



Trade secrets: Managerial guidance for competitive advantage

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Abstract While scholars have explored the construct and ramifications of intellectual property, most research efforts have focused on patents as a means of protecting a firm's intellectual capital. Yet Hemphill (2004) suggested that trade secrets can affect the difference between economic success and failure of the firm. When trade secrets are discussed, there is a tendency to focus on the more famous secrets that have received considerable hype in the popular press (e.g., Coca-Cola, KFC, McDonald's). To address this shortage of trade secrets storytelling, the research reported here engaged in a historiographic approach to capturing and compiling an in-depth look at various company trade secrets and elaborating on the strategic intent behind many of the secrecy efforts. Product and process secrets were seen to be used to develop positive brand perceptions, establish consistent brand purchasing, aid in distinguishing products and services from competitive offerings, and build market share. We suggest that managers should regularly assess which assets are suitable for patent, product design, trademark, copyright, or trade secret status and work diligently to protect the firm's intangible assets.

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“The whole secret lies in confusing the enemy, so that he cannot fathom our real intent.”

—Sun Tzu

“The great secret of the art of war [is] how to develop offensive action from a defensive base.”

—Ulysses S. Grant

“The secret of my influence has always been that it remained secret.”

—Salvador Dalí

1. Strategic secrets

Aggressive conditions have long resulted in strategic secrets. From Sun Tzu's military strategies to Ulysses S. Grant's secrets for battlefield supremacy to Salvador Dalí's surrealistic imagery, the art and science of strategic success has been the yin and yang of strategic prowess. The importance and

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power of secrecy is evidenced in [Sawyer's \(1997\)](#) translation of effective strategy and leadership from a Dao-conceptualized viewpoint. With secrecy as weaponry, leaders have long relied on secrets for protection, and this reliance on secrecy extends to the intellectual property of the firm. Rather than provide competitors with potentially useful information via a patent application, secrecy is often viewed as the more appropriate course of protection ([Anton & Yao, 2004](#)).

Most organizations keep and protect secrets, spanning all functional areas of business. For example, the research and development and marketing functions are concerned with product formulations, new product specifications, product launch dates, and sales/revenue data. Production and information systems managers guard operational processes, while the human resources division tries to shield payroll information from both internal and external eyes. From a strategic perspective, this secrecy can serve as a significant resource and a building block for competitive advantage. The significance of such a resource can be so important that competitors may attempt appropriation of secrets through observation, trickery, industrial intelligence gathering, and theft—including the recruitment of other firms' knowledgeable employees.

Against the backdrop of competitive advantage, little research exists seeking to understand trade secrets as a stand-alone topic of inquiry. In one of the few such studies, [Hemphill \(2004\)](#) suggested that trade secrets can affect the difference between economic success and failure of the firm. Yet, if secrets can have such a major economic impact, one has to wonder why the secrets constantly retold are those of KFC, Coca-Cola, WD-40, and McDonald's. Is not the volume of secrecy efforts comprised of organizations that operate on a daily basis in our society? Who are these companies and what are their secrets? Importantly, what is the strategic intent of holding such intangible assets?

In this research, we engaged a historiographic approach to capture and compile an in-depth database of various company trade secrets. We elaborate here on the strategic intent behind many secrecy efforts utilized to protect the intellectual property that comprises a firm's strategic assets.

2. The centrality of trade secrets

As noted by the independent investment research firm Morningstar and legendary investor Warren Buffet, companies need to seek out and develop competitive advantages that make it difficult for rivals to take market share. Companies with durable

advantages suitable to protecting market share and maintaining margins are described as having wide economic moats. If firms make it easy for others to steal ideas, they can ultimately end up washing away their competitive advantage and their own path to success. All the same, the business press seems to report daily yet another firm bringing suit against its rival for poaching employees with proprietary expertise or against former employees for sharing confidential information.

There are no exclusive rights to secrets, however, and competitors can attempt to break any secret's code via such means as accidental disclosure, independent discovery, or intentional leakage. Intentional leakage of trade secret information, referred to as misappropriation, does have legal recourse. But, particularly in today's world of fast-paced communications, there is nothing that can make the secret a secret again. Additionally, competitors may leak false secrets in an attempt to sabotage brand image or reduce the efficacy of trade secret marketing tactics.

According to [Hollander \(2001\)](#), a trade secret represents information that is "sufficiently valuable and secret to afford economic advantage over others." Tort law provides the following definition of a trade secret ([Basile, 2007](#)):

A trade secret may consist of any formula, pattern, device, or compilation of information which is used in one's business and which gives [that business] an opportunity to obtain an advantage over competitors who do not know or use it.

Unlike patents, there is no time limit on how long a trade secret can be protected, and secrets are generally protected under the Uniform Trade Secrets Act and/or the Economic Espionage Act of 1996 ([Justia, 2014](#)). As evidenced by companies such as KFC, Coca-Cola, WD-40, and McDonald's, it may not necessarily be the secret that really protects or enables companies; rather, it is the sense of nostalgia that can drive the business ([Choi, 2013](#)). As noted by [Radford \(2009\)](#), a minimal laboratory analysis could discern what chemicals and ingredients appear in what quantities of a food product. Others suggest that secrets create a buzz factor in the marketplace and that the associated hype and build-up are good for initial sales ([Lewis, 2007](#)). [Hannah, Parent, Pitt, and Berthon \(2014\)](#) created a typology of secrets, where *appealing* secrets (e.g., KFC, Coca-Cola) have both strategic and marketing value, *mythical* secrets (e.g., McDonald's secret sauce) have marketing value but not strategic value, *plain* secrets (e.g., Google's infrastructure) have strategic value but not marketing value, and *weak*

secrets (e.g., SC Johnson's scrubbing bubbles) have no value to the firm.

Stories about trade secrets tend to focus on the more famous secrets that have received considerable publicity in the popular press. In his book *Big Secrets*, Poundstone (1983) first referred to the secrets of Kentucky Fried Chicken, Coca-Cola, and McDonald's. Subsequently, these same stories about secrets have been—and are—retold, over and over (e.g., Choi, 2013; Hollander, 2001; Radford, 2009). Thus, the current research contributes to the storytelling about secrets by expanding the database of secrets and elaborating on the strategic intent behind the identified trade secrets.

3. Are there other trade secrets?

One might wonder if there are secrets other than the noted 'big secrets.' Are there 'little secrets' that reside, day-in and day-out, in companies? And, if so, why are these companies engaging in these secrets? In an attempt to answer these questions, we employed a methodological approach to capture the history behind various trade secrets in the marketplace. Following the logic of historiography in utilizing secondary sources and primary sources, such as company information via electronic access, 45 data gatherers were charged with two tasks: (1) identifying a trade secret and (2) writing a historical narrative about the secret. One aspect of the charge was that the trade secret could not involve one of several oft-described secrets. Thus, the 'big' secrets were excluded from the trade secret possibilities: KFC, Coca-Cola, McDonald's, WD-40, Google, and Mrs. Field's Chocolate Chip Cookies.

Through an extensive approach engaging both primary and secondary data sources, each data gatherer wrote a narrative that (1) identified a specific company's product or process trade secret, (2) summarized the secret, and (3) discussed the strategic implications of the secret. Utilizing standardized measures so as to metrically define units allowed for three outside coders to engage in a content analysis of each of the narrative documents. The qualitative coding utilized several pre-determined coding categories that were embedded in the instructions for writing the stories. This allowed the coders to tag segments of interest, and thus mitigated the need for achieving inter-coder reliability as would otherwise have been required (Sayre, 2001). These metrics, in conjunction with additional secondary information (e.g., public vs. private company, company location) compiled by one of the coders, were then used to compare across each of the narratives (Berelson, 1952).

3.1. 'Little' secrets

This historiography resulted in 35 different trade secrets. These 35 trade secrets occurred in 14 publicly held companies and 21 privately held companies, with 29 companies headquartered in the United States, three headquartered in France, two in China, and one in Ireland. Of the trade secrets identified, 33 exist in the business-to-consumer marketplace, with only two in the business-to-business marketplace. The distinction between product and services was somewhat difficult to discern, as some of the companies operate in the food service market yet the trade secret dealt with the tangible food product. With this in mind, trade secrets related to specific food products within the food service marketplace were categorized as product and not service. In sum, there were 27 product-related and six service-related trade secrets identified in the business-to-consumer marketplace and one product-related and one service-related secret in the business-to-business marketplace. Table 1 provides a summary overview of the companies and trade secrets identified in this research.

Upon reading the narrative, the coders categorized the trade secret as either related to the product formulation or the operational process. Two of the trade secrets clearly overlapped both product (secret recipes) and process: Kweichow Moutai, producer of the national spirit of China, and Quanjude, a famous Chinese restaurant specializing in a duck entrée.

3.2. Product formulation secrets

The data gatherers identified 21 product formulation trade secrets, all in the business-to-consumer category. Of these, 14 were in the food and non-alcoholic beverage category and three product formulations were in the alcohol category. Thus, almost 81% of the product formulation trade secrets were related to food and beverage. These secrets, in the form of recipe or ingredients, were from the following companies: Bojangles' (food), Bush's Baked Beans (food), Chartreuse Liqueur (alcoholic beverage), Cinnabon (food), Cointreau (alcoholic beverage), Dr Pepper Snapple Group (non-alcoholic beverage), Famous Amos (food), Heinz (food), Hershey (food), Hostess (food), Justin's Nut Butter (food), Krispy Kreme (food), Kweichow Moutai (alcoholic beverage), Milo's Hamburgers (food), Quanjude (food), Thomas' English Muffins (food), and Tootsie Roll (food).

Food and beverage secrets dominated the business-to-consumer marketplace, particularly as related to tangible products. However, closely

Table 1. Summary of secrets

Business-to-Consumer	Trade Secret	Type of Secret
Bojangles'	recipe	Product Formulation
Bush's Baked Beans	recipe	Product Formulation
Chartreuse Liqueur	recipe	Product Formulation
Chanel No. 5	formula	Product Formulation
Cinnabon	recipe	Product Formulation
Cointreau	recipe	Product Formulation
Dr Pepper Snapple Group	23 different flavors	Product Formulation
Famous Amos	recipe	Product Formulation
Heinz	recipe	Product Formulation
Hershey	recipe	Product Formulation
Hostess	ingredients	Product Formulation
Justin's Nut Butter	ingredients	Product Formulation
Lena Blackburne	baseball product	Product Formulation
Listerine	ingredients	Product Formulation
Krispy Kreme	recipe	Product Formulation
Kweichow Moutai	recipe	Product Formulation
Microsoft Xbox	algorithm	Product Formulation
Milo's Hamburgers	recipe	Product Formulation
Quanjudé	recipe	Product Formulation
Thomas' English Muffins	recipe	Product Formulation
Tootsie Roll	recipe	Product Formulation
Amazon.com	algorithm	Operational Process
Bodega	location	Operational Process
Disney World	tunnels/scents	Operational Process
Guinness Draught	brewing	Operational Process
In-N-Out Burger	menu	Operational Process
Kweichow Moutai	recipe	Operational Process
Netflix	algorithm	Operational Process
NY Times	bestseller list	Operational Process
Pappy Van Winkle Bourbon	bourbon creation	Operational Process
Progressive Insurance	low-cost pricing	Operational Process
Quanjudé	product prep	Operational Process
Surftech	core composite	Operational Process
Taco Bell	product prep	Operational Process
Tesla Motors Inc.	advanced technology	Operational Process
<u>Business-to-Business</u>	<u>Trade Secret</u>	<u>Type of Secret</u>
Blackrock	investment formula	Operational Process
Cummins	technology	Operational Process

aligned with the recipe/ingredients categorization in food and beverage, the formula was also a protected item for consumer products such as perfume, mouthwash, and sporting goods products. Interestingly, only one product formulation trade secret identified, Microsoft Xbox's secret mapping algorithm, did not relate specifically to ingredients, recipe, or formula.

3.3. Operational process secrets

In considering the 14 identified business-to-consumer operational process trade secrets, six of the secrets were from food and alcoholic beverage companies: Guinness Draught (alcoholic beverage),

In-N-Out Burger (food), Kweichow Moutai (alcoholic beverage), Pappy Van Winkle Bourbon (alcoholic beverage), Quanjudé (food), and Taco Bell (food). Alcoholic beverage companies' trade secrets centered on the brewing/mixing process, while food companies' process secrets related to the food product preparation (e.g., the secret way Taco Bell prepares its beef mixture for tacos; how In-N-Out Burger creates sandwiches to suit customers' desires and promotes this as a secret).

Not surprisingly, technology and algorithms appeared more often regarding operational processes in the business-to-consumer marketplace. The technology at Surftech and Tesla Motors and the algorithms that operate behind the scenes at

Amazon.com, Netflix, the NY Times Bestseller Lists, and Progressive Insurance provide for less easily imitable service offerings to consumers. Operationally, however, secrets are not all about technology and algorithms; Bodega and Disney, for example, focus on location-specific secrets to set themselves apart from competitors. Both business-to-business secrets in the study were operational processes. BlackRock's investment formula is closely guarded, while Cummins' technology enabled considerable innovative products to be released.

4. Strategic benefits of secrecy

A critical aspect of the narrative preparation entailed exploration of the historical data to discern each company's strategic intent regarding its respective secret. As discussed earlier, trade secrets are sufficiently valuable so as to create competitive advantages for the companies that hold them. One intention of our research was to discern what the company identified as its intended competitive advantage. The unfolding of this intention identification occurred in stages. First, the data gatherers compiled the historical narratives based on primary and secondary sources. Then, one coder discerned the strategic implications from the narrative, with the output being one or two sentences capturing the more specific reason for the intent. At this stage, the coder was not guided by any specifics; the short summary was based on what was read in the narrative. Another coder then reviewed the short summaries and compiled a listing of strategic implications, noting during the compilation the frequency of intent across both product and operational secrets. Next, a third coder reviewed each of the short summaries and noted, separately, the frequency within the previously compiled listing of implications. No additional implications were identified by the third coder, and the second and third coders reconciled differences—which were few and minor—via face-to-face discussions. [Table 2](#) shows a summary of the strategic implications found in the historiography.

Regardless of the frequency of notation, the current research shows that there are several strategic implications behind the use of trade secrets as a way to protect intellectual property. These product and process secret weapons can be used to attain the following outcomes: brand power, customer loyalty, product differentiation, and market share.

4.1. Brand power

Companies in the sample set had a strong focus on brand with respect to expected benefits of a trade

Table 2. Summary of strategic implications

Expected Consequence	Product Formulation [*]	Operational Process [*]
Brand image	11	4
Brand loyalty	7	1
Customer loyalty	5	2
Product differentiation	4	2
Market share	1	4
Growth	1	1
Reputation	1	1
Repeat purchase	1	0
Intangible value	1	0
Higher pricing	0	1
Set industry standard	0	1

^{*} Numbers in columns represent frequency of occurrence in the company narratives.

secret. This was particularly true for companies where the secret related to the formulation of the product. Eleven companies suggested brand image and seven companies referred to brand loyalty as the expected consequence of a product formulation trade secret, while four companies mentioned brand image and one company brand loyalty with respect to operational process secrets. According to the [American Marketing Association \(2014\)](#), brand image refers to the perception of a brand in a person's mind and is what people believe (i.e., thoughts, feelings, expectations) about a brand, whereas brand loyalty is a situation whereby a consumer purchases the same brand consistently within a product class. Thus, if a company can use a trade secret to assist in creating a positive perception of a product in the mind of the consumer, it would be expected that brand loyalty would follow. [Reitzig \(2004\)](#) referred to brands in terms of companies using intellectual property rights as strategic weapons. In particular, he suggested that companies gain and sustain a competitive advantage with brand names and that brands can serve to both differentiate and create entry barriers with respect to horizontal competition. Given the frequency of brand image and brand loyalty in the narrative data set, brand value appears to be of considerable strategic importance as regards the keeping of secrets.

4.2. Customer loyalty

Customer loyalty also appeared fairly often in the company narratives. Customer loyalty is considered a somewhat new imperative in marketing and has arisen due to the shifting of power from the product to the consumer. In making that shift, the concern is that brand loyalty will fade in importance ([American Marketing Association, 2014](#)). Where customer loyalty reigns, companies will survive by creating

relationships one customer at a time, and loyalty will reside between the company and the customer, not between the brand and the customer. It appears that some companies are starting to understand the possible shift from brand reliance to customers, with seven of the company narratives mentioning customer loyalty as an intended consequence of the strategic secret.

4.3. Product differentiation

Hannah et al. (2014) identified three interconnected dimensions related to secrets about a company's products. One of these dimensions refers to the tangible elements of weight, size, color, and performance specifications. Thus, not surprisingly, one expected consequence of the trade secret was product differentiation. Product differentiation is defined as one or more product attributes that make one product different from another (American Marketing Association, 2014), and Reitzig (2004) suggests that a company can use its intellectual property to differentiate both vertically and horizontally in its industry. This intellectual property differentiation then serves as a barrier to competition.

4.4. Market share

Four of the secrets related to operational processes were linked with expectations of gaining market share. Since all of the service firms had operational process secrets, it might be that service firms tend to focus on the more immediate—and often more easily measureable—metric of market share. As well, market share is likely the dependent variable of brand image, brand loyalty, customer loyalty, and product differentiation, thus making it somewhat difficult to tease out, in the narratives, what might be moderating issues.

4.5. Not as important as you might think

Finally, several other expected consequences were noted in the coded data. These included growth, reputation, repeat purchases, intangible value, higher pricing, and ability to set the industry standard. None of these are surprising as far as strategic intent of a trade secret. But, what *is* surprising is the low frequency of the expectation. Based on the data collected for this study, one might surmise by their general omission that hard-good consumer product companies would be likely to utilize patents and trademarks to protect their intellectual property, and that business-to-business firms have little to gain by attempting to establish brand mystique as part of the value equation.

5. Create deep and wide moats

While not exhaustive, the current research reveals several strategic objectives behind the use of trade secrets. These product and process secrets can be used to pursue enhanced customer outcomes, including positive brand perceptions, consistent brand purchasing, aid in distinguishing a product or service from competitive offerings, and building market share.

Firms should consistently seek opportunities to create deep and wide economic moats. Unique, valued, intangible assets are a competitive advantage foundation. Intellectual property management plays a critical role in monetizing ideas, plans, and innovations. Managers must regularly determine which assets are suitable for trade secret status.

Just as with any prized asset, managers must plan how they will exploit the value inherent in their trade secrets. Perhaps they can develop a backstory if one does not already exist and push this backstory to enhance the image of the trade secret, creating a positive brand image. Perhaps they can determine ways the trade secret can help make products or services difficult or costly to replicate. Additionally, and quite importantly, managers must determine how to protect their trade secrets to ensure that others cannot legally or illegally expropriate their value.

It is clear that managers need to take the time to be sure they and their teams are knowledgeable regarding trade secrets. As a firm, all must work together to engage customers in the brand identity associated with company secrets. Furthermore, investors must be engaged in the durability of this secret in creating an economic moat that will be difficult if not impossible to broach.

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