated Dolby's entry to new markets.

The first author would like to acknowledge enlightening discussions with Clinton Francis of the Northwestern University School of Law that gave rigor to the value transference concept and laid the groundwork for the overall framework. We further acknowledge the executives who generously gave of their time, especially Gerhard Berssenbrügge, Ed Schummer and Robert Shapiro. Commentary and guidance from discussant Carmelo Cennamo and participants at the June 2012 European Patent Academy workshop in Munich, Germany, three anonymous reviewers, the special issue editors Alberto Di Minin and Dries Faems, and managing editor Kora Cypress are gratefully acknowledged. The usual disclaimers apply.

What is instructive about Mr. Dolby's success is that he has managed to grow the firm's value and revenues during times of remarkable competition and disruptive technological change. For example, his initial value proposition was based on patented benefits for analogue sound recording and playback, which suddenly became obsolete through the emergence of digital sound. For technology entrepreneurs like Dolby, patents are important, but they tend to get invented around and/or expire. What has endured since the founding of the company is the Dolby brand and trademark.

James G. Conley is Clinical Professor of Technology at the Kellogg School of Management Center for Research in Technology and Innovation and the McCormick School of Engineering and Applied Science at Northwestern University in Evanston, Illinois. <j-conleya@kellogg.northwestern.edu>

Peter M. Bican is a Ph.D. Candidate at the WHU, Otto Beisheim School of Management in Vallendar, Germany, and also a Visiting Scholar at the Kellogg School of Management Center for Research in Technology and Innovation at Northwestern University in Evanston, Illinois. <peter.bican@whu.edu>

Holger Ernst is the Chaired Professor of Technology & Innovation Management at the WHU, Otto Beisheim School of Management in Vallendar, Germany. <holger.ernst@whu.edu>

This article introduces a conceptual framework of how to use the specific IP rights in a complementary way. Based on existing literature,[2] we analyze the process of transferring the value of protection from limited-life Intellectual Property Rights (IPRs), such as patents or copyrights, to indefinite-life IPRs, such as trademarks. The framework, which we call "Value Articulation," illustrates the role of IP as an enabler for creating and pursuing market opportunities.

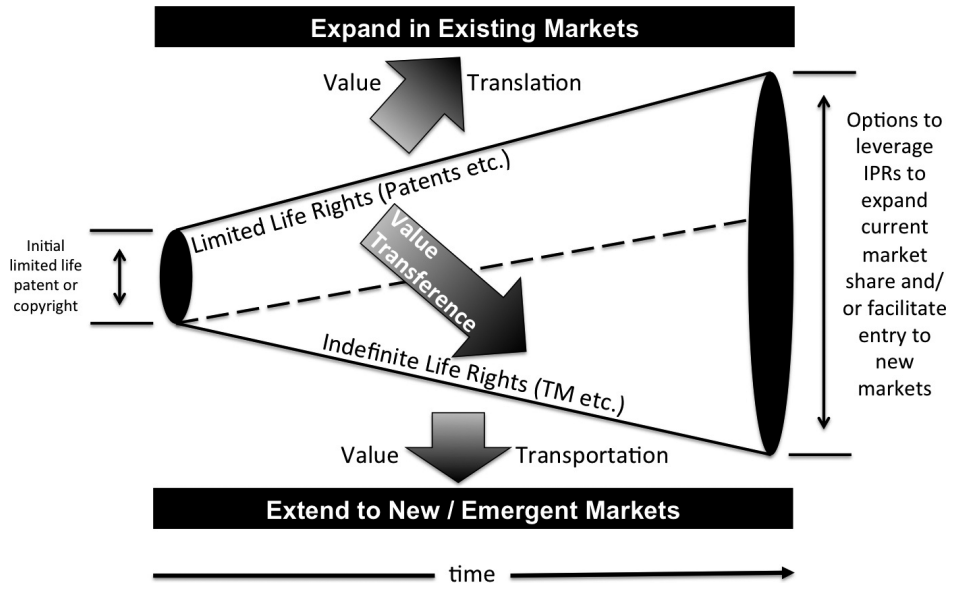
To illustrate this framework, we conducted in-depth case studies in multiple industries including entertainment, pharmaceuticals, and consumer packaged goods.[3]

Value Articulation

The Framework

Central to the innovation management challenge are: securing all IPRs related to an innovation; leveraging them in an existing market to expand market share; and opportunistically extending the IPR options[4] into new markets for growth. Each of these activities has product differentiation and IP attributes that can be characterized as opportunities for marketing, strategy, technology management, and other disciplines. In the marketing literature, for example, scholars distinguish between various kinds of *extensions*, i.e., line extensions and category extensions.[5] A novel line extension, also called brand expansion,[6] is a product introduction within a currently served category that carries an established IPR, such as a trademark. Category extensions, on the other hand, are used in the marketing literature to characterize product introductions in categories that have not been served by the firm. However, the marketing literature on extensions rarely mentions IPRs.[7] Throughout this article, we will refer to line extensions as *expansion* and to category extensions as *extensions*. Our framework brings these concepts together, as illustrated in Figure 1. The framework consists of three elements—*value transference*, *value translation*, and *value transportation*—and helps managers from multiple disciplines appreciate the usefulness of IPR options in navigating through the challenges and opportunities of dynamic market conditions.

FIGURE 1. The Value Articulation Framework that connects IPR Management with Market Opportunities[8]



Elements of the Framework

Value transference involves pursuing and developing the optimum combination of IPRs that can be associated with an innovation. Transference activities develop and migrate the advantages of technical or performance-based customer benefits (originally reserved in patents or copyrights) to trademarks. The goal is to secure the reputational aspects of these benefits in the brand, resulting in customer preference of the brand. Transference aggregates the reputational aspects of each patented invention or copyrighted expression (limited life) in the trademark (indefinite life).[9]

Value transference can complement the classic marketing activity of building a unique selling proposition (USP). As defined in the literature,[10] the USP comprises three elements: a proposition to the customer must be made by each media message; it must be strong enough to move the masses; and it must be unique (meaning competition does not or cannot offer the same proposition).[11] IPRs' inherent ability to deter imitation or copying helps to support the uniqueness of the USP.

Evidence of value transference can be found in the time-sequenced prosecutions of patents, copyrights, trademarks, and so forth in conjunction with coordinated marketing activities. Typically, a patent is used during the early stages of market competition to secure technical product advantage and build a patent-supported USP. In the food ingredient industry, for example, aspartame is a patented artificial sweetener molecule[12] that promises the benefit of improved low-calorie sweet taste. After FDA approval in 1981, an advertising campaign was launched that cultivated an association

between the zero-calorie "sweetness hit" achieved by the use of the patented aspartame molecule and the NutraSweet brand. It was positioned in the marketplace as a unique zero-calorie, relatively healthy alternative to saccharine.[13] A red and white swirl reminiscent of large lollipops and other confections was chosen as the logo for the media campaign. Trademark registrations of this logo followed.[14] By carefully connecting the patented aspartame molecule benefit with the brand logo equities in media messages, the customer preference for patented aspartame was transferred to the brand NutraSweet. Hence the reputational aspects of the aspartame invention were secured in the NutraSweet trademark estate. The uniqueness of aspartame is expressed in the "zero-calorie sweetness hit" USP, which is secured by multiple IPRs. The trademarked NutraSweet brand advantage endured beyond the expiry of the aspartame patent. As characterized by NutraSweet's marketing director Jim Mitchell: "Patents expire, but brands endure."[15]

Value translation takes value transference further. It renders the value of the product benefits (secured in multiple IPRs through value transference) and expands them into existing markets, leveraging the established channels and customer relationships of a firm. Value translation activities address the question of "How can IPRs be used to differentiate our offering in existing categories and grow market share?" Value translation is about using multiple IP regimes to thrive and sustain in familiar markets (for example, by product modifications and upgrades to advance the competiveness of the offering). Each newly patented feature or copyrighted expression can be an additional proprietary attribute in the USP of improved products.

Value translation focuses on the role of the limited-life IPRs (such as patents or copyrights) in growing the share of existing markets. At the product level, improvements are made proprietary by these limited-life IPRs and advertised as such to build a category focused USP. The related IPRs secure new performance benefits that enhance competitiveness in an existing market. Customer preference for these incremental proprietary benefits continues to build confidence in the brand and the trademark. Indicators of translation activities over time include incremental line extensions and product-focused media messaging that attempts to grow market share. Apple, for example, translated the unique solution that was the classic iPod + iTunes system for personalized digital music experience through multiple design iterations that included the iPod Mini, iPod Shuffle, and the iPod Nano. Each design included incremental functional benefits (iTunes software patents) and ornamental modifications (design patents). The basic form factor of the media player was held constant such that it could eventually be registered as a product configuration trademark.[16] Following the translation approach, Apple leveraged its software, technology, and design to build source identity or brand preference that significantly expanded and sustained their share of the portable music player market.

Value transportation is an opportunistic activity that uses IPRs as negotiating tools to enter new markets for growth. These markets are difficult to reach through existing clients or existing channels. Market entry may require whole new technologies that must be acquired or new channels that must be contracted for access. Value transportation leverages the full array of IPRs and projects them to new markets, answering the question: "How do we best use IPRs to get into new markets and grow the business?"

TABLE 1. Role of IPR within the Value Articulation Framework and its Elements

IP Right	Uniqueness	Value Transference	Value Translation	Value Transportation	Impact/ USP
Patent	Function	Differentiated Function	Incremental Product Attributes	Technology Platform Projection to New Markets	Technical Benefit
Copyright©	Expression	Original Expression	Scalable Media Content	Derivative Use in New Markets	Story about Benefit
Trademark®	Source Identifier	Branded Offering	Brand Expansion	Category Extension	Source of Benefit

Evidence of transportation can be found in opportunistic ventures, licenses, acquisitions, or mergers where IPRs are used as an element of leverage. The architect of the aspartame to NutraSweet value transference campaign Robert Shapiro became the head of Monsanto in the early 1990s. At that time, Monsanto[17] dominated the market for grass/weed herbicides with a patented chemical glyphosate[18] that was trademarked as Roundup.[19] Farmer preference for Roundup was high for a number of reasons, including increased yields and improved environmental friendliness relative to other herbicides. The growth market for Monsanto, however, was viewed to be transgenic seeds. In order to enter that market, Shapiro had to unite elements of the proprietary Monsanto recombinant DNA technology platform with the sources of seed DNA, specifically germ plasm. Through an aggressive acquisition campaign, Monsanto procured substantial sources of IP protected foundation seed that were needed to enter and be competitive in the seed market. After developing the offerings such that the crops were genetically modified to resist glyphosate (and hence increase yield), these seeds were launched using the "Roundup Ready" trademark.[20] In so doing, Shapiro projected the power of the patented, recombinant DNA seed platform and the positive Roundup brand equity from the herbicide market into the new and growing market for transgenic crop seeds. Since 1995, Monsanto has transformed itself from a 90-year-old chemical company to a modern innovator in agribusiness.[21]

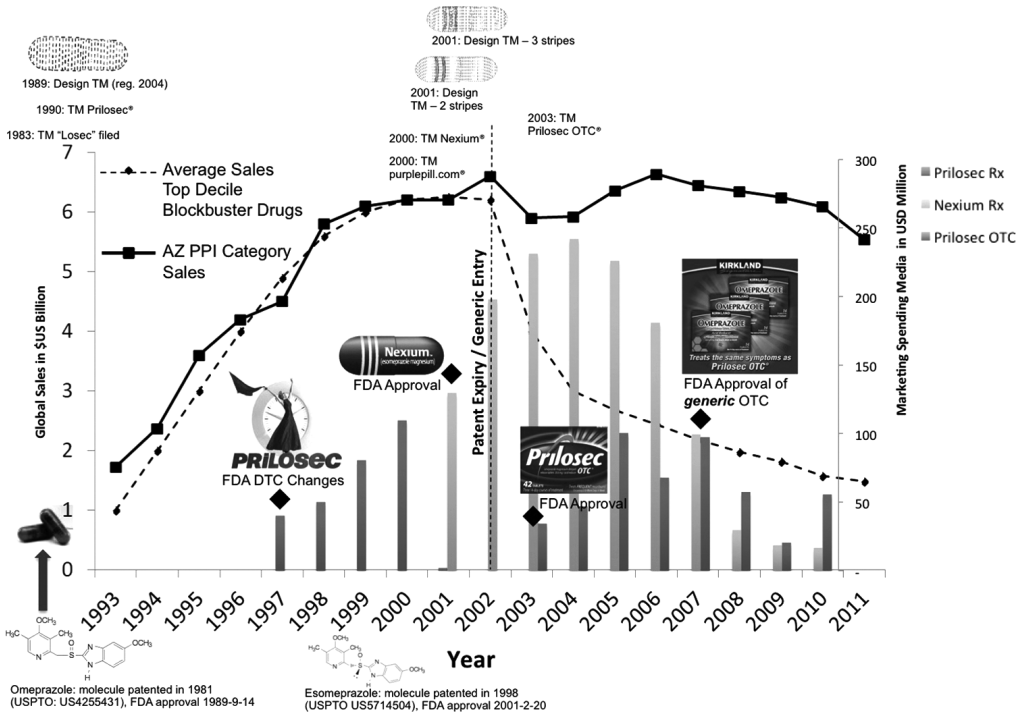
Table 1 summarizes the central role of IPRs within the value articulation framework and connects the legal language with tenets of strategy and marketing.

Value Articulation at AstraZeneca

No End in Blockbuster Wonderland

In 1989, Prilosec (generic Omeprazole)[22] was introduced to the U.S. market. As the first mover in the new proton-pump inhibitor (PPI) prescription drug category, Prilosec became the most popular drug for chronic patients of reflux related indigestion or heartburn. By 1993, it was a multibillion-dollar blockbuster that eventually added $6 billion to AstraZeneca's (AZ) annual sales making it the most profitable product in the AZ portfolio and the best selling drug in the world in 2000.[23]

FIGURE 2. AstraZeneca's Management of IPR's, Marketing Activities, Product Launches and PPI Market Revenue



Approaching patent expiration in 2001, AZ faced the classic pharmaceutical industry conundrum, how to deal with competition from generic drug manufacturers? When generic versions hit the market, sales of the original, branded drug plummet on average 50% per year.[24] The resulting sales curve over time takes on the shape of an ominous shark fin (see dashed line in Figure 2).[25] Strangely, after patent expiry, AZ's annual revenues in the PPI category continued to be approximately $6 billion in the years after the key patent expired and generics entered the market (see Figure 2). How did AZ achieve this very unusual result?

Value Transference: "The Purple Pill"

Several years before the Prilosec patent expired,[26] AZ used the time of patent exclusivity to launch a direct to consumer advertising (DTC) campaign to promote distinctive visual elements and position Prilosec as the "purple pill," *the* best performing drug to relieve chronic heartburn. AZ reinforced this marketing strategy by pursuing trademark registration on key elements of the purple pill including its color,[27] thus allowing AZ to protect this element of brand equity from imitation. DTC media messaging up to $100 million in the year 2000 supported this transference of value from the function—the underlying patent—to the trademark, moving the "purple pill" and the color purple on the pill to the center of the media messages. With such an array of IPRs on Prilosec, the selling proposition was indeed unique.

Value Translation: "Better is Better"

The ideal time to expand the value in the purple pill trademark to a modified product in the PPI category was prior to expiry of the Omeprazole patent and the onset of generic competition. The new purple pill Nexium promised improved functionality over Prilosec. Further, the improved Nexium compound (Esomeprazole) was granted a U.S. patent in 1998.[28] AZ claimed, as expressed in its "better is better" marketing campaign, that Nexium would provide faster relief from heartburn than Prilosec (Omeprazole), but also heal the root cause of heartburn. AZ gained FDA approval for Nexium in March of 2001 and immediately launched a marketing campaign encouraging doctors and patients to switch from Prilosec to Nexium. AZ shifted its marketing activities to Nexium and spent more on Nexium media messaging than the $100 million it had spent on Prilosec pre-expiry (see Figure 2).

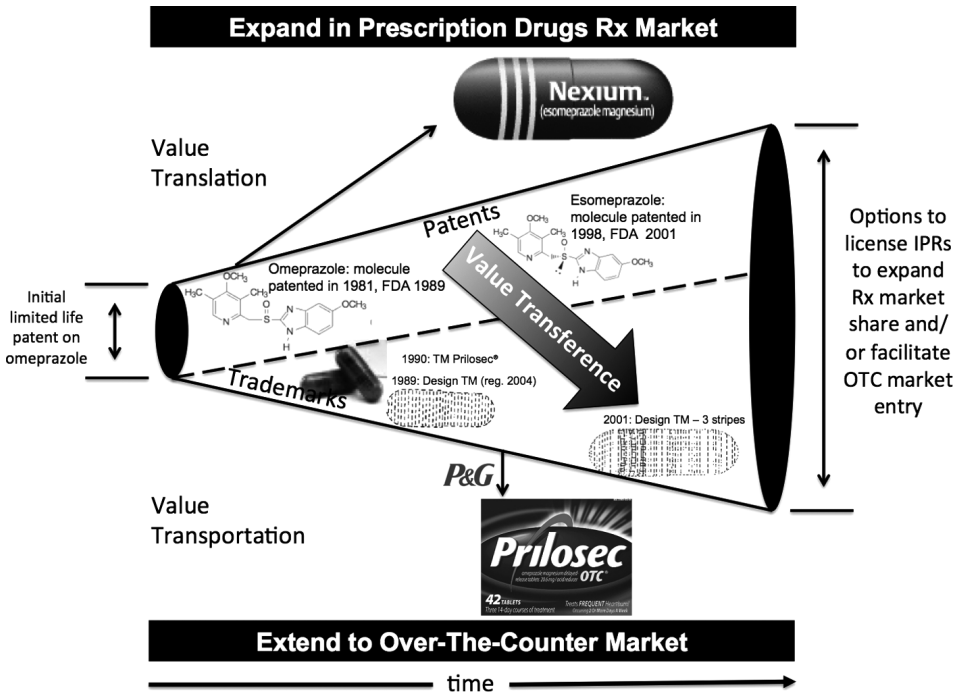
In the 5 years after the Nexium launch, AZ spent more than $1 billion on media marketing to promote efficacy of the new purple pill. AZ used the purple pill trademark protected color[29] to migrate the brand image and customer base of Prilosec to the newly patented drug Nexium. By means of this comprehensive branding, trademark, and patenting strategy, AZ translated the old product (Prilosec) into a next generation PPI product (Nexium) with an improved USP. Sales of Nexium (on patent until 2014) in the following years compensated for the decline of Prilosec sales brought on by generic entry in November 2002. AZ was able to maintain and even expand its blockbuster business in the prescription PPI market (see Figure 2), thereby avoiding the shark fin.

Value Transportation: Going Over-The-Counter

AZ leveraged multiple elements of its IP portfolio to attack cost-based competition from the generics by entering the non-prescription, over-the-counter (OTC) market with Prilosec in the Fall of 2003.[30] AZ thereby transported the Prilosec trademark IPR into a new market. The non-prescription OTC market differs significantly from the market for prescription drugs. Extending the brand value from the prescription market to OTC is a challenge for companies like AZ because it lacks the marketing and strategy know-how in consumer packaged goods retail channels. AZ therefore took advantage of its strong trademark position and brand awareness, together with the proprietary OTC marketing exclusivity[31] granted by the FDA, and formed a partnership with one of the major players in retail: Procter & Gamble (P&G). At the heart of the value proposition that AZ brought to P&G is the proprietary marketing right from the FDA OTC approval together with the patented OTC tablet production technology and the Prilosec mark. P&G immediately started to market the drug selling it below the retail price of generic Omeprazole.[32] Low-priced Prilosec OTC available *without* a prescription became the best selling branded product within the U.S. OTC and health and beauty care market in 2007.[33]

Through value transference, translation, and transportation, AZ was able to build a strong product portfolio in multiple categories, generating and sustaining the $6 billion in annual revenue through 2011—almost 10 years after Prilosec's loss of patent protection (see Figure 3).[34]

FIGURE 3. AZ's Temporal Management of the PPI Invention and Associated IPR's

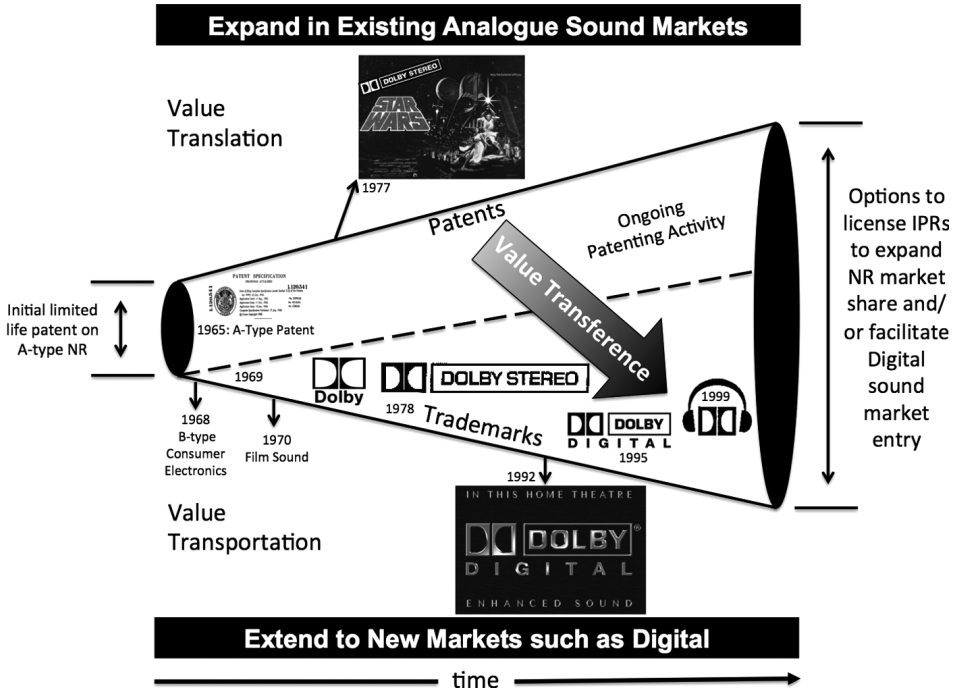


Value Articulation and Entrepreneurs

"In many ways, contemporary sound is one of the leading Hollywood exports in technological, aesthetic, and financial terms."[35] Film sound? As in Dolby Laboratories, which recently bought the naming rights for the Hollywood theatre that hosts the Oscars?[36] Yes, as in Ray Dolby, the entrepreneur who founded Dolby Laboratories in 1965. Dolby aimed to develop and market sound enhancement technologies that reduce or eliminate the "noise" in professional analogue recording and transmission systems. His patented[37] Dolby A-type noise reduction system was produced and marketed to the London music recording studios under the famous "Dolby" and Double-D trademarks from 1966 onwards (see Figure 4). The patented benefit of his system was a sophisticated new form of audio signal compression and expansion, which reduced the background "hiss" inherent in magnetic tape recording with no discernible effects on the material being recorded.

Ray Dolby's growth aspiration sought opportunities beyond the boundaries of the professional music recording market. His will to further extend the patented benefits of his invention and his intention to transfer, translate, and transport its value to other applications and markets was already present in the early days of Dolby: "I thought [noise reduction] is going to be useful for a lot of things. I mean it can be used for master tape recording . . . home tape recording . . . and certainly on movie soundtracks."[38]

FIGURE 4. Dolby's Temporal Management of the Audio Technology IPR's across Multiple Media Market Opportunities



Value Transportation in the Analogue World

Following this vision, Dolby developed and patented the B-type noise reduction (NR) system[39] in 1968. This laid the IPR groundwork to move the functional benefit from the A-type professional technology to the consumer market (see Figure 4). In addition, Dolby decided to access both markets in a different way, that is, manufacturing products in-house for the professional market and licensing out the B-type noise reduction patented technology to device manufacturers (consumer market).

Early customers of the Dolby B-type NR license agreements were Pioneer and Sony. As Bill Jasper, former CEO and President of Dolby Laboratories, noted: "Ray believed from the beginning that licensing the company's technologies [for the consumer market] would lead to higher and more consistent revenues from manufacturers, would build trust in Dolby Laboratories as a partner, and would enable the company to grow while remaining independent of venture capitalists, investment bankers, and other external money sources."[40]

A Blueprint for Value Transference

Dolby understood from the beginning how to tie the Dolby trademark to his patented inventions, that is, how to transfer the functional benefit of the patented technology to the trademark. This was demonstrated in his early licenses[41] for the B-type noise reduction, which included both patent and trademark use rights.

In crafting the license terms, Dolby surprisingly decided to make them royalty free. Ian Hardcastle, former Vice President of Dolby Laboratories Licensing Corporation, explained the value transference strategy behind that move: "Initially a royalty was contemplated but it was thought that these tapes would help establish Dolby B as the standard consumer tape noise reduction system and would also promote sales of Dolby B-equipped cassette recorders."[42] While the license was royalty free, the license facilitated licensees to put the "Dolby NR" name above the button that would activate the noise reduction function on the recording or playback device. Hence the front of his customer's products became a Dolby advertising platform.

Developing and extending the noise reduction technology further, Dolby transported his inventions again into a new market: film sound, which he formally entered in 1970. After this market entry, he eventually expanded (i.e., translated) the Dolby presence in film studios in 1977 with his advanced analogue sound product Dolby Stereo,[43] most prominently used in one of the icons of Hollywood film, "Star Wars." Dolby used "Star Wars" not only to further promote his proprietary stereo sound technology, but also to strengthen the Dolby trademark itself: the trademarked Dolby System Logo was prominently displayed on all posters[44] that advertised the cinema release of the first Star Wars movie.

Dolby added: "No, we wanted [the Dolby Logo on all movie posters] because we wanted to popularize the process and see it more widely used and we had already established that principle with the A-type tapes . . . so we had labels and stickers and things like that that people could put on their tapes as being Dolby A-type encoded and so on."[45]

Value Transportation into the "Digital Age"

Noise free digital sound methods, which do not depend on analogue sound signal processing, entered the market in 1990.[46] Digital sound technologies do not have analogue noise. Hence Dolby's patented A-, B- and C-Type NR methods were suddenly obsolete.

It took Dolby two years to respond to those competitive dynamics with the first major Dolby SR-D (now Dolby Digital)[47] release, "Batman Returns" in June 1992. It is a curious coincidence that first mover CDS (Cinema Digital Sound) made its last public appearance as a digital sound enhancement system only one month after the release of "Batman Returns."[48]

Building on the experiences with digital sound in the film audio market, Dolby translated those experiences to almost all domains of digital sound, culminating in Dolby Digital becoming the standard for professional DVD recording in 1997.[49] Despite the disruptive shift from analogue noise reduction/noise enhancing to digital sound, Dolby managed to sustain his market share and continuously expand and extend the Dolby proprietary technologies to other fields—for example, Dolby Digital EX for the consumer market, Dolby TrueHD for professional recording, Dolby 3D Digital Cinema, and Dolby Axon (a 3D voice communication solution for the consumer PC market).

In 2011, Dolby Laboratories[50] realized annual revenues of nearly $1 billion, with approximately 83% coming from licensing revenues.[51] (Further discussion of

the value articulation framework applied to a consumer packaged goods context can be found in a case study of Nespresso coffee machines.)[52]

Discussion

Value Articulation: The Main Findings

Our case studies (see summary in Table 2) illuminate how the value articulation framework can be used to leverage the richness of patents beyond their limited life. AZ avoided the typical steep decline of revenues and profits when generics entered the market after patent expiration. They extended their PPI USP into the OTC market. Entrepreneur Ray Dolby managed to grow his business in the face of major technology disruptions, such as the market shift from analogue to digital sound technologies. These case studies demonstrate that transferring the value of protection from limited-life IPRs, such as patents, to indefinite-life rights, such as trademarks, is practical and not contingent upon the industry context or the size of the firm.

It is established in the literature that the role and management of IP varies across industries.[53] The companies in our case studies applied a variety of IP strategies. In pharmaceuticals, IP plays a dominant role, protecting the USP very efficiently by a limited number of patents, trademarks, and other market exclusivities.[54] In complex industries such as consumer electronics, appropriability regimes can differ and can consist of a multitude of patents and other IPRs.

Moreover, value articulation strategies can be applied in both startup companies that have limited budgets (e.g., Dolby) and resource-rich entities that spend hundreds of millions of dollars on media messaging (e.g., AZ). The beauty of the Dolby case is that we can see the IP maneuvers as managed by the hand of a single visionary engineer and entrepreneur with considerable resource constraints who had the foresight to secure both inventions and his brands. We then see how he translated and transported these IP-based advantages for long-term growth without relying on expensive marketing, but by using the front of intermediary products as a clever and cost-free advertising platform.

Value articulation captures the role of IP as an enabler for facilitating market opportunities. Through constructs such as the USP, brand expansion (value translation), and category extension (value transportation), strategies are more effective if they are carefully aligned with and supported by a strong IP position. An awareness of these market exploitation strategies provides a better understanding of the strategic optionalities inherent in IPRs and their potentially significant business effects, as demonstrated in the case studies (Table 2).

AZ used IPRs as a strategic tool to protect the color and design of its "purple pill" from imitation. The heavy investment in DTC media messaging would just be of short-term value if competition, especially the generic manufacturers, could freely copy and use AZ's purple pill design. The connection of IP with AZ's strategic and marketing activities secured its market position in the long run by enabling and sustaining differentiation in the market place between its successor drug Nexium (*the* purple pill) and generic Omeprazole. IPRs enabled Dolby to

TABLE 2. Summary of Value Articulation Case Studies, Elements and Business Impact

Value Articulation – Case Summaries					
Company	**Product**	**Value Transference**	**Value Translation**	**Value Transportation**	**Business Impact**
AstraZeneca	Pharmaceutical preparations for GERD and heartburn, PPI	Patent on Omeprazole molecule, trademarked as the Rx Purple Pill Prilosec	Prilosec to Nexium, new patent on compound; same purple color on pill but w/gold racing stripe accents	Entering the OTC market by cooperating with P&G building on FDA exclusivity (accrued from the patents on omeprazole)	Sustained top line revenue (approx. $6 billion/year) in PPI category for AZ, even 10 years past patent expiry & generic entry
Nespresso	Encapsulated coffe & machines; portioned coffee segment	Patents on capsule and machines under the Nespresso home enjoyment TM	Advancing into coffee machines accessories under the Nespresso TM	Extending the coffee technology platform into out-of-home coffee experience via hospitality/office	Substantial growth to more than CHF 3 billion in 2011
Dolby Lab.	Professional and Consumer Sound enhancement	A-type noise reduction patent trademarked w/DD and "Dolby"	Noise Reduction Film Sound to Stereo Film Sound Technique, protected by proprietary patents	Cooperate with movie studios to extend sound enhancement from the "Analogue World" to the (w/additional) patents protected "Dolby Digital" World	Sustained revenue growth between 2001 and 2011 (10X)
Monsanto	Herbicides and Seeds	Patent on Glyphosate - an agricultural herbicide - to RoundUp TM	Use new patents/packaging to move RoundUp to all market segments, professionals or green thumb garden hobbyists	Combine powerful RoundUp TM w/patented advances in biogenetic engineering & strategic M&A to market "RoundUp Ready" branded, herbicide resistant seeds	Transformed itself from a herbicide manufacturer to the high yield seed firm at the heart of global agribusiness
Apple	Digital Music, Smartphone	iTunes utility patents/iPod design patents to iPod TM & product marks	Upgrade software utility and expand product design (both involving new patents) to modified products e.g. Mini, Nano	Using powerful i**** TM, new developed patents and dominant design capabilities (patent protected) to contract into the mobile phone space	Sustained top line revenue growth since 2001 over all segments from iPod to iTunes to iPhone to iPad to iCloud etc.
Disney	Entertainment Media	Copyright on stories & characters to trademarks on characters	Advancing derivative copyrighted works within the media space	Contract the Disney copyrighted characters and TMs into new markets like merchandise, health care products and consumer durables etc.	Disney Consumer Products generates $28.6 billion in licensed product sales annually (Nr.1 in the world), compared to global box office sales of $31.8 billion (2010).

use licensing agreements to give his technology away in exchange for the licensee promoting the Dolby name. Without the patents, Dolby could not have negotiated to get his trademarked brand promoted.

The value articulation framework is complementary to other contemporary innovation strategy frameworks such as the 'blue/red ocean' and the 'three horizon' frameworks.[55] More specifically, the 'red ocean' construct is analogous to value translation where firms fight it out in existing markets with current customers in pursuit of higher market share. The blue ocean construct is analogous to value transportation where the firm seeks out new markets and possibilities for growth. Transference and translation activities are also complementary to the McKinsey Horizon 1 and 2 (short and medium term) constructs while transportation is more aligned with McKinsey's Horizon 3 long term initiatives.

An important difference between the 'blue/red ocean' and 'horizons' models and the value articulation framework is the central and explicit role of IPRs and their utility as management levers.

Ownership of rights comes with strategy options[56] unique to each IPR. The framework can help guide scholars, teachers,[57] managers, and practitioners in thinking about how to pursue and leverage intangibles in order to get ahead and stay ahead in a variety of market environments and/or resource-based dispositions.

Not All about Patents

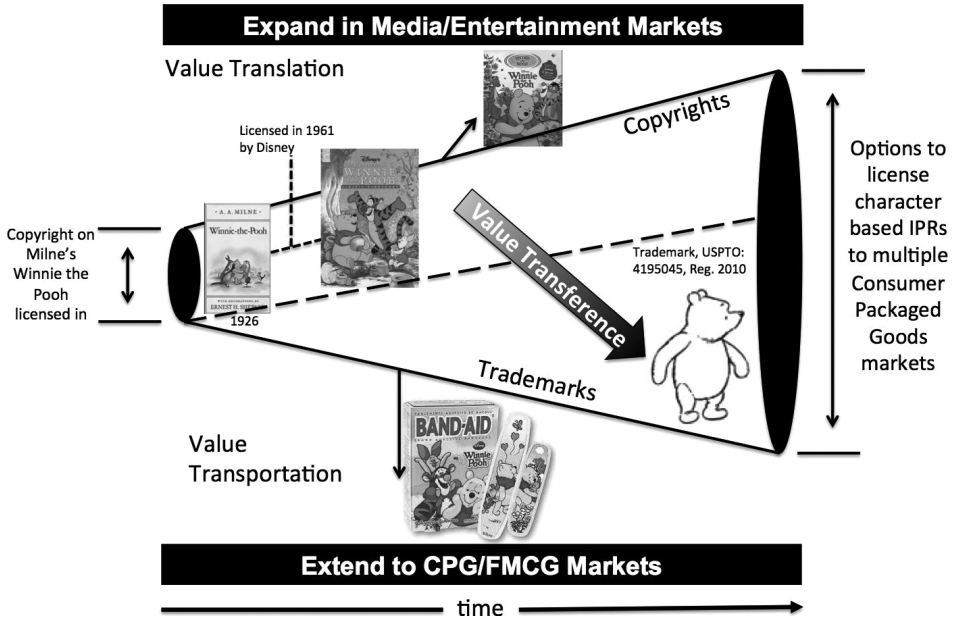
The elements of IP leverage do not necessarily originate from patents alone. Other limited-life IPRs could be the basis of leverage. Disney, for example, realized in 1929 that they could generate additional revenue beyond the print and film business via licensing of the stories, characters, and names of their media content.[58] They undertook a similar strategy in-licensing the story of Winnie the Pooh from the author A.A. Milne, creating their own original expressions and stories about the "hundred acre wood," expanding the sale of stories and films in the existing media channels and contracting into new markets for growth through the derivative licensing activities of the Disney Consumer Product Division (see Figure 5). What can be seen in the related license documents is Disney's connection of the copyrighted media-content with the trademark to contract into new markets such as merchandising and health care products.[59]

The success of the *Winnie the Pooh Model* as depicted in Figure 5 has led to related transactions with Pixar, Marvel, and Star Wars. Thus, Disney, as the worlds largest licensing company, was able to grow its global revenue from $33.7 billion (in 2006) to $42.8 billion (in 2012). Sales of Disney licensed products generated $28.6 billion in 2010 alone, this compared to total box-office sales of the worldwide film industry of $31.8 billion.[60]

Organizational Implications

In order to successfully implement the value articulation framework as an instrument for value creation and capture, firms should develop an interdisciplinary[61] approach using multiple IP regimes in a sequential manner to achieve and preserve competitive advantage over time. Trademarks are a good indicator illustrating

FIGURE 5. Disney's Temporal Management of IPR's across Multiple Entertainment and CPG Market Opportunities



how firms manage the process of value transference (patent to trademark), value translation (expansion of IP to other products and services in the same market), and value transportation (extension of IP to products and services in a new market). Applying the value articulation framework requires input from top management (strategy), IP (legal and strategic aspects), new business development (innovation), and marketing. As Gerhard Berssenbrügge (the former CEO of Nespresso and current CEO of Nestlé Germany) explains it: "To make these strategies work, we needed to think and act across functional borders in the organization and make this IP strategy a cornerstone of our activities."[62]

The firms we studied launched multiple activities to achieve this cross-functional[63] approach to value articulation. It was clearly understood and communicated that IP means more than just patents. All IP regimes, including trademarks should complement each other to achieve competitive advantage. This is emphasized by Robert Shapiro, former CEO of Monsanto: "We understand that the value of our products and IP go way beyond the functionality of the product. We used a cross-functional approach where we focused on bringing the strategy, marketing, legal, and IP management professionals together to come up with an interdisciplinary strategy formulation and execution."[64]

Not all companies are successful in executing their IPRs to sustain and grow their USP. Companies need the awareness of the optionalities embedded in their IPR portfolio and the ability and will to expand and extend it within existing and new markets. A strong IPR position alone does not ensure long-term firm success, as demonstrated by the recent failure of Nortel, Kodak, and other players with a

strong IPR portfolio. Kodak's IPR portfolio of once superior technologies and well-known brands did not ensure its survival in the digital age. In contrast to Dolby, Kodak lacked the vision of how to use its IPR base to respond to the disruptive challenge posed by the emergence of digital technologies.[65] A strong IPR position in the present may induce firms to rely on past accomplishments and even hinder the necessary and constant transitions of their business.

Conclusion

Innovative companies are increasingly moving beyond the legal-oriented and patent-focused IP departments of the past to adopt a more strategic and cross-functional approach to IP management. As Ed Schummer, former licensing Vice President of Dolby Laboratories, describes it: "While the Dolby intellectual property was the foundation of the licensing business, it took a committed focus on the customer to build the trust and the relationships that in the end drove revenue. This was a cross-functional activity that included engineers and market savvy professionals working closely with both device and content producers. The resulting customer equity and brand recognition helped Dolby move through at least two major focus transitions."[66]

This change is in line with the core managerial message of the value articulation framework. It brings the discussion of IP out of the clouds of technology and law down into the heart of marketing, new product development, and strategy. The patent-centric view of IP neglects the strategic importance of leveraging the various IP regimes over time. The value articulation framework offers a view on who should be actively involved in the process of defining and executing transference, translation, and transportation. Given recent billion dollar IP transactions,[67] the returns to be realized from IP options are self-evident.

With the framework, entrepreneurs, managers, and academics can gain insight into how the optionality embedded in IPR regimes can build and sustain competitive advantage. The value articulation framework connects IP options, investments, and benefits in a unique way to enable growth in existing markets and to lead the transition to new markets.

Notes

1. Robert Merges, "Uncertainty and the Standard of Patentability," *High Technology Law Journal*, 7 (Spring 1992): 1-70.
2. James G. Conley and John Szobocsan, "Snow White Shows the Way," *Managing Intellectual Property*, 6 (June 2001): 1-5; Meir Statman and Tyzoon T. Tyebjee, "Trademarks, Patents, and Innovation in the Ethical Drug Industry," *Journal of Marketing*, 45/3 (Summer 1981): 71-81; Gideon Parchomovsky and Peter Siegelman, "Towards an Integrated Theory of Intellectual Property," *Virginia Law Review*, 88/7 (November 2002): 1455-1528; Ove Granstrand, *The Economics and Management of Intellectual Property: Towards Intellectual Capitalism* (Cheltenham, UK: Edward Elgar, 1999); Klaus Jennewein, *Intellectual Property Management: The Role of Technology-Brands in the Appropriation of Technological Innovation* (Heidelberg: Physica-Verlag, 2005); David J. Teece, "Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy," *Research Policy*, 15/6 (December 1986): 285-305; Gary Pisano and David J. Teece, "How to Capture Value from Innovation: Shaping Intellectual Property and Industry Architecture," *California Management Review*, 50/1 (Fall 2007): 278-296.

3. Consumer Packaged Goods (CPG), also denominated as Fast Moving Consumer Goods (FMCG).
4. For example, patents offer the optionality to exclude all others from making, selling, or using the claimed invention.
5. Philip Kotler and Waldemar Pfoertsch, *Ingredient Branding: Making the Invisible Visible* (Heidelberg: Springer, 2010); Philip Kotler and Kevin Lane Keller, *Marketing Management*, 14th edition (Upper Saddle River, NJ: Prentice Hall, 2011); Alokparna Basu Monga and Deborah Roedder John, "What Makes Brands Elastic? The Influence of Brand Concept and Styles of Thinking on Brand Extension Evaluation," *Journal of Marketing*, 74/3 (May 2010): 80-92; Janell D. Townsend, Sengun Yeniyurt, and Mehmet Berk Talay, "Getting to Global: An Evolutionary Perspective of Brand Expansion in International Markets," *Journal of International Business Studies*, 40/4 (May 2009): 539-558; Srinivas K. Reddy, Susan L. Holak, and Subodh Bhat, "To Extend or Not to Extend: Success Determinants of Line Extensions," *Journal of Marketing Research*, 31/2 (May 1994): 241-262.
6. Kalpesh Kaushik Desai and Kevin Lane Keller, "The Effects of Ingredient Branding Strategies on Host Brand Extendibility," *Journal of Marketing*, 66/1 (January 2002): 73-93.
7. David A. Aaker and Alexander L. Biel, eds., *Brand Equity and Advertising: Advertising's Role in Building Strong Brands* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1993).
8. A colored depiction of the figures included in this paper can be accessed under <http://kellogg.northwestern.edu/Faculty/Conley/htm/VA_Figures.pdf>, accessed on June 24, 2013.
9. Conley and Szobocsan, op. cit.; Statman and Tyebjee, op. cit.
10. Rosser Reeves, *Reality in Advertising* (New York, NY: Alfred A. Knopf, 1961); Jack Trout, *Differentiate or Die: Survival in Our Era of Killer Competition* (New York, NY: John Wiley & Sons, 2000).
11. While this body of scholarship has been under development for 50+ years, it has largely neglected the combinations of rights and options that help build and preserve uniqueness,
12. Patent Number US3,475,403, source: USPTO.
13. Saccarine, at that time, carried a public health warning on the labeling.
14. TM Registration Numbers 1366139 and 1353525, source: USPTO.
15. "History in the Making: The Most Significant Promotions of the Last 15 Years," *Chief Marketer Network*, March 1, 2002, <http://chiefmarketer.com/mag/marketing_history_making_significant>, accessed on May 15, 2012.
16. James G. Conley, J. Duncan Berry, Laura DeWitt, and Mark Dziersk, "Inventing Brands: Opportunities at the Nexus of Semiotics and Intellectual Property," *Design Management Review*, 19/2 (Spring 2008): 58-67.
17. For additional information, see also Daniel Charles, *Lords of the Harvest* (New York, NY: Perseus Books Group, 2001); Brian Hindo, "Monsanto: Winning the Ground War," *Businessweek*, December 6, 2007, <www.businessweek.com/print/magazine/content/07_51/b4063034300400.htm>, accessed on May 15, 2012.
18. Patent Number US4,405,356, source: USPTO.
19. *Roundup* TM Registration Number 0847249, source: USPTO.
20. For additional information on how patents are linked to trademarks at Monsanto, see the *Monsanto Technology/Stewardship Agreement 2010*, <www.canamaizeus.com/2010-Monsanto_Tech_Agreement.pdf>, accessed November 16, 2012; the *Technology Use Guide 2010*, <www.monsanto.com/Documents/2010_technology_use_guide.pdf>, accessed November 16, 2012. *Roundup Ready* TM Registration Number 0847249, source: USPTO.
21. Charles, op. cit.
22. Patent Number US4,255,431, source: USPTO.
23. Robert Bazell, "The Costly Side Effects of Nexium's Ad Blitz," *msnbc.com*, August 14, 2007, <www.msnbc.msn.com/id/20249591/ns/health-second_opinion/t/costly-side-effects-nexiums-ad-blitz/-.T65gmZ91BxI>, accessed on May 15, 2012.
24. Dipak C. Jain and James G. Conley, "Patent Expiry and Pharmaceutical Market Opportunities at the Nexus of Pricing and Innovation Policy," INSEAD Working Paper 2012/89/MKT, 2012, <http://ssrn.com/abstract=2156237>, accessed November 14, 2012.
25. Ibid.
26. The FDA changed the rules for DTC effective in 1997. From this moment on, AZ invested heavy in DTC, as can be seen in Figure 2.
27. In use since 1989, filed in 2000, and registered in 2004, see USPTO TM Nr. 2806099.
28. Patent Number US5,714,504, source: USPTO.
29. Among others, AZ registered the following trademarks in the USA: "The purple pill" TM Registration Number 3188285, shape of a pill and color purple on the pill TM 2806099, and pill with stripes TM 3062072 and TM 2980749, source: USPTO.

30. U.S. Food and Drug Administration, *Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations*, updated May 18, 2012, <www.accessdata.fda.gov/scripts/cder/ob/docs/obdetail.cfm?Appl_No=021229&TABLE1=OB_OTC>, accessed on May 18, 2012.
31. U.S. Food and Drug Administration, *Prilosec OTC (omeprazole) Information*, updated September 21, 2010, <www.fda.gov/AboutFDA/CentersOffices/OfficeofMedicalProductsandTobacco/CDER/ucm220944.htm>, accessed on November 16, 2012.
32. In Fall 2003, Prilosec OTC launched at US$0.71 per pill while generic prescription Omeprazole was selling above US$2.00 per pill.
33. Advanstar Communications, *DrugTopics: TOP 200 OTC/HBC Brands in 2007*, February 25, 2008, <http://drugtopics.modernmedicine.com/drugtopics/data/articlestandard//drugtopics/082008/492702/article.pdf>, accessed on May 15, 2012.
34. Jain and Conley, op. cit.
35. Gianluca Sergi, *The Dolby Era* (Manchester: Manchester University Press, 2004).
36. Craig Karmin, "Dolby Labs Buys Naming Rights for Theater that Hosts Oscars," *The Wall Street Journal*, May 1, 2012, <http://online.wsj.com/article/SB10001424052702303916904577378130811235606.html>, accessed on May 15, 2012.
37. Patent Number GB1,120,541, source: Espacenet.
38. Interview with Ray Dolby in Sergi, op. cit.
39. Patent Number US3,631,365 and US3,846,719, source: USPTO.
40. Dolby Laboratories Inc., *Press Release: Dolby Surpasses Major Milestone: One Billion Licensed Products Sold*, May 15, 2002, <http://web.archive.org/web/20040414041050/http://www.dolby.com/press/co_pr_0205_onebillion.html>, accessed on May 15, 2012.
41. See *B-Type and C-Type Noise Reduction Systems License Agreement Consumer Audio Hardware*, included in: Dolby Laboratories Inc., *Amendment No. 1 To Form S-1 Registration Statement*, filed with the SEC on December 30, 2004, <http://yahoo.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?ID=3366998&SessionID=9XWZHC9Jmy12g77-DS1A_HTM_TOC>, accessed on March 12, 2013.
42. Ian Hardcastle, "Commercializing the Dolby System," 2003, <http://web.archive.org/web/20040209145252/http://www.dolby.com/company/les-ih.html>, accessed on May 15, 2012.
43. The experiences with his early inventions in the film sound market enabled Dolby to *translate* his original invention further on, with Dolby Stereo as a derivate product. For more information on Dolby Stereo, see Sergi, op. cit.
44. Promoting the brand not only on electronic equipment, *translating* the IP further, is already documented in 1970, seven years before the release of *Star Wars*, and only four years after the first use of the Dolby and the "Double-D" as international class 009 (for electrical apparatus) registered TMs, see USPTO TM Registration Nr. 0907450 and 0904201. Dolby extended the original use and registration to international class 016 (paper goods and printed matter), USPTO TM Registration Nr. 1658181 and 1671087, to additionally secure the source identity of the Dolby brand in this economic context, demonstrating *translating* the IP further (international class 016 marked the beginning, more classes were to follow, see USPTO).
45. Interview with Ray Dolby in Sergi, op. cit.
46. Note that digital sound by definition has no noise so the functional benefit of A & B type noise reduction was obsolete. CDS (Cinema Digital Sound), a Kodak joint venture with Optical Radiation Corporation, was the first digital sound system to be used on a major film release, *Dick Tracy* in 1990.
47. Dolby Digital Decoder Patents (see Onecle Inc., *Sample Business Contracts: Dolby System License Agreement of May 20, 2004*, 2012, <http://contracts.onecle.com/intervideo/dolby.lic.2004.05.20.shtml>, accessed on July 8, 2012): US4,790,016, US4,914,701, US5,357,594, US5,479,562, US5,633,981, US5,109,417, US5,235,671, US5,274,740, US5,291,557, US5,297,236, US5,394,473, US5,581,653, US5,583,962, US5,623,577, US5,632,003, US5,752,225, US5,890,106, US6,449,368, source: USPTO.
48. Other deficiencies of the CDS system might also have played a strong role in its decline. See Mark Kerins, *Beyond Dolby* (Bloomington, IN: Indiana University Press, 2011).
49. Kerins, op. cit.
50. Ray Dolby and Ioan Allen of Dolby Labs were awarded the Academy Award of Merit (Oscar) in 1988 for their continuous contributions to motion picture sound. See Dolby Laboratories Inc., "Academy Awards, 2013," <www.dolby.com/us/en/about-us/who-we-are/awards-and-accolades/academy-awards.html>, accessed on March 14, 2013.
51. Moving into the professional film market and continuously building on the benefits of the Dolby IP, the early Dolby noise reduction and Dolby Stereo System set the stage for marking

the year 2012 as the 34th consecutive season that films released with Dolby audio technologies have earned Academy Award nominations for outstanding sound quality. See Dolby Laboratories Inc., "Press Release: Dolby Congratulates Oscar-Nominated Sound Editors, Mixers, and Cinematographers," February 22, 2012, <http://investor.dolby.com/releasedetail.cfm?ReleaseID=650465>, accessed on May 15, 2012. For an extended visualization of Dolby's IP and business activities over time, see <http://kellogg.northwestern.edu/Faculty/Conley/htm/VA_Dolby.pps>, accessed on November 16, 2012.

52. The Nespresso case study demonstrating the value articulation framework in a FMCG/CPG context can be accessed online under <http://kellogg.northwestern.edu/Faculty/Conley/htm/VA_Nespresso.pdf>, accessed on March 14, 2013.
53. Ammon Salter and Bruce S. Tether, "Innovation in Services: Through the Looking Glass of Innovation Studies," background paper for Advanced Institute of Management (AIM) Research's Grand Challenge on Service Science, Oxford, Saïd Business School, 2006, pp. 1-38; Petr Hanel, "Intellectual Property Rights Business Management Practices: A Survey of the Literature," *Technovation*, 26/8 (August 2006): 895-931; Jennewein, op. cit.
54. Value transportation in the pharmaceutical industry does not only apply to already approved, ready-to-market or already successfully marketed drugs. Even compounds, which have been abandoned during development, could be transported further, see Henry Chesbrough and Eric L. Chen, "Recovering Abandoned Compounds Through Expanded External IP Licensing," *California Management Review*, 55/4 (Summer 2013).
55. W. C. Kim and R. Mauborgne, "Blue Ocean Strategy: From Theory to Practice," California Management Review, 47/3 (Spring 2005): 105-121; Mehrdad Baghai, Steve Coley, and David White, The Alchemy of Growth (New York, NY: Perseus Publishing, 2000).
56. William W. Fisher III and Felix Oberholzer-Gee, "Strategic Management of Intellectual Property: An Integrated Approach," *California Management Review*, 55/4 (Summer 2013).
57. Summary of teaching resources for AstraZeneca: James G. Conley, "AstraZeneca, Prilosec, and Nexium: Strategic Challenges in the Launch of a Second-Generation Drug," Kellogg Case Study, distributed through HBS, version 5-404-752, revised April 2005; James G. Conley, "Case Supplement: AstraZeneca, Prilosec, and Nexium," Kellogg Case Study Supplement, distributed through HBS, version 5-404-753, 2006; Jain and Conley, op. cit. Teaching Resources for Dolby Labs: Sergi, op. cit.; Kerins, op. cit.; Pamela Hawkins Williams, Dotcy Isom III, and Tiffini D. Smith-Peaches, "A Profile of Dolby Laboratories: An Effective Model for Leveraging Intellectual Property," *Northwestern Journal of Technology and Intellectual Property*, 2/1 (Fall 2003): 81-98. For an extended visualization of Dolby's IP and business activities over time, see <http://kellogg.northwestern.edu/Faculty/Conley/htm/VA_Dolby.pps>, accessed on November 16, 2012.
58. Disney Consumer Products, *About US*, 2012, <https://www.disneyconsumerproducts.com/Home/display.jsp?contentId=dcp_home_ourbusinesses_company_overview_us&forPrint=false&language=en&preview=false&imageShow=0&pressRoom=US&translationOf=null&region=0>, accessed on November 12, 2012.
59. In one of their licensing contracts for Disney's *George of the Jungle*, Disney displays the extension of their copyrights, their core IP, via trademarks as following: "In consideration for licensee's payments . . . Disney grants Licensee the non-exclusive right . . . to reproduce the licensed material [defined as the graphic representations, i.e., the copyrighted works] . . . in connection with the articles [defined as the following items on . . . which the licensed material and/or the trademarks are reproduced, here binders, study kits and so forth], to use such trademarks and uses thereof . . . to manufacture . . . the articles." See Disney License Agreement, December 14, 1996, <www.techagreements.com/agreement-preview.aspx?title=HedstromHoldings-SpecimenOfDisneyLicenseAgreement&num=187577>, accessed on November 12, 2012.
60. Statista, *Global Revenue of the Walt Disney Company from 2006 to 2012*, 2012, <http://www.statista.com/statistics/193108/global-revenue-of-the-walt-disney-company-since-2006/>, accessed November 15, 2012; The Wrap Media, *Report: Disney Raked in $28.6B From Licensed Merchandise in 2010*, May 2011, <www.thewrap.com/media/print/27526>, accessed on November 15, 2012.
61. Fabrizio Cesaroni and Andrea Piccaluga, "Operational Challenges and ST's Proposed Solutions to Improve Collaboration between IP and R&D in Innovation Processes," *California Management Review*, 55/4 (Summer 2013); Fisher and Oberholzer-Gee, op. cit.
62. Personal interview with Gerhard Berssenbrügge, 2012.
63. Holger Ernst and Martin Fischer, "Integrating the R&D and Patent Functions: Implications for New Product Performance," Journal of Product Innovation Management (forthcoming).
64. Personal interview with Robert Shapiro, 2012.

65. For additional information, see Henry C. Lucas Jr. and Jie Mein Goh, "Disruptive Technology: How Kodak Missed the Digital Photography Revolution," *The Journal of Strategic Information Systems*, 18/1 (March 2009): 46-55.
66. Personal interview with Ed Schummer, 2012.
67. For example, The Nortel Patent Portfolio was won in an auction by a consortium including, among others, Apple, RIM, and Microsoft for $4.5 billion, granting access to more than 6.000 patents and applications, see "UPDATE 1-Apple, RIM in Consortium Buying Nortel's Patent Portfolio," *Reuters*, July 1, 2011, <www.reuters.com/article/2011/07/01/nortel-idUSL3E7I10HT20110701>, accessed on May 15, 2012; Microsoft acquired a portfolio of patents from AOL for $1 billion, selling a portion to Facebook for $0.5 billion, see "Microsoft to Sell Some AOL Patents to Facebook for $550M," *Forbes*, April 23, 2012, <www.forbes.com/sites/ericsavitz/2012/04/23/microsoft-to-sell-some-aol-patents-to-facebook-for-550m/>, accessed on May 15, 2012.

California Management Review, Vol. 55, No. 4, pp. 102–120. ISSN 0008-1256, eISSN 2162-8564. DOI: 10.1525/cmr.2013.55.4.102.