HILLNER PhD thesis amendments as made in response to the examiners' requests

Changes were requested as follows:

1. In chapter 1, set out a concise research question that underpins/guides the thesis. In chapter 4 you should then provide a table, in methodologies, that clearly shows how the questions are answered, including the hypothesis which should be at the end of the methodology section instead of the literature review.

2. In response to the clarification of the research question, clarify the interdependencies between IP strategy and the other variables. This will require a redesign of the flow chart.

3. In chapter 12, include a section on the discussion of your findings in relation to existing literature, leading to a clear statement of your contribution to knowledge.

Point 1

In Chapter 1, set out a concise research question that underpins / guides the thesis.

A concise research question has been articulated in section 1, and with reference to section 4.4.4, an explanation has been added to clarify how the question has arisen (see then last paragraph on page 2). At the end of section 4.4.3 the research question is linked to the final hypothesis (see page 73). This part precedes the 'Route map', a section that I added to indicate how questions and hypotheses are answered.

In chapter 4 you should then provide a table, in methodologies, that clearly shows how the questions were answered, including the hypothesis which should be at the end of the methodology section instead of the literature review.

The hypotheses were moved from the end of section 3 (literature review — previously listed as section 3.9) to the end of section 4 (methodology) where they become part of a new section — **4.4. Framing the study: Towards a hypothesis** — Text references have been adjusted throughout the thesis accordingly, as has the list of contents. Image numbering was adjusted throughout the thesis also, due to the fact that various visuals moved from section 2 to section 4 as a result of this adjustment in the content structure.

Instead of a single table indicating where and how hypotheses and questions were answered a series of tables has been included (table 1-6 in section 4.4.4 — I used the term 'table' instead of 'figure' to mitigate the risk of errors in renumbering the following visuals throughout the thesis). In combination with explanatory text, the tables form a new section: **4.4.4. Route map**. An additional paragraph concludes this section and clarifies where and how the fundamental research question is addressed.

Point 2

In response to the clarification of the researcuh question, clarify the interdependencies between IP strategy and the other variables. This will require a redesign of the flowchart.

A range of diagramms have been changed, some minimally (figures 56, 57, 58, 86, 101), some more significantly (figure 87, 88, 89, 90, 93, 94, 95, 96, 97, 98, 99, 100). The main changes relate to the alignment of variables (e.g. 'sales' and 'route to market' — minimal adjustments) and to the differentiation between tech IP and design IP within the framework (significant adjustments). The latter allowed for a better articulation of the interdependencies between IP strategy and the other variables, and thus to enhance the usability of the framework in relation to IP strategy developments. Dependencies between variables have been articulated more clearly in the visuals and in the body text. Whilst the body text makes it clear that the framework is flexible, and dependencies are subject to individual innovation-managerial strategies and decision making, the diagrams in section 11 received text elements to help the reader better understand dependencies between variables through stating examples (figures 95, 96,97, 98, 100).

Point 3

In chapter 12, include a section on the discussion of your findings in relation to existing literature, leading to a clear statement of your contribution to knowledge.

Section 12 has been amended as requested. Specific references have been added to clarify how the thesis connects with existing knowledge, and how existing knowledge is enhanced through my contribution to knowledge. Two pages (p.218-219) were added to accommodate the additional text passages. In line with the existing text, the added paragraphs refer to
– Salter and Alexy
– Verganti and Dell'Era
– Rebecca Tushnet and Dennis Collopy et al.
– Abernathy and Utterback
– Teece (1986)
– Teece, Pisano, Shuen (1997) and Teece (2007)

To ensure clarity, each of the theories has been addressed in a separate short paragraph that also outlines the knowledge contribution made through this PhD study. Following the insertion of two pages, the pagination has been adjusted in the list of content.

Other points

To cater for the increase in the number of words through addiing to section 12, section 9.3 (Conran Case study — Gifu) has been taken out. Although useful to some extent, this part of the thesis was not of critical significance to the overall PhD argument. The following sections, and section references have been adjusted accordingly in terms of numbering.

Post-viva, one of the examiners commented on the use of the word 'flowchart', arguing that strictly speaking the diagram that has been developed is not a flowchart. Additional research reveals that this criticism can be sustained due to the fact that the directions of arrows are not prescriptive or definitive, instead they vary from business to business. To address the examiner's concern the word **business model flowchart** has been replaced with **business development framework** throughout the thesis.

Prior to the exam, concerns were expressed with respect to the express consent forms provided by intereviewees. To address this issue, all interviewees, who were quoted and for whom a signed consent form was not available, were anonymised in this version of the thesis. This includes the people interviewed in conjunction with the expert interviews, as well as the members of the focus group which came to mention in sections 4.2 and 8.4. The focus group members had provided their consent to being mentioned, however, not through the official form provided by the RCA. Appendix 9 was also adjusted to eliminate the names of experts who were quoted in the thesis.

To reduce the word count, which increased through adding to section 12, section 9.3 was taken out. This part of the thesis appeared not critical to the PhD argument. Some of the long quotations in section 6 were paraphrased to further reduce the word count, and the anonymised introduction to section 4.2.1 (focus group) was also shorter than the original. The following 6 pages show examples of how these cuts have affected the text length in places (examples are thesis p.129, p.131, p.134). The affected passages are highlighted in red.

9.3. Gifu

Figure 79: Aero Collection by Ozeki, a lantern maker whose practice dates back to 1891

Figure 80: The Hikari Collection by Oda Pottery, who started out in 1921, is part of a portfolio of thin translucent white porcelain tableware.

The Gifu project is a collaboration between Conran Associates and a collective of artisan makers based in the prefecture of Gifu, Japan. The products, which comprise lighting, ceramics, stationery and kitchen tools, but also furniture items, are marketed as a collection but can also be sold individually. Conran Associates are paid for their design services, and receive an additional 7% of the revenues generated through the Gifu range in royalties. Production and distribution are managed by the collaborating partners. Sebastian Conran and his staff visit Gifu regularly to meet the project partners.

Conran expresses reservations about royalty-based income streams: "I've got outgoings in the form of people's salaries, six double heads and if I'm thinking too much about percentage of sales, we will lose out; because of the tax flows. So, the idea is that you get a royalty revenue stream. Having royalty revenues in products that are in production in 20 years is a good thing. Gaining royalty revues of products that are only in production a few years … You know, I would never do an iPhone on a royalty revenue because royalty is the only thing around for such a short time. Whereas designing a chair or something that will probably be in production for 20 or 30 years, it's very worthwhile." (Conran, 2017b) Conran further points out that success prospects of royalty-based projects can be limited: "… one in ten royalty projects is fantastic, outstanding. Probably the next 40% are good and you get more out of doing that than you would else if you just start paid fees. You'd get probably twice the revenue than fees. Then, the next 30% are okayish, not amazing. Actually, you need to be taking fees. Then, 20% just ... They never get made, you know. It's a waste of time. You have to sort out the time wasters." (Conran, 2017b) This point of view connects with Clarysse / Kiefer's argument related to patents, which suggests that licensing alone does not tend to generate substantial revenues (see section 3.7.7.).

Looking at the four categories of design businesses as defined by The Big Innovation Center (see section 2.1.), it becomes clear that Conran Associates combines a range of business models. The firm acts not only as a design services business, but also as a designer-maker in collaboration with strategic partners. Using different design business initiatives in combination appears to stabilise the business on the whole. Conran does highlight that his wide-ranging industry experience is of great benefit to pursuing design business partnerships (Conran 2017b). His understanding of materials and fabrication processes, is not something that design novices tend to have when exiting college. From the Universal Expert example above, we can conclude that even experienced designer entrepreneurs are not safe from the occasional pitfall. "The path to success is also paved with failure." (Conran, 2017b) However, an experienced designer such as Conran will find it easier to estimate and negotiate royalty revenues and to assess the potential risks involved, and an established firm such as Conran Associates with a variety of revenue streams finds it easier to manage adverse circumstances than a firm that focuses the entirety of its resources on a single product that is aimed at one particular niche market. In a product-innovation-oriented business environment, royalty-based revenues can only supplement business-developments.

Insights:

- The example of Conran Associates confirms the categorisation by The Big Innovation Centre, and shows how different business models can be combined effectively.
- Sebastian Conran's explanation related to royalty payments concurs with Clarysse / Kiefer's statement that licensing alone rarely suffices needs for a viable business model.
- The value of royalty arrangement is proportionate to the product life-span.
- Conran's explanations highlight the benefit of experience surrounding materials and production, knowledge assets, which designer-entrepreneurs who exit academic studies often lack. Conran's knowledge advantage needs taking into consideration when comparing his achievements to that of the designers interviewed in section 5.

Figure 60: AnywayUp cups

after, sales reach 60,000 per week, and the product was stocked by Tesco and Safeway, two major UK supermarket chains. This was the result of an unusual marketing campaign: V&A Marketing Ltd had sent AnywayUp Cups filled with concentrated Ribena and packaged loosely in a white cardboard box to distributors with a note asking the recipient to call if it had not spilt. By 1997, the company had grown to 70 employees facilitating the AnywayUp Cup production, and Sebastian Conran Associates, a reputable UK design consultancy, were commissioned to redesign the AnywayUp Cup.

Infringement 1: In 1997 Jackel International Limited, one of the 18 companies, to whom the AnywayUp Cup prototypes had been shown, introduced a product branded as 'Tommee tippee' non-drip cup, which resembled the original AnywayUp Cup prototype (Roskell, 2011). Haberman issued legal proceedings against Jackel International Limited, after her sales had dropped by about two thirds (Roskell, 2011). The British newspaper The Guardian reported:

> 'Jackel argued that the design of the valve was "obvious", that nothing in the technology involved in Haberman's valve was outside normal workshop modifications, and that its operating principles had been known of for a long time. But its claim was rejected by the judge, who ruled that although Haberman had only taken a small and simple step, it had been a very effective one and had been sufficiently inventive to deserve the grant of a patent monopoly. Jackel was forced to withdraw its patent-infringing product.'
> Insley, 2012

An injunction prevented further infringement of her patent through Jackel International Limited, who first appealed against the verdict, but abandoned their appeal in 2000 when an out-of-court settlement was reached. Haberman and V&A Marketing Ltd were compensated for their costs and awarded damages (Haberman, 2013). The fact that three years had passed from infringement until the case was resolved, shows how long difficulties can prevail in relation to the legal enforcement of patents.

page 129 prior to amendments

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Infringement 2: In 1999 Haberman issued proceedings against Icoma Babyworld, a Dutch distribution firm, who had traded a product similar to Haberman's AnywayUp cup. Following a court hearing in January 2000, the judge ruled that the Icoma's product infringes Haberman's European patent. The parties reach an outer court settlement, following which Icoma ceased infringement across Europe and paid a contribution towards Haberman's legal costs (Haberman, nd)

Infringement 3: During a trade fair in Holland in May 2000, yet another infringement was spotted. This led to action brought successfully against Difrax and Kruidvat, two Dutch companies who had

page 129 after amendments

6.3. Invention 3: The Smiley Cup

For this product, a derivative of the AnywayUp cup, a design patent was filed in the US in 2012. The Smiley Cup comes in a range of options using different kinds of surface decorations such as the Bird Cup (figure 40), and the Cow Cup. However, the design patent itself is devoid of any surface patterns and focuses on the physical shape of the artefact (figure 62). It uses outline drawings to protects the overall product shape, whilst Haberman's AnywayUp cup (utility) patents protect the functionality, i.e. the way in which the product performance is enhanced through the slit valve mentioned in the previous section.

Figure 61: Smiley Cup (Bird Cup example)

The preliminary hypothesis which remains to be examined relates to the robustness of registered design rights (section 4.4.3.) With respect to this, it is interesting that in Europe Haberman chose not to protect the product language of her Smiley Cup through a registered design right. She opted for a 3D trademark instead instead (figure 63). When comparing the registered design right to the patent, Haberman stated:

> "The thing about design registration, it is much, much narrower […] they [the competitors] only need to change a number of very tiny details to not be infringing the design registration. It does protect against copying and counterfeiting if it is an absolute copy." (Haberman, 2014)

Haberman (2014) claimed to have filed a US Design Patent as a strategic measure "to obtain a granted right faster than could be achieved by our patent application". The intention was to secure formal IP prior to the product launch, and considering that "The US patenting process [related to utility patents] can take many years."

page 131 prior to amendments

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page 131 after amendments

When interviewed, Haberman pointed out that during a trade show she had seen a competing product that was visually almost identical to the Smiley Cup:

> "… across the room […] I saw another cup and I thought: That is my cup. And all from what I could see, it looked exactly like it. But when you got rid of things, the colour was different and this angle was different, and that detail was different, and it was not protected then. There was not enough there for us to go about doing something that would stop them from infringing our design."
> Haberman, 2014

Haberman took no action to contest the competing design. In addition to the time required to secure 3D trade marks, her concerns related to its robustness, make it clear that this form of IP is not a suitable alternative to registered design rights for fledgling start-up businesses.

6.4. Genuine competition: The Belanger Patent

As explained in section 5.1.8., the term duplication of research and development (R&D) relates to scenario where two or more inventors or inventing firms develop simultaneously the same or similar concepts. Haberman's concept of the AnywayUp Cup coincided with another innovation that originated in the USA: The Dripless liquid feeding / training container invented by Richard Belanger (Patent reference: US005079013A) that was used by Playtex (see infringement 4)

With respect to the AnywayUp Cup, Haberman explained:

> "I took out my first patent application in 1991, and I got to the end of that period of time where you had to spend money on a law firm, PCTs or overseas, and I needed £4,000, and […] I talked to my patent agent and said: What do I do? He said: Either you borrow the money and go and do it, or we can stop it and start again. And that is what I did. […] But by doing that I lost a year's priority."
> Haberman, 2014

The possibility of withdrawing and refiling a patent including the risks involved in this process, has been highlighted in section 5.1. with reference to Cupris (section 5.1.1). Haberman stated:

> "I cannot believe how much I lost as a result of it. […] If I had not pulled the first one that I started again, my priority would have been a year earlier, so therefore it would not have needed to be amended in order to cover a little bit of prior art that came out in that year. So I could have had a patent on a cup with any type of valve, rather than a slit-valve or a double slit valve."
> Haberman, 2014

page 134 prior to amendments

When interviewed, Haberman (2014) pointed out that during a trade show she had seen a competing product that was visually almost identical to the Smiley Cup, but "that there was not enough there for us to […] stop them from infringing our design". Haberman took no action to contest the competing design. In addition to the time required to secure 3D trade marks, her concerns related to its robustness, make it clear that this form of IP is not a suitable alternative to registered design rights for fledgling start-up businesses.

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With respect to the AnywayUp Cup, Haberman explained, that she has withdrawn her patent within less than a year after filing in 1991 as she could not afford international filing. Through the re-filing process she lost a year's priority. During the interview she stated:

> "I cannot believe how much I lost as a result of it. […] If I had not pulled the first one that I started again, my priority would have been a year earlier, so therefore it would not have needed to be amended in order to cover a little bit of prior art that came out in that year. So I could have had a patent on a cup with any type of valve, rather than a slit-valve or a double slit valve."
> Haberman, 2014

The Belanger patent was filed 7 January 1992, and produced prior art, which reduced the scope of Haberman's AnywayUp Cup patent. With respect to the potential duplication of R&D, Haberman stated:

> "If it is not completely obscure, if it is a device for the general market, that the general market is going to want, you can bet on the fact that someone else is going to have the same idea at the same time. So you have got to get the priority. I would go insane if I thought about what I had actually lost. I did extraordinarily well from the cup, well better than I ever thought I would. But you could have added several millions on the end of the order."
> Haberman, 2014

The concern that another competing invention may enter on the market, perhaps one that is protected through a patent that affects one's freedom to operate, was common amongst the RCA inventors interviewed. Whilst secrecy can be an effective mechanism to protect against copying, it perpetuates the risk of another inventor filing for a patent for a similar design concept, unless the product is already on the market (trading phase) or through a defence publication that articulates the technical particulars of the invention in the public domain.

page 134 after amendments