

## Android OS as a New Ingredient Brand in Consumer Electronics

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*The purpose of this study is to examine the ingredient branding efforts and market situation of Android OS, a leading software company for Smartphones and trying to answer the question that “Can we count Android OS as an Ingredient Brand?”. Ingredient Branding has been in the market since 1960’s and its popularity have increased in the last few years and showing more alliances of products, brands and marketing programs. Also, academic studies are gaining momentum in this direction. The new mobile phones are no more just for talking or texting, they have hardware more like personal computers today and they can carry and process data to compensate consumers’ needs when people are away from their computers. The more complex hardware that Smartphones have, the more complex operating system needs arises. Android is an open-source software stack for mobile phones and other devices.*

**JEL Codes:** M30, M31 and M39

### 1. Introduction

Ingredient Branding is not a new strategy; it has been in market since early 1960s. It is a management strategy having a purpose of prompting components and parts to downstream players in the value chain. Ingredient Branding strategy have been started to use in the chemical industry first (e.g., DOW Chemical with Styron, BASF with Luran), on the products such as plastics and synthetic fibers. Later then, there were a lot of scholarly studies on Ingredient Branding (Linder and Seidenstricker, 2010). Ingredient Branding is becoming increasingly popular and increasingly showing more alliances of products, brands and marketing programs. (Desai and Keller, 2002). In the ongoing effort to survive and grow in the marketplace, marketers have increasingly turned to brand alliances such as co-branding, composite branding and advertising alliances, as well as ingredient branding (McCarthy and Norris, 2009, Keller, 2009).

Previous studies mentioning Ingredient Branding are mostly theoretical-descriptive and empirical-quantitative works revealing success of ingredient marketing strategies and can be summarized by four attributes (Linder and Seidenstricker, 2010):

- Concentration only on select and specific questions (industry-specific)
- Out of touch with reality and factious brand and product offerings
- Limited validity due to the use of primarily university students as participants
- Research primarily concentrated on consumptive commodities (e.g. food)

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However, there is no study concerning that Android Operating System as an Ingredient Brand. We examine and aim to explore this very successful OS in the name of literature of Ingredient Branding in this study. Past studies about Ingredient Branding did not concerned Android OS as an Ingredient Brand.

The purpose of this study is to examine the ingredient branding efforts and market situation of Android OS, leading software company for smartphones. We aimed to shed light on academicians and practitioners for future research for they count Android OS as an Ingredient Brand.

The rest of this paper is organized as follows: First, we investigate the literature of Ingredient Branding. We also talk about push and pull strategies by the relations of Ingredient Branding. In the third section, we mention about methodology that is used, and mention the history of Android OS and market situation in the next section. Finally, we discuss our findings and inferences.

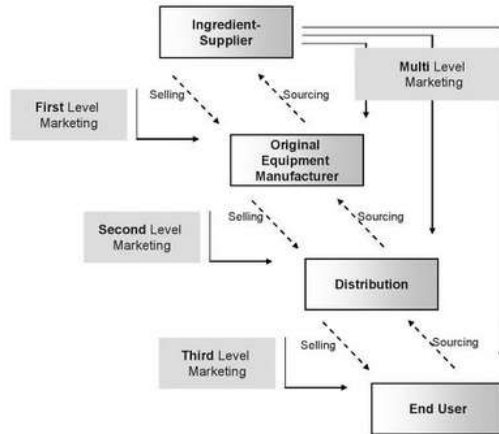
### **2. Literature Review**

There are different opinions about definition of Ingredient Branding and position of Ingredient Branding where it locates in the literature. Keller (2008) is suggesting that Ingredient Branding under an umbrella of co-branding as an element. Kotler and Pfoertsch (2006) have a similar opinion suggesting that Ingredient Branding is a special form of co-branding and multi-level branding. Conversely to these ideas, there are several definitions separating Ingredient Branding and co-branding from each other. There are differences between co-branding and Ingredient Branding while manufacturers coming together and offering product in co-branding, relationship between the manufacturer and the supplier in which the end product of supplier becomes one of the components of manufacturer's offering in Ingredient Branding (Smit,1999, Erevelles et al., 2008). Another important criterion of co-branding is that the ingredient brand cannot be bought outside the context of the host brand (Rik, 2003). Yet another difference between co-branding and ingredient branding is the strategic direction: Co-branding is more horizontal and ingredient branding is a vertical strategy based on an isolated positioning principle (Herman and Carsten, 1999). Considering all these, Uggla and Filipson (2008) defining Ingredient Branding on the basis of Baumgarth (2004) and Riezebos's (2003) studies as follows:

“Ingredient branding is a specific form of brand collaboration, distinct from co-branding that highlights a distinct component or brand attribute to enhance a product or service that can potentially become a category point-of-parity, create multi-level visibility, awareness, differentiation, and preference down-streams in the value chain.”

Also Aaker (2003) defining Ingredient Branding as a brand differentiation instrument.

**Figure 1 Multi-level branding (Kotler and Pfoertsch, 2010)**



According to Desai and Keller (2002), getting key attributes of one brand incorporated into another brand as ingredients is the Ingredient Branding. The basic motivation for using ingredient branding is - even if customers do not understand how the ingredient works - that it enhances the differentiation of the host brand from competition by characterizing the attributes of the ingredient in the host brand more specifically (Pinar and Trapp, 2008, Aaker, 2003). There are two sides of Ingredient Branding: Ingredient brand and host brand.

Ingredient brands are firms that procurement components to producers that producing final products (OEM) to end user. The ingredient brand is a branded differentiator and as such a part of the functional benefits is provided by the offering (Aaker, 2004, Uglia and Filipsson, 2008). Ingredient brands changes interactions of companies in value chain. (Luczak et al., 2007). Ingredient brand gives an entirely new feature and significant competitive advantage to the host brand (Desai and Keller, 2003). The host brands wishes to differentiate itself from the competition through the inclusion of the ingredient brand into their final product (Luczak and others, 2007). From the standpoint of the manufacturer of the host product, the benefit is in leveraging the equity from the ingredient brand to enhance its own brand equity (Keller, 2008).

One of the most common models for Ingredient Branding is the alliance made by Intel with Dell. Both Intel and Dell's sales was increased after Intel processors had used on Dell computers by the Intel Inside program. Another well-known example is Shimano gear mechanisms have used in bicycles. Shimano notifies in their promotions that most of bicycle producers have been using Shimano gear mechanisms with their bicycles.

Despite the past studies concerned and exemplified very well known chemical, automotive, computer technology industries host brands and their ingredient brands, there is a gap in the rapidly growing smartphone industry that ingredient branding has never been talked.

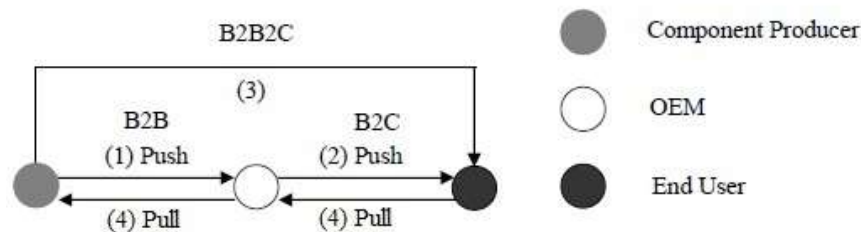
## **2.1. Push and Pull Strategies**

In order to understanding Ingredient Branding and which motives lies behind, push and pull concepts have critical importance. The marketing mix for an Ingredient Branding strategy involves both push and pulls effects. The elements that separating push and pull strategies from each other are consumer and manufacturer behaviors.

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Both push and pull effects as effects of marketing mix for Ingredient Branding strategies. Manufacturer sets pushing strategies as consumer behavior sets pulling strategies. Push strategies include operating the marketing strategy to the OEM's (Pfoertsch and Chen, 2010). Suppliers provide components and services to OEM's. OEM companies are manufacturers that producing products to the end users such as automobiles and electronic products. Suppliers have a B2B relationship with the producers. But when we look from the perspective of customers, we see that the OEM produces a product that is to be used by their customer, the final user. And the end user buys the product or service directly from the OEM which is called B2C relationship. According to this principle, there are two separate stages of customer relationships: An interaction performs between supplier and OEM in first step, and another interaction performs in second step between OEM and end user. According to Figure 2 first and second steps are related to each other. Step (2) follows step (1). And step (3) occurs when the supplier informs the final user that a particular ingredient is part of the final product offering and the final user chooses this product over competitive offerings. In step (4), the final customer "pulls" the product because the particular ingredient component is desired (Luczak et al., 2007). A pull strategy involves appealing directly to the consumer. Supporting pull with push increases the probability of coordination and the combination of the push and pull creates synergy for the complete marketing mix (Pfoertsch and Chen, 2010).

**Figure 2: The Ingredient Brand Framework (Linder and Seidenstricker, 2010)**



Despite Ingredient Branding have been using in practical since 1960's as mentioned, its popularity have increased in last few years. Also, academic studies are gaining momentum in this direction. Despite Ingredient Branding is providing lots of benefits to the companies, it also brings some risks together with. Some of that advantages and disadvantages mentioning below: (Pinar and Trapp, 2008)

### Advantages

- Improvement in perception of differentiation in quality and performance
- Synergy effect from both brands
- Non-cannibalizing its own products
- Perception of better quality allows:
  - ✓ Price premium
  - ✓ More effective and efficient promotion
  - ✓ Easier access to distribution channels
  - ✓ Positive spillover effect
  - ✓ Stronger brand image

### Disadvantages

- Negative spillover effect resulting from problems with ingredients

- Losing control over the brands
- Possible conflicts in marketing mix
- Profit sharing

### 3. The Methodology

This study is designed as an exploratory study and secondary data sources such as market researches, industry reports, company websites and technology magazines have been used in addition to scholarly articles. Due to fact that Android is up to date, popular and successful Ingredient Brand so we select and examine it as case study. Lewin and Johnston suggest that case study method, permits the type of detailed observation that has the power to reveal various nuances and subtleties of behaviour other empirical methods might miss and help to researchers to see new theoretical relationships and question old ones (Lewin and Johnston, 1997).

### 4. The Findings

#### 4.1 Android's History

The new mobile phones are no more just for talking or texting, they have hardware more like personal computers today and they can carry and process data to compensate consumers' needs when people are away from their computers. We call almost all of new mobile phones as smartphones by this reason. They are eligible to fulfill these types of new demands of consumers. Therefore, smartphones need more complex and stable softwares to operate these functions. Because of hardware like touchscreen, GPS, Bluetooth, camera, g-sensor, music player, etc. that smartphones have, they need to being "operated" by a set of software named OS (Operating System) just like their elder brother PC's. The more complex hardware that smartphones have, more complex operating system needs arises.

Android is an open-source software stack for mobile phones and other devices, by definition of Google (Android.com, 2012). This "new stack of software" (we will call it OS in this paper) in the word of Google, have strong competitors like iOS. As we all knew, Android is an open-source software. This made most programmers get excited, because it is an advanced platform that introduces several paradigms in framework design (Hashimi and Komatineni, 2009). This is main difference of Android and iOS mobile OS'es. Let's look into the history of Android operating system closely.

In 2003, before Android has been bought by Google, Andy Rubin was founder and former CEO of Android Inc. He conducted an interview with Business Week, he said there was tremendous potential in developing smarter mobile devices that are more aware of its owner's location and preferences. "If people are smart, that information starts getting aggregated into consumer products" he said (Elgin, 2005).

Google bought Android Inc. in 2005 and announced Open Handset Alliance in 2007, a group for help to develop it (Karch, 2010). Alliance includes mobile operators, handset manufacturers, semiconductor companies, software companies, and commercialization companies, total of 86 today (Open Handset Alliance, 2007). Google wanted to use of the true power of open source, and maintained a web site that anyone who could download and build their own Android. And developers were

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having ability to upload their changes to Google directly. Google moderated these changes and features to make new Android versions (Holly, 2012).

For Teufl, P. and others, (Teufl et al., 2011) success of a mobile OS depends on quality and usability of user interface, and maybe the most important thing is availability of applications demanded by market. Google knew it and after they bought Android from Rubin, have organized application developing contests with cash prizes for developers before the first Android mobile phone T Mobile G1 (U.S. Market name, it's named HTC Dream or Era G1 in some markets) launched in October 2008 (Karch, 2011). By October 21th, 2008, Open Handset Alliance announced that anyone could download and change Android OS for free (Open Handset Alliance, 2008).

There have been many changes applied since the first version (0.9) of Android revealed in August 2008. First version was supporting screen resolutions only up to 320x480 pixels and not even close to today's android features. If we talk about Android evolution, we need to consider four main versions: Froyo (2.2), Gingerbread (2.3), Ice Cream Sandwich (4.0) and Jelly Bean (4.1). These versions are best-selling distributions of Android based on official numbers on Android developer website (Android.com, 2012). There have been many changes amongst these distributions, if we need to consider some of them: General OS speed improved and Flash support came with Froyo; game performance improved, input, sensor events and NFC (Near Field Communication) support added with Gingerbread; face recognition, hardware accelerated User Interface added with Ice Cream Sandwich; Google Now support added and performance greatly improved with Jelly Bean distributions (Socialcompare.com, 2012).

Android has a very different philosophy compared to other mobile OS developers. Anyone can use Android OS in their devices for free, can modify it for free, and develop any applications easily without any complicated process (Elgin, 2005). And it has a virtual shop for getting applications named "Android Market" (named "Google Play" after March 2012) (Chopra, 2012). By this option, consumers have ability to download and use applications for their needs and customize their devices OS'es. Google Play has over 675.000 applications by date of October 2012. More than 25 billion downloads done since its launch. (Android Blog, 2012) Being suitable for multi-platform is other key factor of Android's success. Android's use is not limited to mobile phones, it can be used at tablet computers, e-book readers, netbooks, multimedia players, even microwaves, washing machines, printers, etc. (Karch, 2011) These capabilities made Android is a market leader OS in mobile phones, and fast growing OS in other devices.

Some forecasts show us that Android's success will not reduce in the near future. IDC (International Data Corporation) says, by the last day of 2012, Android will have 61 percent market share against its competitors. And by 2016, this rate will be still 52.9 levels with 9.5 percent annual growth rate.

### 4.2. Market Situation

After the first Android phone, HTC Dream, was sold in October 2008, Android had become the world's leading smartphone platform by the end of 2010. Android has 500 million activated devices and 1.3 million activations per day at Q3 2012. According to research firm IDC, Android and Apple devices dominate in smartphones, with 85

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percent of the worldwide market. As it can be seen from the Figure 3 Android has continued to move ahead and now has more than half of smartphone market. Even the launch of the new versions Iphone has not slowed down Android's rising to the top (Bishop, 2011). Other big companies making Android devices include Samsung Electronics Co., HTC Corp. and Motorola Mobility, which Google now owns. Samsung also makes phones running Bada, which is based on Linux. Nokia, once the dominant market leader, has been reduced to use Symbian on their devices and started to collaboration with Microsoft for the new devices.

Although Intel and Microsoft are very strong technology and ingredient brands, they have not shown same success results like Android. But Android has achieved its success not only at the expense of its host brands, but also cooperation in Open Handset Alliance (OHA) which is a consortium of 86 leading expert hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices. This experience and knowledge in different fields of technology companies, has made great contributions to the success of Android. (Bishop, 2011).

**Figure 3: Top Smartphone Operating Systems, Shipments, and Market Share, Q2 2012 – Units in Millions (IDC, 2012)**

Operating System	Q2 2012 Shipments	Q2 2012 Market Share	Q2 2011 Shipments	Q2 2011 Market Share	Yer-over year Change
ANROID	104,8	68,1%	50,8	46,9%	106,5%
iOS	26,0	16,9%	20,4	18,8%	27,5%
BLAKCBERRY OS	7,4	4,8%	12,5	11,5%	-40,9%
SYMBIAN	6,8	4,4%	18,3	16,9%	-62,9%
WINDOWS MOBILE	5,4	3,5%	2,5	2,3%	115,3%
LINUX	3,5	2,3%	3,3	3,0%	6,3%
OTHERS	0,1	0,1%	0,6	0,5%	-80,0%
TOTAL	154,0	100,0%	108,3	100,0%	42,2%

Looking at and comparing the underlying reasons for this success, some important points stand out. For example, one important difference between Android and Intel is that Intel made itself really difficult to extract from its hosts. Intel has budgeted and spent significant marketing dollars both directly to the consumer and indirectly to its OEM partners. The OEMs became dependent on Intel and consumers were trained to look for the Intel mark. Google has implemented a different market strategy (open-market strategy) and gained market success quickly by being offered for "free" and without significant marketing support (Bishop, 2011). Manufacturers can use an open-source license to get the right to make Android products (phones, tablets, etc.). And also Android allows developers and programmers to create applications and code upgrades. Android has created an open platform for carriers, manufacturers and developers to use for their own ideas on their own products, apps and upgrades. In this way, with no single control point, companies can use and implement Android software widely and market their concepts for Android platforms or apps. Developing Android based systems is an eye-catching alternative for producers who do not want to deal with Apple's stronger oversight. That motivation spurs Android's growth and the

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more customers interact with Google, the more it can charge for advertising which is the heart of Google's earnings (Sherman, 2012).

Although Google implement the open-source strategy, all new Android code has to go through a review by Google staff. Also the Android trademark is controlled by Google and companies have to use the Android name with Google's assent. In these days there is a buzzword that Google bought Motorola for \$12.5 billion to create new software strategies and to overcome the problems of the patent (Sherman, 2012).

Significant dominance of technology companies stand out from Figure 4, the brand values chart of 2012. Technology manufacturers ongoing their raising of the past few years, with four of the five top risers hailing from the industry (Apple, Amazon, Samsung, and Oracle). In addition, five of this year's Top 10 manufacturers come from within technology industry (Apple, Google, Microsoft, Apple, and Samsung). Especially mobile industry is very successful and profitable. Apple was the fastest grower and clinched second position in the list behind only Coca-Cola. Samsung (ninth) also shot previous brands as big as Disney and Toyota. But not all technology companies have shown the same success. Microsoft, Nokia and RIM were among those that took a discoloration. Samsung became the world leader for smart phone deliveries in 2011 ahead of Apple and Nokia. Despite its legal battle with Apple, Samsung's global market share is 32.6% and its brand value increased by a meteoric 40% in previous year. Android's undeniable contribution stands out on Samsung's rapid rise (Interbrand, 2012).

**Figure 4: 2012 Best Global Brands, (Interbrand, 2012)**

2012 RANK	2011 RANK	BRAND	SECTOR	2012 BRAND VALUE \$m	% CHANGE (Brand Value)
1	1	Coca-Cola	Beverages	77,839	8%
2	8	Apple	Technology	76,568	129%
3	2	IBM	Business Services	75,532	8%
4	4	Google	Technology	69,726	26%
5	3	Microsoft	Technology	57,853	-2%
6	5	GE	Diversified	43,682	2%
7	6	McDonald's	Restaurants	40,062	13%
8	7	Intel	Technology	39,385	12%
9	17	Samsung	Technology	32,893	40%
10	11	Toyota	Automotive	30,280	9%
11	12	Mercedes-Benz	Automotive	30,097	10%
12	15	BMW	Automotive	29,052	18%
13	9	Disney	Media	27,438	-5%
14	13	Cisco	Business Services	27,197	7%
15	10	HP	Technology	26,087	-8%
16	16	Gillette	FMCG	24,898	4%
17	18	Louis Vuitton	Luxury	23,577	2%
18	20	Oracle	Business Services	22,126	28%
19	14	Nokia	Electronics	21,009	-16%
20	26	Amazon	Internet Services	18,625	46%

Another interesting point is that Android's dominance in sales and market share but these are not reflected in earnings and profits. One of the main reasons of this situation is Apple earns money on hardware sales, Google does not. Google advertising revenues constitute the main source of money. On the other hand, Apple creates cash on every iPhone and iPad it sells, even before an ad is delivered to the product. It is approximated that Apple earns 70%-75% of the profit for the entire cell phone industry (that is, of all the profit gained by all device manufacturers) on its own products, which only have approximately 7% of the world market share. Apple also gain significant more revenue from applications sales (Interbrand, 2012). Distimo, a mobile consulting firm, estimates that the Apple App store generates \$5.4M/day for



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the 200 top-grossing apps while Google generates just \$679K for their top-200 grossing apps. That is almost a 8:1 revenue ratio (Travlos, 2012).

Below financial results show situation clearly:

### Net Income to Common Shareholders (Travlos, 2012):

FY (Bils)	2007	2008	2009	2010	2011
Apple	\$3,495	\$6,119	\$8,235	\$14,013	\$25,922
Google	\$4,204	\$4,227	\$6,520	\$8,505	\$9,737

## 5. Conclusions

We have tried to answer in this study the question that “Can we count Android OS as an Ingredient Brand?”

When looking at the results, Android can be called as one of the most successful Ingredient Brand of all time. In the past studies, there's no paper mentions or calls Android OS as an Ingredient Brand, but we have found significant factors that we can say Android is a successful Ingredient Brand. We have found that we can count Android OS as an Ingredient Brand according to studies by Aaker (2003), Desai and Keller (2002, 2003), Keller (2008), Kotler and Pfoertsch (2006), Luczak et al. (2007), Pinar and Trapp (2008), Uggla and Filipson (2008) on the basis of Baumgarth (2004) and Riezebos's (2003) studies. According to Smit (1999) and Erevelles (2008), Android OS can be discussed as a co-brand in the same time while it is an Ingredient Brand because of OHA (Open Handset Alliance). This paper also gives an idea that an Ingredient Brand can be counted as Ingredient Brand and co-brand in the same time (Smit, 1999; Erevelles, 2008), and this idea can be discussed in future studies.

Nowadays we talk about Android phones, tablets and other products, we do not talk about any products with the Android operating system. Any manufacturer that partners with an ingredient brand as strong as an Android way a good portion of its equity and heads towards commodity status (Bishop, 2011).

We try to take and present a picture with this study. Limitations are that case of Android as an ingredient branding is very new subject and information, also data resources, are limited. Especially with new empirical researches, new and deep insights would be reached and contribute to literature.

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