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Intellectual Property in the Coffee Industry

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ABSTRACT

Coffee is one of the world's most popular beverages. According to a report by the World Intellectual Property Organisation, more than 3 million cups of coffee are consumed per day. Today, coffee is highly associated with several premium products, ranging from beverages to cosmetic products, thus coffee enjoys a somewhat elite connotation today, especially with the growth of premium coffee brands like Starbucks and McCafe. However, the situation is quite different on the other side of the chain, that is at the producer's end. The intense competition and lack of differentiation between coffee farmers has caused severe competition between them, which has in turn resulted in low returns and poverse conditions for them.

This paper analyses the basic economic principles behind Intellectual Property Rights, and further examines the condition of the coffee industry, and how Intellectual Property can be used in the coffee industry. It explores the demand in the three sectors of coffee. The paper concludes that IP has a huge potential to enable gains in this industry.

Keywords: Intellectual Property, Coffee, Value Chain, First Wave, Second Wave, Third Wave.

I. Introduction

With the growth of innovation and new start-ups with innovative ideas coming to the forefront every single day, it is important for creators and innovators to protect their ideas to ensure exclusive exploitation and prevent others from earning off the ideas and mental labour of others.

Intellectual property is the property of the intellect. The law relating to intellectual property regulates the creation, use and exploitation of mental or creative labour. Everything from literary and artistic works to technical algorithms and software can be categorised as IP.

The most common forms of intellectual property are copyrights, trademarks, and patents.

• Copyrights are rights over the expression of a unique idea. These apply to literary, creative and artistic works. The reason copyrights exist is to protect theft of or unjust

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enrichment off someone else's imagination, creative works.

- Trademarks are unique symbols, images, sounds or any characteristic that can be used
 to identify a particular brand, product or individual, misuse of trademarks could result
 in loss or damage to the owners.
- Patents are agreements between governments and inventors. The agreement states that
 the inventor may enjoy monopoly over his invention for a limited time, after which
 the details of the invention must be added to the public pool of knowledge.
- Geographical Indicators (GIs) are signs used on products that have a specific **geographical** origin. The geographical origin of a product can make the product more valuable as the area represents certain characteristics and features of the final product.

(A) Coffee and Intellectual Property

Coffee is one of the most traded commodities of the modern world, it provides employment to around 25 million families, mostly small farmers, and goes through a huge chain of processes before it ends up in a cup in front of us. 3 million cups of coffee are consumed on a daily basis.²

Most of the economic value is added to coffee once it is made consumable, this maybe in the form of soluble powders, or café prepared beverages etc. Higher income countries import more coffee, which is the best market for farmers to sell too, however due to geographical and economic reasons, these markets are often inaccessible to farmers, thus coffee importing brands have bargaining power over the growers and exporters of coffee, as a result small farmers may even end up earning a far lesser amount of the price that is paid for by the consumers.³

However, the coffee industry is undergoing changes. Currently, there is a rise in the second and third wave segments, this has caused a shift in the existing dynamic that was established by the first wave of coffee, in which the prices were purely determined by the market demand, the new segments function a bit differently.

II. MATERIALS AND METHODS

(A) Review of Literature

Economic Foundations of Intellectual Property Rights – Joseph Stiglitz 2008

² Luis F. Samper et al., The powerful role of intangibles in the coffee value chain (WIPO) (2017); *Coffee: how consumer choices are reshaping the global value chain*, in Intangible Capital in Global Value Chains

³ Samper et al., Id.

This paper takes a critical view of Intellectual Property Rights and their effects on a country's economy as a whole. Although the title says 'Intellectual Property Rights' the paper primarily focuses on patents, and technological and medical patents within that. The paper takes a critical view on Intellectual Property, saying that the notion that IPR drives innovation is outdated and unjustified. He says that by patenting important technologies and medicine in developed and wealthy countries, developing countries that need access to these technologies and medicines but cannot afford them at a large scale suffer. He also goes on to say that patenting or placing knowledge behind closed doors (payment walls) prevents the further growth of knowledge. That being said, the author also mentions that inventing and creation requires investment and returns on those investments, and how the returns can be made into profits.

Inventing Brands: Opportunities at the Nexus of Semiotics and IP – Conley et al. 2008

This paper explores the psychology behind brands and visual equities that help form or 'invent' brands. The paper focuses on how psychology and intellectual property can be used in conjunction to build an incredibly strong brand identity. The primary example taken is that of Apple and its aesthetically similar products and uniformity across its product range that has created a strong, concrete brand that goes beyond trademarks. Apple, being the most valuable American company as on 21st August 2020, has been said to owe a large part of its success to it's unique and innovative technologies that were protected by various patents and trademarks.

Strategic Analysis of Starbucks Corporation - Geereddy 2013

This paper analyses the business model of the Starbucks company, it is important to note that this is an analysis of Starbucks considering every product, service and store bearing the Starbucks logo. The key strategy of Starbucks is to provide a premium coffee experience and to this extent they have patented several aspects of the coffee preparation and serving process. Starbucks uses self-made resources (Coffee beans etc.) in its cafes and also sells these resources at a premium price. The author remarks that several popular recipes of are not disclosed and thus they form Trade Secrets which is why you will not find the infamous Pumpkin Spice Latte at any other Cafe under the same name.

Intellectual Property as a Marketing Tool – Kazunari Sugimitsu 2017

This paper serves as a literature review for researchers conducting research on how intellectual property works as a marketing tool, nevertheless, this paper is useful from the point of view of my research in economics as well. Over the length of this research the author

mentions several principles derived from using intellectual property that I believe form grounds of economic benefit for businesses. Such as: *The function of deterring market entry, the function of exclusion from the market and the function of building business partnerships.*

Intangibles are key to seizing new opportunities in the coffee market – WIPO 2017

This paper focuses on the international coffee market and the growing trends, it focuses on how coffee makers (farmers) can better their markets and incomes using intangible assets such as: patents, utility models, etc. Competition in this market is intense and, more importantly, based on keeping the production cost low. Decisions regarding the origin of the coffee and whether Arabica or Robusta beans are used to cater to this market segment are based on price, therefore consumers and distributors may compromise on quality because most of the products being offered by the farmers were identical. Using IP they could stand out amongst their peers and better position themselves for better profit margins.

The powerful role of intangibles in the coffee value chain – Samper et al. 2017

This is a working paper published by the World Intellectual Property organisation, it analyses the role of intangibles (intellectual property, branding, associations and connections, etc.) in the role of the coffee value chain (value chain refers to the process or activities by which a company adds value to an article). Coffee goes through various channels before reaching the end user, from the farmer to the roaster to the grinder, etc. each stage has the potential to add value using branding, patents, confidential information, geographical indications etc. Intellectual property undoubtedly is an asset that can enhance coffee from an economic perspective. The paper analyses the coffee value chain and makes a list of important intangibles on both the supply side and the demand side.

(B) Research Methodology

This paper was conducted through the examination of various sources of secondary data, ranging from journal articles and official UN reports to popular newspaper and magazine articles. Thus, it can be described as a descriptive research. Research was largely online, due to limited mobility as a result of the Covid - 19 Pandemic.

III. FINDINGS AND STUDY

(A) Intellectual Property Economics

Public Goods

Public goods are goods that are non-rivalrous and non-excludable, i.e. once they are released to the public, they cannot be kept exclusive, and their consumption by one person does not

reduce the ability for another person to consume it. for e.g. a Lighthouse, all ships in the vicinity can see the light house and use it as it was intended to be used, with no return to the builder ⁴. Public goods may be neccessary but no one would be willing to produce such goods, because absent some lawful or mandatory intervention - there would no meaningful return on investment, and hence they would not be produced. Due to these reasons, Intellectual Property is often considered a public good, in the sense that – absent some lawful intervention, once knowlege has been released – you cannot stop others from gaining that knowledge, no matter how many people gain that knowledge, the amount of the same knowledge does not decrease in the minds of the creator. This is opposed to private goods such as a single chair, I cannot sit on a chair that someone else is already sitting on, thus a chair is a rival good, i.e. it's consumption is rivalrous in nature. ⁵

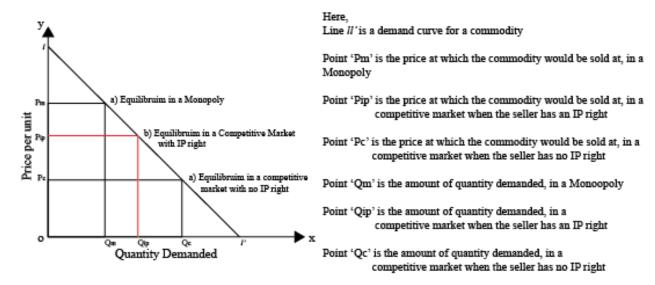
Intellectual Property Law forms the lawful intervention that allows people to monetize and subsequently create value from their intellectual properties. Intellectual property rights work by creating an almost monopolistic environment (almost because it is very rare for an unsubstitutable good to be created), and giving *supra-marginal economic returns* to the creator. This means, a return that is greater than the market equilibrium in a competitive market ⁶.

- In a competitive market, the competition between producers forces them to set a very low price on their goods, often the marginal cost – that is the cost required to produce the good.
- In a monopoly, the single buyer is able to set as high a price he wants, this would cause people to buy less of the product but he would still be satisfied with the amount of income he was making.
- When IP rights are applied, the producer is able to charge a slightly higher price than other manufactures because he has a more unique and possibly superior product as compared to the other products in the market. This gives him a monopoly over a specefic product, but not over all products in the industry.

These observations can be seen in the figure below

⁴ R. Polk Wagner, Basic Intellectual Property Economics (2017), https://www.coursera.org/learn/introduction-intellectual-property/lecture/nTMmF/basic-intellectual-property-economics (last visited Sep 6, 2020); R. Polk Wagner, Mechanism of Intellectual Property Rights (2017), https://www.coursera.org/learn/introduction-intellectual-property/lecture/U7jf3/the-mechanisms-of-intellectual-property-rights (last visited Sep 6, 2020) ⁵ Joseph E. Stiglitz, *Economic Foundations of Intellectual Property Rights*, 57 Duke Law journal 1693–1724 (2008)

⁶ Wagner, Supra.



Value Chains

A value chain is a representation of the development of a product from the conception to the distribution and everything in between. The amount of value that is added at each stage helps us assess the total value of the product. This allows us to asses where investment is being wasted and where one should invest more to earn more profit, boost productivity or make the production more efficient. Intellectual Property Rights add value to products by making them unique. ⁷

(B) The Coffee Industry

Market Segments and economic behaviour

• First Wave or 'Conventional', this segment contains products like packaged coffee beans, soluble coffees, capsules, etc. This forms around 70% of the world's coffee production. This is targeted at the consumers that use coffee for a quick burst of energy, they buy coffee mainly for its effects rather than its taste. The consumer has almost no control over variables like texture, roast, origin, etc. ⁸ The demand in this segment is highly market based. While purchasing raw materials, manufacturers generally only use Arabica or Robusta beans, they go with whichever bean is cheaper. The implications of this are that the farmers have very little control over the pricing and have to settle for low prices due to high competition in this market segment. The quality of the beans here is generally poor to mediocre and the emphasis is on quantity while buying, the manufactures later roast and grind the beans in order to illicit the flavour profiles they

⁷ What Is Industry Value Chain Analysis?, https://blog.marketresearch.com/what-is-industry-value-chain-analysis (last visited Sep 17, 2020); What Is a Value Chain? Investopedia,

https://www.investopedia.com/terms/v/valuechain.asp (last visited Sep 17, 2020); Haibo Zhou et al., *Patents, trademarks, and their complementarity in venture capital funding*, 47 Technovation 14–22 (2016)

⁸ Samper et al., supra.

wish to deliver to their consumers. Prices here are cheap and accounts for the highest demand among the three market segments.

- Second wave or 'Differentiated', this segment targets consumers who wish to consume coffee in a social setting. This segment consists of cafes that offer a wide range of standardized coffee-based products in a comfortable and convenient location. They offer a social element to consuming coffee, and try to offer a distinct ambience. The demand in this segment is also highly market based, but the growing interest of a small number of consumers in how the coffee is grown and where it comes from, as well as ethical concerns for the farmers, has resulted in these cafes creating programmes and initiatives to partner up with specefic farmers. This also allows the company to function more efficiently by creating economies of scale. The quality of beans used here tends to be higher than that in the first wave. The prices in this segment are slightly higher, this is because the consumer is not only charged for the cup of coffee, but also the cost of the amenities provided alongside it: the packaging 10, the ambience of the café, and many other things.
- Third wave coffee or 'Experiential', this segment targets highly sophisticated coffee consumers that have distinct coffee tastes and are willing to pay premium prices for the same. They are interested in where the coffee comes from, the nature and texture of the beans, etc. this segment has been compared to the wine industry. ¹¹. Here, the Baristas (highly trained and knowledgeable coffee servers) focus on providing a service and experience rather than product. There is lore and theatrics involved in the making and serving of the coffee, the consumer has the freedom and is encouraged to ask questions in order to be able to appreciate the coffee better. The demand in this segment is greatly regulated by the relation between consumers, baristas and farmers. Unlike the other two segments, third wave coffee businesses tend to buy coffee beans directly from the farmers. Better relations with the farmers bring security into the relationship and ensure stable supply, businesses may even be able to compel the farmers to grow a particular type or variation of coffee. ¹². The quality of coffee in this segment tends to be far superior than the other two, this is a largely due to superior relations between and the

⁹ Economies of Scale: cost advantages reaped by companies when production becomes efficient. Companies can achieve *economies of scale* by increasing production and lowering costs. E.g. By developing relations with farmers, companies can eliminate the recurring search and scouting costs of finding suppliers.

¹⁰ The carboard sleeve that hugs the outside of your cup to keep your hand from burning was designed and patented by Starbucks. (US Patent No. 79,22,031),

¹¹ What (Exactly) is "Third Wave Coffee"? Medium, https://magazine.crema.co/third-wave-f6479681dcf9 (last visited Sep 17, 2020)

¹² Samper et al., supra.

importer and grower. The prices in this segment are much higher than those in the other two sectors. When you buy a cup of coffee in the third segment, you are not only buying a beverage, you are buying the result of a series of actions under taken by the Barista. A barista will usually be responsible for procuring the raw beans from faraway farmers, storing, preparing, roasting and grinding the beans according to a specefic taste and preference.

a. The Coffee value chain

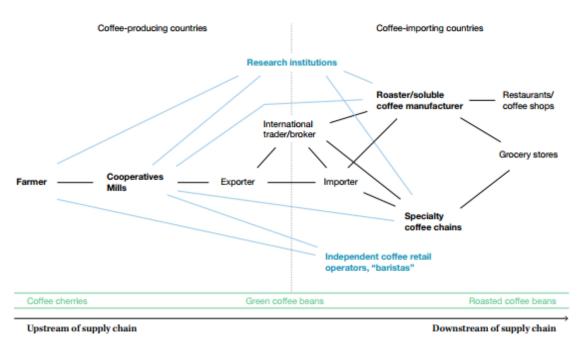


Figure 1: Coffee Value Chain

Note: Chart taken from World Intellectual Property Organisation (2017)

Figure 1 represents the flow of coffee from coffee exporting countries to the coffee importing countries. The black lines represent the traditional flow of coffee, and the blue ones represent new flows brought about through the growth of the second and third segments of coffee. The majority of coffee is grown in the global south and the majority of the output is consumed in the global north.¹³ As we saw, farmers in the first segment have to sell at low prices, often going through cooperative mills in a bid to make a higher revenue, however this reduces individual earnings by a large chunk ¹⁴, these mills would directly contact the exporters and sell the produce through an auction method. Exporters generally charge high prices while selling to importers, from whom most first and second wave businesses buy from. The

¹³ This is primarily because of the favourable climatic conditions between the tropic of cancer and tropic of Capricorn, this region is also known as the 'Bean Belt'.

¹⁴ Akundi Santaram, Geographical Indications on Coffee (2018)

growth of second and third wave coffee segments, and also policy changes have allowed farmers to gain more from their produce and subsequently skip the mills and exporters to earn higher incomes, this is especially true in the cases of third wave businesses, most of which buy their coffee directly from the farmers, effectively creating a two-step process which greatly reduces the expenses. ¹⁵.

The Value chain is heavily skewed in favour of the importers, i.e. the importers are the ones that add the majority of the value to the coffee in the first and second wave through their unique roasts and blends, etc. the highly market oriented approach of the segments pushes the importers to procure whatever raw materials they can get at low prices and then manipulate these products in order to receive the desired flavours that they want, hence the importers are not as dependent on the growers as the growers are dependent on the importers. As a result, the growers have little scope to invest and potentially improve their product while operating within the first and second segment.

The concept of competitive equilibrium applies here.

Table 1: Hypothetical Market of 3 Farmers when all of them sell the same kind of coffee

| Farmer | Price/Kg |
|-----------------|----------|
| Coffee Farmer A | \$ 10 |
| Coffee Farmer B | \$ 5 |
| Coffee Farmer C | \$ 10 |

In a hypothetical market of 3 farmers, all 3 farmers are selling similar coffee beans, farmers A and C try to raise prices but farmer B does not do so, as a result Farmer B enjoys more business than the other farmers as importers would always try to cut costs and make profits, and because there is nothing that Farmer's A and C can offer that B doesn't. Thus, A and C are eventually also forced to reduce their prices in order to stay in business.

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¹⁵ Samper et al., supra.

Intellectual Property and the Coffee Value Chain

Intangibles may include, trademarks and patents, and even confidential information¹⁶¹⁷, With the rise of the third wave of coffee, the role of intangibles is slowly becoming more and more important if farmers wish to seize more lucrative deals and profits. As we saw above, by directly selling to the baristas, the farmers can earn much more than they would in the traditional set ups. Value can be added in various ways, by value addition we can make the product more desirable. On the supply side this can only happen if there is something unique that the farmers bring to the table.

One problem that plagues the coffee industry is the short shelf life of roasted coffee beans, this necessitates the roasters and end users be close-by. This leads to companies setting up roasting stations in areas where land and capital is more expensive. If a particular farmer A could develop a certain method of prolonging the shelf life of roasted coffee, this would be a huge value addition to the importers as they could now set up roasting stations in cheaper areas, thus increasing coffee margins. If Farmer A chooses to protect this method through a patent, then he could potentially monopolise this method and create immense value for himself, this would enable him to charge higher prices, albeit the higher price may result in lesser quantity of sales, but he would still be earning sufficiently. ¹⁸

Table 2: Hypothetical Market where one farmer has a unique offer, protected by IP

| Farmer | Price/Kg |
|--|----------|
| Coffee Farmer A (With unique growing method) | \$ 15 |
| Coffee Farmer B | \$ 5 |
| Coffee Farmer C | \$ 10 |

Here, farmer A is charging much more than farmer B and C, but he is still able to earn more per Kg due to his unique proposition, and because this unique proposition is protected by

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¹⁶ By intangibles we refer to entities that are not physical but add some value to the product or material that is dealt with. This also includes the relationship between the buyers and the farmers as positive relationships have positive economic effects.

¹⁷ Confidential information encompasses things like technical know-how and unique steps or ingredients that enhance the quality of the product.

¹⁸ Kazunari Sugimitsu, *Intellectual Property as a Marketing Tool*, 13 日本知財学会誌 4–14 (2017)

some sort of IP, B and C cannot copy it. Thus, Farmer A can earn Supra-Marginal Returns, i.e. returns that are greater than the marginal cost of production.

The third wave of coffee has increased the scope of farmers to invest and leverage intellectual property rights.

- Business Methods: By developing better relations with the Baristas, the farmers can
 ensure steady business and the baristas can ensure steady supply.
- Trademarks and Branding: Branding their produce, will enable them to charge higher prices.
- GI Tags: Farmers that are located in specefic geographical regions can also implement Geographical Indications in order to further differentiate and heighten their product.
 There are several regions across the globe that are renowned for the characteristics of their coffee plantations, such as Costa Rica and Columbia ¹⁹.

Moving further along the value chain, first wave coffee businesses can also create value using Ips by:

 Trademarks and Design Patents: Developing unique packaging methods that are beneficial to the consumers, for example, making more portable containers, like the single-use capsules.²⁰ ²¹

Second Wave coffee businesses can create value using Ips by:

• Trademarks and Copyrights: Investing in their outlets to match specefic themes and/or styles. For example, Starbucks aims to create a space that is comfortable and warm, well-lit and not crowded in order to make a calming aesthetic, Starbucks attempts to compel people into sitting down and enjoying their coffees, they provide plug in points to encourage people to sit down and work on their devices for long periods of time, on the other hand, McCafe, (the second wave coffee outlet by McDonalds) pursues a more fast-food adjacent theme, they set up small desks and stools for the cafés, and also take away windows for faster service, McCafe targets customers that want good coffee quickly. ²²

¹⁹ Santaram, supra.

²⁰ Starbucks created and patented the unique disposable paper cup design and made a distinct brand identity by patenting and registering these as Trademarks.

²¹ Conley, James et al., *Inventing Brands: Opportunities at the Nexus of Semiotics and Intellectual Property*, 19 58–66 (2008); Nithin Geereddy, Stratrgic Analysis of Starbucks Corporation (2013)

²² James G. Conley et al., *Value Articulation: A Framework for the Strategic Management of Intellectual Property*, 55 California Management Review 102–120 (2013); McDonald's And Starbucks' Two Most Important Advantages At Home And Abroad Forbes,

b. Other Applications of intellectual property in Coffee

There is a threat to coffee manufactures due to global warming as the generic Arabica and Robusta beans are not as hardy to changing weather conditions and climates.²³This could translate into potential supply shortages in the long run; thus, farmers are trying to grow plant varieties that can sustain sharp changes in the weather and in the climate, these new plant varieties can be protected by Intellectual Property. There is a huge incentive to grow such plant varieties and hence monopolising on it could potentially be the best deal for plant growers to earn huge margins, with the right sort of protection and marketing. Not only sustained supply, but businesses can also enjoy differentiation from the market in terms of taste and location.

IV. CONCLUSION

The coffee industry is facing an internal revolution, at the forefront are people that wish to experience their beverages and become more knowledgeable about the same, even if it costs them more time and money. The emergence of this crowd has wide spread economic effects across the industry. These effects are placing more emphasis on variables such as the source and preparation of the raw materials that are applied in this industry, and are hence shining the spotlight and opening oppurtunities at the beginning of the value chain. The seizing of these oppurtunities will help the farmers to add more value through intellectual property rights and other intangibles such as know-how and relationships.

V. RECOMMENDATIONS

This study can be improved by accessing more resources that were not available to the author due to economic and physical constraints.

This study was conducted during the covid-19 pandemic and hence the author could not access or interview people relevant to this industry, such as managers of cafes, or representatives of companies that are involved in this industry.

Further, there is scope for this study to be empirical, surveys can be conducted by researcher to determine whether people truly value the intangibles that the author has explored in this paper.

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