

**INVESTIGATING THE IMPACT OF BRAND  
REPUTATION ON BRAND ARCHITECTURE  
STRATEGIES: A STUDY ON A SOUTH AFRICAN  
AUTOMOTIVE COMPANY**

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by

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## ABSTRACT

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The brand architecture of an organisation has become increasingly important to global management and marketing professionals, as it deals with structures and designs of brands which are constantly influenced by a changing environment. The market realities and changes brands face continuously impact the reputation of the brand, which is critical to sustain competitive advantage. The primary purpose of the study was to investigate the impact brand reputation has on brand architecture strategies, and an automotive company was chosen as the focus of the research. This research aims to help managers, marketers and brand owners make informative decisions regarding the brand architecture of a company. A quantitative content analysis methodology was used along with a webpage keyword counting application (WebWords). The application was used based on the principles outlined by Corporate Brand and Reputation Analysis (COBRA), which uses a four step progressive filtering process in filtering traditional and consumer generated media. The results from WebWords were then aligned to the brand architecture strategies from the brand relationship spectrum (BRS) to gain insight as to which of the strategies from the BRS were most vulnerable to reputational damage. The study found that the branded house and sub-brand strategies were most vulnerable to reputational damage based on the number reputational hits received. The connection between the master brand and the sub-brands could cause both brands to be affected should any reputational issues arise.

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# CHAPTER 1

## INTRODUCTION

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### 1.1 Preamble

The marketing environment is no longer considered to be simple in the eyes of marketing and brand managers, business managers, and directors. This is mainly due to the increasingly complex business environment fuelled by the fast-paced information era combined with the impact of globalisation (Aaker & Joachimsthaler, 2000:8). Thus, managers face complex environments with market fragmentation, channel dynamics and global realities (Aaker & Joachimsthaler, 2000:8).

In light of global realities and changes, the brand architecture of an organisation has become increasingly important to marketing professionals, as it deals with structures and designs of brands, much as an architect would design and structure rooms, buildings and cities (Aaker & Joachimsthaler, 2000:8). The brand architecture of the organisation is thus formally defined as “the organising structure of brand portfolio that specifies brand roles and nature of relationships between brands” (Sanchez & Rajagopal, 2004:236).

Strategy literature has argued that from a resource-based view, sustainable competitive advantage is created primarily from intangible capabilities, notably innovation, organisational architecture, strategic assets, and **reputation** (Omar, Williams & Lingelbach, 2009:177). Herbig and Milewicz (1995:5) define reputation as the estimation of *consistency* over time of an attribute of an entity. Hannington (2004:3) regards corporate reputation as one of the most important assets of a company since it has a large impact on the financial health of the company, as well as future business prospects. A tool developed by Aaker and Joachimsthaler (2000:10) called the **Brand Relationship Spectrum (BRS)** is used to link brand architecture to strategies pertaining to each brand.

According to Aaker and Joachimsthaler (2000:10), there are four strategies and nine sub-strategies which can be described as follows:

**A house of brands** – “A house of brands strategy involves an independent set of standalone brands, each maximising the impact on the market” (Aaker & Joachimsthaler, 2000:10). For example, Lexus (Toyota).

**Endorsed brands** – Endorsed brands are independent but are endorsed by another brand. The endorsement provides credibility and usually plays a minor driver role (Aaker & Joachimsthaler, 2000:12). For example, Universal Pictures (Sony).

**Sub-brands** – “Sub-brands are brands connected to a master or parent brand and augment or modify the associations of that master brand” (Aaker & Joachimsthaler, 2000:14). For example, HP DeskJet (Hewlett Packard).

**A branded house** – In this strategy the master brand moves from primary to dominant driver, and the sub-brand moves from modest driver to being a descriptor with little or no driver role (Aaker & Joachimsthaler, 2000:15). For example, Virgin Active and Virgin Mobile.

In 2009 and 2010, Toyota experienced numerous reputational issues on a global scale (see Appendix B). Ritson (2010:18) argues that Toyota’s brand architecture could multiply the problem should any reputational crisis occur. Toyota possesses three of the four brand architecture strategies from the BRS, namely the *house of brands*, *sub-brands* and *branded house strategies*. The Toyota brand is a ***branded house brand***, while Auris, Avanza, Corolla, Prius, Verso and Yaris are all ***sub-brands*** since they are linked to the Toyota master brand. The Lexus brand falls under the ***house of brands strategy*** as it is a separate brand from the Toyota master brand. Toyota is an excellent case for analysis since it possesses brand architecture strategies on opposing sides of the spectrum of the BRS, and there are numerous reputational issues to measure and test to see which of the BRS strategies are most vulnerable to reputational damage.

## **1.2 Problem Statement**

Due to the complexity of the modern business environment organisations have had to hold multiple brands, brand extensions, and complex structures to cope with pressures and complexities (Aaker & Joachimsthaler, 2000:8). These brand structures can be labelled as the brand architecture of an organisation. The brand relationship spectrum (BRS) by Aaker and Joachimsthaler (2000:8) illustrates brand architecture strategies managers, marketers and brand owners can implement within their brand portfolio. In order for managers, marketers and brand owners to make informative decisions regarding these strategies, insight into which of these strategies would be more vulnerable in terms of brand reputation needs to be researched (Douglas & Craig, 2003:10). Existing evidence is largely survey based, therefore no study to date has used quantitative keyword analysis to examine how brand architecture strategies are impacted by brand reputation.

## **1.3 Aims and Objectives of the Study**

The primary purpose of this research is to investigate the impact brand reputation has on brand architecture strategies. In order to achieve this primary purpose, the following research objectives are stated:

- Assess and plot the brand architecture of Toyota South Africa (Pty) Ltd;
- Assess the sales of Toyota South Africa (Pty) Ltd during the 2009/2010 calendar year;
- Assess and plot the reputation of Toyota South Africa (Pty) Ltd's brands using a webpage keyword counting software application (WebWords) based on the principles outlined by COBRA, during the 2009/2010 calendar years;
- Compare and contrast the results from WebWords with the change in sales over the period of the study;
- Align the results from WebWords to brand architecture strategies; and
- Based on the results, provide managers with recommendations as to which brand architecture strategies are more vulnerable in terms of reputation.

## 1.4 Method of Study

According to Spangler, Chen, Lelescu, Behal, He, Griffen, Liu, Wade and Davies (2009:243), consumer generated media (CGM) such as news websites, blogs, forums and message boards have become the “voice of the people”, which allows companies to leverage CGM in terms of their reputation analysis (Spangler et al., 2009:243). Traditional media are also important to take into account since they can influence stakeholders’ perceptions about the company’s brands (Einwiller, Carroll & Korn, 2010:300).

In order to analyse Toyota’s brand reputation, the concept of Corporate Brand and Reputation Analysis (COBRA) was applied to a webpage keyword counting program (WebWords) which filtered both CGM and traditional media. COBRA uses a four-step progressive filtering approach (Spangler et al., 2009:245) to extract keywords which the website keyword counting program captured, counted and plotted against the date of the media articles. Orthogonal filtering on the title of the article took place, which placed all the articles collected in a negative context. The more frequently the keyword or brand is mentioned, the more it affects its reputation.

The study was performed in a South African context, therefore all data collected were collected from local media websites. Local sales figures were collected from the National Automotive Association of South Africa (NAAMSA, 2010). A total of 269 webpages were collected, captured and filtered, 202 webpages from traditional media and 67 webpages from CGM. Time series analysis was performed using a Poisson and Linear regression.

The reputational hits on each brand from WebWords were then aligned to the brand architecture strategy under which it falls. The more hits the strategy received, the more vulnerable that particular strategy was.

## 1.5 Outline of Study

This study is divided into seven chapters each contributing to researching which of the brand architecture strategies from the BRS are most vulnerable to reputational damage. The chapters are organised as follows:

Chapter Two introduces the theory of brands and branding to the study. Branding is defined in the context of the research, and is related to examples. Branding in the automotive industry is discussed, as well as its connection to the branding cycle. An important part of branding, namely brand value is highlighted and related to the automotive industry. The extension of brands along with the driver role of brands is introduced to the study. Finally, the complexity of branding in today's world, along with the challenges it brings is discussed.

Chapter Three takes an in-depth look at the concept of brand architecture. Brand architecture is defined, along with examples. The various categories of brand architecture are then discussed and related to the study. Brand architecture strategies are then introduced, mainly from the Brand Relationship Spectrum (BRS). Each brand architecture strategy is defined and examples of each are given.

Chapter Four focuses on brand reputation, where brand reputation is fully defined and introduced. The concepts of brand image and identity are illustrated and discussed, which then leads to the importance of brand reputation. The methods and procedures that have been used and are currently being used to measure brand reputations are discussed in depth, as well as the reasoning for the method the study has chosen to use. This leads to the introduction of modern brand reputation analysis, which introduced the concept of consumer generated media (CGM).

Chapter Five concentrates on the in-depth analysis of the research methodology used for this study. The chapter begins with an introduction to the aims and objectives of the study along with the primary purpose of the research. The population and sampling is then defined and discussed. The research paradigm and method are then defined and examined in detail. The research instrument that was used in this study is described in terms of its functioning and operation. The data collection and analysis including brand architecture strategy and brand reputation analysis are reviewed and described. Finally, the ethical considerations of the study are presented, along with remarks on the full limitations of the study.

Chapter Six reports the results of the study. The chapter begins by introducing the descriptive statistics of the research, which highlight the details of the data collected. The reliability and validity of the study is then discussed. The research aims and objectives are then discussed individually. Graphical comparisons are introduced into the aims and objectives of the research to provide comparative illustrations. Lastly, the results from the regression analysis are considered and described.

Chapter Seven discusses the results and findings from the study in detail. The reputational impact on brand architecture strategies is then critically analysed based on the literature and results from the study. Toyota's response to reputational issues is then highlighted followed by the brand architecture implications. The implications for managers, marketers and brand owners are then addressed. Finally, recommendations for future research are reviewed.

# CHAPTER 2

## BRANDS AND BRANDING

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### 2.1 Introduction

Branding, as a discipline, has become an integral part of an organisation in recent times. This however has not always been the case. Branding has developed over the years and effective branding has gained a reputation for being able to improve a corporation's financial health, and express the corporation's values, goals and promises. Branding has become more than a descriptive communication tool to express the quality of an organisation. It has transformed into the personification of products and services in order for consumers to relate to the product and/or service more closely. Using the branding cycle to understand and communicate brands is vitally important, which must be constantly repeated by managers, marketers and brand owners. This is also true for corporate brands, as the core values of the firm need to be reflected by the corporate brand.

Brands equate enormous value in organisations, both tangible and intangible. Brands express the core values of the organisations, which consumers will either relate to or reject. Research has also proved that strongly branded companies yield more profit and tend to perform well in the stock market. Managers need to be aware that brands are no longer names, but that they hold value in organisations. This in itself has increased the importance and complexity of brands and branding. The fast paced information communication transmission, packed with the impact of globalisation, has caused brands and their values to be expressed across the world at a great speed. In order to extend this value or introduce new products, brand extension strategies are used. This has caused managers, marketers and brand owners to hold a complex set of brands in order to explore various markets.

## **2.2 Defining brands and branding**

Branding has been used since the earliest times when producers used brands or marks to distinguish their products (Hart, Murphy & Blackett, 1998:1). Branding has changed and developed considerably in the last century. Hankinson and Cowking (1993:1) define a brand as a product or service made distinctive by its positioning relative to the competition and by its personality. Two important features of brands are highlighted by this definition. Firstly, that it is made distinctive by its positioning, which is the point of reference with respect to its competition (Hankinson & Cowking, 1993:1). Secondly, that a brand has a personality consisting of a unique combination of functional attributes and symbolic values (Hankinson & Cowking, 1993:2). Collectively, these two features can be labelled as the brand proposition. The verb branding is defined by Bergstrom, Blumenthal and Crothers (2002:134) as “adding a higher level of emotional meaning to a product or service, thereby increasing its value to consumers and other stakeholders” (Bergstrom et al., 2002:134).

The brand proposition should, according to Hankinson and Cowking (1993:2), constitute the starting point in the process of branding for brand managers with the responsibility of developing and maintaining brands in the workplace. If brands are successful, they are usually the focus of a coherent blending of marketing resources. These brands become valuable assets (De Chernatony & McDonald, 1992:17). Chernatony and McDonald (1992:18) define a successful brand as an “identifiable product, service, person or place, augmented in such a way that the buyer or user perceives relevant unique added values which match their needs most closely. Furthermore its success results from being able to sustain these added values in the face of competition” (De Chernatony & McDonald, 1992:18). In essence, branding is the process marketers perform to achieve a successful brand by adding a higher level of meaning to the product or service. Managers, marketers and brand owners should therefore strive towards creating and maintaining successful brands within their organisation by continually adding value to them.

### ***2.2.1 Branding in the Automotive Industry***

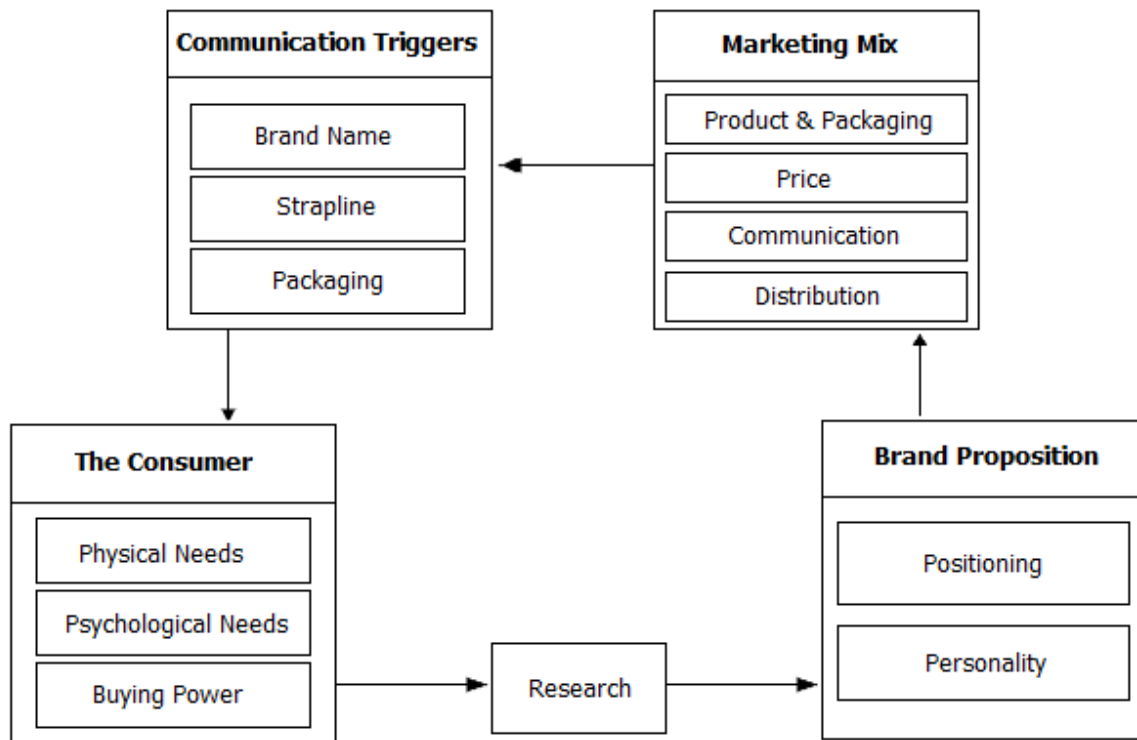
One of the most important aspects of branding in the automotive industry is building the customer-brand relationship. The more precise the consumers’ perception of that brand relationship is, the more it will lead to brand acceptance (Hankinson & Cowking, 1993:3).

According to Huber and Herrmann (2001:99), product quality in the automotive industry is the central determining factor. Customer satisfaction is also the key to brand loyalty in the automotive industry (Huber & Herrmann, 2001:101). The automotive dealerships play a large role in the continuation or termination of customer brand loyalty, particularly when customers place complaints at the dealerships (Huber & Herrmann, 2001:101). It is important for automotive organisations to educate the dealerships in the handling of complaints to ensure the continuation of brand loyalty of its customers. Toyota has built a considerable relationship with its consumers, expressing their values of reliability, safety and quality throughout the years of its operation (Liker, 2010:30). According to Liker (2010:30), in 2009 three of the top five most reliable brands were Toyota (Toyota, Scion and Lexus). The Prius, manufactured by Toyota, was the most satisfying brand, and Lexus the best in reliability for the 8<sup>th</sup> time in 20 years (Liker, 2010:30). It is observed, with brand acceptance and understanding come sales and adoption of the product, much as the Toyota consumers have done. For marketing and brand managers a more practical approach to understanding the process of branding would be the knowledge of the branding cycle.

### **2.3 The Branding Cycle**

The process of branding is a continuous cycle, which involves research, planning, implementation and control (Hankinson & Cowking, 1993:4). Branding starts with the consumer. Identifying what the consumer needs through research marks the start of the branding cycle (Hankinson & Cowking, 1993:5). Once an understanding of the consumer is understood, an implementation of brand proposition, which includes developing brand personality, needs to be performed in order to relate to the consumer. From this the brand's positioning with respect to its competition can be developed as seen below (Hankinson & Cowking, 1993:5).

**Figure 2.1 - The Branding Cycle**



Source: Hankinson and Cowking (1993:5)

Marketing and brand managers then use the marketing mix to communicate the brand proposition. This is done through the physical product, packaging, price, advertising, and distribution (Hankinson & Cowking, 1993:5). The brand name and packaging then act as communication triggers to the consumer (Hankinson & Cowking, 1993:5). This allows the consumer to connect the brand to the product.

This cycle should be repeated constantly and consistently by marketing and brand managers. Consumers use brands as a tool to recall information about products, while research from which the marketing mix can be adjusted should be continuous (De Chernatony & McDonald, 1992:49). Marketers should also be aware not to bombard consumers with information via the marketing mix which can cause confusion. Another reason why research should be continuously performed in the branding process is that once consumers have purchased the product, brand evaluation will take place by the consumer (De Chernatony & McDonald, 1992:69). Any negative evaluation outcomes could result in abandonment of the product and brand.

The above cycle is typical of a product branding cycle. There are also corporate brands to consider. Schultz and Hatch (2003:6) highlight the importance of corporate brands as well, as seen by the cycles of corporate branding shown below.

The corporate branding cycle shown below in Table 2.1 starts with the corporation's core values which will include the culture of the organisation (Schultz & Hatch, 2003:7). This will be important for Toyota, since it emphasised quality, reliability and validity to its consumers (Liker, 2010:29). Once these core values have been identified they need to be linked to the corporation's image (Schultz & Hatch, 2003:7), which is viewed by stakeholders (internal and external). The next step in the cycle would be to involve the stakeholders in the image of the corporate brand. This allows the stakeholders to view the core values and culture of the corporate brand (Schultz & Hatch, 2003:7). Finally, managers need to integrate the vision, culture, an image into the corporate brand. Managers need to assess the branding cycle continuously in order to grow the corporate and product brands not only in terms of image and values but in terms of financial value of the organisation as well.

**Table 2.1 Cycles of Corporate Branding**

	<b>Cycle 1: Stating</b>	<b>Cycle 2: Linking</b>	<b>Cycle 3: Involving</b>	<b>Cycle 4: Integrating</b>
<b>Key Process</b>	Stating the foundation for the corporate brand and linking it to corporate vision	Linking vision to culture and image	Involving stakeholders through culture and image	Integrating vision, culture and image
<b>Key Change Mode</b>	Decentralisation	Centralisation	Decentralisation	Centralisation
<b>Key Question</b>	What do we want to stand for?	How can we reorganise behind our corporate brand?	How can we involve internal and external stakeholders in the corporate brand?	How can we integrate vision, culture and image for the corporate brand?
<b>Key Concern</b>	Companywide audit of brand expression?  Revisiting brand heritage  Analysing brand image among key stakeholders	Create a coherent brand organisation and provide managerial foundation for implementation processes	Does the company have a shared cultural mindset?  Active inclusion of global shareholder perceptions	Integrate the brand across markets and business segments

Source: Schultz and Hatch (2003:6)

## 2.4 Brand Value

Managers must understand that brands hold important value in the organisation, and can prove to be strong assets. Raggio and Leone (2008:249) state that brand value must be seen from a firm's perspective, usually as the sale or replacement price of a brand. Crimmins (2000:16) defines brand value as "the ratio of its price to its competitors price when both products are equally desirable to consumers, minus one" (Crimmins, 2000:16). Crimmins (2000:16) suggests that managers need to ask how much value is added to their products by their brand name. This would be in terms of sales, and therefore would be a monetary value.

Toyota holds considerable brand value, and is currently valued at \$24 198 million, based on a recent study conducted by Millward and Brown Optimor (2011). Toyota lies 27<sup>th</sup> overall, and 1<sup>st</sup> in valued automobile brands, with an increase of 11% in brand value from 2010 to 2011 (see Table 2.2). Interestingly Lexus lies 10<sup>th</sup> in terms of valued automobile brands, which in itself belongs to the Toyota corporation (Millward and Brown Optimor, 2011:40). This gives us an indication of how strong Toyota's brand portfolio has become.

There is however a difference between a brand and a commodity, which Chernatony and McDonald (1992:9) note as the added value to a brand, which is intangible, but very real. Therefore, if the brand chosen is more expensive (price premium), and the product itself is equally desirable by consumers, then that product holds brand value (Crimmins, 2000:16). This will allow Toyota to sell its products at a premium price, since it holds brand value.

**Table 2.2**      *Top Valued Automobile Brands for 2011*

	<b>Top Brands</b>	<b>Brand Value \$M</b>	<b>Brand Contribution</b>	<b>Brand Momentum</b>	<b>Brand Value Change</b>
<b>1</b>	<b>Toyota</b>	24 198	4	7	11%
<b>2</b>	<b>BMW</b>	22 425	5	8	3%
<b>3</b>	<b>Mercedes</b>	15 344	5	8	12%
<b>4</b>	<b>Honda</b>	14 182	3	7	-1%
<b>5</b>	<b>Porsche</b>	12 413	5	6	3%
<b>6</b>	<b>Nissan</b>	10 072	2	8	17%
<b>7</b>	<b>VW</b>	7 408	3	8	6%
<b>8</b>	<b>Ford</b>	7 394	2	3	5%
<b>9</b>	<b>Audi</b>	3 808	4	8	5%
<b>10</b>	<b>Lexus</b>	3 648	4	5	N/A

Source: Millward and Brown Optimor (2011:40)

Creating brand value is the key to brand success, as shown by the Toyota brand. Raggio and Leone (2008:252) mention that behaviour loyalty and price premiums, known as market-level outcomes, combined with marketplace activities such as advertising and price promotions contribute the most to brand value. It is important to note that consumers also perceive a brand as embracing a set of values, in which they can reject alternatives that may not possess the same set of values (Hart et al., 1998:3). It would then be important for managers, marketers and brand owners to continue to use market-level outcomes and marketplace activities to communicate these values, continually creating brand value. Maintaining these values is equally important. Brand owners must ensure continuing the appeal to the consumers in a constantly changing society (Raggio & Leone, 2009:84; Hart et al., 1998:4). This increases the perceived value of products, influencing the consumers' choice, and allowing the organisation to demand a premium price (Mizik & Jacobson, 2009:140; Swait & Erdem, 2007:681; Ailawadi, Lehmann & Neslin, 2003:2).

Yeung and Ramasamy (2007:331) revealed that strongly branded companies are more profitable, which in this case is good news for Toyota, and that there is a significant relationship between brand equity (measure of brand value) and performance of the firm in the stock market. Brand value has a significant impact on share prices, mainly due to investors' future perceptions of the firm, which is usually linked to brand value (Yeung & Ramasamy, 2007:331). It is clear from the literature that brand value is an important part of branding theory and that managers need to consider it seriously when branding their organisation.

## **2.5 Brand Extensions**

In order to continue building brand value, organisations usually use brand extensions to launch new products (Yorkston, Nunes & Matta, 2010:80). Extending brands is one of the most frequently used branding strategies (Volckner & Sattler, 2006:18; Martinez & Chernatony, 2004:39), as it is deemed to be profitable since the parent brand already exists, allowing the new brands to be easily recognized (Volckner & Sattler, 2006:18). Another benefit of brand extensions is the cost factor. With an established brand or brands, it will be less expensive than introducing an entirely new brand (Yorkston et al., 2010:80). Upon observation of Toyota, the sub-brands (Corolla, Yaris, Verso, Prius, Avanza and Auris), are all brand extensions which have developed over Toyota's history. Toyota has done this to

launch new products at a minimal cost. When extending brands, brand acceptance by consumers is critical for brand success, continually adding back to the parent brand (Dwivedi, Merrilees & Sweeney, 2009:339). Toyota has successfully achieved this, mainly due to the emphasis on quality, reliability and safety (Liker, 2010:29; Ritson, 2010:18).

It is important for organisations to understand that a fit between the parent brand and the extension is key to the success of the extension (Volekner & Sattler, 2006:30; Dwivedi et al., 2009:339; Martinez & Chernatony, 2004:47). If we look at Toyota and Lexus, Lexus could have been a sub-brand of Toyota. The characteristics of the Lexus product are however different from those of Toyota's sub-brands. Lexus focuses on a niche market (luxury car market), while the Toyota sub-brands focus on mass production. Therefore Lexus separated from the Toyota brand (Datamonitor, 2009:5).

There are of course risks involved when extending brands (Kumar, 2005:192). Managers, marketers and brand owners need to make sure that their parent brand is strong enough to extend (Dwivedi et al., 2009:339). Toyota, in the view of the present researcher, has built up a strong parent brand, from which it extended into sub-brands. Toyota has created brand value, rather than diluting the brands which is very possible when extending brands.

An important factor organisations should take into account is that extending brands can impact the brand image of the organisation (Martinez & Chernatony, 2004:47). Ritson (2010:18) argues that Toyota's sub-brands, in essence its brand extensions, have caused problems for the parent brand (Toyota). This is due to the fact that should anything negative happen to Toyota's sub-brands, it will lead back to Toyota. Lexus, on the other hand, being separated from Toyota should be fine. This research will then seek to explore these relationships.

The brand role is critical to understanding brand extensions. Some brands have an increasingly important role to play than others. This will now be discussed in detail.

## **2.6 Driver Role of Brands**

Each brand has a certain role it has to play in the overall strategy the organisation implements. According to Aaker (2004:45), the driver role is the degree to which the brand drives the purchase decision and defines the use experience. Aaker (2004:45) notes that the best way to identify the brand with the primary driver role is to ask the consumer which

brand he or she had bought. The role of the brand guides consumers in the purchasing decision, particularly if the purchase decision is a tough one (Wilkes, 2010:1). The consumer use experience or driver role of the brand is key to brand extension success, which can be done by building or acquiring strong brands (Volckner & Sattler, 2006:30).

When having a large portfolio, depending on the strategy, the brand driver role can vary quite extensively (Aaker, 2004:45). Toyota, for example, would be the primary driver for the Toyota Corolla, as people will mention they have a “Toyota” rather than a “Corolla” (Aaker, 2004:45). Some of Toyota’s sub-brands seem to have a larger driver role than others, the Prius for example. Assigning different driver roles to different sub-brands is a strategy Toyota has employed, particularly with the Prius (see Appendix A). This may be to build up the brand extension, allowing it the best opportunity for success. Since this research will also be looking at brand reputation, it will investigate how the driver role of the brand impacts its vulnerability in terms of reputation, and how this will affect the brand architecture decision.

Due to changing market dynamics from which extensions are needed, and the brand portfolio of organisations having become increasingly complex (Aaker & Joachimsthaler, 2000:8), organisations have had to build and monitor their brand architecture, which is usually made up of brand extensions.

## **2.7 The Increasing Complexity of Branding**

Currently brand managers face a different situation than they did in the past. They face market fragmentation, channel dynamics, and global realities (Aaker & Joachimsthaler, 2000:8; Muzellec & Lambkin, 2008:283). One of the largest changes that has impacted branding is the removal of global barriers, as consumers have become more accustomed to the global village concept (Agres & Dubitsky, 1996:21). Due to the fast paced information communication transmission of news, science and politics, brands have been able to be transmitted with ease (Ind, 1997:9; Agres & Dubitsky, 1996:22). This has caused branding to become complex, as consumers are bombarded with information constantly (Davis, 2005:198). This has created an increasingly skeptical and better informed consumer, which has made the work for managers, marketers and brand owners tough in their attempt to continually build brand value (Davis, 2005:198).

Branding today has been concerned with providing and maintaining a mix of values, both tangible and intangible, in order to distinguish one brand from other brands (Hart et al., 1998:2). Adding to this idea and the overall complexity of branding, is that brands possess brand personality, or a set of humanlike traits that consumers can relate to (Aaker, 1997:347). Brand managers will have to respond to this, making sure that the brand's personality reflects the corporate values of the firm.

Branding complexity has also been influenced by different brand categories. For example, corporate branding has become more complex than traditional brand marketing (Ind, 1997:9). It is extremely important to develop a corporate brand behind the product name, as it represents a set of values that represent the organisation (Ind, 1997:9). In this case brand reputation becomes important, as will be referred to later on.

To cope with the pressures and increasing complexities, brand managers have to manage complex brand structures and extensions (Aaker & Joachimsthaler, 2000:8). This has brought the concept of brand architecture to the attention of managers, marketers and brand owners. With a coherent brand architecture, clarity, synergy and leverage will be gained by the organisation in terms of its branding (Aaker & Joachimsthaler, 2000:8). Brand architecture can therefore be used by developing relationships between brands (Sanchez & Rajagopal, 2004:233), alleviating complexity and confusion.

## **2.7 Summary**

The fast paced information communication transmission and the impact of globalisation have caused brands to be communicated all over the world at a high rate. This has caused the process of branding to become complex, as managers, marketers and brand owners have had to constantly re-evaluate their portfolio of brands based on the branding cycle. They have also realised that brands hold enormous value to the organisation, both tangible and intangible. This has led to brand extension strategies in order to extend brand value and introduce new product offerings. This has caused the brand portfolio of the organisation to become increasingly complex.

Due to this complexity, brand managers now have to develop a clear brand architecture using strategies that best express the core values of the organisation and build the best relationship between the brands in the portfolio. This will lead to brand clarity and synergy, removing confusion between various brands. The following chapter will explore brand architecture as a concept, and provide clarity on the importance of brand architecture in an organisation.

# CHAPTER 3

## BRAND ARCHITECTURE

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### 3.1 Introduction

The increasing complexity of the brand portfolio has required organisations to consider ways to manage their brands more effectively. The complexity arises due to extending brands while introducing new products, which extends the brand architecture of an organisation over time. Having an organised brand architecture allows the consumer to identify with the brand, removing brand confusion. There are various categories of brand architecture that allow managers, marketers and brand owners to place their brands in order for them to develop strategies.

The Brand Relationship Spectrum defines a spectrum of strategies for the brand architecture of the organisation for managers to employ, depending on the product nature and overall marketing strategy. In this chapter, Toyota's brand architecture is summarised and explored. Finally, using the Brand Relationship Spectrum, insight is gained as to which strategies Toyota uses with regard to its brand architecture.

### **3.2 Defining Brand Architecture**

Branding and brands have become increasingly complex. Managers, marketers and brand owners have had to create and manage a complex structure of brands, which is now defined as the brand architecture of the organisation (Aaker & Joachimsthaler, 2000:8; Schultz, 2002:8). The brand architecture of the organisation is in fact a measure of past management decisions, as well as the competitive forces it faces, often regarded as the brand baggage of the organisation (Sanchez & Rajagopal, 2004:233). Brand architecture is also a reflection of the market in which the organisation operates, displaying local, national and global brands (Sanchez & Rajagopal, 2004:233). Aaker and Joachimsthaler (2000:8) define the brand architecture of an organisation as “an organising structure of the brand portfolio that specifies brand roles and the nature of the relationships between brands” (Aaker & Joachimsthaler, 2000:8).

In recent years industry restructuring and changing market dynamics have forced organisations to adopt a new brand architecture specifically related to their situation (Muzellec & Lambkin, 2008:283). The brand architecture has helped in the revival and retention of brands, especially brands with low market impact (Douglas & Craig, 2002:1; Sanchez & Rajagopal, 2004:233). Managers, marketers and brand owners need to select an appropriate brand architecture for their organisation given their current situation. Toyota has selected to adopt a sub-brand focused brand architecture, aligning its products with its corporate brand (Ritson, 2010:18).

Brand architecture represents a structural link between the organisation and the consumer (Strebinger & Treiblmaier, 2006:84). This is important for Toyota since the organisation has always adopted a quality and reliability approach for their consumers (Liker, 2010:29). The most important factor when designing and re-evaluating the brand architecture of the organisation is taking into consideration the consumer brand experience, as consumers determine the brand’s success (Petromilli & Morrison, 2002:1).

Ritson (2010:18) has argued that Toyota’s brand architecture has become its biggest strategic problem by focusing on the sub-brand approach. This is because if anything had to happen to Toyota’s brand, it will affect all its sub-brands (Ritson, 2010:18). During this research, an investigation will be performed, supported by this argument. When designing or re-

evaluating brand architecture, strategy has to be involved. In order to understand brand architecture strategy, categories of brand architecture need to be introduced and understood.

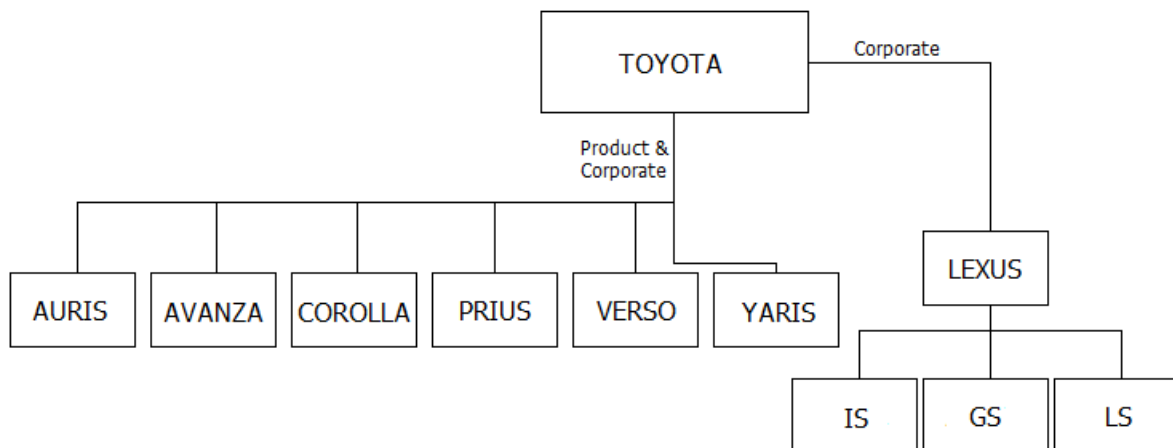
### **3.3 Categories of Brand Architecture**

In order to understand brand architecture strategy, and particularly Toyota's brand architecture strategies, it is important for the categories of brand architecture to be highlighted. At the top of the brand architecture of an organisation usually lies the corporate brand (Aaker, 1996:242; Hart et al., 1998:65; Muzellec & Lambkin, 2008:284). The corporate brand is defined as "the corporation behind the product or service offering" (Aaker, 1996:242). In this case, Toyota South Africa (Pty) Ltd would be the corporate brand. Following the corporate brand usually lies the product-line brands (Aaker, 1996:242). Product-line brands are usually associated with the organisation's specific products (Aaker, 1996:243; Hart et al., 1998:164). Toyota and Lexus would then be product-line brands in this case. It is important to note that Toyota is both a product and a corporate brand, which is a strategy Toyota has used in its model.

Under the product-line brands, sub-brands are usually found. These brands refine and distinguish between different product offerings (Aaker, 1996:243). Corolla, Auris, Avanza, Prius, Verso and Camry would all be sub-brands of Toyota. IS, GS and LS would all be sub-brands of Lexus. The sub-brand approach is a dominant feature in Toyota's overall model.

Finally, the branded feature falls under the sub-brand (Aaker, 1996:242). For example, if Toyota would want to differentiate its Corollas based on price and features, it would add a branded feature to the sub-brand in order to differentiate it from the line. Shown below is an indication of Toyota's overall brand architecture.

**Figure 3.1** Toyota South Africa (Pty) Ltd's Brand Architecture



Source: Adapted from Toyota South Africa (2011) website

The brand architecture of Toyota South Africa, indicates important strategies that the firm has applied to its overall model. Notice that the Toyota brand is a corporate and a product brand, which will have certain advantages and disadvantages. This was confirmed by David Aaker via an email conversation (see Appendix A). This is a clear brand architecture strategy that Toyota has included in its model. The Lexus brand however, is solely a product brand, connected corporately to the Toyota corporate brand, but separated from the Toyota product brand and sub-brands. These are all brand architecture strategies that Toyota has designed, and implemented. It is important to understand these strategies and reveal which strategies Toyota implements. More importantly, do these strategies fit in with the current model Toyota applies, and finally how do these strategies affect Toyota's brand portfolio in terms of brand reputation?

### **3.4 Brand Architecture Strategies**

Due to changing market dynamics, globalisation and increasing competition (Aaker & Joachimsthaler, 2000:8; Muzellec & Lambkin, 2008:283), organisations have had to implement brand architecture strategies in order to cope with the complexity of their brand portfolio (Aaker & Joachimsthaler, 2000:8). The type of brand architecture determines (using the relationship between product and corporate brand) the importance of corporate culture and values, giving the organisation competitive advantage (Muzellec & Lambkin, 2008:284).

In most organisations brand architecture has developed as a result of other strategies, such as an organisation's structure, expansion strategies (mergers and acquisitions), and strategic

alliances (Sanchez & Rajagopal, 2004:234). Managers, marketers and brand owners should continually develop their brand architecture based on their current situation. Aaker and Joachimsthaler (2000:8), have developed a tool called the Brand Relationship Spectrum (BRS), in order to help brand strategists to develop the brand architecture of the organisation.

In this research, an analysis of Toyota South Africa's brand architecture will be performed using this tool. This research will evaluate the tool itself in order to see which of the strategies suggested by BRS would be more vulnerable in terms of brand reputation. The BRS is related to the driver role played by the brands. The driver role is the degree to which the brand drives the purchase decision and user experience (Aaker & Joachimsthaler, 2000:10). There are four primary strategies and nine sub-strategies.

### **3.4.1 House of brands**

“A house of brands strategy involves an independent set of stand- alone brands, each maximising the impact on the market” (Aaker & Joachimsthaler, 2000:10). The *House of Brands* strategy allows the firm to position its brands based on functional benefits and to dominate niche segments. It directly connects the niche customer to a targeted value proposition (Aaker & Joachimsthaler, 2000:11). The Lexus brand falls under this strategy due to the nature of the product. The Lexus brand focuses its attention on a niche market, providing and delivering value to the consumer. Additional benefits of this strategy according to Aaker and Joachimsthaler (2000:11) include the following:

- Avoiding brand association that would be incompatible with an offering
- Signalling breakthrough advantages of new offerings
- Owning a new product class association by using a powerful name that reflects a key benefit (which Toyota have done with the Lexus brand)
- Avoiding or minimising channel conflict

A disadvantage to using this strategy is the decline in brand leverage owing to the fact that individual brands tend to have a narrow range. This is because the brands are not connected to each other; as a result, each brand has to support itself in its own right (Aaker & Joachimsthaler, 2000:11). Under this strategy, the *Shadow Endorser* sub-strategy also exists, which is the strategy Lexus specifically follows. This is used when a brand (Toyota) is not connected visibly to the endorsed brand (Lexus), but many customers know about the link. The shadow endorser does not impact much in terms of the image, but provides credibility for

the organisation (Aaker & Joachimsthaler, 2000:11). Toyota therefore provides credibility for the Lexus brand to develop. This is an important point, as the question is, what would happen to the Lexus brand should the shadow-endorser (Toyota) lose its credibility? This research will explore this issue.

### **3.4.2 *Endorsed brands***

Endorsed brands are still independent but are endorsed by another brand. The endorsement provides credibility and usually plays a minor driver role (Aaker & Joachimsthaler, 2000:12). Notably emphasised by Aaker and Joachimsthaler (2000:12) is that in order to make this strategy work, one requires a clear distinction between the corporate brand and the product brand. For example, Toyota has separated its brand (corporate brand) from Lexus (product brand). This is shown in Figure 3.1. Under endorsed brands we find the *Token Endorser* strategy which according to Aaker and Joachimsthaler (2000:12) is usually applied when a master brand is involved in many product related markets, but is less prominent than the endorsed brand. This is not the case with Toyota and Lexus, as the Toyota brand is not involved in endorsing Lexus (shadow-endorser strategy). A common mistake in implementing this strategy occurs when the endorser is not well known. The impact of the *Token Endorsement* is then exaggerated in terms of the endorser, whereas the endorsed brand has established itself without the need of the endorser (Aaker & Joachimsthaler, 2000:12). This however does not apply to Toyota, since it is an established brand already. A *Linked Name* strategy is also a variant of the *Endorsed Brand* strategy. This is used when common elements create a family of brands, in which the names are linked to one another.

### **3.4.3 *Sub-brands***

“Sub-brands are brands connected to a master or parent brand and augment or modify the associations of that master brand” (Aaker & Joachimsthaler, 2000:14). The master brand here is the prominent brand which is stretched out by sub-brands. The master brand plays the primary driver role leading the sub-brands. According to Ritson (2010:18), this is Toyota’s main brand architecture strategy. *The Sub-brand as a Co-Driver* is a sub-strategy applied when the master brand and the sub-brands have major driver roles, which would be very much the case for Toyota and its sub-brands (Corolla, Auris, Verso, Prius, Avanza and Yaris). The disadvantage regarding this strategy is that if the brands do not represent each other equally (possibly in terms of quality or service) they cause damage to each other, as well as the master brand (Aaker & Joachimsthaler, 2000:15). Ritson (2010:18) argues that the

sub-brand approach has caused a major problem for Toyota, and may be its weakness in terms of branding. This is mainly due to the assumption that if anything should happen to the sub-brands and/or the master brand, the negative impact would affect all the connected brands in the portfolio (Ritson, 2010:18).

#### **3.4.4 *A branded house***

In this strategy the master brand moves from primary to dominant driver, and the sub-brand moves from modest driver to being a descriptor with little or no driver role (Aaker & Joachimsthaler, 2000:15). This maximises identity for the customer in terms of the value the organisation has to offer. This strategy provides leverage for the master brand and enhances visibility of current and new sub-brands (Aaker & Joachimsthaler, 2000:15). The Toyota brand is more primary than dominant, in the sense that its sub-brands play an above modest driver role.

Upon analysis of Toyota's brand architecture, it can be seen that it does possess strategies on opposing sides of the BRS. In an email discussion with the co-author of the BRS, Erich Joachimsthaler, he mentioned the important fact that in order to properly use the BRS, one needs to look at the relationship between each and every brand in isolation. His analysis of Toyota was that if we look at Toyota and Lexus alone, Lexus would form part of a house of brand strategy (see Appendix A). This is since Toyota would act as a shadow endorser. Observation of Toyota and its sub-brands (Corolla, Prius, Avanza, Yaris, Auris and Verso), would be, according to Erich, a branded house strategy. He does mention the important fact that some sub-brands take on a higher driver role than others, for example Prius takes on a higher driver role than some of the other sub-brands.

Finally, upon asking him the question whether some BRS strategies would be more vulnerable than others, his response was "Yes, definitely. It is precisely for that reason that we developed the brand relationship spectrum, because some strategies insulate brands more from reputational damage than others" (see Appendix A). This research will look at exactly this and seek to analyse which of the BRS strategies would be more vulnerable in terms of brand reputation, the house of brands strategy (Toyota and Lexus) or the branded house strategy (Toyota and its sub-brands, Corolla, Auris, Avanza, Prius, Verso and Yaris). In order to perform this, the attention will move to analysing brand reputation and connecting it to brand architecture strategies, thus, connecting the two ideologies.

### **3.5 Summary**

This chapter seeks to define and explore brand architecture as a concept. It also serves to gain insight into the brand architecture strategies that managers, marketers and brand owners might employ. The BRS shows us the spectrum of strategies that might be used. At the top of the spectrum, the house of brands strategy is much like the Toyota and Lexus brand relationship. At the bottom of the spectrum, the sub-brand and branded house strategies are the main strategies Toyota uses with its various sub-brands. In conversation with the author, it was clear that some of the strategies within the brand relationship spectrum insulate brands more than others in terms of brand image and brand reputation.

The following chapter will now gain further insight into brand reputation as a concept, as well as its impact on brand architecture strategies.

# CHAPTER 4

## BRAND REPUTATION

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### 4.1 Introduction

Brand architecture strategy has become an important consideration for managers. Using the brand relationship spectrum as a tool helps managers in deciding which strategies to use when designing their brand architecture. The BRS also clarifies the roles each brand plays when using an extension strategy. In this chapter, brand reputation will be explored. The chapter will explore why brand reputation is important to consider, as well as ways in which managers, marketers and brand owners can measure brand reputation. Modern brand reputation analysis then gives insight into how brand reputation can be linked to brand architecture strategies.

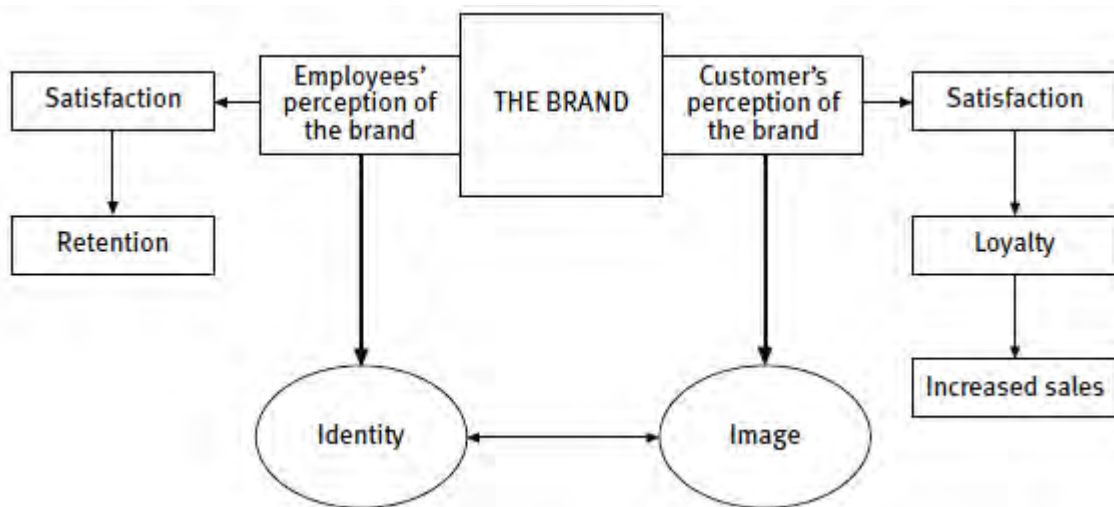
## 4.2 Defining Brand Reputation

Strategy literature has argued that from a resource based view, sustainable competitive advantage is created primarily from intangible capabilities, notably innovation, organisational architecture, strategic assets, and *reputation* (Kay, 1995:12; Omar et al., 2009:177). Reputation has started to play a central role in certain types of consumer buying decisions, especially in products that cannot be inspected in advance or only consumed once (Omar et al., 2009:177). According to Kay (1995:12), and Omar et al. (2009:177), some examples include pension plans, funeral services, and consumer durables such as washing machines and *cars*, which makes brand reputation of particular importance to Toyota.

Herbig and Milewicz (1995:5) define reputation as “the estimation of consistency over time of an attribute of an entity” (Herbig & Milewicz, 1995:5). This estimation is based on the entity’s willingness and ability to perform an activity *repeatedly* in a similar fashion. An attribute is some specific part of the entity – price, quality and marketing skills (Herbig & Milewicz, 1995:5). The Toyota brand has always expressed quality, reliability and safety as its attributes to its consumers which have been questioned of late due to numerous vehicle recalls (Liker, 2010:32). In order to fully grasp the concept of brand reputation it is important to understand its components, brand image and brand identity.

Brand image is seen as the external view by stakeholders (usually consumers), while brand identity is the brand seen from the internal perspective (employees) (Davies, Chun, da Silva & Roper, 2001:114; Schultz & Werner, 2005:2). Early literature has often combined these two concepts (Davies et al., 2001:114), however for the purposes of this research it is important to separate them. From the diagram below, it is seen that the perception of the customer and employee impact on their satisfaction. This satisfaction could lead to loyalty or retention. In Toyota’s case, after the reputational issues it faced in 2009/2010, that firm would be more concerned with consumer loyalty and sales. For this reason, this research will focus largely on the brand image of Toyota rather than its identity.

**Figure 4.1** *Interaction between the internal and the external views*



Source: Schultz and Werner (2005:3)

### 4.3 Importance of Brand Reputation

There is no doubt that in recent times corporate reputation has become an important focal point for corporations. They have realised that poor reputation management can lead to severe financial loss, while effective reputation management can lead to corporate financial health (Hannington, 2004:1). In today's world, competition for reputation has become a significant driving force in order to create competitive advantage (Hannington, 2004:1). Brand names can often be repositories for an organisation's reputation (Herbig & Milewicz, 1995:8) which make them important. The new revelation is that an organisation's reputation has the same risk and returns as its financial situation which is why brands are being taken seriously now more than ever (Laforet & Saunders, 2005:314). Reputation is also an indicator of organisational success, and this is because successful organisations are usually well perceived (Kuenzel & Halliday, 2010:169).

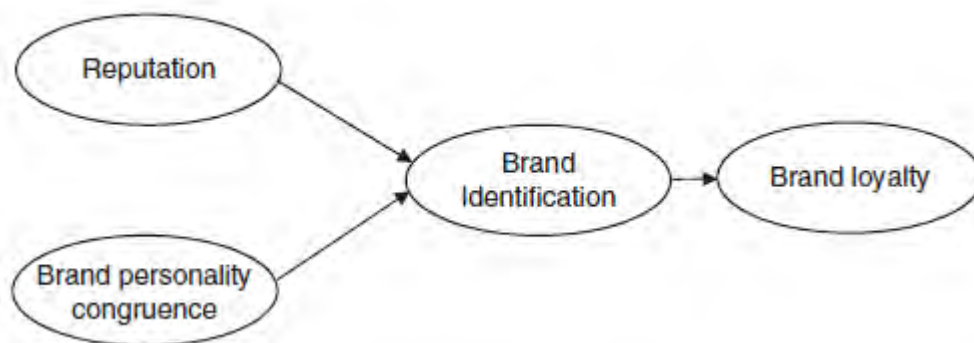
Academics agree that corporate reputation is an important asset for the firm, as it generates goodwill to the firm and must be constantly maintained, as it is very fragile and extremely hard to repair (Milewicz & Herbig, 1994:46; Howard, 1998; Omar et al., 2009:178). The perception of the organisation can also have a large impact on its performance (Page & Fearn, 2005:305). According to Howard (1998), an exceptional reputation will distinguish the firm from its competitors, which will lead to a customer assuming that the products have a higher

quality, enabling the firm to command a premium price (Greyser, 1995:5). This should, according to Milgrom and Roberts (1986:796):

- Attract investors and new contracts
- Enhance the organisation's access to capital markets
- Create a sustainable competitive advantage over rival firms

From a consumer's perspective, if they perceive the corporation to be successful, they will associate themselves with the brand of that organisation in terms of pride in the brand. It has been argued, that consumers do this to generate positive identification (Kuenzel & Halliday, 2010:169), as well-regarded brands should increase the consumers' self-esteem (Kuenzel & Halliday, 2010:169). Another factor that contributes to achieving brand identification is brand personality. Brand personality is defined as human characteristics associated with a brand. This could be self-image, status, and lifestyle (Kuenzel & Halliday, 2010:169). Having a certain lifestyle, leads to believing in that particular brand, and therefore identifying with it. Hannington (2004:16) mentions that reputation is built from firsthand experience with the product or service as well as the referred experience from others. This experience will be influenced by each individual's personality. Therefore both brand reputation and brand personality lead to brand identification as show below.

**Figure 4.2 Brand Identification Model**



Source: Kuenzel and Halliday (2010:170)

From the model we can see that brand identification leads to brand loyalty. Brand loyalty ultimately should lead to repeat sales which is good for the financial health of the organisation. This would be Toyota's key concern following its reputational occurrences. It is recommended that companies develop a strong relationship with their customers via brand identification, as it will lead to brand loyalty and ultimately sales growth (Kuenzel &

Halliday, 2010:170). If we look at reputation, it should work both ways. In other words, if the organisation experiences negative reputation, consumers will no longer want to identify themselves with the brand as it will negatively affect their self-esteem. Brand loyalty will then be abandoned which should then impact negatively on organisational sales (Schultz & Werner, 2005:3). It is therefore important for managers, marketers and brand owners to monitor the reputation of their brands. In order for them to do this, insight is needed on how to measure brand reputation.

#### **4.4 Measuring Brand Reputation**

Measuring reputation is difficult due to its subjectivity. Academicians have however developed methods that provide the means to measure reputation. Most of these methods accept that reputation is important, and then based on a weighted average of various perceptions an overall score is produced (Page & Fearn, 2005:306).

Currently most methods use an index to measure reputation. For instance, the Fortune magazine's Annual Survey of America's Most Admired Corporation's index is a common index that is used (Kuenzel & Halliday, 2010:171). The index has however been criticised for its lack of theoretical foundation, as well as the fact that it surveys only executives and business analysts (Davies et al., 2001:115). A number of scales have also been used such as Mael and Ashforth's (1992) brand identification scale which links brand loyalty to reputation and identity. Van Riel, Stroecker and Maathuis (1998) used a repertory grid and laddering to measure image. The criticism for these past measurements was the fact that they failed to measure both image and identity (Davies et al., 2001:114). Thus, Aaker's (1997) brand personality scale was introduced, which defined personality traits to brands. By assigning personification metaphors to brands its reputation could be understood more clearly (Aaker, 1997:347; Davies et al., 2001:114). This measurement will however not be used in this research due to the criticism of its extensive questionnaire (42 traits) (Kuenzel & Halliday, 2010:171). The study has also been criticised for the cultural context in which it lies, as it has never been fully replicated in or out of the United States (Kuenzel & Halliday, 2010:171).

The key to measuring reputation in this research is communication. An important insight by Omar et al. (2009:180) is that communication plays a large role in understanding a corporation's reputation. Since brands are communicated constantly by the marketing mix,

perceptions of these brands will be communicated as well. The communication opinions from others should shed light on a corporation's reputation (Omar et al., 2009:180).

Today communication of the news and opinion is readily available. Managers, marketers and brand owners need to consider this when looking at brand reputation. Past reputational measures mostly consisted of a limited number of respondents via a questionnaire. Since the emergence of the web, numerous opinions are now available (Spangler et al., 2009:243). Traditional media and consumer generated media have opened the information door into the true perceptions of stakeholders (Spangler et al., 2009:243). The key is, however, filtering this information to make sense of it. This is where modern brand reputation analysis is key.

#### **4.5 Modern Brand Reputation Analysis**

Since the emergence of the web, information has been able to be communicated freely and at a fast speed (Spangler et al., 2009:243). New forms of media have been introduced, such as blogs, forums, message boards and websites (Spangler et al., 2009:243). In 2009/2010 Toyota experienced a blow to its reputation by announcing three major recalls totalling eight million vehicles globally (Mittal, Sambandam & Dholakia, 2010:9), which was noted as a *product-harm crisis* where a product malfunction has potentially harmed the stakeholders' perceptions of the organisation's brands (Mittal et al., 2010:9). Traditional media, along with consumer generated media (CGM) had much to report on the various incidents. The key to this research will be utilising these forms of communication to shed light on how the various brands of Toyota were impacted in terms of reputation.

Consumer generated media differentiates itself from traditional media as it "describes a variety of new and emerging sources of online information that are created, initiated, circulated, and used by consumers with an intent on educating each other about products, brands, services, personalities and issues" (Blackshaw & Nazzaro, 2006:2). Two important words in this definition make CGM important to the study. One, that it is *circulated* which could involve a number of stakeholders as seen in the Table below, and two, that it involves perceptions of *brands*.

**Table 4.1**      *Who Else Listens to CGM?*

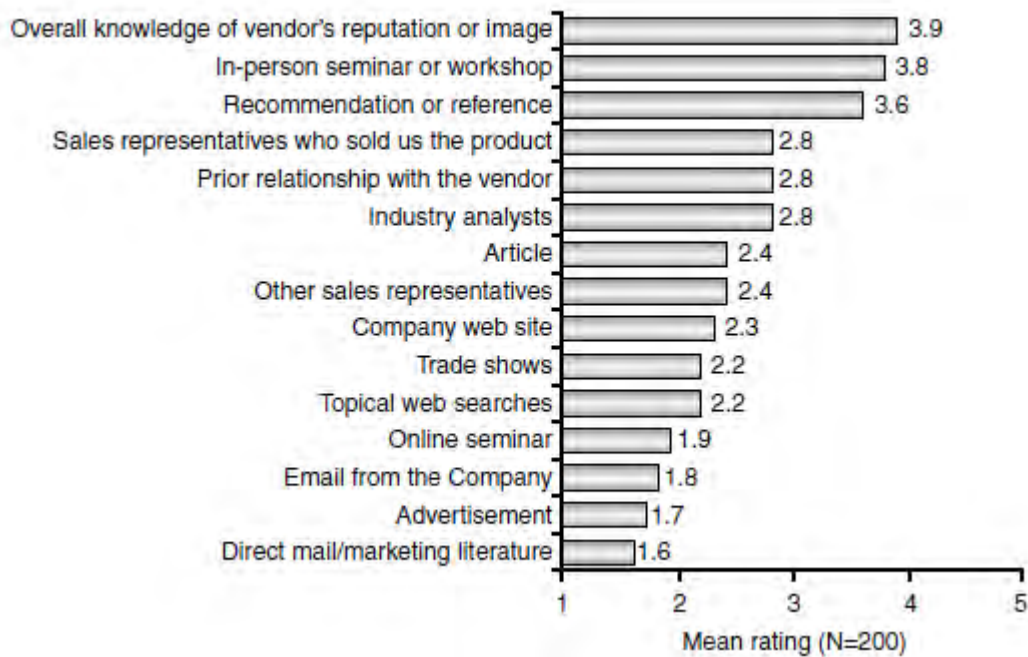
<b>Who</b>	<b>Why</b>
<b>Consumers</b>	Informs purchase, loyalty
<b>Reporters</b>	Accelerates research, fact finding
<b>Analysts</b>	Offers scoop/insight the company won't volunteer
<b>Competitors</b>	Exploits actual users of competitors' products
<b>Regulators</b>	Vocal consumers provide leading indicators into future problems
<b>Activists</b>	Helps reinforce a key position

Source: Blackshaw & Nazzaro (2006:7)

As regards CGM or word-of-mouth, it has been argued by academics that brand reputation is signaled by *existing* CGM (Amblee & Bui, 2008:11). Using existing word-of-mouth, future word-of-mouth can be forecast (Amblee & Bui, 2008:11), which could lead to predicting future brand reputation.

Traditional media need not be forgotten as well. It has been argued that mass media can influence stakeholders' perceptions of a corporation's reputation (Einwiller et al., 2010:300) and is therefore important to consider when assessing reputation (Schultz & Werner, 2005:2). "Stakeholders are more dependent on the news media to learn about those attributes that are important to them and on which they feel the need to gain information" (Einwiller et al. 2010:300). Toyota's important attributes are, for example, its safety, quality and reliability. These being important attributes for stakeholders, they would use the news media to gain information should any of these attributes fall under scrutiny. An important study which researched how consumers choose a product, found that reputation was the highest ranked influencer (Hannington, 2004:4), as shown below in Figure 4.3.

**Figure 4.3 How Customers Choose**



Source: Hannington (2004:4)

CGM and news media are important in measuring and analysing brand reputation. The problem lies in how to filter the masses of information. (Spangler et al., 2009) have devised a way to measure brand reputation by using a progressive filtering approach. By using this approach sense can be made of the mass media, allowing managers, marketers and brand owners to make decisions based on accurate modern brand reputation analysis. This will be applied to this research, and will be described in the research methodology.

## **4.6 Summary**

This chapter has served to explore brand reputation as a concept and discipline. Brand reputation has been proven to be of high importance to organisations, as it serves as a valuable asset to the organisation. There are many ways to measure brand reputation, mostly using older methods such as surveys and interviews. Modern brand reputation analysis uses both traditional and consumer generated media (CGM) to effectively analyse brand reputation. Using modern reputation analysis, brand architecture strategies can now be analysed in terms of brand reputation, much more effectively than before. The following chapter will now look at the research methodology on how to analyse brand architecture, in terms of brand reputation.

# CHAPTER 5

## RESEARCH METHODOLOGY

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### 5.1 Introduction

This chapter firstly addresses the importance of the study, along with the aims and objectives. The methodology of research makes sure that each aim and objective is addressed to allow for the best possible outcome of the study.

The population of the study is then outlined, which comprises all South African media, both traditional and consumer generated, that relate to Toyota's negative reputational issues. The sample is also defined, which consists of selected prominent South African news websites. Secondly, the research method and the research instrument used in the study are discussed and analysed, providing the reasoning for both.

The data collection process consisting of a flow chart is then analysed and discussed. Included in this, the statistical methods used in the study and the reasoning behind the statistical methods are highlighted. Lastly, the ethical considerations and limitations of the study are discussed.

## 5.2 Aims and Objectives

The importance of this study is to identify, using the brand relationship spectrum, which brand architecture strategies are more vulnerable in terms of brand reputation. This will help managers, marketers and brand owners make informed decisions regarding the brand architecture of the organisation. The focus of this study is on Toyota South Africa (Pty) Ltd since their brand architecture strategies span across the brand relationship spectrum, allowing the researcher to study various BRS strategies. The other reason why Toyota was chosen, was that during 2009/2010 the company received numerous negative press reports regarding the quality and safety of its vehicles (Liker, 2010:29), which could have caused brand reputation damage, allowing the researcher enough data to perform an analysis. In order to analyse Toyota's brand architecture strategies with regard to brand reputation, principles outlined by Corporate Brand and Reputation Analysis (COBRA) have been applied to a webpage keyword counting program (WebWords). COBRA uses consumer generated media (CGM), to analyse a brand's reputation using a progressive filtering approach (Spangler et al., 2009:243).

The primary purpose of this research is to investigate the impact brand reputation has on brand architecture strategies. In order to achieve this primary purpose, the following research objectives are stated:

- Assess and plot the brand architecture of Toyota South Africa (Pty) Ltd;
- Assess the sales of Toyota South Africa (Pty) Ltd during the 2009/2010 calendar year;
- Assess and plot the reputation of Toyota South Africa (Pty) Ltd's brands using a webpage keyword counting software application (WebWords) based on the principles outlined by COBRA, during the 2009/2010 calendar years;
- Compare and contrast the results from WebWords with the change in sales over the period of the study;
- Align the results from WebWords to brand architecture strategies; and
- Based on the results, provide managers with recommendations as to which brand architecture strategies are more vulnerable in terms of reputation.

### **5.3 Population and Sampling**

In this research, indicating the relevant population and sample is critical in giving insight into the focus and limitations the researcher has solidified in the study. A population is “any precisely defined set of people or collection of items which is under consideration” (Collis & Hussey, 2009:56). In researching a population, researchers are almost never able to study an entire population due to large population sizes (Babbie & Mouton, 2001:100). The population of this research includes all South African traditional and consumer generated media webpages. The South African media were chosen due to the fact that most South Africans will be reading the local news, which is important for the research in order to compare the results with the sales of Toyota South Africa (Pty) Ltd. Due to the sure volume of these webpages, sampling of the webpages is included.

A sample is “a subset of a population and should represent the main interest of the study” (Collis & Hussey, 2009:56). The sample selected for this research was based on the readership of the website. The sample selected is made up of nine of South Africa’s prominent news websites, as indicated below in Table 5.1. These webpages are also ranked the highest in terms of search engine rank with regard to Toyota reputational issues. In terms of CGM, there is a limited amount of CGM from the South African population online, which is why comments below traditional news webpages were also included in the sample shown in Table 5.2. South African forum articles and blog posts relating to Toyota’s reputational issues are also included in the sample.

**Table 5.1 Prominent South African Traditional News Websites with regard to Toyota's Negative Reputational Issues**

<b>Website Name</b>	<b>Address</b>
Business Day	<a href="http://www.businessday.co.za/">http://www.businessday.co.za/</a>
Times Live	<a href="http://www.timeslive.co.za/">http://www.timeslive.co.za/</a>
IOL	<a href="http://www.iol.co.za/">http://www.iol.co.za/</a>
Fin24	<a href="http://www.fin24.com/">http://www.fin24.com/</a>
Wheels24	<a href="http://www.wheels24.co.za/">http://www.wheels24.co.za/</a>
Mail and Guardian	<a href="http://www.mg.co.za/">http://www.mg.co.za/</a>
News24	<a href="http://www.news24.com/">http://www.news24.com/</a>
Engineering News	<a href="http://www.engineeringnews.co.za/">http://www.engineeringnews.co.za/</a>
Car Magazine	<a href="http://www.carmag.co.za/">http://www.carmag.co.za/</a>

**Table 5.2 Prominent South African Consumer Generated Media Websites with regard to Toyota's Negative Reputational Issues**

<b>Website Name</b>	<b>Address</b>
Consumer Comments	Traditional News Websites
Car Blog	<a href="http://www.carblog.co.za/">http://www.carblog.co.za/</a>
Times Live Blog	<a href="http://blogs.timeslive.co.za/">http://blogs.timeslive.co.za/</a>
News24 Blog	<a href="http://blog.news24.com">http://blog.news24.com</a>
Toyota Blog	<a href="http://www.toyotablog.co.za/">http://www.toyotablog.co.za/</a>
Car Forum	<a href="http://www.carforums.co.za/">http://www.carforums.co.za/</a>
9000RPM	<a href="http://forum.9000rpm.co.za/">http://forum.9000rpm.co.za/</a>
4x4 Community	<a href="http://www.4x4community.co.za/forum/">http://www.4x4community.co.za/forum/</a>
Fly Africa	<a href="http://www.flyafrica.info/forums/">http://www.flyafrica.info/forums/</a>

## **5.4 Research paradigm**

The positivist paradigm was utilised in this research since it is deductive in nature (Remenyi, 1995:11) and tends to produce quantitative data which is more objective and less prone to bias (Rourke & Anderson, 2004:5).

The researcher adopted a quantitative content analysis methodology, which is a systematic, objective and quantitative research technique of certain content of communication (Berelson, 1952:18). In this context, description is a process that includes segmenting communication content into units (keywords/brands), assigning each unit to a category (BRS), and providing tallies for each category (Rourke & Anderson, 2004:5). WebWords were used to capture the selected data.

## **5.5 Research Method**

As mentioned, the research method adopted to best suit the study was the quantitative content analysis method. This method was used based on the principles outlined by COBRA, which uses a four step progressive filtering approach. COBRA was selected due to the fact that CGM has become readily available and extremely valuable for corporations because of the amount of CGM generated (Spangler et al., 2009:243). COBRA was however also applied to traditional media in order to allow a comparison between CGM and traditional media.

The content analysis method is useful for examining trends and patterns in documents (Stemler, 2001:1). In this research, documents were in the form of webpages. It is important to point out the difference between webpages and websites. Multiple webpages are derived from the entire online website, therefore in this research, singular webpages were analysed, and not entire websites. Using WebWords to filter information from webpages is also known as data mining. Data mining is the “nontrivial extraction of previously unknown, and potentially useful information from given data” (Feldman, Dagan & Hirsh, 1998:281). A timeline was formulated using the webpages analysed, along with the date of the webpages. One of the most common notions about content analysis is that it involves a word frequency count (Stemler, 2001:2). “The assumption made is that the words that are mentioned most are the words that reflect the greatest concerns” (Stemler, 2001:2). Based on this assumption, the more the brand is mentioned, the more concern there is about that particular brand. For example, the more the Toyota brand is mentioned, the more concern there is for that brand

which has an underlying effect on its reputation, which was applied to all of Toyota's brands and sub-brands.

There are a number of counterpoints with regard to word frequency counts. The most common is that synonyms may be used throughout the document, which may lead researchers to underestimate the importance of the synonym and then discount it (Weber, 1990:73). Words may not represent a category as equally as another (Weber, 1990:73), which could be problematic when counting words that have been placed into categories. In this research, unique brand names were analysed which counteracted the synonym problem.

When conducting the content analysis three common problems can occur. The first arises when a number of documents are missing from the population on which the content analysis must be conducted (Stemler, 2001:2). With webpages this can occur, however there are sufficient webpages on similar dates to replace a removed webpage, which allows analysis to continue. Secondly, that inappropriate records exist, for example, those that do not match the definition of the study (Stemler, 2001:2). Finally, some documents might meet the requirements for analysis, but be uncodable due to missing parts or ambiguous content (Stemler, 2001:2). These problems have been taken into consideration during the course of the research.

In terms of validity, coding in content analysis is of vital importance (Rourke & Anderson, 2004:12). By successfully identifying, categorising and counting the content correctly, the validity of the data is strengthened (Rourke & Anderson, 2004:15). In this study, brands have been placed into categories relating to their brand architecture strategy definition. Orthogonal words, as discussed in section 5.7.3, have been placed in another category as a requirement for the content to be filtered and then analysed.

## **5.6 The Research Instrument**

The quantitative content analysis research instrument used in this research was a keyword counting application, called WebWords. The instrument was designed and programmed by a Lourenço (2010) of Rhodes University with guidance from the researcher. The research instrument was tested to ensure that it was operating correctly (Lourenço, 2010).

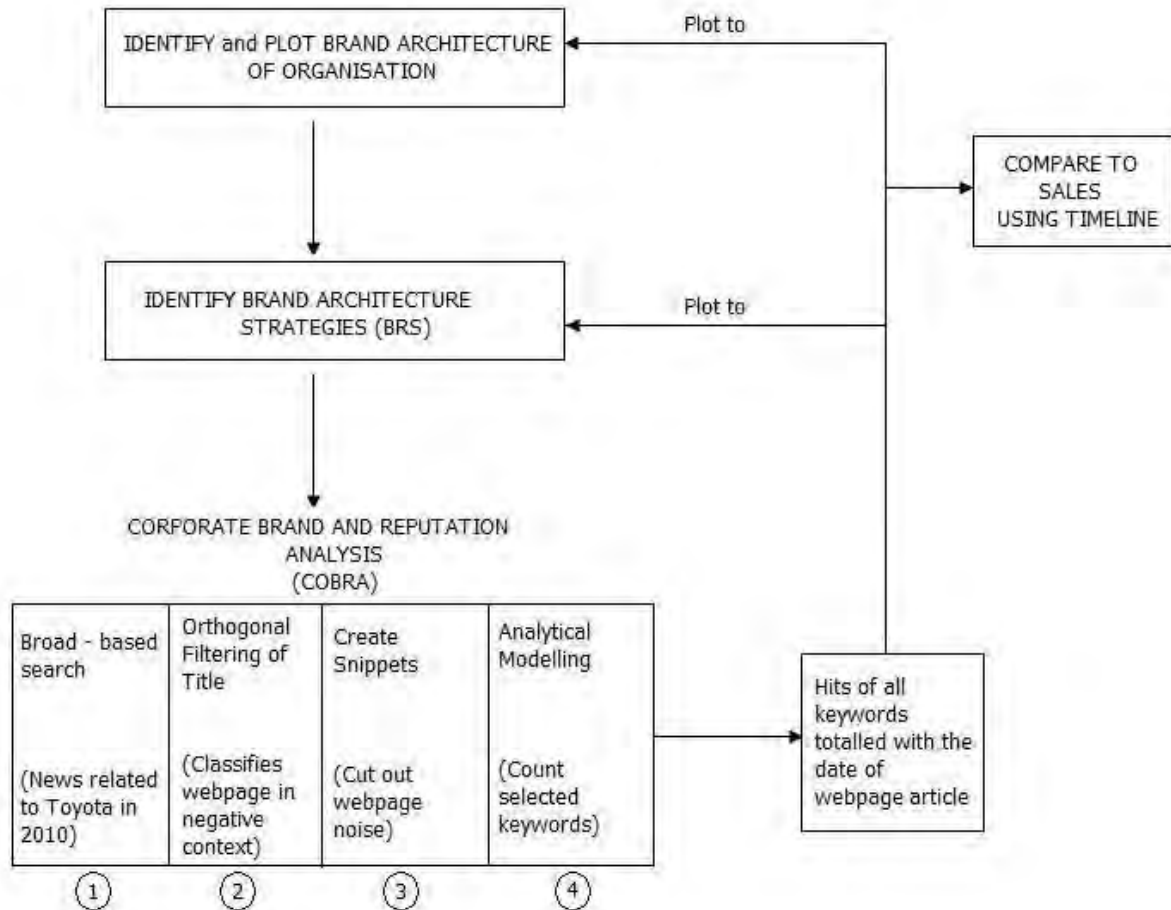
There are a number of tools relating to mining content that have helped organisations make sense of large amounts of data relating to their product or service. Tools such as Overture Keyword Selection Tool, AdWords, MetaCrawler and TermsNet all provide different outputs of data relating to the keywords the organisations are most interested in (Joshi & Motwani, 2006:494). Databases are then also created, such as the Reuters-21578 database, which hold 21578 news articles categorised by country and which contains information about stock exchanges, organisations and economic variables (Feldman, Aumanne, Amir, Zilberstein & Kloesgen, 1997:167). It is to be noted that WebWords is not a web crawler like most of the above applications. It does not mine the internet automatically and therefore the researcher had to manually select the webpages to be filtered.

WebWords reads in a webpage, and based on the keywords stipulated by the user, the application counts the number of times that keyword is mentioned on the page. The application also has the ability to create snippets, removing all the noise from the webpage, such as advertisements and links. Once all the webpages have been captured, the application then formulates a Microsoft Excel document with the raw data.

## **5.7 Data Collection and Analysis**

In order to demonstrate the process of data collection and analysis of the study, a comprehensive flow chart was formulated as illustrated in Figure 5.1 below. Literature was combined from both the brand architecture and brand reputation fields in order to compare and contrast the data. It must be noted that the brand reputation filtering and analysis process (COBRA), was altered slightly by the researcher in order to best suit the data capturing process; this however will be explained in further detail below.

**Figure 5.1** Diagram illustrating the process of Data Collection and Analysis



**Source:** Adapted from Aaker & Joachimsthaler (2000:8) & Spangler et al. (2009:243)

### 5.7.1 Brand Architecture Analysis

The first step was identifying and plotting the brand architecture of the organisation. This needs to be done in order to understand the branding structure of the organisation. Assessing the organisation’s brand architecture was done using a brand architecture audit. A proposed outline by Sanchez and Rajagopal (2004:245), for brand architecture audits was used. The assessment of the brand architecture consists of a compliance audit and strategic audit (Sanchez & Rajagopal, 2004:245). The compliance audit allows for a bottom-up assessment of how well sub-brands function as part of the overall brand architecture of the organisation, whereas the strategic audit assesses the compliance of groupings of strategic brands in terms

of established guidelines (Sanchez & Rajagopal, 2004:245). The organisation's website was analysed as it provided a breakdown of the organisation's current brands in the market. The discontinued brands of the organisation were left out of the study, as the sales of these brands were no longer available. Since the research was being done in a South African context, only the South African organisation's website was analysed. Once this was completed, a tool developed by Aaker and Joachimsthaler (2000:10) referred to as the Brand Relationship Spectrum (BRS) was used to identify the brand architecture strategies pertaining to the brand architecture.

### ***5.7.2 Brand Architecture Strategy Analysis***

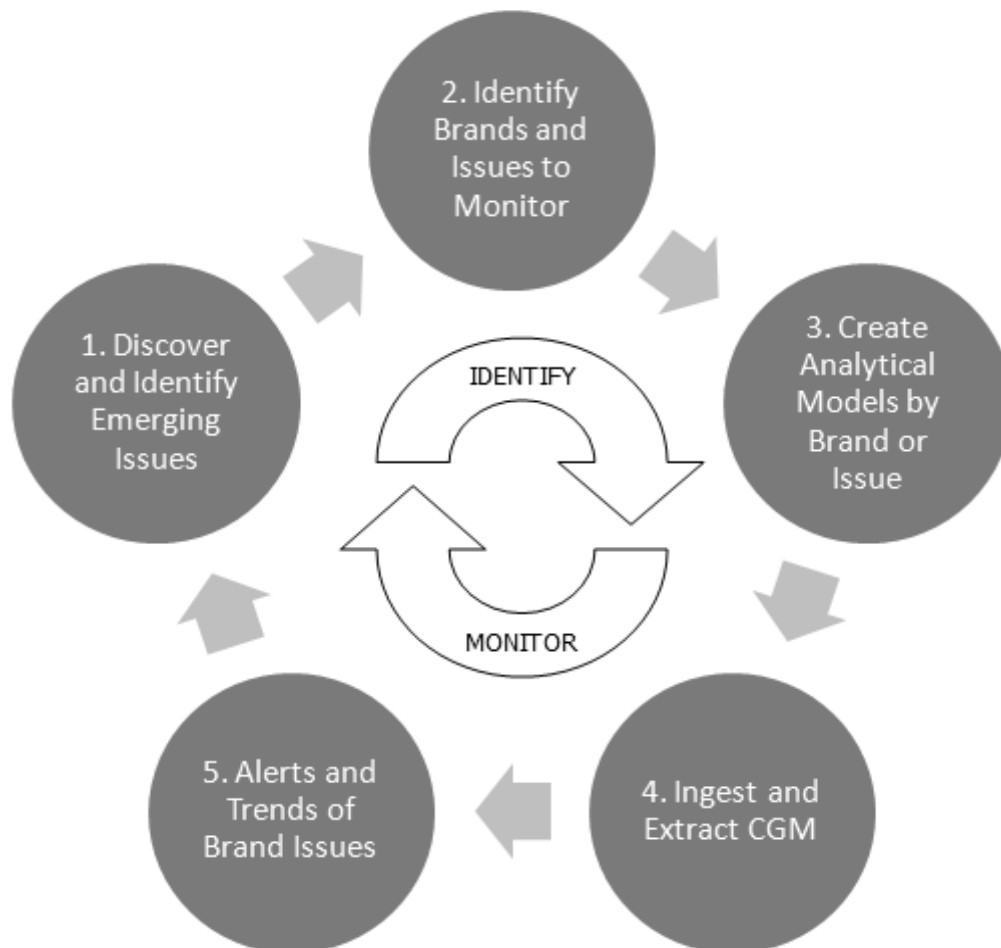
Once the brand architecture was identified and drawn, the researcher was able to identify the brand architecture strategies outlined by the BRS. The BRS consists of four major strategies, namely branded house, house of brands, sub-brands and endorsed brands. It was particularly important for the researcher to confirm the connection between the brands and the brand architecture strategy pertaining to each brand, as this would allow the research to later identify which of the brand architecture strategies are affected in terms of brand reputation. In order for the researcher to confirm the accuracy of the connection, the authors were contacted via email. The authors then confirmed the researcher's connection relating to Toyota South Africa (Pty) Ltd's brands and the brand architecture strategies pertaining to them (see Appendix A).

### ***5.7.3 Brand Reputation Collection Instrument***

A brand reputation instrument designed by Spangler et al. (2009:244) referred to as Corporate Brand and Reputation Analysis (COBRA) was used. Figure 5.2 shows the alert and monitoring process of COBRA. The first step was to discover the emerging issues of the brands in question, for example, the numerous recalls Toyota has had to deal with in the past 20 months would be an issue to consider. The second step was identifying the issues and brands to monitor (Spangler et al., 2009:244). In this study, all the brands were selected since all the brand architecture strategies of the brand architecture of the organisation needed to be analysed. Thirdly, creating analytical models by placing the brand and issues into categories is crucial in understanding the reputational impact on the brands (Spangler et al., 2009:244). In this study, the brands were placed into categories pertaining to their brand architecture

strategy, along with the orthogonal keywords that were also placed into a category. The reputational issues pertaining to each brand could then be identified using WebWords.

**Figure 5.2** *The Cobra Alert and Monitoring Process*



Source: Spangler et al. (2009:244)

After creating the analytical models, COBRA has a four step *progressive filtering approach* when ingesting and extracting CGM which was applied to the WebWords application, which is discussed below.

- Firstly **broad keyword-based queries** are used, which extract relevant information from identified sources (Spangler et al., 2009:246). This included articles related to Toyota, during the 2009 and 2010 calendar years. The purpose of broad keyword-based queries would be to gather sufficient information about Toyota during 2009/2010.

- Secondly, **orthogonal filtering** took place on the title of the webpage article. Orthogonal filtering is an important step as it validates the negativity of the article by combining words that are not usually associated with each other, for example “Toyota” and “Recall” are not words usually associated together, but “Toyota” and “Profits” are words one would expect to be placed together.
- Thirdly **snippets** from the webpages generated are stored in a data warehouse (Spangler et al., 2009:246), which was important since webpages can be noisy with a lot of non-topic related content on them. This improves the validity and reliability of the data.
- Lastly, **analytical modelling** took place using WebWords after capturing keywords from the snippets. This application filters the brands related to Toyota and tallies them, aligned to the brand architecture strategy which that particular brand falls under.

In the original literature orthogonal filtering took place last. The researcher chose to move it to the second step due to the fact that it shortens the filtering process. If orthogonal filtering was done before the snippets were created, there would not only be fewer snippets upfront, but also fewer snippets to pass through analytical modelling.

Toyota’s sales figures during 2009/2010 were gathered and assessed. The sales figures were obtained from the National Association of Automobile Manufacturers of South Africa (NAAMSA, 2010). The sales figures were plotted against the filtered keywords (brands of Toyota) based on the date of the webpage.

#### ***5.7.4 Brand Reputation Analysis***

The research findings were captured, checked and analysed. The keywords (brands of Toyota) found from the webpages were then plotted to the brand architecture strategy of that particular brand keyword. A time series analysis was conducted, which is a sequence of observations that are arranged according to the time of their outcome (Falk, Marohn, Michel, Hofmann, Macke, Tewes & Dinges, 2006:1). Based on the data captured from WebWords and sales figures the researcher was able to make observations, recommendations and conclusions as to how BRS strategies are affected over time in terms of brand reputation.

#### 5.7.4 Statistical Analysis

In addition to the above analysis a standard Poisson regression was used to gain insight into the relationship between number of articles and events, as well as the relationship between monthly sales and number of articles. A Poisson regression is a generalised linear model, whereby a linear prediction equation is used to estimate the effect of covariates on the natural logarithm of the dependent variable's mean (Van Rensburg, 2011:1). As shown below:

$$\ln \mu_t = \beta_0 + \beta_1 x_{1,t} + \dots + \beta_k x_{k,t}$$

where  $\mu_t$  is the average number of articles published on our variable interest at time  $t$ ,  $x_{i,t}$  is the value of  $i$ th covariate at time  $t$  and  $\beta_i$  is the coefficient relating to  $x_i$  (Van Rensburg, 2011:1). The Poisson regression was fitted with events lagged up to three periods, which also measured CGM and traditional media in isolation. Due to a large number of zeros in the data set, a linear regression model was also used (see Appendix F).

### 5.8 Ethical Considerations

The researcher conducted the research with the utmost responsibility and integrity during the period of research. The researcher ensured that the correct ethical policy was followed, and that all ethical considerations were taken into account.

The ethical research requirements as outlined by the Department of Management's Human Research Ethics Committee have been adhered to in this research. The source data captured was publically available information which allowed the researcher to freely use it for research purposes.

It is with full confidence that the research findings were presented honestly and without any distortion, ensuring that any data was not discarded. The data collected and results were for research purposes only, with no ulterior motives involved.

## 5.9 Limitations of Study

The number of limitations was reduced dramatically due to the development and implementation of the WebWords keyword application, which allowed the researcher to gather and analyse many more webpages than if it were to be done manually. Accuracy and consistency from the application allowed the data to hold more validity.

One of the limitations of the study was that more traditional news webpages were filtered compared to CGM. The problem with traditional news is the fact that it does not come directly from the consumer, and therefore may be ill-informed. It was difficult for the researcher to find the relevant CGM within a South African context, which is why more traditional news was filtered. To counteract this problem, the researcher included the consumer comments below the traditional news webpage, which then could be added to the CGM domain.

Another limitation was a practical one, as only prominent South African news websites were used in the research. Since there are many websites outside of South Africa, it would be impossible for the researcher to filter them all due to time constraints. To keep it in a South African context was also important for comparing and contrasting the sales figures, as the sales figures are from Toyota South Africa (Pty) Ltd. CGM filtering was also captured in a strictly South African context.

Only a certain number of orthogonal words were selected for the study (see Appendix B). The number of orthogonal words was sufficient in gathering enough data relating to negative reputational issues regarding the organisation. Each webpage was monitored and read by the researcher, which ensured the data to be valid.

## **5.10 Summary**

This chapter presented the methodology of the study by comparing and discussing various methods that would best suit the study. The population and sample were clearly defined. The research instrument, WebWords, was discussed in detail providing reasons why it was best suited to the study. The flow chart of the data collection process was explained in a step by step process making sure that the information collected was of the best quality, allowing for reliability and validity of the data to be meticulous. Statistical measures, such as time series analysis were also defined, along with various other statistical methods relevant to the study. Ethical considerations and limitations of the study were also discussed in detail.

The next chapter, Chapter Six, presents an overview of the results of the study. An indication of the impact on brand architecture strategies in terms of brand reputation, along with sample size, time series analysis, and acute analysis of data, is discussed in detail.

# CHAPTER 6

## RESULTS

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### 6.1 Introduction

The previous chapter outlined the methodology of the study, highlighting the specific methods and tools that were used in order to provide accurate and detailed results. In this chapter, the results of the study will be discussed. The chapter describes the statistics and reliability of the study, along with each of the objectives of the study.

Each aim and objective is discussed using keyword and time series analysis. The time series of each individual brand compared with sales is provided and examined briefly. Lastly, a Poisson and Linear regression is then used to analyse and discuss the various brand architecture strategies.

## 6.2 Descriptive Statistics

The total number of webpages captured and filtered in this study was 269, with 202 webpages from traditional media, and 67 webpages from consumer generated media (CGM). Table 6.1 and Table 6.2 summarise the websites that were captured, the website addresses and the total pages filtered from each website.

**Table 6.1. The Number of South African Traditional News Webpages Filtered**

Website Name	Address	Pages Filtered
Business Day	<a href="http://www.businessday.co.za/">http://www.businessday.co.za/</a>	64
Times Live	<a href="http://www.timeslive.co.za/">http://www.timeslive.co.za/</a>	43
IOL	<a href="http://www.iol.co.za/">http://www.iol.co.za/</a>	23
Fin24	<a href="http://www.fin24.com/">http://www.fin24.com/</a>	20
Wheels24	<a href="http://www.wheels24.co.za/">http://www.wheels24.co.za/</a>	16
Mail and Guardian	<a href="http://www.mg.co.za/">http://www.mg.co.za/</a>	13
News24	<a href="http://www.news24.com/">http://www.news24.com/</a>	12
Engineering News	<a href="http://www.engineeringnews.co.za/">http://www.engineeringnews.co.za/</a>	7
Car Magazine	<a href="http://www.carmag.co.za/">http://www.carmag.co.za/</a>	4
<b>Total</b>		<b>202</b>

**Table 6.2. The Number of South African CGM Webpages Filtered**

Website Name	Address	Pages Filtered
Comments	Comments on Webpages	22
Times Live Blog	<a href="http://blogs.timeslive.co.za/">http://blogs.timeslive.co.za/</a>	10
Car Blog SA	<a href="http://www.carblog.co.za/">http://www.carblog.co.za/</a>	6
Fly Africa	<a href="http://www.flyafrika.info/forums/">http://www.flyafrika.info/forums/</a>	5
Toyota Blog	<a href="http://www.toyotablog.co.za/">http://www.toyotablog.co.za/</a>	4
Car Forums SA	<a href="http://www.carforums.co.za/">http://www.carforums.co.za/</a>	4
9000 RPM	<a href="http://forum.9000rpm.co.za/">http://forum.9000rpm.co.za/</a>	3
4x4 Community	<a href="http://www.4x4community.co.za/forum/">http://www.4x4community.co.za/forum/</a>	3
Other		10
<b>Total</b>		<b>67</b>

### 6.3 Reliability

In terms of reliability of the data captured, each and every webpage article was personally screened by the researcher to ensure that the webpage article contained the relevant orthogonal word in the title and that the article was of a negative nature. WebWords was also tested to ensure the accuracy of the counted keywords. All the data, figures and tables were checked by the researcher to ensure that the information displayed was correct and accurate.

In terms of the analysis, the Poisson regression encountered discrepancies due to the large number of zeroes found in the data set (Van Rensburg, 2011:1). The only tenable solution to propagate the data was to include lagged indicator variables, shown below.

$$\begin{aligned}\mu_t &= \exp \left\{ \alpha + \beta_1 1_{\text{Event},t} + \beta_2 1_{\text{Event},t-1} \right\} \\ &= \exp \{ \alpha + \beta_1 \} \\ \mu_{t+1} &= \exp \{ \alpha + \beta_2 \} \\ \mu_{t+2} &= \exp \{ \alpha \}\end{aligned}$$

Another limitation with regard to reliability was the length of the time series, which was two years. For effective analysis a five to ten year period would need to be considered in future research.

Upon analysis of the data collected, the data collected were reliable and sufficient to achieve the aims and objectives of the study.

### 6.4 Research Aims and Objectives

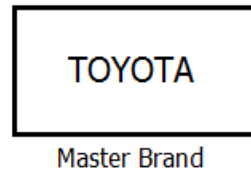
The research aims and objectives of the study are addressed individually in order to thoroughly explain the outcome of the study.

#### 6.4.1 *Plot and Assess Brand Architecture of Toyota South Africa (Pty) Ltd*

The first objective of the study was to plot the brand architecture of Toyota South Africa, and then assess it using a compliance and strategic audit. In order to identify the brand architecture strategies within the organisation's brand architecture, the brand architecture was broken up into its basic parts and then put back together in order to shed light upon the

strategic reasoning behind the brand portfolio. The BRS was then used to identify the specific brand architecture strategies used in the design of the organisation's brand architecture.

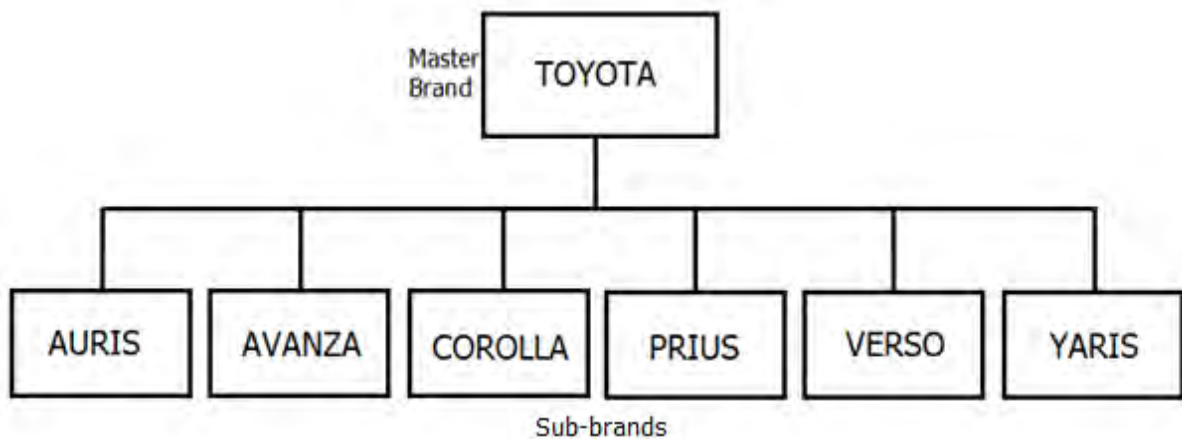
**Figure 6.1** *Toyota Brand*



Source: Adapted from Toyota South Africa (2011) website

Firstly the master brand of the organisation was identified as Toyota as seen in Figure 6.1. Toyota is the master brand of the organisation as it holds a large role in the brand portfolio by associating itself with other brands, providing credibility and sharing the visibility with other brands in the portfolio. Toyota is both a product and corporate brand, as the brand is associated with both the products and corporate dealings of the organisation, which is an important link from a reputation point of view, as it ties the products of the organisation directly to the corporate side of the organisation.

**Figure 6.2** *Toyota Brand and Sub-Brands*

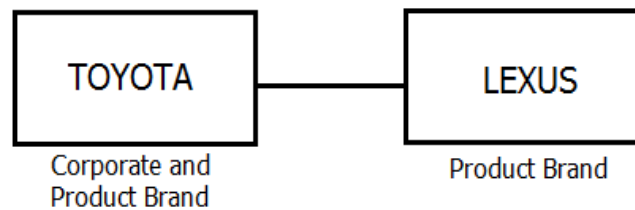


Source: Adapted from Toyota South Africa (2011) website

In South Africa, Toyota has six main sub-brands, namely the Auris, Avanza, Corolla, Prius, Verso and Yaris. All these brands are directly linked to the master brand of Toyota, and therefore Toyota is a co-driver with the sub-brands, which provides credibility to the sub-brands. This also allows consumers to become increasingly aware of where the products

originate from, along with the values such as quality and reliability associated with the Toyota organisation. In terms of the BRS, the sub-brand strategy is reflected in Figure 6.2. A problem for Toyota from a branding point of view, is the fact that should any reputational issues affect any of the sub-brands, the reputational damage will in effect lead back to Toyota as a product, but more importantly as a company.

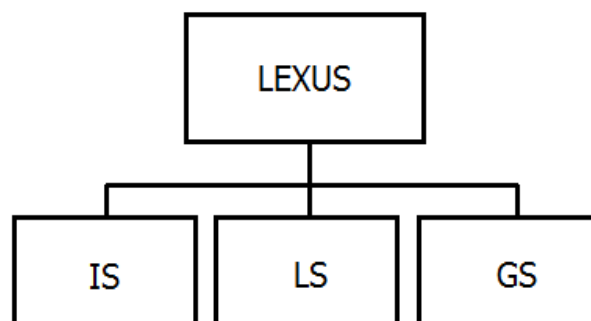
**Figure 6.3** *Toyota Brand and Lexus Brand*



Source: Adapted from Toyota South Africa (2011) website

As the Lexus brand is introduced, it needs to be noted that the Lexus brand is not supposed to be associated with the Toyota product brand at all. It is however associated with the corporate brand of Toyota, since it falls under the organisation’s overall product strategy. Therefore, from a reputational view point, Lexus is not connected to the Toyota *product* brand, but is connected to the Toyota *corporate* brand, shown in Figure 6.3. Lexus is a standalone brand, and therefore all marketing efforts are separated from Toyota product brand products. In terms of the BRS, this is a classic house of brands strategy.

**Figure 6.4** *Lexus Brand and Sub-Brands*

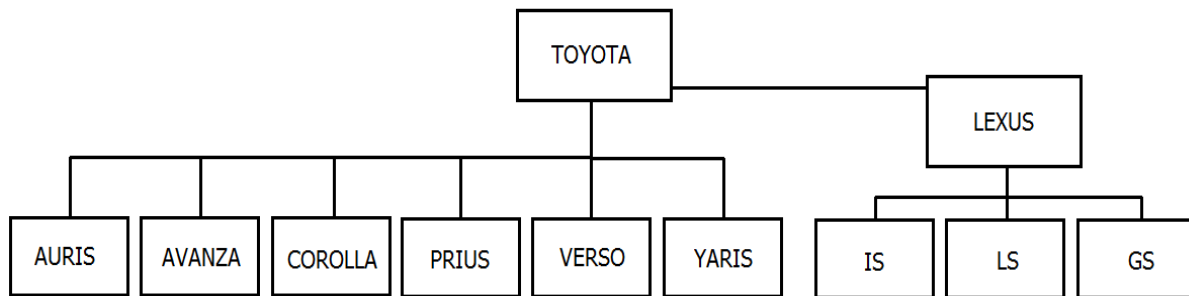


Source: Adapted from Toyota South Africa (2011) website

The Lexus brand possesses three sub-brands in South Africa, namely the IS, LS, and GS, shown in Figure 6.4. These brands are not as descriptive or creative as the Toyota sub-brands,

which seems to be part of the marketing strategy of Lexus. The sub-brands play little or no role, and are more branded features than sub-brands. It seems that marketers are more concerned for the consumer to be associated with the Lexus brand than its sub-brands.

**Figure 6.5 Brand Architecture of Toyota South Africa (Pty) Ltd**



Source: Adapted from Toyota South Africa (2011) website

In Figure 6.5, the overall brand architecture shows a clear division with the branded house and sub-brand strategies on the left, comprising Toyota and its sub-brands, and to the right of the brand architecture, the house of brands strategy lies comprising the Lexus brand and its non-influential sub-brands the IS, LS and GS.

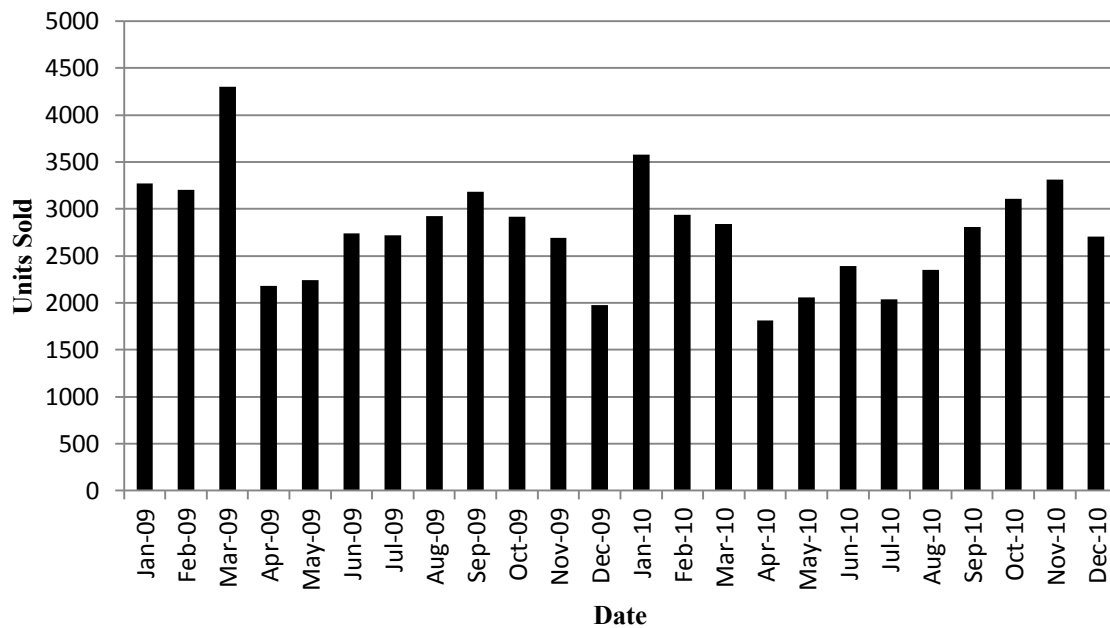
#### **6.4.2 Assess the Sales of Toyota South Africa (Pty) Ltd during 2009/2010**

The second objective of the study was to investigate and assess the sales of Toyota South Africa during 2009/2010. The sales figures were obtained from NAAMSA (2010).

Figure 6.6 indicates that over the 2009/2010 period the largest monthly sales took place in March 2009. The lowest sales of the period took place in April 2010. A large drop in sales in 2009 from March to April was the result of global recession recovery and low domestic demand, which caused sales to drop both globally and domestically (Business Day, 2009a:1). From May to September 2009 sales began to recover as the global economy recovered. In early October 2009, Toyota had the first major recall for the year, recalling 3.8 million vehicles in the United States and offsetting the global confidence in the organisation (Business Day, 2009b:1). January 2010 received good local sales, the highest in the previous nine months, but unfortunately these would be the highest sales Toyota would receive for 2010. In late January, early February 2010, Toyota had to deal with a large recall of over 2.2 million vehicles globally due to faulty accelerator pedals and brake glitches (see Appendix

B). Domestic sales then dropped from January 2010 to April 2010 as shown in Figure 6.6. For the rest of the year, domestic sales of Toyota began to rise as they began to repair reputational damage due to the recalls. By November 2010, Toyota South Africa had successfully recovered its loss in sales shown in Figure 6.6. Upon statistical analysis there seems to be a half-yearly seasonal trend in the sales figures (see Appendix F).

**Figure 6.6** Sales Figures of Toyota South Africa (Pty) Ltd for 2009/2010



Source: NAAMSA (2010)

With regard to the Lexus brand, it also experienced a drop in sales in early 2009 with relation to the global economic sales and low domestic demand (see Appendix C2). In December 2009 and January 2010, Lexus experienced strong sales growth. A slight drop in sales occurred in February 2010. Lexus also experienced domestic recalls in April, July and October 2010 due to faulty stability control systems, valve springs and cylinder seals (see Appendix B). Interestingly enough, domestic sales of Lexus decreased from March to June 2010, and then from August to October 2010. Sales then recovered well in November and December 2010 (see Appendix C2).

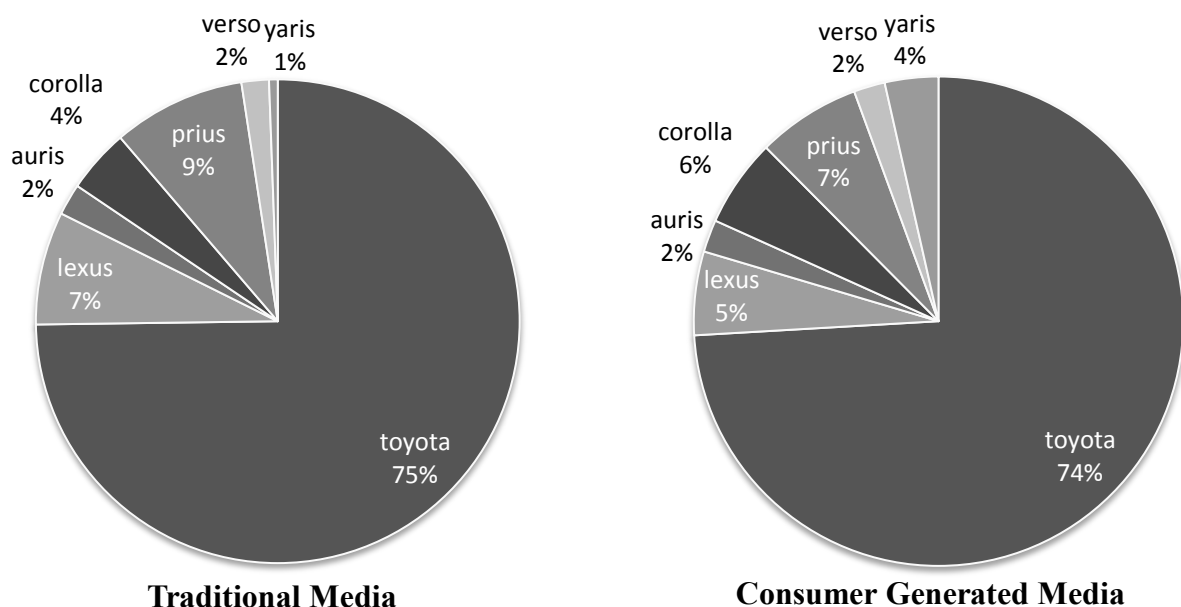
Toyota South Africa’s sub-brands also experienced a drop in sales in early 2009 due to the global economic sales and low domestic demand (see Appendix C3, C4, C5, C6, C7). The Corolla model sales trend was very much like the overall Toyota sales trend experiencing a drop in sales in April 2010 (see Appendix C4). The Auris model had almost no sales from

October 2009 to March 2010 (see Appendix C3). The Prius model experienced high sales in January 2010, but thereafter a drop throughout the year of 2010 with the lowest sales in April and December 2010 (see Appendix C5). The Verso model had a large drop in sales in August 2009 followed by a larger increase in September 2009. The Verso model also experienced a drop in sales from January to April 2010 (see Appendix C6) much like the other models under the Toyota brand. The Yaris model was no different, also declining in sales from January to April 2010 (see Appendix C7).

### 6.4.3 Plot and assess the reputation of Toyota South Africa (Pty) Ltd's brands using WebWords

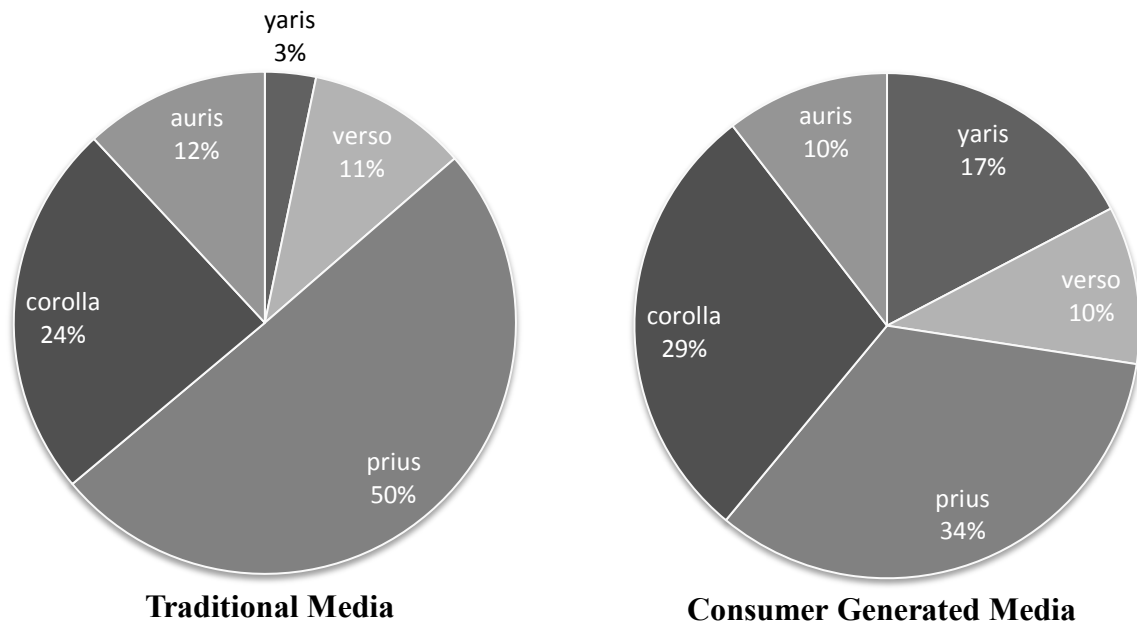
The third objective was to assess the reputational hits on Toyota South Africa's brands using the keyword counting application WebWords. To illustrate the hits on each individual brand a pie chart was formulated for both traditional and consumer generated media. In Figure 6.7 it is shown that 75% of the reputational hits occurred on the Toyota brand, which is expected since Toyota is the master brand and holds both a product and a corporate role. Toyota was also significantly impacted due to its connection with the sub-brands, therefore should any reputational issues occur on any of the sub-brands they would lead back to the Toyota brand. The Lexus brand obtained reputational hits of between 5% - 7%, similar to those of Prius with 7% - 9%, and Corolla with 4% - 6%. The Auris, Verso and Yaris brands received very few reputational hits with between 1% - 4%. What this indicates is that the Lexus, Prius and Corolla brands have a higher driver role than the Auris, Verso and Yaris brands. It should be noted that the Avanza brand did not obtain any reputational hits.

**Figure 6.7** Pie Chart Illustrating Traditional and Consumer Generated Media Hits on Toyota South Africa's Brands



In terms of reliability and validity of the data, it is shown that the traditional media reputational hits were highly similar to those of the CGM hits, which indicates that the data collected were indeed valid and reliable.

**Figure 6.8** *Pie Chart Illustrating Traditional and Consumer Generated Media Hits on Toyota South Africa's Sub-Brands*



In Figure 6.8 only the sub-brands of Toyota are compared. The figures indicate that the Prius brand was the highest hit sub-brand in terms of reputational damage receiving 50% in the traditional media and 34% in CGM. The Corolla brand was the second highest hit brand, receiving between 29% and 24% from both media. The Auris and Verso brands seem to receive similar hit from both media, whereas Yaris was hit only 3% in traditional media. In CGM Yaris was hit 14% more than in traditional media, which indicates that consumers are concerned about the Yaris brand.

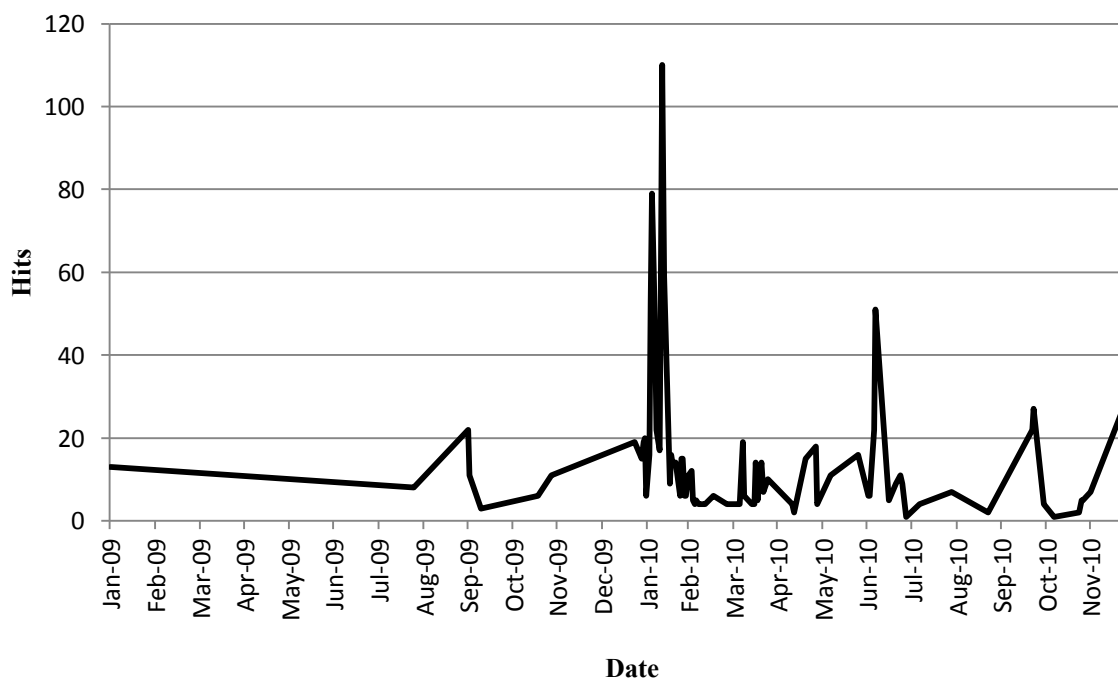
**6.4.4 Compare and Contrast the Results from WebWords with the change in Sales**

The fourth objective was to compare the results from WebWords with the sales figures in 2009/2010. A line graph of the hits was compared with the bar graph of the sales figures. The following graphs below show the reaction of sales, if any, to the hits based on negative reputational issues. Therefore, the spikes in the time series reflect negative reputational issues occurring at that particular point in time. For the best indication of which of the brand

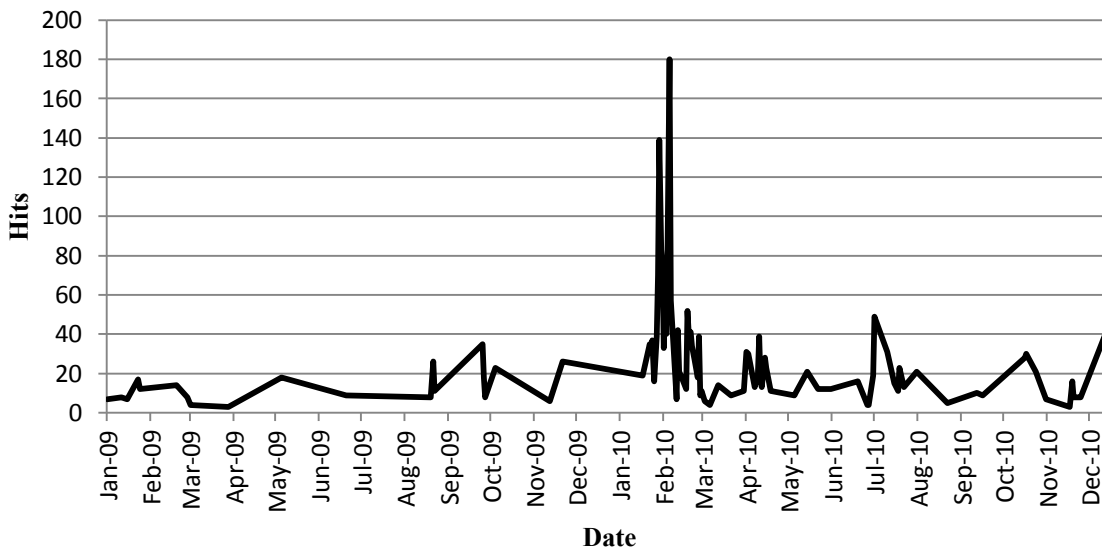
architecture strategies would be affected in terms of reputation, three brands most relating to each strategy were chosen to be represented below. The Toyota brand was chosen to represent the branded house strategy, since it holds a primary to dominant driver role. The Lexus brand was chosen to represent the house of brands strategy, since it is separate from the master brand of Toyota. The Corolla brand was chosen to represent the sub-brand strategy since the brand is well established within Toyota and is closely tied to the Toyota master brand.

In Figure 6.10 it is clearly seen that the largest reputational hit on the Toyota brand took place at the end of January, beginning of February 2010. The reputational hits were largely due to the accelerator pedal and brake glitch problems which were followed by recalls. Figure 6.9 gives an indication as to when the major recalling events took place. The largest recall took place in January and February 2010. The year 2010 was significantly worse than 2009 as shown below; however after January 2010 the recalls were less significant. The Toyota Corolla, Auris and Prius models were affected by these recalls (see Appendix B). The event affected the South Africa Toyota users on a large scale, which caused a large amount of local press to scrutinise Toyota with regard to the recalls.

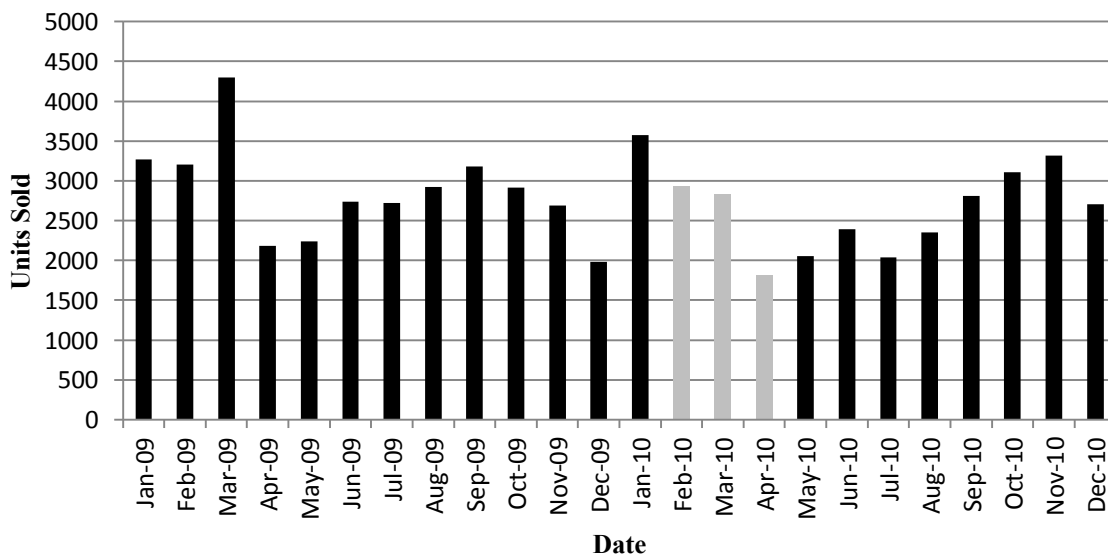
**Figure 6.9** *Recall Hits of Toyota for 2009/2010*



**Figure 6.10 Traditional Media Hits of Toyota South Africa (Pty) Ltd for 2009/2010**



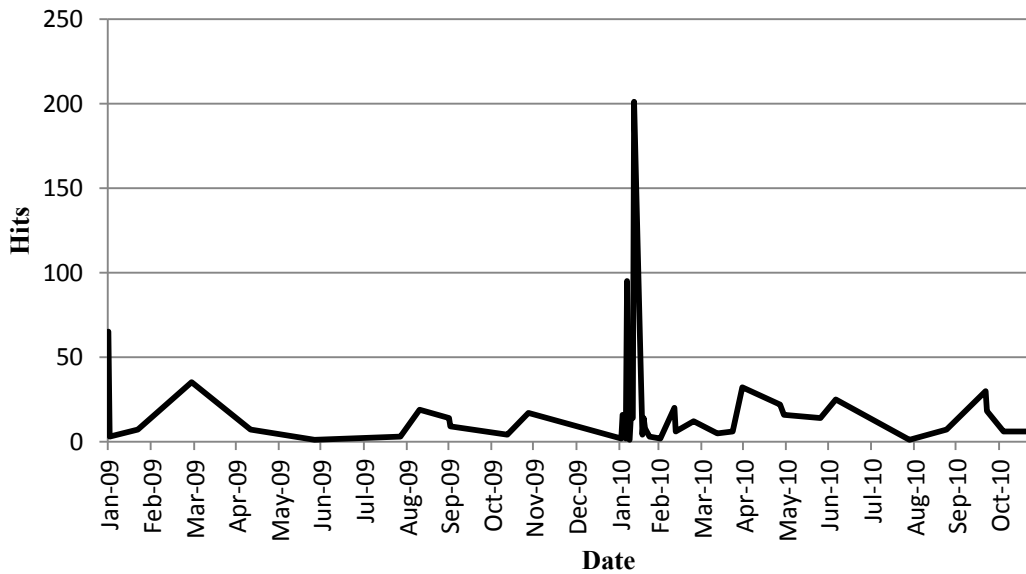
**Figure 6.11 Sales Figures of Toyota South Africa (Pty) Ltd for 2009/2010**



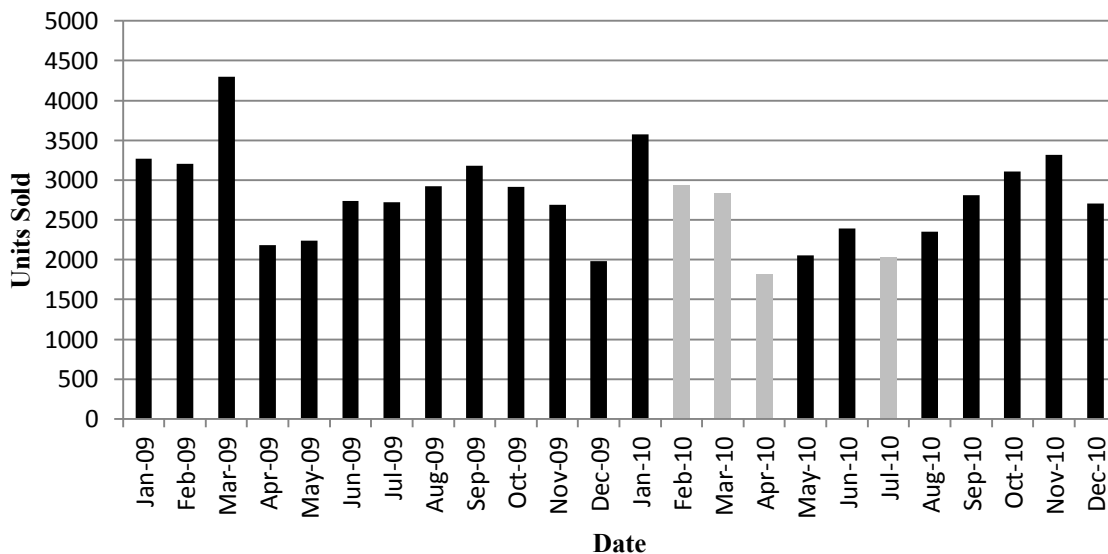
Source: NAAMSA (2010)

In Figure 6.10 it is shown that the largest reputational hit took place between January 2010 and February 2010. If this is subsequently compared with the sales figures in Figure 6.11, it can be observed that there is a decrease in sales from February 2010 to April 2010, with April 2010 being the lowest sales month over the two year period. It is to be noted that the drop in sales could be related to the reputational damage suffered by the Toyota brand; however there could be other internal or seasonal issues that might have caused the drop as well.

**Figure 6.12 CGM Hits of Toyota South Africa (Pty) Ltd for 2009/2010**



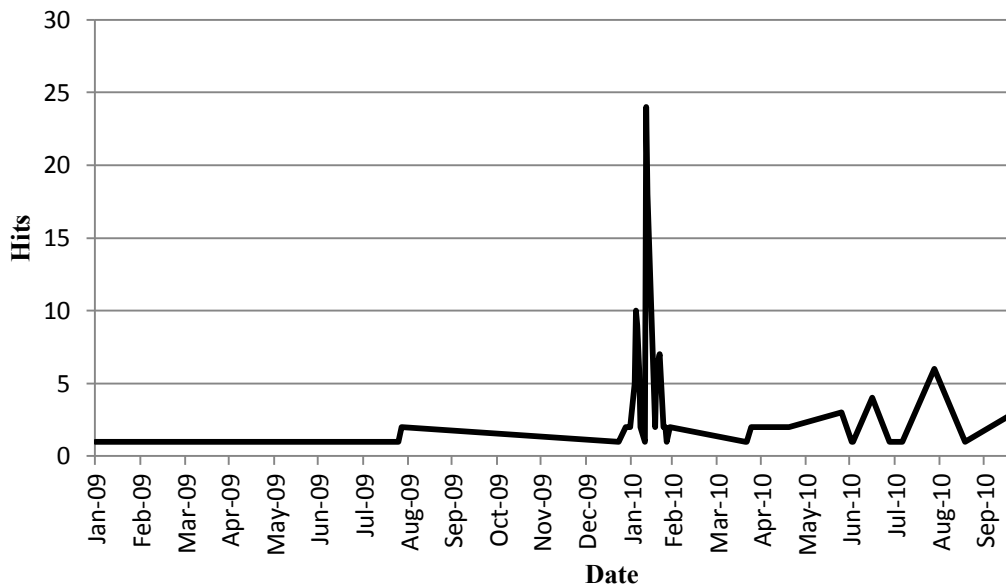
**Figure 6.13 Sales Figures of Toyota South Africa (Pty) Ltd for 2009/2010**



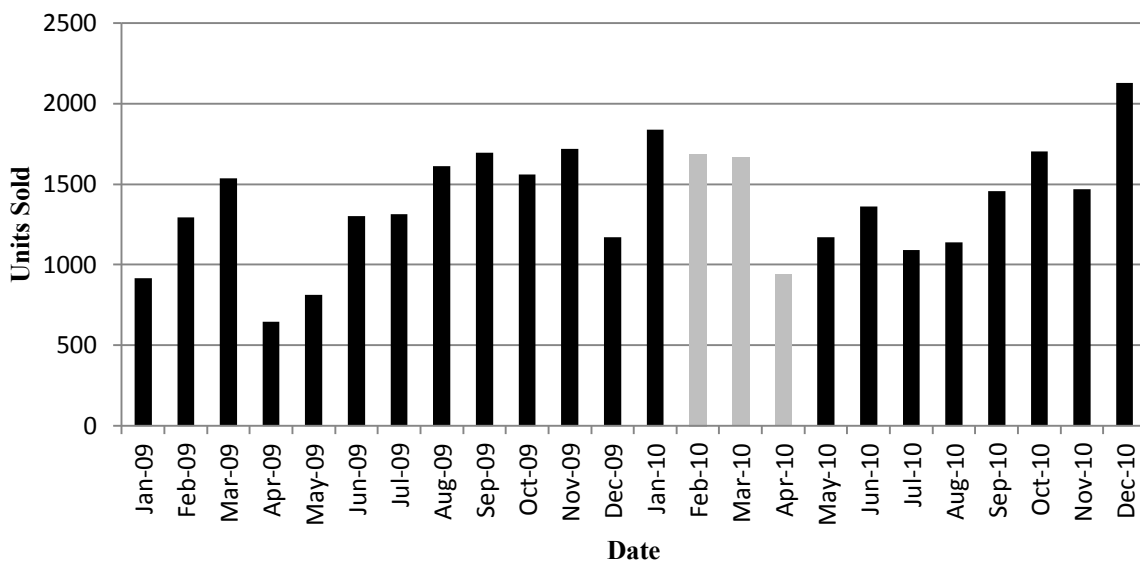
Source: NAAMSA (2010)

In Figure 6.12, the CGM hits of the Toyota brand indicate a similar scenario to that of the traditional media hits. January and February 2010 received the largest hits which could indicate that consumers were unhappy with the recalls. Comparing Figure 6.12 to Figure 6.13 it is once again seen that the sales figures drop between January and April 2010. In July 2010, there was a slight drop in sales, which could have been linked to global concern for the safety of Toyota vehicles, which was followed by a global apology by the corporation (see Appendix B). No hits were found on the Toyota brand after October 2010 in CGM.

**Figure 6.14 Traditional Media Hits of Corolla for 2009/2010**



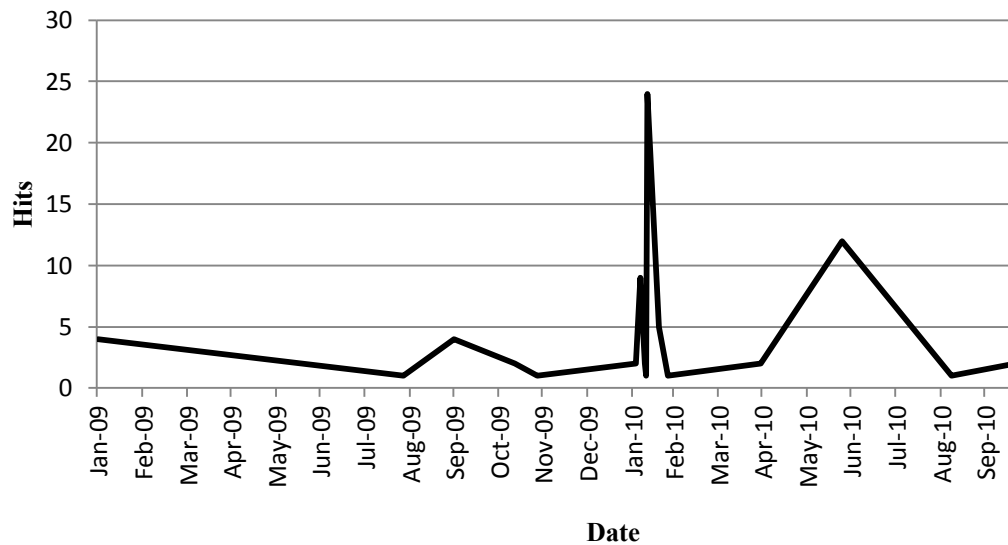
**Figure 6.15 Sales Figures of Corolla Models for 2009/2010**



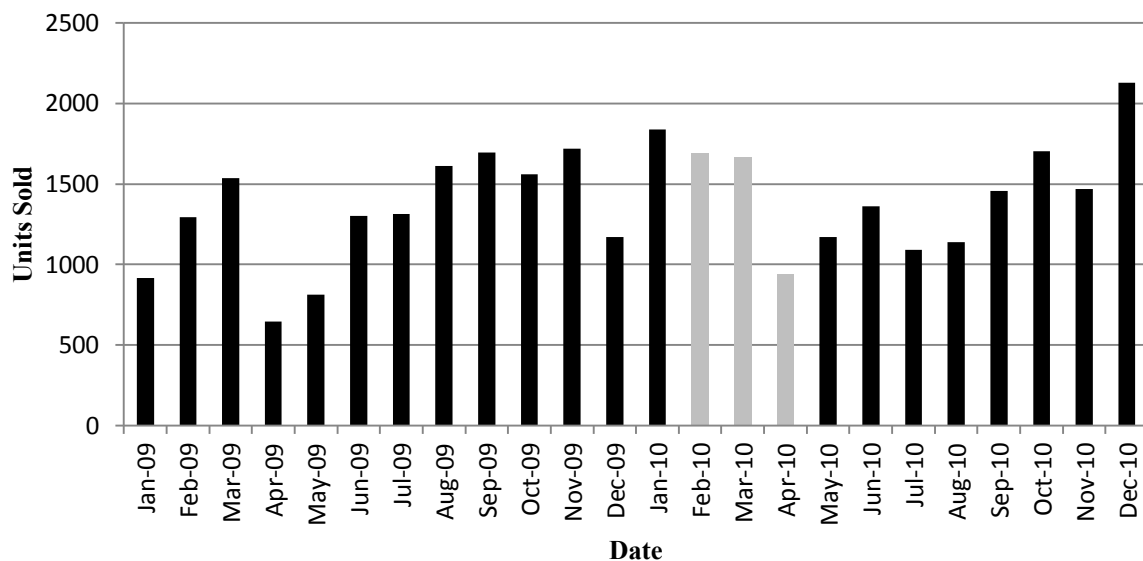
Source: NAAMSA (2010)

The focus now moves to one of Toyota’s largest sub-brands, Corolla. Figure 6.14, which is largely similar to Figure 6.10, shows that the Corolla sub-brand took most of its reputational damage in January and February 2010. Corolla was one of the models impacted by recall events, which was mainly due to faulty accelerator pedals (see Appendix B). In Figure 6.15 the Corolla sales drop between January and April 2010. The sales figures do follow a seasonal buyers trend as previously mentioned, and therefore the drop in sales could be related to factors other than reputational damage.

**Figure 6.16 CGM Hits of Corolla for 2009/2010**



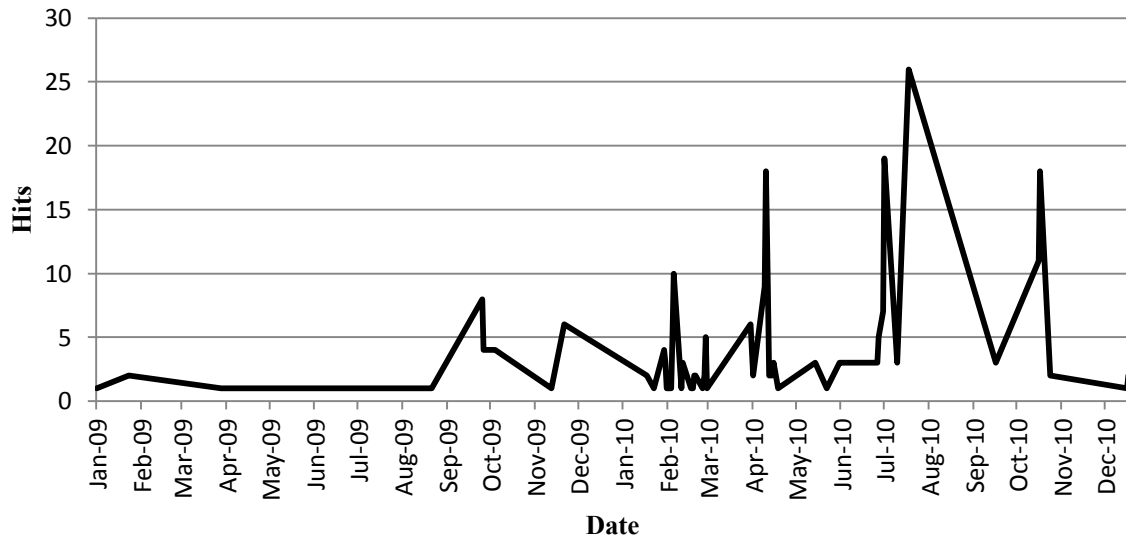
**Figure 6.17 Sales Figures of Corolla Models for 2009/2010**



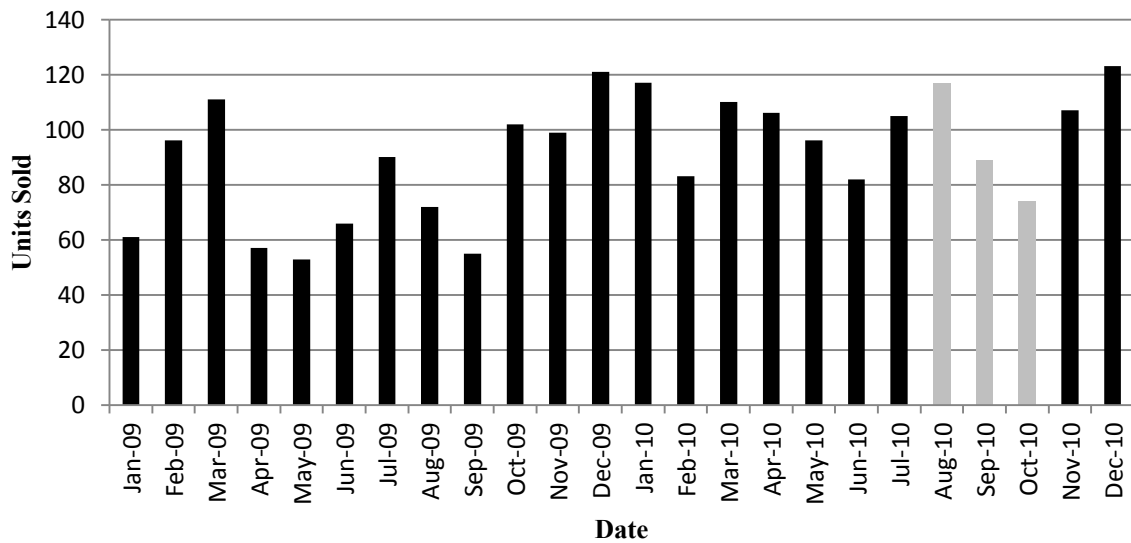
Source: NAAMSA (2010)

The CGM hits in Figure 6.16 received similar reputational impact on the Corolla brand shown in Figure 6.14. The second largest hit was in June 2010, where the global concern for Toyota products was the issue, followed by an apology by Toyota worldwide. Since the Corolla model was one of the models that raised concern, it is clear that questions were raised by consumers with regard to the model’s reliability and safety as shown in Figure 6.16. A drop in sales in April and July in Figure 6.17 could have resulted from these events. No hits were found on the Corolla brand after September 2010 in both CGM and traditional media.

**Figure 6.18** *Traditional Media Hits of Lexus for 2009/2010*



**Figure 6.19** *Sales Figures of Lexus Models for 2009/2010*

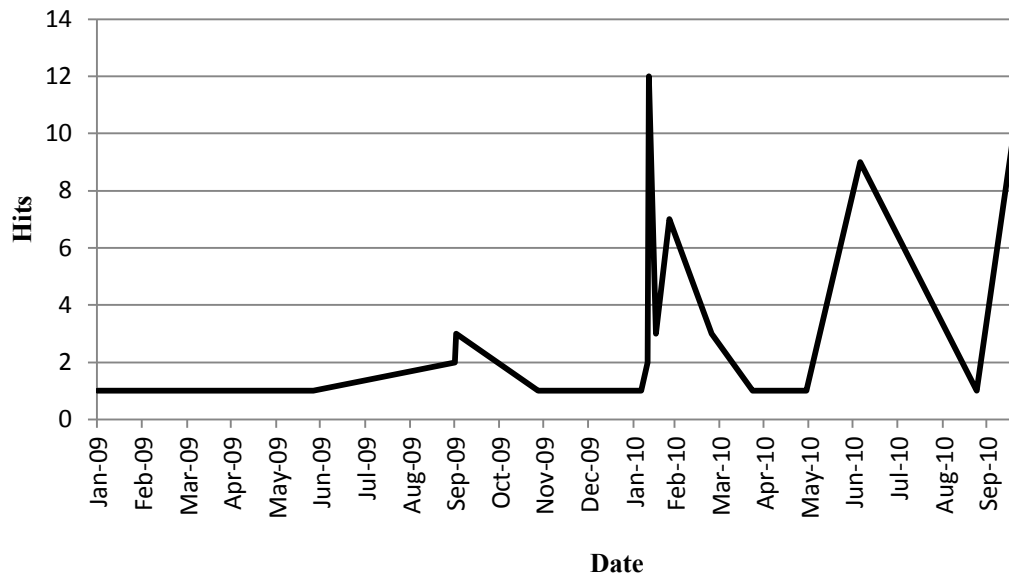


Source: NAAMSA (2010)

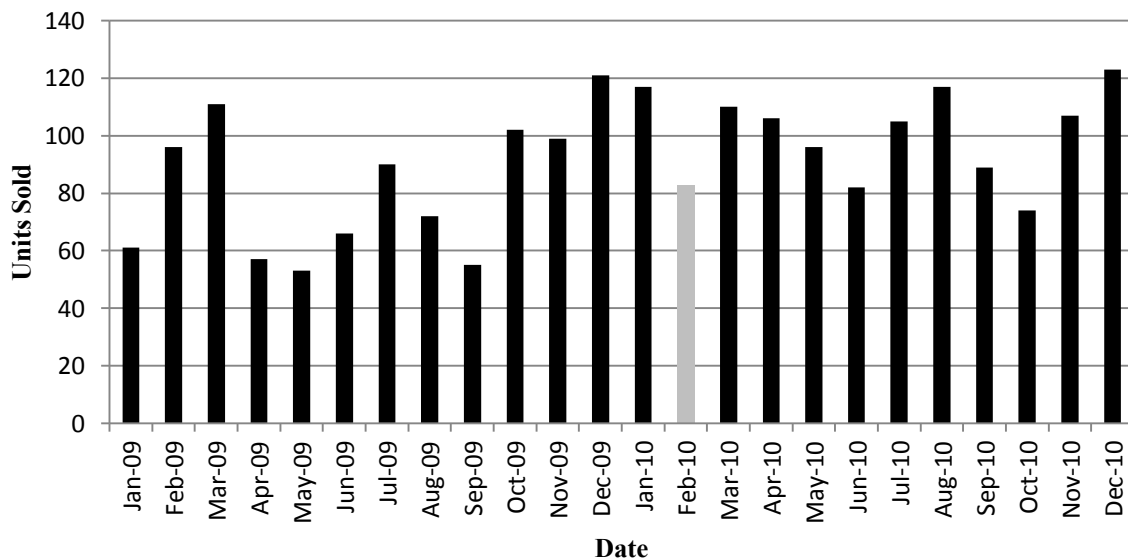
In Figure 6.18 the focus now moves to the Lexus model, which should not be linked to the Toyota brand since it follows a house of brands strategy. It can be seen from Figure 6.18 that compared with Figure 6.10 where all the reputational damage took place between January and February 2010, very little impact took place on the Lexus brand in the same period. The large reputational hits on the Lexus brand took place at the beginning of July and October

2010 due to faulty valve springs and cylinder seals respectively (see Appendix B). As a possible result Lexus sales decreased from August to October 2010 as shown in Figure 6.19.

**Figure 6.20** CGM Hits of Lexus for 2009/2010



**Figure 6.21** Sales Figures of Lexus Models for 2009/2010



Source: NAAMSA (2010)

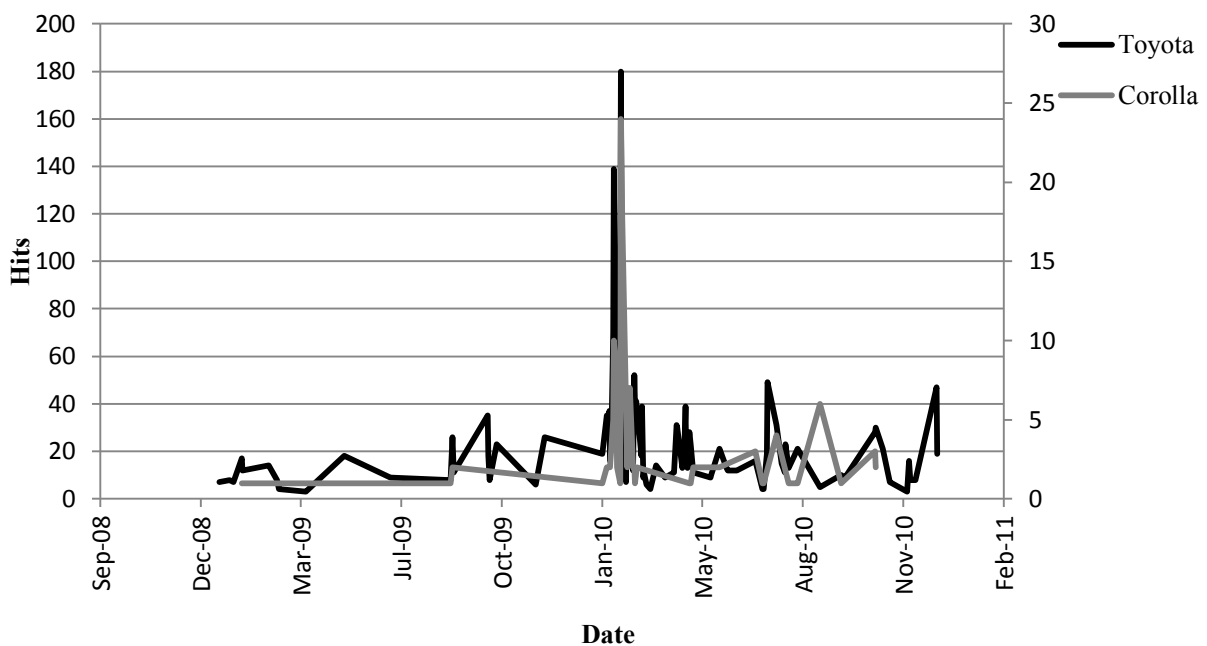
Figure 6.20 shows a somewhat different result from that of Figure 6.18 with the largest reputational hit taking place at where most of the other brands took the largest hit in January and February 2010. This indicates that consumers did have a concern about the Lexus brand during the major South African recalls, most of which were related to the Toyota brand (see

Appendix B), which indicates that the Lexus brand is not entirely separate from the Toyota corporate brand. In Figure 6.21 a slight drop in sales in February 2010 is shown which could indicate that the reputational damage of the Toyota brands during that period could have damaged the Lexus brand as well.

#### 6.4.5 Align the results from WebWords to Brand Architecture Strategies

The fifth objective was to align the results gathered from WebWords to the brand architecture strategies of Toyota. In Figure 6.22 it can be seen that the Corolla brand (a strong sub-brand of Toyota) follows a similar pattern to that of Toyota.

**Figure 6.22** A comparison of reputational hits between Toyota and Corolla (Branded House and Sub-brand)

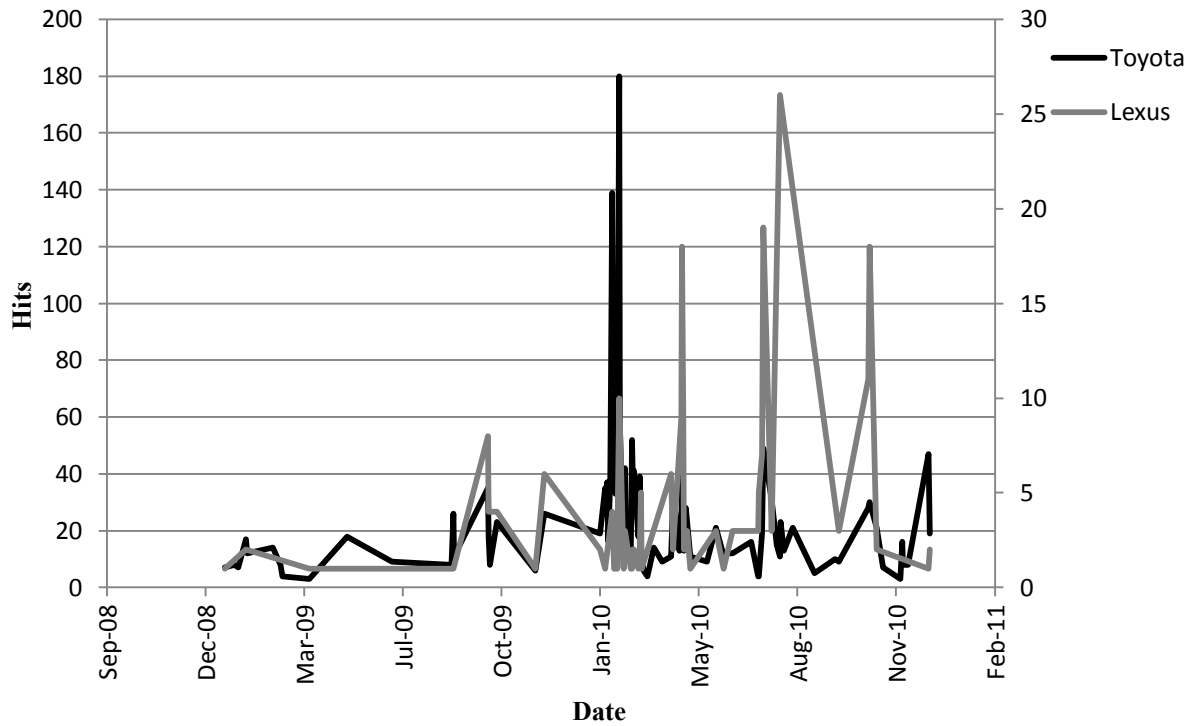


The large reputational hit at the end of January 2010 is reflected by both brands. Due to the fact that these two brands are connected, should any reputational hit occur on the one brand, this will automatically affect the other. The branded house and sub-brand strategies are therefore vulnerable to reputational damage due to this connection.

When comparing the Lexus brand (a house of brands brand of Toyota) and the Toyota brand shown below in Figure 6.23, it can be seen that Lexus does not follow the same pattern as the Toyota brand. Since the Lexus brand is a house of brands brand, this is correct and should not be connected to the Toyota master brand (shadow endorser). In terms of reputational damage,

it means that since the brands operate in isolation, any reputational damage affecting the one brand, will not necessarily affects the other, making the house of brands strategy safer.

**Figure 6.23** *A comparison of reputational hits between Toyota and Lexus (Branded House and House of Brands)*



Following this analysis, orthogonal keyword and Poisson regression analysis was performed on the data in order to understand the impact on the brands and brand architecture strategies.

Table 6.3 shows the total number of times the orthogonal word was mentioned if the brand was mentioned on the same page. There were many orthogonal words that were used in the study, therefore Table 6.3 summarises just eight.

**Table 6.3** *Total Hits of Brands Associated with Orthogonal Word*

	Recall	Crisis	Problem	Damage	Danger	Fault	Trouble	Defect
<b>Toyota</b>	1313	116	561	51	28	135	31	217
<b>Lexus</b>	551	35	76	19	11	55	12	120
<b>Auris</b>	301	11	110	2	3	43	0	24
<b>Corolla</b>	613	32	227	14	11	72	6	75
<b>Prius</b>	580	48	258	16	5	59	14	62
<b>Verso</b>	327	3	108	1	3	41	1	25
<b>Yaris</b>	89	0	32	2	1	10	0	13

The orthogonal word “recall” had the most hits, mostly associated with the Lexus, Corolla and Prius brands. The orthogonal word “problem” was the second highest, with Prius and Corolla most associated with the orthogonal word. Lexus was most associated with the word “defect”, while Prius most associated with the words “damage” and “crisis”. The Auris, Verso and Yaris brand were the brands least associated with the orthogonal keywords.

**Table 6.4** *Percentage of Hits of Brands Associated with Orthogonal Word*

	<b>Recall</b>	<b>Crisis</b>	<b>Problem</b>	<b>Damage</b>	<b>Danger</b>	<b>Fault</b>	<b>Trouble</b>	<b>Defect</b>	<b>Average</b>
<b>Lexus</b>	42%	30%	14%	37%	39%	41%	39%	55%	<b>37%</b>
<b>Auris</b>	23%	9%	20%	4%	11%	32%	0%	11%	<b>14%</b>
<b>Corolla</b>	47%	28%	40%	27%	39%	53%	19%	35%	<b>36%</b>
<b>Prius</b>	44%	41%	46%	31%	18%	44%	45%	29%	<b>37%</b>
<b>Verso</b>	25%	3%	19%	2%	11%	30%	3%	12%	<b>13%</b>
<b>Yaris</b>	7%	0%	6%	4%	4%	7%	0%	6%	<b>4%</b>

In Table 6.4 the total hits associated with the each brand were divided by the total orthogonal words across all captured articles. Toyota was captured for each and every orthogonal word, therefore Toyota was associated 100% in respect of each orthogonal word. In Table 6.4 it is shown by the percentages highlighted which of the brands were most associated with each individual orthogonal word, along with the average shown in the right-most column. In the table it can be seen that all the highlighted cells are only associated with the Lexus, Corolla and Prius brands. The Corolla and Prius sub-brands are an ideal comparison as they hold a similar driver role to that of Lexus. If the word “recall” is focused upon, it can be seen that the sub-brands Corolla and Prius received 5% and 2% more hits respectively than the house of brands brand Lexus. The word “problem” received 26% - 32% more hits for the Corolla and Prius than the Lexus brand. If the averages are compared, it can be seen that the Auris, Verso and Yaris brands were not as affected by the reputational issues as the Lexus, Corolla and Prius brands. This relates to each individual brand’s driver role. Even though Lexus, Corolla and Prius received similar averages, the Corolla and Prius brands are connected directly to the Toyota master and corporate brand, whereas Lexus is not.

An in-depth statistical analysis was then performed on the data provided from WebWords, which consisted of a Poisson and Linear regression. The analysis was twofold, and focused on the relationship between the number of articles and events, as well as the relationship

between sales and the number of articles. The Poisson model was fitted with events lagged up to three periods.

With regard to the relationship between the number of articles and events that took place (see Appendix B), there was a correlation between the two, which indicated that the article occurred between one and two days after the event occurred (see Appendix F). This indicates that the media reporting was quite consistent and timely.

The relationship between the monthly sales and the monthly number of articles was then analysed. Upon inspection, it was clear that increases/decreases in sales followed a half-yearly seasonal trend. A cross correlation function indicated that there was a weak statistical relationship between sales and number of articles, mostly due to a small sample size of both sales figures and number of articles. It was indicative that numbers of articles lead sales by two and five months (see Appendix F).

**Table 6.5** *Regression results depicting the relationship between media articles and sales*

	Estimate	Std. Error	t-value	Pr(> t )
(Intercept)	92.978	9.008	10.321	0.000
Sub-brands + House of Brands	-0.732	0.305	-2.401	0.026
Branded House	0.231	0.084	2.747	0.012

It should be noted that, due to the sample size, a liner regression was resorted to which included covariance estimates (see Appendix F). In Table 6.5 for sub-brand and house of brand’s strategies there was an inverse relationship between articles consisting of those strategies and sales. Should the number of articles consisting of Toyota’s sub-brands and the Lexus brand increase by one, sales would drop by 0.732. Interestingly, the Toyota brand (branded house) sales increased by 0.231 when the number of articles increased by one. Therefore, the negative press could result in an increase in sales, which is unlikely, however due to the estimation of these statistics they should not be considered seriously. Since the sub-brands are connected to the branded house brand, the increase in sales by 0.231 would be offset by the decrease in sales of 0.732, and therefore overall there would be a decrease in sales.

The above analysis indicates that all of the brand architecture strategies were impacted by the reputational damage; however the house of brand and sub-brand strategies were not as

severely affected as the branded house strategy. The driver role of each particular brand architecture strategy seems to be indicative of how severely the strategy is impacted. The sixth and final objective of the study is to provide managers with feedback and recommendations, which will be discussed in Chapter Seven.

## **6.5 Summary**

In this chapter, the results of the study were revealed and briefly discussed. The descriptive statistics revealed that a total of 269 webpages were captured in the study. The reliability of the study was discussed, which revealed that the data collected were valid and reliable in order to achieve the objectives of the study. The brand architecture of the organisation was analysed, from which the brand architecture strategies were then identified and discussed.

The sales of the organisation were analysed which indicated a half-yearly seasonal trend. Results pertaining to each research objective were then revealed which indicated that sales did tend to drop after a spike in reputational hits, however this could be a result of numerous issues such as seasonal trend or internal issues. With regard to the brand architecture strategies, they were all affected in terms of reputation; however the branded house strategy was affected more severely than the house of brands and sub-brand strategies.

Now that the results have been revealed, the findings can now provide managers, marketers and brand owners with recommendations as to how they can use brand architecture strategies within their organisation, as will now be discussed in Chapter Seven.

# CHAPTER 7

## DISCUSSION OF EMPIRICAL RESULTS

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### 7.1 Introduction

Following the illustration of the results in Chapter Six, this chapter focuses on the results in accordance with the literature presented in Chapters Two, Three and Four. The reputational impact on brand architecture strategies is fully reviewed in terms of each objective of the study. Toyota's response to the reputational issues and the brand architecture implications are then highlighted, followed by a full description of implications for managers, marketers and brand owners when developing their brand architecture.

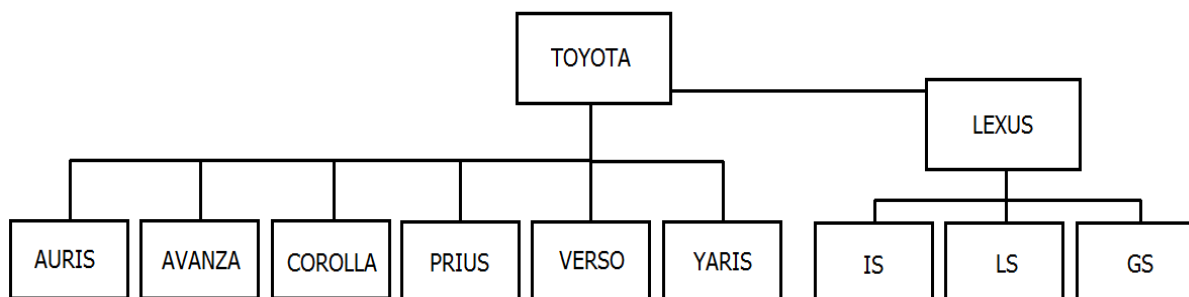
Finally, since this research is particularly new, guidelines and recommendations for future development of this field of research are then discussed.

## 7.2 Reputational Impact on Brand Architecture Strategies

The primary purpose of the study was to investigate which of the brand architecture strategies from the brand relationship spectrum were more severely impacted by being exposed to negative reputational issues. In order to determine this outcome six objectives were investigated.

The first objective was to choose an organisation for the study and critically analyse the organisation's brand architecture. The organisation chosen for the study was Toyota's South Africa (Pty) Ltd since its brand architecture possessed three of the four brand architecture strategies that would undergo analysis in this research. Toyota South Africa (Pty) Ltd's brand architecture, as shown below, consists of the Toyota master brand, six sub-brands and the standalone Lexus brand.

*Figure 7.1 Brand Architecture of Toyota South Africa (Pty) Ltd*



Source: Adapted from Toyota South Africa (2011) website

The second objective of the study was to assess the sales of Toyota South Africa (Pty) Ltd for 2009 and 2010. It was found that the overall sales of Toyota passenger vehicles followed a half-yearly seasonal trend shown in Appendix C1. The lowest sales month over the period occurred in April 2010. The Toyota sub-brands followed a similar trend to Toyota; however the Lexus brand experienced a different trend, with sales increasing in March and April 2010. In 2010 Lexus sales dropped slightly from August 2010 to October 2010 followed by the largest sales month over the period in December 2010 (see Figure 6.19).

The third objective of the study was to identify the brand architecture strategies within the organisation's brand architecture and then gather data using progressive filtering (see Section 5.7.3) to investigate which of the brand architecture strategies from the BRS were most

vulnerable to reputational damage. It was found that Toyota South Africa (Pty) Ltd possessed the branded house strategy which was indicative of its Toyota master brand which held a primary to dominant driver role in the organisation's overall marketing strategy. The sub-brand strategy was also identified since the organisation holds six brands with the smaller driver role connected to the master brand. Finally, the house of brands strategy was identified with the Lexus brand being separated from the Toyota master brand. It was also found that Toyota plays both the product and corporate brand role in the organisation. The endorsed brand strategy was not evident in the study since Toyota South Africa (Pty) Ltd does not possess any endorsed brands.

In Figure 6.8 it was seen that Toyota experienced 75% of the total hits on the brand. This was followed by the Prius (7% - 9%), Lexus (5% - 7%) and Corolla (4% - 6%) brands. Since Toyota is part of a branded house strategy, it was evident that the branded house strategy was the most vulnerable to reputational damage based on the number of hits Toyota received.

The fourth objective of the study was to compare the results from WebWords with the sales over 2009/2010. The traditional media hits on the Toyota brand over 2009 in 2010 indicated a substantial reputational hit between January and February 2010, which was due to the major South African recalls of Toyota products after safety speculations. Following this large reputational hit a drop in sales was indicated between February and April 2010 (refer to Figure 6.10).

The fifth objective of the study was to align the results with the brand architecture strategies. Significant differences in brand architecture strategies can be seen when comparing the Toyota and Lexus brand reputational hits and sales over the period of the study. Toyota received numerous reputational hits between January and February 2010, whereas Lexus received very few hits in the same period (refer to Figure 6.23). This indicates that the house of brands strategy which separates the Lexus brand from the master brand of Toyota has worked. In fact, Lexus sales increased from February to March 2010 (refer to Figure 6.19). This was however not the case for the branded house and sub-brand strategies. Toyota sub-brands followed a similar trend in reputational hits and sales since both brands were connected (refer to Figure 6.22 and Appendices C4, C6 and C7). The Poisson regression indicated that if the number of articles increases by 1, sales for Lexus and Toyota sub-brands would decrease by 0.732, while Toyota sales would actually increase by 0.231.

It can be concluded that should any reputational damage occur on the master brand and/or the sub-brand, they both could be affected. It is clear from the study that the branded house and sub-brand strategies are more vulnerable to reputational damage than the house of brands strategy; since the master brand and sub-brand are connected they collectively form a larger target than a standalone house of brands brand.

### ***7.2.1 Toyota's Response to Reputational Issues***

In Chapter Two (section 2.6) the driver role a brand holds was discussed. It was shown that the driver role of the brand is the degree to which the brand drives the purchase decision (Aaker, 2004:45). The Toyota brand's driver role is significantly larger than that of its sub-brands, which explains why Toyota received 75% of the total reputational hits. Differences in the driver roles between the sub-brands can be seen by the number of reputational hits the sub-brands receive, and therefore the Corolla and Prius brands seem to hold a higher driver role than the Auris, Verso and Yaris brands (refer to Appendices D3-D7). The study therefore confirms that the driver role of a brand is key to the amount of reputational damage the brand is exposed to. The larger the driver role the more susceptible it is to reputational damage.

As discussed in Chapter Two, (section 2.2) Toyota's values are mainly expressed by its reliability, safety and quality (Liker, 2010:30). The Lexus brand was the most reliable brand for the eighth time in 20 years (Liker, 2010:30), while the Toyota brand held the most brand value in the global automotive industry (refer to Table 2.1). In 2009 and 2010 the Toyota Motor Company experienced numerous reputational issues with regard to the safety of its products (see Appendix B) which then threatened the above values Toyota had built up over the years.

In Chapter Four, (section 4.2) it was shown that in terms of brand image and reputation customer loyalty and satisfaction were vitally important to maintain and increase sales (see Figure 4.1). Ultimately the reputational issues experienced by Toyota in 2009 and 2010 threatened Toyota's customer loyalty and satisfaction. A study by Mittal et al. (2010:11) indicated that Toyota owners were however equally or more satisfied with their product following the recalls. Therefore according to theory, this increase in customer loyalty and satisfaction should lead to an increase in sales, which was evident in Figure 6.11 from May to November 2010. The large South African recall which took place between January and February 2010 could have impacted sales in the short term with April 2010 being the lowest

sales month over the study period (refer to Figure 6.11). The response by the Toyota Motor Company which according to customers was prompt and efficient (Mittal et al., 2010:11), allowed the company to recover extremely well following the recalls. Customers found that Toyota's concerned response to the quality and safety of their vehicles increased their overall satisfaction with their products (Mittal et al., 2010:11). Managers, marketers and brand owners should note, that based on Toyota's management of their crisis, responding to a crisis in a timely and transparent manner is vitally important to recovery.

### ***7.2.2 Brand Architecture Implications***

Brand architecture decisions are of critical importance to managers, marketers and brand owners mainly due to the fact that organisations extend and retract product lines continuously, and therefore brands are constantly being introduced and removed from the brand portfolio, causing the brand portfolio to become complex (Aaker & Joachimsthaler, 2000:8). The brand architecture is also critical in aligning the company culture and values with the organisation's brands (Muzellec & Lambkin, 2008:284). Due to the importance of brand architecture decision making, brand architecture strategies forming the Brand Relationship Spectrum (BRS) were introduced by Aaker and Joachimsthaler (2000). The BRS allowed managers, marketers and brand owners to compare the advantages and disadvantages of various brand architecture strategies (refer to Section 3.4.1 - 3.4.4).

In this study three of the four brand architecture strategies from the BRS were researched to give insight into which of these strategies would be most vulnerable to reputational damage. These strategies included the branded house, sub-brand and house of brands brand architecture strategies. It was found that the branded house brand (usually the master brand) and sub-brand strategies were the most vulnerable to reputational damage, since they were usually connected to each other, for example the Toyota and Corolla brands. The reason for this is that should any reputational damage affect any of the sub-brands, the master brand would in effect be immediately impacted as well. In the case of Toyota, should any crisis impact any of its sub-brands, i.e. the Corolla brand, the reputational damage suffered by Corolla would also be passed on to the Toyota master brand. The reason why the branded house strategy is employed in the first place is that the master brand holds an enormous amount of endorsement power, which can then be passed on to the newly introduced sub-brand, increasing and maximising the identity and values the customer is receiving from the

new product (Aaker & Joachimsthaler, 2000:15). The second reason why the branded house and sub-brand strategies are used, is that since the master brand and sub-brands are connected the marketing efforts of either master or sub-brands would complement each other.

On the other side of the spectrum the house of brands strategy, which involves avoiding brand association with the master brand (Aaker & Joachimsthaler, 2000:11), as is the case between the Toyota and Lexus brands. The main advantage of this strategy, which this study proves, is that it minimises conflict with the master brand and sub-brands. In comparing the Toyota and Lexus reputational hits (refer to Figure 6.23), it can be seen that when Toyota experienced large reputational damage in South Africa in January and February 2010, the Lexus brand in the very same period experienced very few reputational damage hits. When Toyota sales seemed to drop off following the reputational hits, Lexus sales on the contrary seemed to pick up (refer to Figure 6.19). This proves that a house of brands strategy could be useful to organisations in a time of crisis. The house of brands strategy can be a costly strategy especially in terms of marketing (refer to Section 3.4.1), since the brand has to create its own set of values that customers can relate to. The implementation of effective marketing strategies could reduce this.

### **7.3 Implications for Managers, Marketers and Brand Owners**

Based on research and theory, brand architecture has become an important facet of an organisation. It is important that managers, marketers and brand owners spend sufficient time formulating a coherent brand architecture with sufficient strategic consideration. This is particularly important to organisations which are new to the market, as it strategically maps out the organisation's future brand portfolio. Once the brand architecture of the organisation has been formulated, it is imperative to review it constantly, possibly half yearly, as this will allow business strategy to be continuously aligned with the branding of the organisation.

The advantages and disadvantages of each particular brand architecture strategy should be considered. The product should match the particular brand architecture strategy chosen, for example, if the product targets a niche market a house of brands strategy could be employed much like the Lexus brand. In this study, it is clear that the house of brands strategy lessens the overall impact on the brand portfolio, since it is not directly connected to the master brand. The branded house and sub-brand strategies, on the other hand, suggest the opposite

since all the sub-brands are directly connected to the master brand (refer to Figure 6.22). The driver role each particular brand plays is the key to the vulnerability of the brand. The larger the driver role the brand takes on, the more vulnerable it is to reputational damage. Since the master brand usually takes on the largest driver role, it is usually the most susceptible to reputational damage. Sub-brands can possess different driver roles, for example the Prius brand holds a larger driver role than the Verso or Yaris brands (see Appendix D5-D7). The advantage of this is that the Prius brand becomes increasingly recognisable with its own set of brand values, for example, environmentally friendly, safety and technologically advanced. The disadvantage of an increased driver role of a sub-brand is that it is still connected to the master brand (Toyota), and that should any crisis occur to the sub-brand it affects both the master and sub-brand's reputation.

Managers, marketers and brand owners should consider a brand architecture with a variety of strategies preferably on both sides of the BRS. Formulating a portfolio spreads the risk of reputational damage on the overall brand portfolio. In this study, it was shown that during a critical reputation crisis, Toyota and its sub-brands were experiencing reputational hits and a drop in sales, while the Lexus brand received minimal hits and a slight increase in sales in the same period (refer to Figure 6.23). If any crisis were to occur regarding a house of brands brand, the reputational damage on the branded house brands could be minimal, and vice versa. Introducing multiple house of brands brands, could prove useful. Toyota has already introduced a new house of brands brand in the United States, namely the Scion (MSN, 2011:1). By building a diversified brand architecture investors are likely to feel less risk averse about investing in a company since the brands will be more diversified in terms of risk of reputational damage.

Since Toyota is both the product and corporate brand, it opens up the possibility of reputational damage to occur on both the product and the corporate side of the master brand. Should a reputational crisis occur on such a brand, it is of critical importance that managers, marketers and brand owners manage such crisis as swiftly and effectively as possible to ensure that the brand image and brand identity remained intact. In order to minimise overall reputational damage on an organisation's brand architecture, constant revision, monitoring and diversification of the organisation's brand architecture is critical.

## 7.4 Future Research

A quantitative content analysis methodology using keyword counting and filtering on a South African automotive company had not been performed before in South Africa, which makes this research the first of its kind. The research however has the potential to be developed further.

Keyword quantitative content analysis proved to work well for the study, but in terms of the data, especially with regard to Poisson regression, a larger data set and timescale should be used in future research.

In terms of the sample size, the study was limited to a South African context which placed a limitation on the amount of data available particularly with regard to consumer generated media. Future research should seek to increase the sample size possibly on a global scale. Opening the research to include other automotive manufacturers or across different industries, for example, could be done to allow a cross-industry comparative study.

In terms of brand architecture, only three of the four brand architecture strategies were researched in the study. Future research should include the endorsed brand strategy. Furthermore, this research only focused on the four main brand architecture strategies from the brand relationship spectrum, while there are nine sub-strategies that could be further researched.

With regard to brand reputation, this study focused on the negative reputational issues the organisation encountered, but there are numerous positive issues that offset the negative issues, which should be included in future research. This study mainly focused on the brand image of the organisation, while future research should include brand identity (internal to the organisation) to cover brand reputation as a whole. In terms of the orthogonal keywords, there is potential to take the analysis further including time series analysis on each orthogonal keyword. Due to the large number of zeros and the small sample size, the Poisson regression analysis did not reach full potential and therefore future research should explore this.

Finally, reputational hits could be compared not only with sales, but with other financial measures such as investor confidence, profitability and earnings per share. This will provide a full report on the reputational damage to the company and whether the brand architecture of the company has insulated it from reputational issues.

## 7.5 Summary

The research presented in this study is new to the field, especially in South Africa. The results obtained from this study were sufficient to provide managers, marketers and brand owners with recommendations on how to effectively manage the brand architecture of their particular organisation. The branded house and sub-brand strategies were found to be the most vulnerable to reputational damage, since the driver role of the brands within these strategies is usually large. The connection between different brands, most often the master and sub-brands allows the target for reputational damage to be enlarged, which is clear in this study. The house of brands strategy seems to insulate the brand from reputational damage, due to the fact that it was not connected to the master brand, but this is not to say that the house of brands brand will experience no reputational damage itself.

Managers, marketers and brand owners should constantly review their brand architecture, especially in the fast paced working environment today. Careful consideration must be given to which brand architecture strategy should be taken into account. Should a reputational crisis occur, managers must take swift and effective action to ensure minimal brand reputational damage and to finally secure customer loyalty in a way similar to how Toyota managed the problems it faced.

Future research should include a larger sample size with the possibility of taking the study to a global scale. The increased sample size will allow for a more accurate measurement of the data and allow for a more detailed analysis. The study has the potential to be developed further and allow managers, marketers and brand owners even more insight into their brand architecture.

# APPENDIX A

## Email Responses

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From: **Andrew Waddington** [mailto:waddington.andrew@gmail.com]  
Sent: Thursday, March 31, 2011 7:14 AM  
To: David Aaker  
Subject: Brand Architecture Enquiry  
Dear Sir

I am a masters student at Rhodes University, in South Africa. I am doing research on brand architecture and brand reputation using Toyota as a case. I have read your article on the Brand Relationship Spectrum (BRS) and I have some confusion on how to place the Toyota brands into the BRS strategies.

I understand that Lexus is a house of brands brand, however not sure if Toyota Corolla (Camry, Auris, etc) are sub-brands or are branded house brands?

I am having the debate with myself whether Toyota is a "primary" or "dominant" driver of those brands.

Do you have any thoughts into this ?

Lastly, would you say that with regard to the Brand Relationship Spectrum, that some strategies are more vulnerable in terms of brand image and brand reputation than others?

Thank you so much for your time, looking forward to hearing back from you.

Kind Regards

Andrew Waddington  
Rhodes University

---

From: **David Aaker** <DAaker@prophet.com>  
Date: Thu, Mar 31, 2011 at 5:17 PM  
Subject: RE: Brand Architecture Enquiry  
To: Andrew Waddington <waddington.andrew@gmail.com>

Toyota is a corporate and product brand. Corolla, etc. I would call subbrands. What is dominant will vary in my view over subbrands and segments. mIght look at my book Brand Portfolio Strategy. Dave

David Aaker  
Vice-Chairman, Prophet  
Blog: [davidaker.com](http://davidaker.com)  
From: **Erich Joachimsthaler** <ejoachimsthaler@vivaldipartners.com>  
Date: Fri, Apr 1, 2011 at 12:32 AM

Subject: RE: Brand Architecture Query  
To: Andrew Waddington <waddington.andrew@gmail.com>

Hi,

Thanks for the interest. Yes, definitely, Corolla are subbrands of Toyota and so is the Prius. Toyota is the master brand and they are part of the branded house of Toyota.

If you look at the brand relationship between Toyota and Lexus, then Lexus is defined as a house of brands. If you were to look at Lexus as a brand alone and their relationship to models, then Lexus 400 Lexus 300 and so on suggest that that Lexus is a branded house.

The confusion arises from what relationship you are looking at. In the automotive sector, you need to look at the brand and the model: that is the relevant relationship, namely Toyota is the brand, the model is Corolla (in our world a subbrand)

As I described in the book, there are subbrands that can take on a driver role, for example the Prius.

The other question whether strategies are more or less vulnerable to brand image or reputation than others? The answer is: yes, definitely. It is precisely for that reason that we developed the brand relationship spectrum, because some strategies insulate brands more from reputational damage than others.

Erich

Erich Joachimsthaler

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## APPENDIX B

### Reputational Issues for Toyota Globally in 2009/2010

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Reference	Date	Brands	Amount	Problem	Place
Low Sales	06 January 2009	Toyota	-	Low Sales	Japan
Recall	29 January 2009	Yaris	1300000	Seatbelt Fault	World
Production Cut	24 February 2009	Toyota	-	Production cut	World
Finance Issues	04 March 2009	Toyota	-	No cash, Low Sales	World
Low Sales	02 April 2009	Toyota	-	Low Sales	Japan
Loss in Profits	10 May 2009	Toyota	-	Low Sales, Capacity	World
Low Production	25 June 2009	Toyota	-	Financial Problems	World
Recall	24 August 2009	Camry	-	Power Window Switch	China
Production Cut	26 August 2009	Toyota	1000000	Low Sales	World
Recall	30 September 2009	Lexus, Camry, Avalon, Prius	3800000	Accelerator Pedal	US
Recall	02 November 2009	Lexus, Camry, Avalon, Prius	3 800 000	Floor Mat Problem	US
Recall	26 November 2009	Lexus, Camry, Avalon, Prius	4 200 000	Brake Override	US
Recall	21 January 2010	Toyota	2 300 000	Accelerator Pedals	US
Recall	27 January 2010	Toyota	1 100 000	Floor Mat Problem	US
Recall	29 January 2010	Toyota	1 800 000	Accelerator Pedals	World
Recall	08 February 2010	Prius	436 000	Brake Glitches	World
Recall	08 February 2010	Camry	7 300	Brake Glitches	US
Legal Issues	03 March 2010	Toyota	-	Safety of Public	US
Recall	19 April 2010	Prado, Lexus	44 000	Stability Control System	World
Recall	21 May 2010	Lexus	11 509	Steering System	US, Japan
Apology by Toyota	24 June 2010	Toyota	-	For Recalls/Safety	World
Recall	05 July 2010	Lexus	270 000	Valve Springs	World
Recall	29 July 2010	Avalon, Lexus	412 000	Steering Column	US
Recall	28 August 2010	Corolla	1 130 000	Engine Control Modules	US, Canada
Backlog in Production	07 September 2010	Corolla, Hilux, Fortuna	100000	Strike	SA
Recall	21 October 2010	Lexus, Avalon	1530000	Faulty cylinder seal	World
Fine of \$16.4 mill	25 November 2010	Toyota	-	Recalls and Safety	US
Fine paid of \$32 mill	21 December 2010	Toyota	-	Recalls and Safety	US

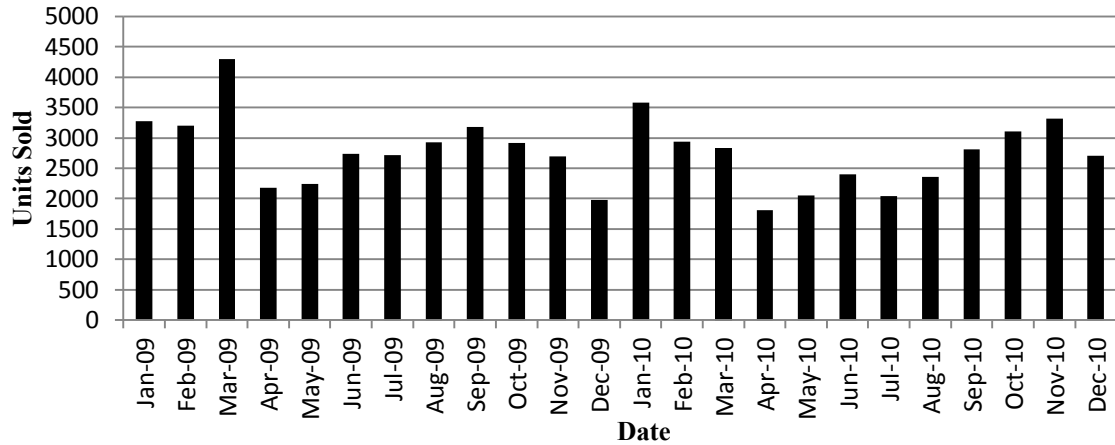
Source: Researcher's own adaptation from news sources\*

\*Available on request

# APPENDIX C

## Sales Figures

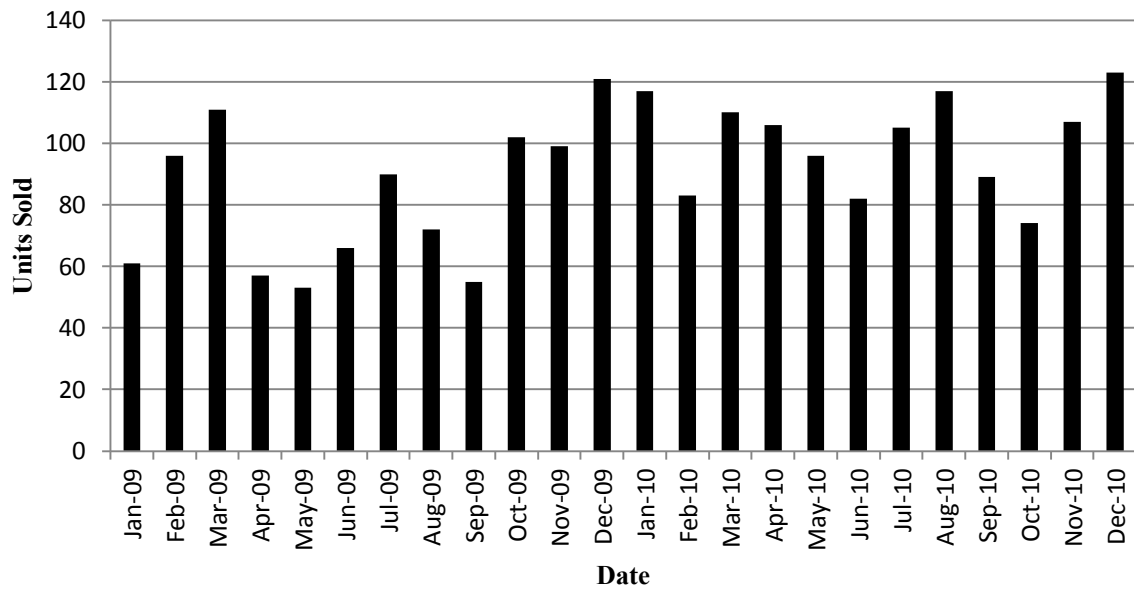
### C1. Sales Figures of Toyota South Africa (Pty) Ltd for 2009/2010



Source: NAAMSA (2010)

Date	Toyota
Jan-09	3271
Feb-09	3205
Mar-09	4298
Apr-09	2182
May-09	2243
Jun-09	2741
Jul-09	2719
Aug-09	2925
Sep-09	3183
Oct-09	2914
Nov-09	2691
Dec-09	1979
Jan-10	3577
Feb-10	2935
Mar-10	2835
Apr-10	1812
May-10	2056
Jun-10	2395
Jul-10	2036
Aug-10	2352
Sep-10	2807
Oct-10	3107
Nov-10	3315
Dec-10	2707

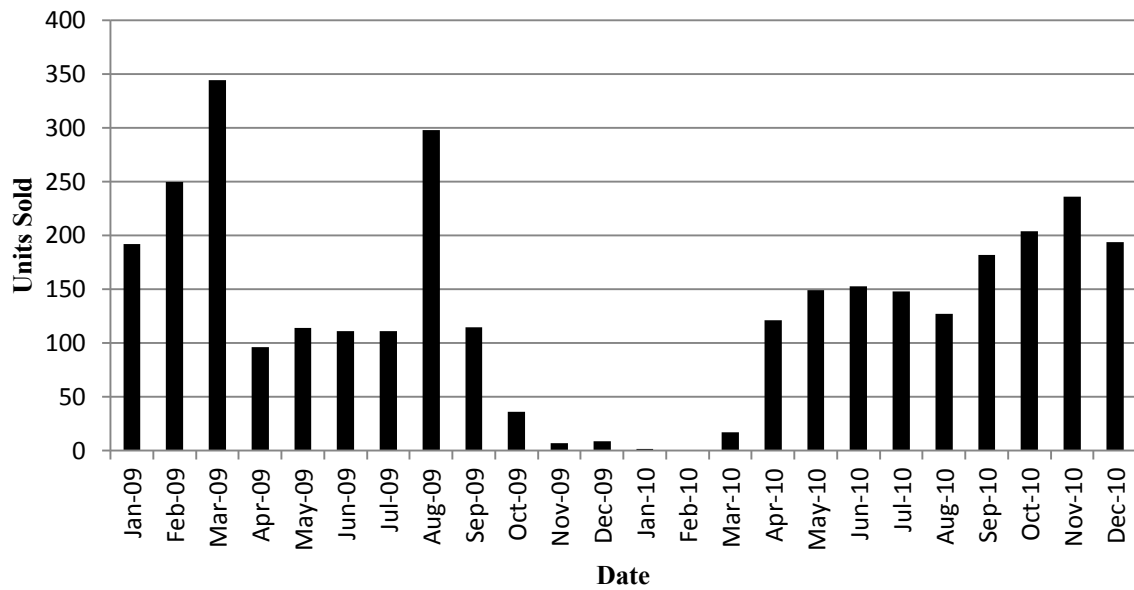
## C2. Sales Figures of Lexus for 2009/2010



Source: NAAMSA (2010)

Date	Lexus
Jan-09	61
Feb-09	96
Mar-09	111
Apr-09	57
May-09	53
Jun-09	66
Jul-09	90
Aug-09	72
Sep-09	55
Oct-09	102
Nov-09	99
Dec-09	121
Jan-10	117
Feb-10	83
Mar-10	110
Apr-10	106
May-10	96
Jun-10	82
Jul-10	105
Aug-10	117
Sep-10	89
Oct-10	74
Nov-10	107
Dec-10	123

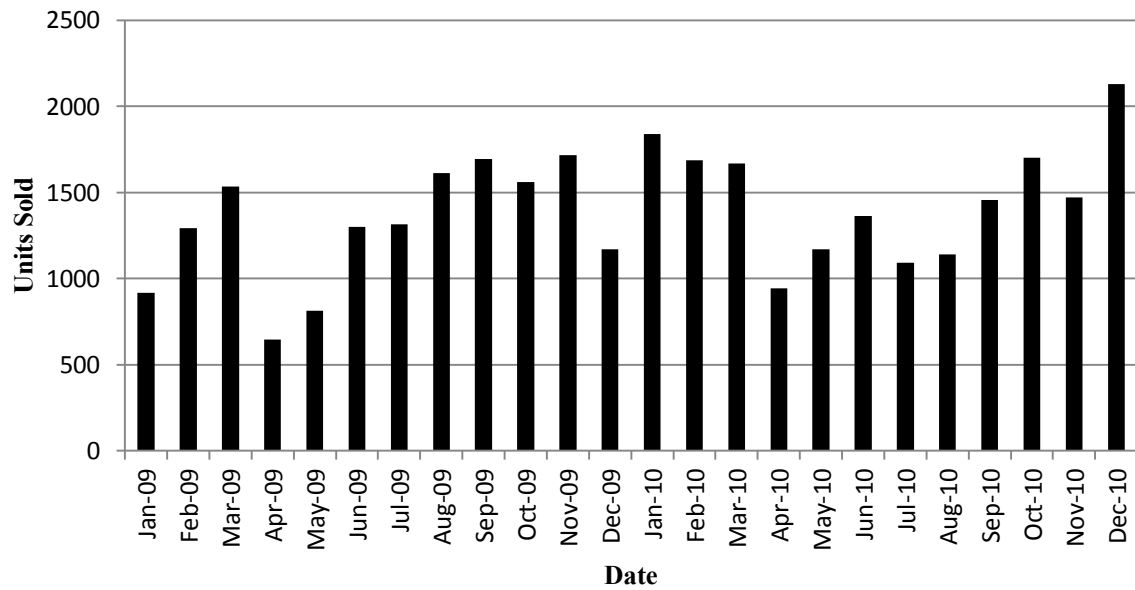
### C3. Sales Figures of Auris for 2009/2010



Source: NAAMSA (2010)

Date	Auris
Jan-09	192
Feb-09	250
Mar-09	344
Apr-09	96
May-09	114
Jun-09	111
Jul-09	111
Aug-09	298
Sep-09	115
Oct-09	36
Nov-09	7
Dec-09	9
Jan-10	2
Feb-10	0
Mar-10	17
Apr-10	121
May-10	149
Jun-10	153
Jul-10	148
Aug-10	127
Sep-10	182
Oct-10	204
Nov-10	236
Dec-10	194

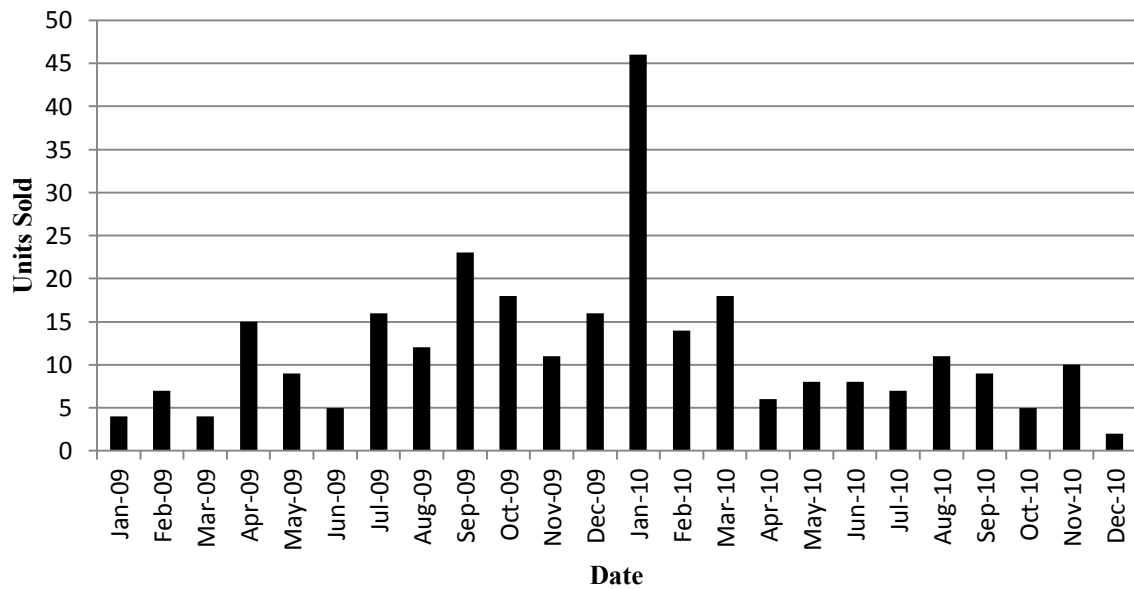
#### C4. Sales Figures of Corolla for 2009/2010



Source: NAAMSA (2010)

Date	Corolla
Jan-09	918
Feb-09	1294
Mar-09	1535
Apr-09	648
May-09	815
Jun-09	1301
Jul-09	1315
Aug-09	1611
Sep-09	1695
Oct-09	1559
Nov-09	1718
Dec-09	1169
Jan-10	1838
Feb-10	1688
Mar-10	1667
Apr-10	942
May-10	1171
Jun-10	1362
Jul-10	1093
Aug-10	1139
Sep-10	1455
Oct-10	1701
Nov-10	1470
Dec-10	2129

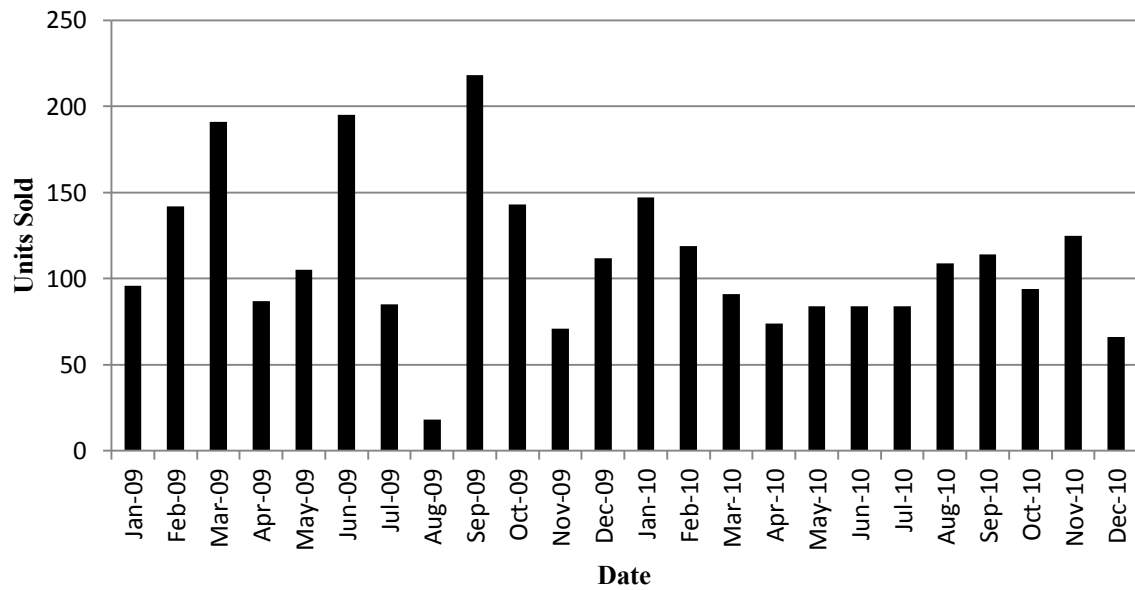
## C5. Sales Figures of Prius for 2009/2010



Source: NAAMSA (2010)

Date	Prius
Jan-09	4
Feb-09	7
Mar-09	4
Apr-09	15
May-09	9
Jun-09	5
Jul-09	16
Aug-09	12
Sep-09	23
Oct-09	18
Nov-09	11
Dec-09	16
Jan-10	46
Feb-10	14
Mar-10	18
Apr-10	6
May-10	8
Jun-10	8
Jul-10	7
Aug-10	11
Sep-10	9
Oct-10	5
Nov-10	10
Dec-10	2

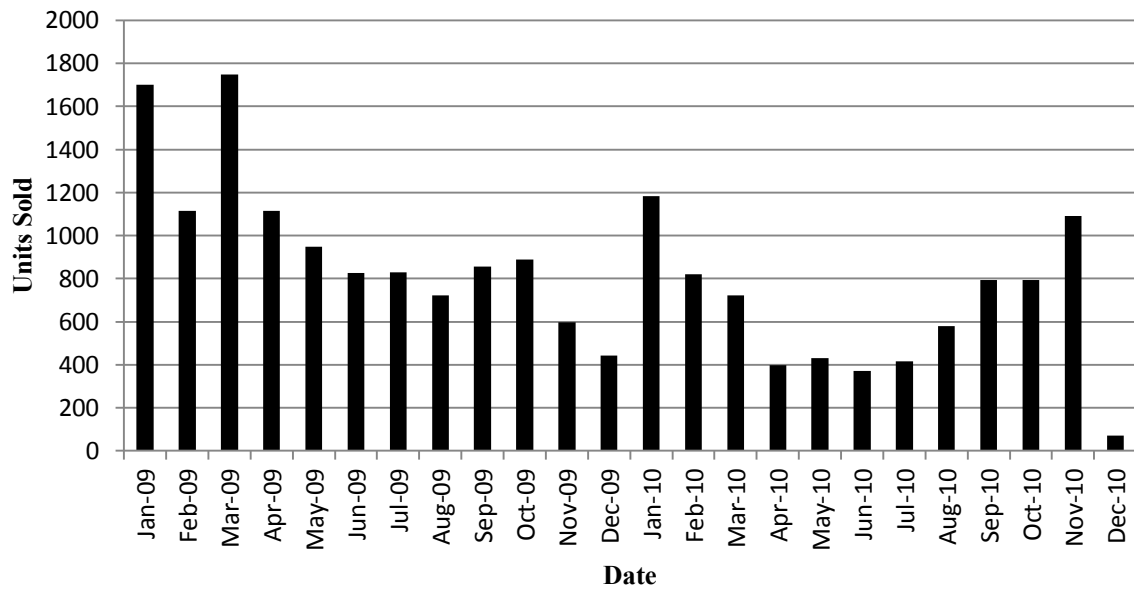
## C6. Sales Figures of Verso for 2009/2010



Source: NAAMSA (2010)

Date	Verso
Jan-09	96
Feb-09	142
Mar-09	191
Apr-09	87
May-09	105
Jun-09	195
Jul-09	85
Aug-09	18
Sep-09	218
Oct-09	143
Nov-09	71
Dec-09	112
Jan-10	147
Feb-10	119
Mar-10	91
Apr-10	74
May-10	84
Jun-10	84
Jul-10	84
Aug-10	109
Sep-10	114
Oct-10	94
Nov-10	125
Dec-10	66

## C7. Sales Figures of Yaris for 2009/2010



Source: NAAMSA (2010)

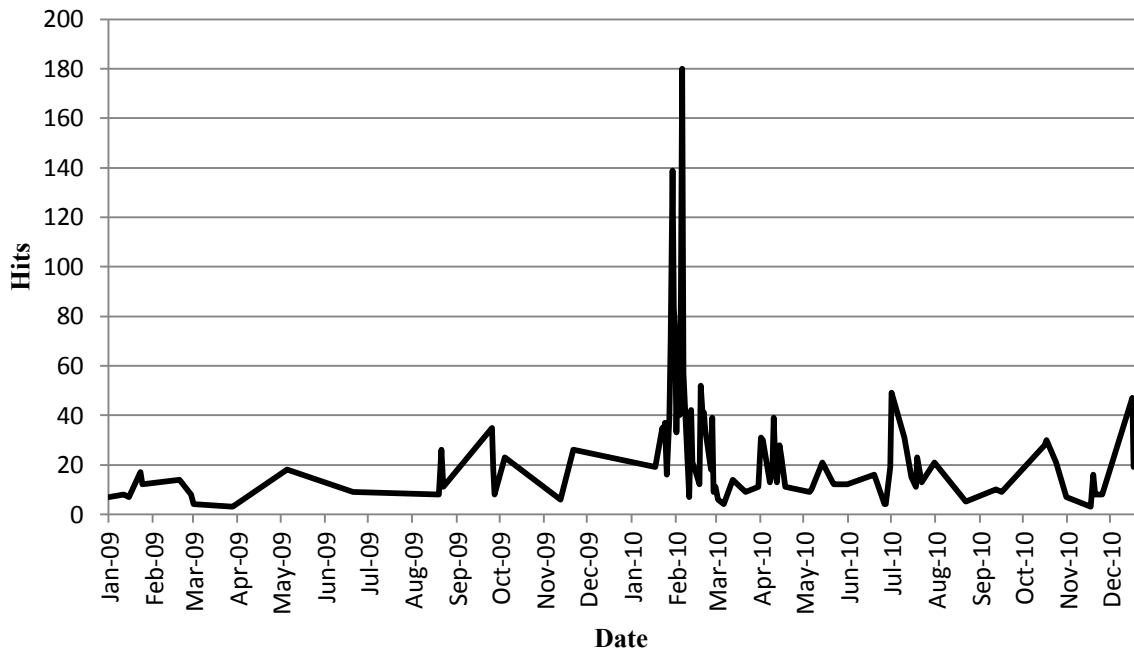
Date	Yaris
09-Jan	1701
09-Feb	1114
09-Mar	1747
09-Apr	1114
09-May	947
09-Jun	825
09-Jul	829
09-Aug	721
09-Sep	855
09-Oct	890
09-Nov	596
09-Dec	442
10-Jan	1182
10-Feb	819
10-Mar	723
10-Apr	398
10-May	431
10-Jun	370
10-Jul	416
10-Aug	580
10-Sep	793
10-Oct	795
10-Nov	1092
10-Dec	71

# APPENDIX D

## Traditional Media Hits

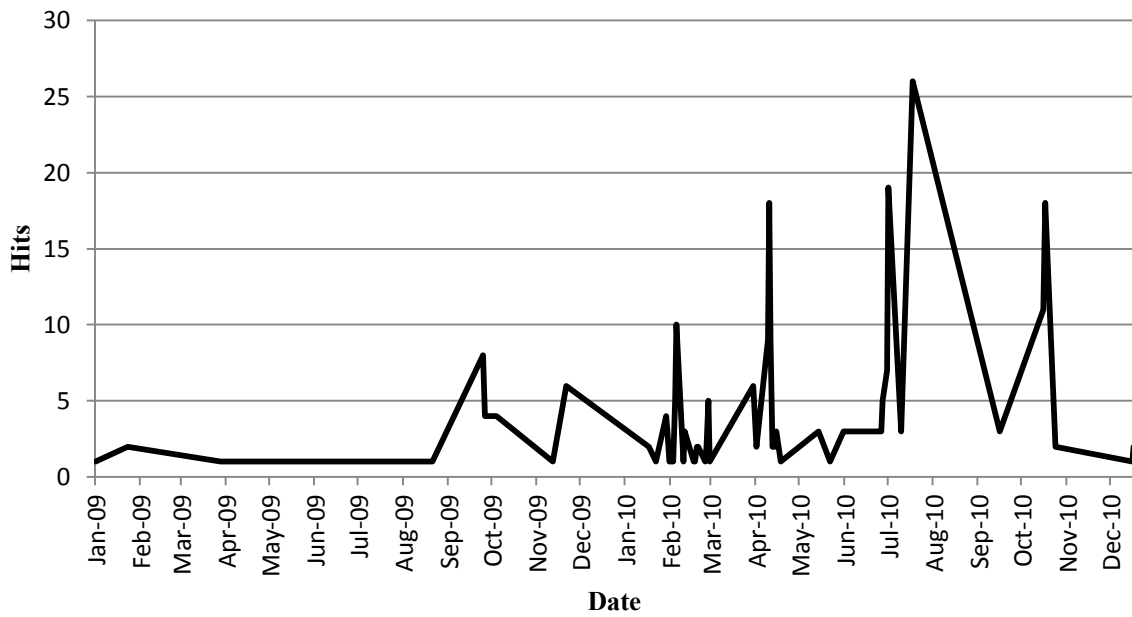
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### D 1. Toyota South Africa (Pty) Ltd Traditional Media Hits



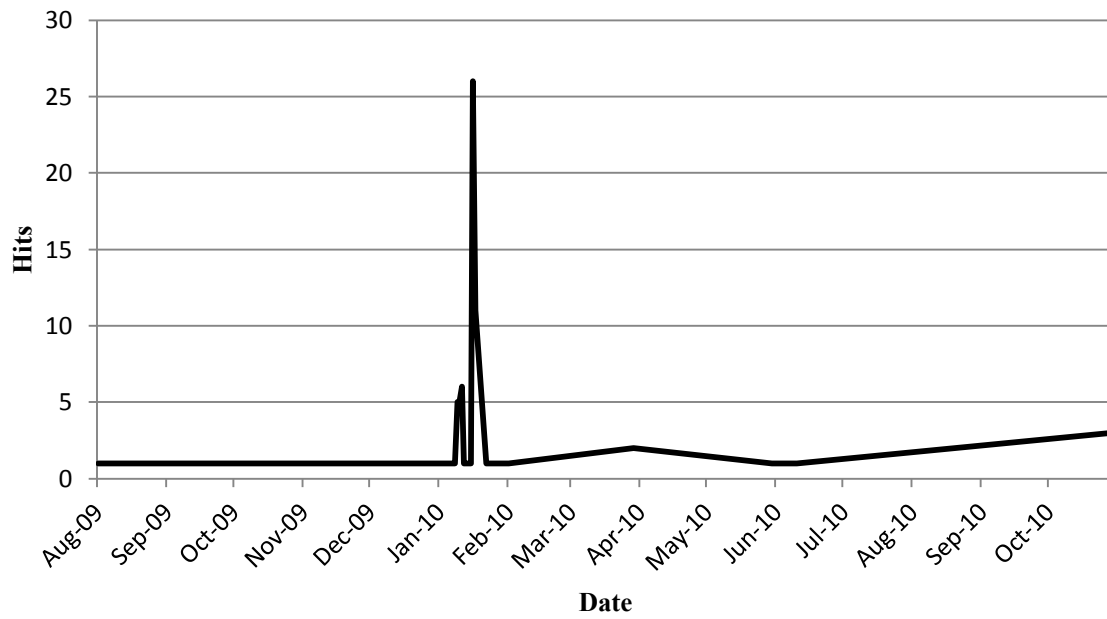
Date	Hits	Date	Hits	Date	Hits	Date	Hits
2009/01/06	7	2010/01/30	16	2010/03/05	11	2010/07/05	19
2009/01/16	8	2010/02/01	39	2010/03/07	6	2010/07/06	49
2009/01/20	7	2010/02/02	70	2010/03/11	4	2010/07/15	31
2009/01/28	17	2010/02/03	139	2010/03/17	14	2010/07/20	15
2009/01/29	12	2010/02/04	83	2010/03/26	9	2010/07/23	11
2009/02/24	14	2010/02/05	74	2010/04/04	11	2010/07/24	23
2009/03/04	8	2010/02/06	33	2010/04/06	31	2010/07/27	13
2009/03/06	4	2010/02/07	59	2010/04/07	30	2010/08/05	21
2009/04/02	3	2010/02/08	40	2010/04/12	13	2010/08/27	5
2009/05/10	18	2010/02/09	88	2010/04/14	20	2010/09/17	10
2009/06/25	9	2010/02/10	180	2010/04/15	39	2010/09/21	9
2009/08/24	8	2010/02/11	57	2010/04/16	16	2010/10/21	28
2009/08/26	26	2010/02/15	7	2010/04/17	13	2010/10/22	30
2009/08/27	11	2010/02/16	42	2010/04/19	28	2010/10/29	21
2009/09/30	35	2010/02/17	21	2010/04/20	23	2010/11/05	7
2009/10/01	18	2010/02/19	18	2010/04/23	11	2010/11/22	3
2009/10/02	8	2010/02/22	12	2010/05/10	9	2010/11/24	16
2009/10/09	23	2010/02/23	52	2010/05/11	10	2010/11/25	8
2009/11/17	6	2010/02/24	40	2010/05/19	21	2010/11/30	8
2009/11/26	26	2010/02/25	41	2010/05/26	13	2010/12/21	47
2010/01/22	19	2010/02/26	34	2010/05/27	12	2010/12/22	19
2010/01/27	35	2010/02/28	27	2010/06/05	12		
2010/01/28	31	2010/03/02	18	2010/06/24	16		
2010/01/29	37	2010/03/03	39	2010/07/01	4		
2010/01/30	16	2010/03/04	9	2010/07/02	4		

## D 2. Lexus Traditional Media Hits



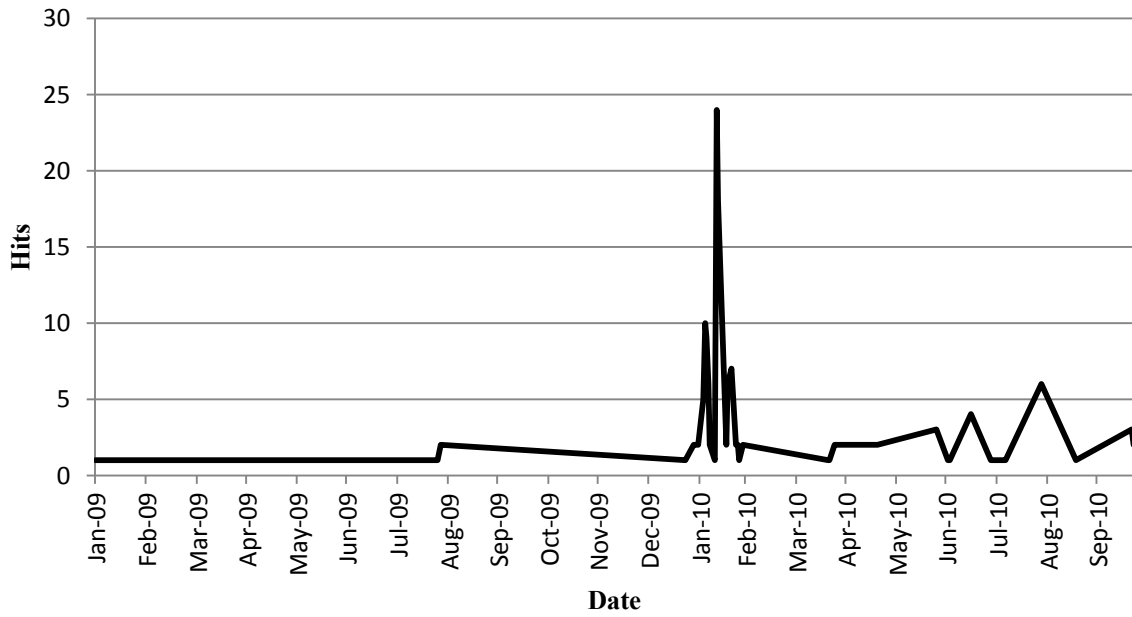
Date	Hits	Date	Hits
2009/01/06	1	2010/03/05	1
2009/01/28	2	2010/04/04	6
2009/04/02	1	2010/04/06	2
2009/08/26	1	2010/04/14	9
2009/09/30	8	2010/04/15	18
2009/10/01	4	2010/04/16	9
2009/10/09	4	2010/04/17	2
2009/11/17	1	2010/04/19	2
2009/11/26	6	2010/04/20	3
2010/01/22	2	2010/04/23	1
2010/01/27	1	2010/05/19	3
2010/02/03	4	2010/05/27	1
2010/02/04	3	2010/06/05	3
2010/02/05	1	2010/07/01	3
2010/02/08	1	2010/07/02	5
2010/02/09	5	2010/07/05	7
2010/02/10	10	2010/07/06	19
2010/02/15	1	2010/07/15	3
2010/02/16	3	2010/07/23	26
2010/02/22	1	2010/09/21	3
2010/02/23	1	2010/10/21	11
2010/02/24	2	2010/10/22	18
2010/02/25	2	2010/10/29	2
2010/03/02	1	2010/12/21	1
2010/03/03	2	2010/12/22	2
2010/03/04	5		

### D 3. Auris Traditional Media Hits



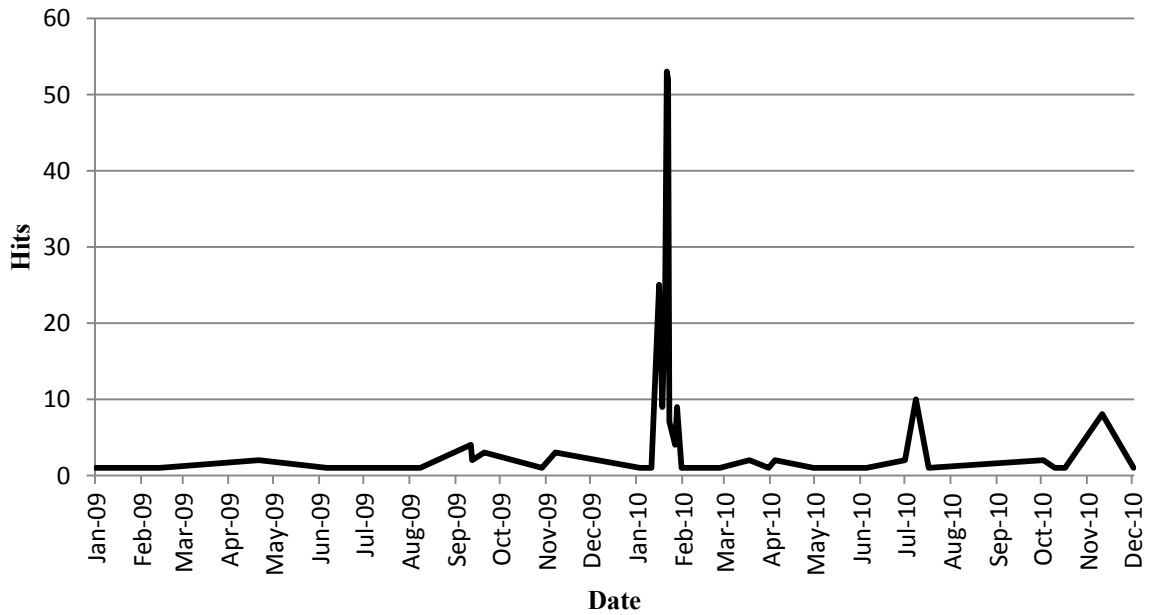
Date	Hits
2009/08/26	1
2010/02/02	1
2010/02/03	5
2010/02/04	5
2010/02/05	6
2010/02/06	1
2010/02/09	1
2010/02/10	26
2010/02/11	11
2010/02/16	1
2010/02/19	1
2010/02/22	1
2010/02/24	1
2010/02/26	1
2010/04/23	2
2010/06/24	1
2010/07/05	1
2010/11/24	3

## D 4. Corolla Traditional Media Hits



Date	Hits	Date	Hits
2009/01/28	1	2010/02/22	2
2009/08/24	1	2010/02/23	2
2009/08/26	2	2010/02/24	1
2010/01/22	1	2010/02/26	2
2010/01/27	2	2010/04/19	1
2010/01/28	2	2010/04/20	1
2010/01/29	2	2010/04/23	2
2010/01/30	2	2010/05/19	2
2010/02/02	5	2010/06/24	3
2010/02/03	10	2010/07/01	1
2010/02/04	9	2010/07/02	1
2010/02/05	6	2010/07/15	4
2010/02/06	2	2010/07/27	1
2010/02/09	1	2010/08/05	1
2010/02/10	24	2010/08/27	6
2010/02/11	18	2010/09/17	1
2010/02/16	2	2010/10/21	3
2010/02/17	6	2010/10/22	2
2010/02/19	7		

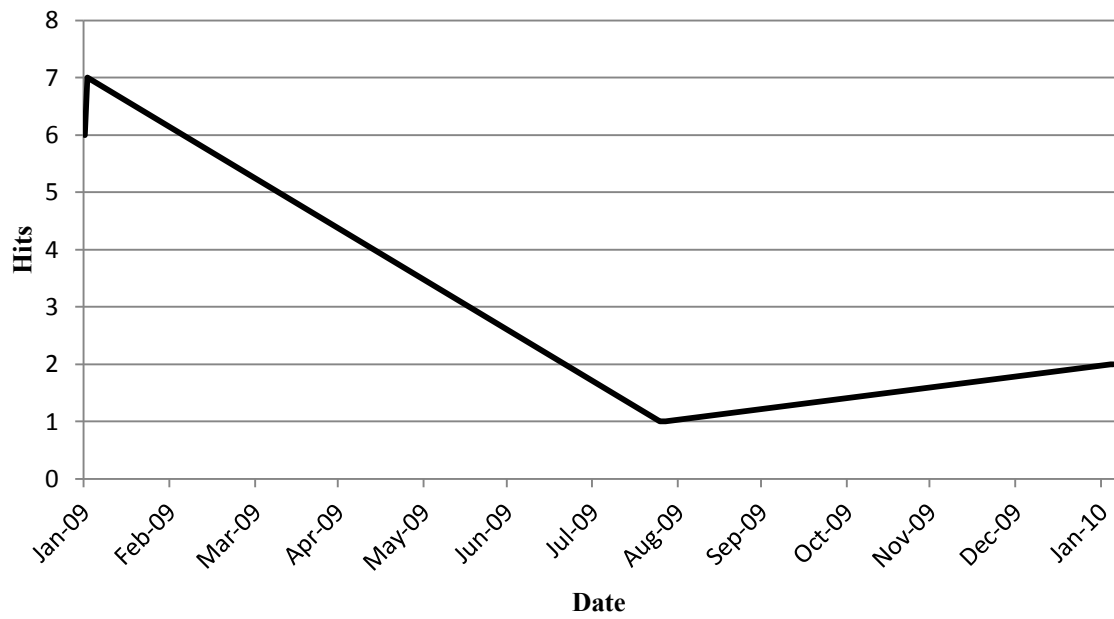
## D 5. Prius Traditional Media Hits



Date	Hits	Date	Hits
2009/01/20	1	2010/02/10	52
2009/02/24	1	2010/02/11	7
2009/03/04	1	2010/02/15	4
2009/05/10	2	2010/02/16	9
2009/06/25	1	2010/02/19	1
2009/08/26	1	2010/02/24	1
2009/08/27	1	2010/03/17	1
2009/09/30	4	2010/04/06	2
2009/10/01	2	2010/04/19	1
2009/10/09	3	2010/04/23	2
2009/11/17	1	2010/05/19	1
2009/11/26	3	2010/06/24	1
2010/01/22	1	2010/07/20	2
2010/01/30	1	2010/07/27	10
2010/02/03	21	2010/08/05	1
2010/02/04	25	2010/10/21	2
2010/02/05	18	2010/10/29	1
2010/02/06	9	2010/11/05	1
2010/02/07	15	2010/11/30	8
2010/02/08	19	2010/12/21	1
2010/02/09	53		



## D 7. Yaris Traditional Media Hits

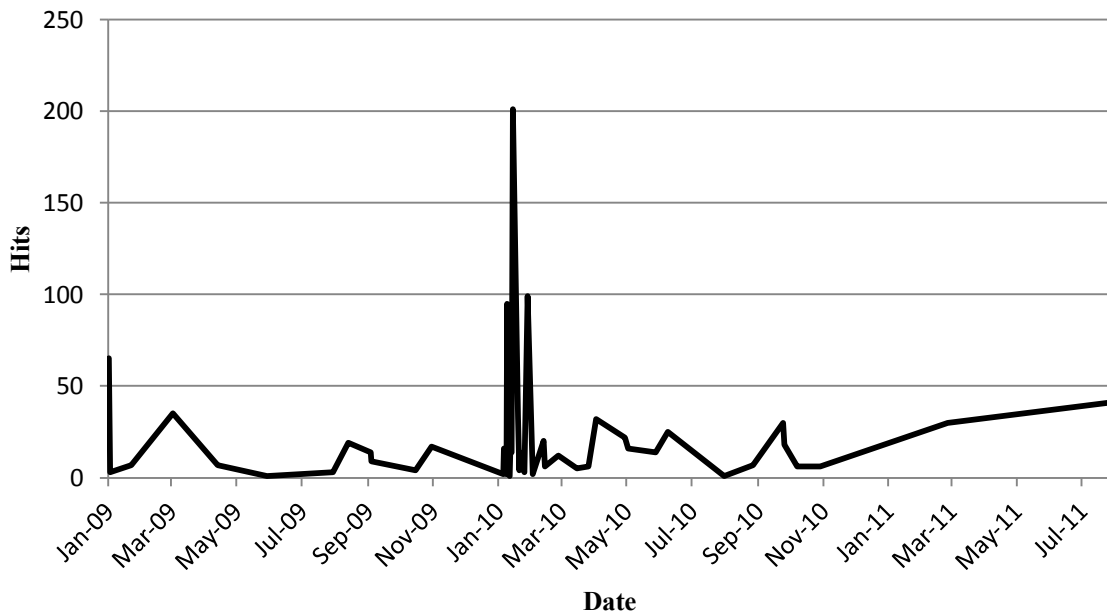


Date	Hits
2009/01/28	6
2009/01/29	7
2009/08/24	1
2009/08/26	1
2010/02/03	2
2010/02/04	2

# APPENDIX E

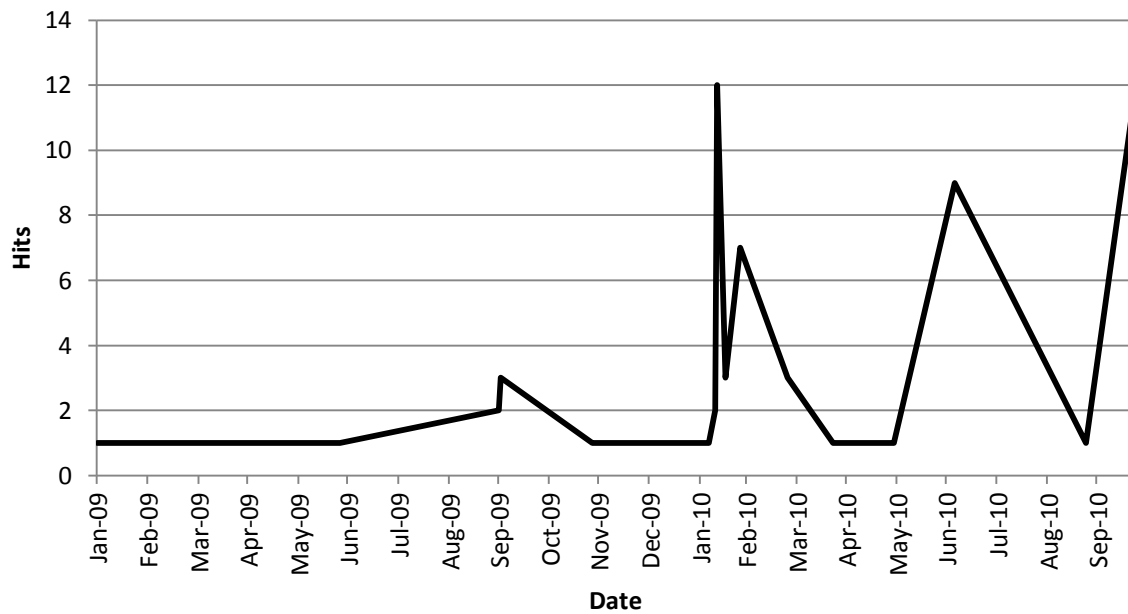
## Consumer Generated Media Hits

**E 1. Toyota South Africa (Pty) Ltd Consumer Generated Media Hits**



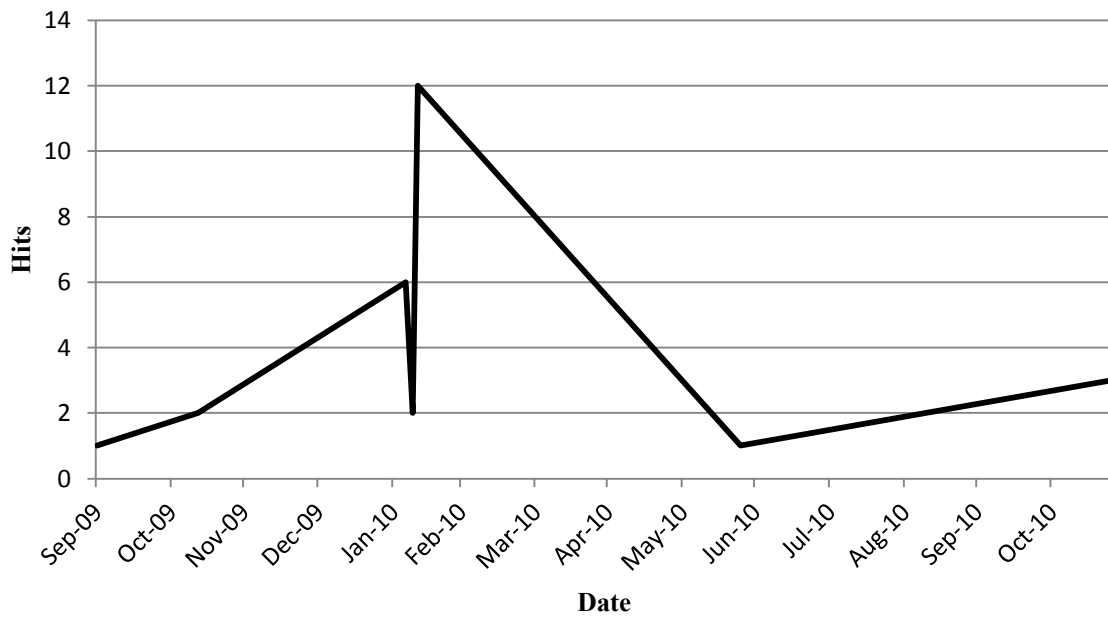
Date	Hits	Date	Hits	Date	Hits
2009/01/28	65	2010/02/08	15	2010/08/27	1
2009/01/29	3	2010/02/09	14	2010/09/23	7
2009/02/18	7	2010/02/10	201	2010/10/21	30
2009/03/29	35	2010/02/15	33	2010/10/22	18
2009/05/10	7	2010/02/16	4	2010/11/03	6
2009/06/25	1	2010/02/17	14	2010/11/25	6
2009/08/26	3	2010/02/18	8	2011/03/24	30
2009/09/09	19	2010/02/21	3	2011/08/24	41
2009/09/30	14	2010/03/01	2		
2009/10/01	9	2010/03/11	20		
2009/11/11	4	2010/03/12	6		
2009/11/26	17	2010/03/25	12		
2010/02/01	2	2010/04/11	5		
2010/02/02	16	2010/04/22	6		
2010/02/03	14	2010/04/29	32		
2010/02/04	2	2010/05/26	22		
2010/02/05	95	2010/05/29	16		
2010/02/06	2	2010/06/24	14		
2010/02/07	1	2010/07/05	25		

## E 2. Lexus Consumer Generated Media Hits



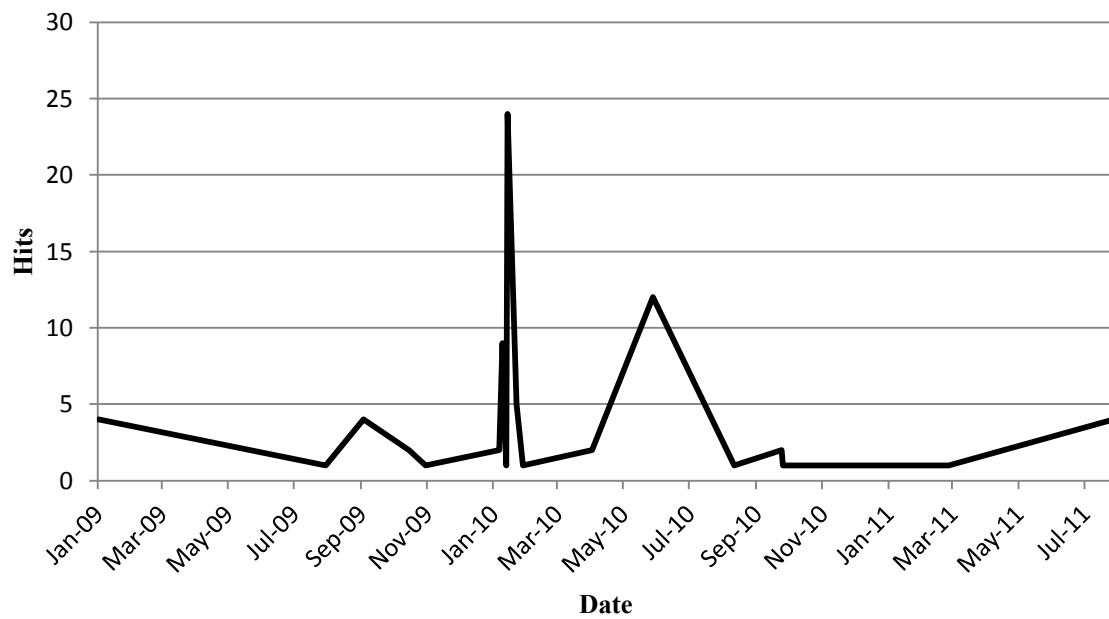
Date	Hits
2009/08/26	1
2010/02/02	1
2010/02/03	5
2010/02/04	5
2010/02/05	6
2010/02/06	1
2010/02/09	1
2010/02/10	26
2010/02/11	11
2010/02/16	1
2010/02/19	1
2010/02/22	1
2010/02/24	1
2010/02/26	1
2010/04/23	2
2010/06/24	1
2010/07/05	1
2010/11/24	3

### E 3. Auris Consumer Generated Media Hits



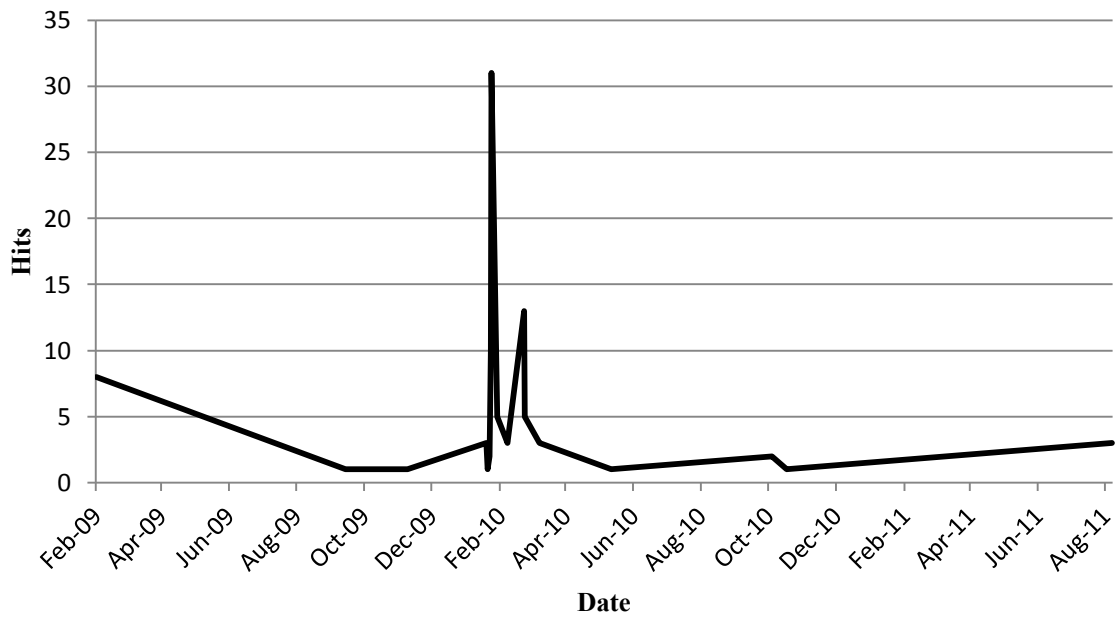
Date	Hits
2009/09/30	1
2009/11/11	2
2010/02/05	6
2010/02/08	2
2010/02/10	12
2010/06/24	1
2010/11/25	3

## E 4. Corolla Consumer Generated Media Hits



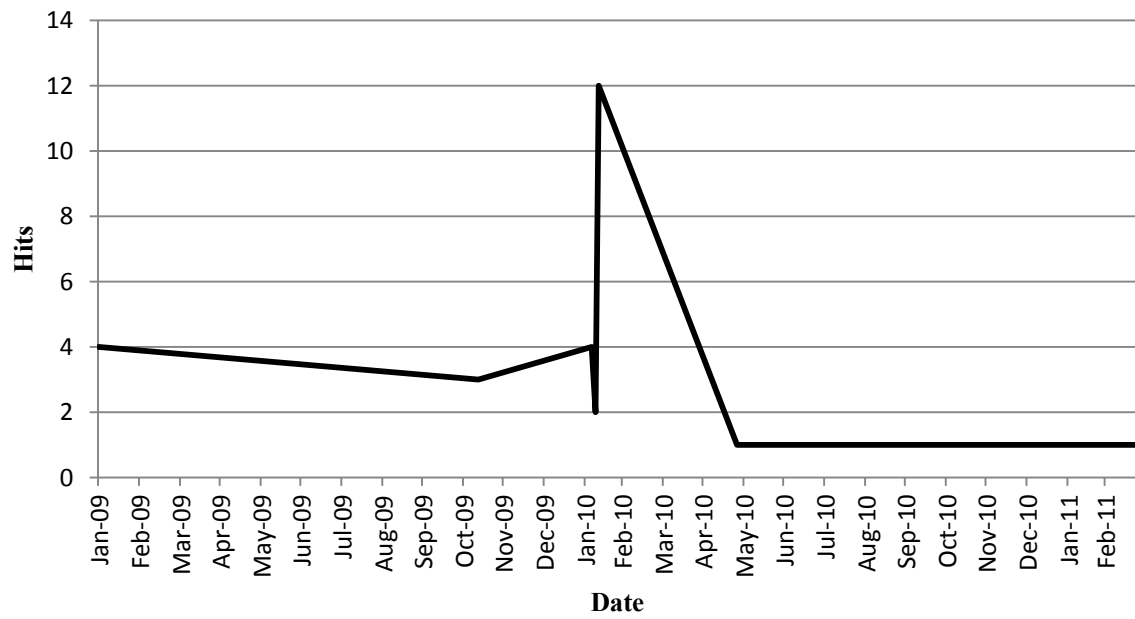
Date	Hits
2009/01/28	4
2009/08/26	1
2009/09/30	4
2009/11/11	2
2009/11/26	1
2010/02/02	2
2010/02/05	9
2010/02/08	2
2010/02/09	1
2010/02/10	24
2010/02/18	5
2010/02/24	1
2010/04/29	2
2010/06/24	12
2010/09/07	1
2010/10/21	2
2010/10/22	1
2011/03/24	1
2011/08/24	4

## E 5. Prius Consumer Generated Media Hits



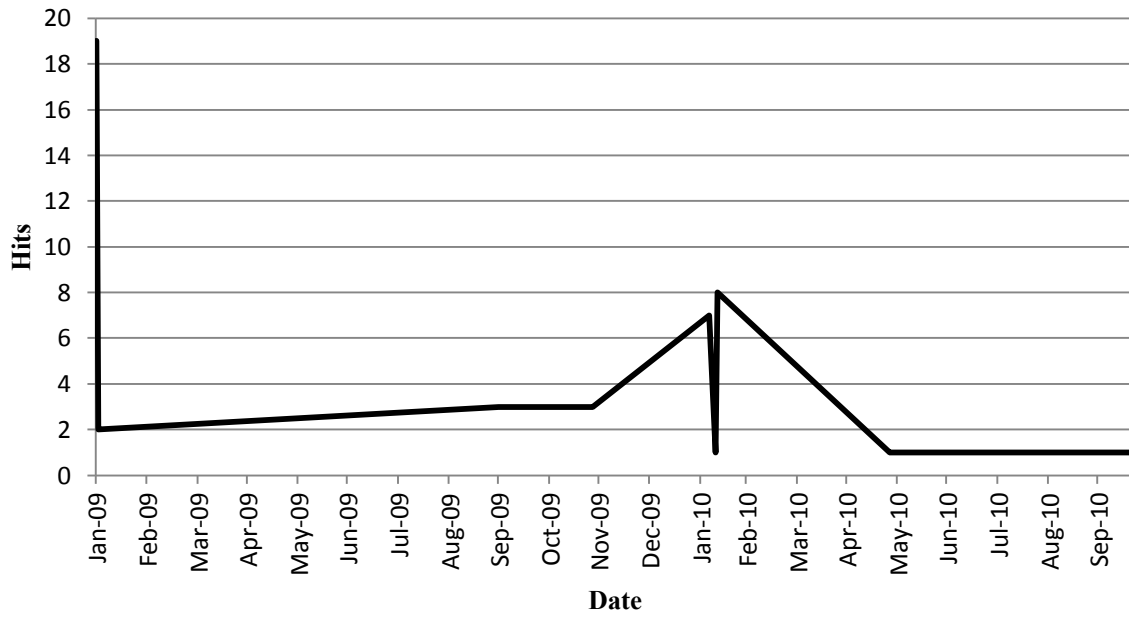
Date	Hits
2009/02/18	8
2009/10/01	1
2009/11/26	1
2010/02/05	3
2010/02/06	1
2010/02/08	2
2010/02/09	10
2010/02/10	31
2010/02/15	5
2010/02/24	3
2010/03/11	13
2010/03/12	5
2010/03/25	3
2010/05/29	1
2010/10/21	2
2010/11/03	1
2011/08/24	3

## E 6. Verso Consumer Generated Media Hits



Date	Hits
2009/01/28	4
2009/11/11	3
2010/02/05	4
2010/02/08	2
2010/02/10	12
2010/05/26	1
2010/06/24	1
2011/03/24	1

## E 7. Yaris Consumer Generated Media Hits



Date	Hits
2009/01/28	19
2009/01/29	2
2009/09/30	3
2009/11/26	3
2010/02/05	7
2010/02/09	1
2010/02/10	8
2010/05/26	1
2010/10/22	1

# APPENDIX F

## Statistical Analysis by Stefan Van Rensburg

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### 1 Relationship between number of articles and events

As per the recommendation in the initial analysis, Poisson models were fitted with events lagged up to three periods.

We can see with all of the models, other than the consumer generate media series for the House-Brands, that the residual deviance is exceptionally large. In these cases, the  $\chi^2$  Goodness of Fit test is highly significant, indicating a clear lack of fit. This is possibly due to the excessive amount of zero.

The result of an event, for each series, is reported in the files "tmImpulseFunc.xls" and "egmImpulseFunc.xls".

### 2 Relationship between monthly sales and monthly number of articles

We now analyse the impact of the number of articles published in a month on the monthly sales.

Inspection of the sales data reveals shows that increases / decreases are usually followed by increases / decreases. This would suggest an AR(1) process. The ACF plot, however, does not reveal any significant autocorrelations, other

	estimate	std.err	pvalue
(Intercept)	-0.696	0.255	0.006
Event	1.14	0.623	0.067
Event11	1.559	0.881	0.077
Event12	2.18	1.007	0.03
Event13	1.116	0.998	0.263
	Residual Dev.	d.f.	pvalue
Goodness of Fit	3496.007	707	0

Table 1: Traditional Media, Sub-Brands: Summary of the Poisson regression model.

	estimate	std.err	pvalue
(Intercept)	0.803	0.174	0
Event	1.9	0.292	0
Eventl1	1.614	0.394	0
Eventl2	1.187	0.71	0.094
Eventl3	0.482	0.578	0.404
	Residual Dev.	d.f.	pvalue
Goodness of Fit	9925.884	707	0

Table 2: Traditional Media, Brand-House: Summary of the Poisson regression model.

	estimate	std.err	pvalue
(Intercept)	-1.586	0.285	0
Event	2	0.472	0
Eventl1	2.476	0.531	0
Eventl2	0.439	0.898	0.625
Eventl3	-15.084	0.452	0
	Residual Dev.	d.f.	pvalue
Goodness of Fit	1207.844	707	0

Table 3: Traditional Media, Houses-of-Brands: Summary of the Poisson regression model.

	estimate	std.err	pvalue
(Intercept)	-1.469	0.32	0
Event	1.416	0.824	0.086
Eventl1	1.041	0.849	0.22
Eventl2	2.504	1.095	0.022
Eventl3	-14.938	0.371	0
	Residual Dev.	d.f.	pvalue
Goodness of Fit	1761.46	688	0

Table 4: Consumer Generated Media, Sub-Brands: Summary of the Poisson regression model.

	estimate	std.err	pvalue
(Intercept)	-3.154	0.38	0
Event	2.804	0.876	0.001
Eventl1	1.91	0.671	0.004
Eventl2	1.613	1.245	0.195
Eventl3	-0.444	1.075	0.68
	Residual Dev.	d.f.	pvalue
Goodness of Fit	399.171	688	1

Table 5: Consumer Generated Media, House-Brands: Summary of the Poisson regression model.

	estimate	std.err	pvalue
(Intercept)	-0.123	0.291	0.672
Event	1.341	0.647	0.038
Event11	0.672	0.63	0.286
Event12	2.019	1.059	0.057
Event13	-1.09	0.815	0.181
	Residual Dev.	d.f.	pvalue
Goodness of Fit	5501.454	688	0

Table 6: Consumer Generated Media, House-of-Brands: Summary of the Poisson regression model.

	Estimate	Std. Error	t value	Pr(>  t )
(Intercept)	86.088	7.526	11.439	0.000
Sub-Brands and House-of-Brands	-0.636	0.223	-2.852	0.010
Brand-House	0.267	0.096	2.771	0.011

Residual standard error: 21.19 on 21 degrees of freedom

Adjusted R-squared: 0.07478

F-statistic: 1.929 on 2 and 21 DF, p-value: 0.1701

Table 7: Regression results depicting the relationship between articles in the traditional media and sales.

than a half-yearly dependence. The lack of significant serial correlation is most likely due to the small sample size, as the asymptotic variance of the ACF depends on the sample size.

Again, the cross-correlation function indicates that there is only a very weak statistical relationship between the number of articles and sales. While not statistically significant, the CCF suggests that the number of articles might lead sales by two months and five months.

Unfortunately, with so few observations, it would be imprudent to fit an ARMA-type model. We rather resort to using a linear regression model with HAC covariance estimates (robust standard errors).

Note that both models display a clear lack of fit. This is especially evident

	Estimate	Std. Error	t value	Pr(>  t )
(Intercept)	92.978	9.008	10.321	0.000
Sub-Brands and House-of-Brands	-0.732	0.305	-2.401	0.026
Brand-House	0.231	0.084	2.747	0.012

Residual standard error: 22.14 on 21 degrees of freedom

Adjusted R-squared: -0.009756

F-statistic: 0.8889 on 2 and 21 DF, p-value: 0.426

Table 8: Regression results depicting the relationship between articles in the traditional media and sales.

in the significant  $F$ -statistics and low adjusted  $R$ -squared. The  $R$ -squared is, in fact, negative for the model with consumer generated data.

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