



A Study of Product Differentiation Strategy in Mobile Devices Specifically In Smartphones about Smartphones Features

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Abstract: mobile devices are becoming indispensable commodity for users they depend on mobile devices for their official work and for entertainment. Mobile devices are becoming more sophisticated, the acceptability of smartphones over the earlier mobile devices has been increased with the features like touch screen over the number keypad and simple camera against mega pixel camera etc. with touchscreen and updated android operating system the smartphones almost taken the maximum market share, now in current scenario to gain and retain the market share the mobile device manufacturer are trying to differentiate the features in smartphones like dual camera, selfi camera, more internal memory etc. In this paper the author is flashing the spotlight on the strategy where every mobile manufacturer is offering almost the similar feature on the smartphone how the manufacturer are making their product differ from other and to get customer attention.

Keywords: mobile devices, smartphones, features, product differentiation strategy, android, ios.

I. INTRODUCTION

In the current scenario market is flooded with a wide range of smartphones by the time the smartphones are becoming more affordable and reaching to the wider range of the market. People are opting smartphones against normal keypad mobile device as they offer more features and easy to operate. Every mobile device manufacturer is making smartphones to get the market hold and stay in competition. People are getting readymade smartphones with almost similar features they are happily upgrading their smartphone from 3G to 4G and so on but the features are still same like every smartphone has camera with high resolution, some are giving two cameras like front and back, some are offering extra attachment for zoom and clarity. One feature "Camera" in the smartphone with different integrated features like placement – front and back, mega pixel difference in front and back these are the differentiating features on which mobile device manufacturer are focusing to offer a better featured mobile, as camera is a common feature in every mobile and smartphone, the focus is how to attract customer to their brand and make them brand loyal. In general scenario the brand loyalty is stick to the price and utility of the smartphone and then on brand in many price sensitive countries like India. In later sections of the paper the author is going to discuss on the product that is smartphone and the

differentiating strategy for holding a better position in the market.

II. MAJOR SMARTPHONE COMPANIES IN THE COMPETITION

Samsung, is having the maximum market share in terms of smartphone in today's scenario. It has many competitors form Indian market and global market, here is the list of major smartphone manufacturers who are in tough competitor of the leader Samsung. It is very hard to compete in the market in terms of price and feature rich smartphone availability as everyone is selling the same hardware and software other than iOS of Apple.

1) Apple

Apple's Iphone is without doubt the number 1 Samsung competitor when we talk about high end smartphones. Almost every year, there are 3 smartphones sure to be launched. One would be an Iphone, another a Samsung Note and the third Samsung galaxy or Samsung galaxy edge. Iphone was one of the first phones to come out in the market with multi touch features.

However, although Iphone is loved by many, Samsung utilised Google Android to launch several features of its own, including some awesome hardware. The Apple vs Samsung (Android) debate is endless. Apple Iphone has the share of Smartphones in US and it is second highest market share holder worldwide and is one of the strongest Samsung competitors in the business.

2) Huawei

Samsung competitors 2 Huawei has repeatedly impressed consumers with its design as well as functionality of its phones. Obviously Huawei operates with strong penetrative pricing, which is common for all Samsung competitors other than Apple's Iphone and Google's Pixel (which operate on Skimming price strategy). There are ripe speculations that Huawei is becoming a strong global contender to Samsung and Apple both.

3) Xiaomi

In 2015, Xiaomi was the worlds 4th largest smartphone maker. Xiaomi is a privately owned company operating from China. The best advantage to Xiaomi is the Asian population which it can cover easily, mainly India and China, two of the most populated countries in the world. Because of its massive



distribution and production capacity, Xiaomi is the third highest Samsung competitors in the world.

4) Oppo

Oppo came quite late in the picture, but took away the market share which was going to Micromax. Oppo left Micromax far behind with its well designed smartphones which were value for money. In fact, most distributors which were purely Micromax players are seen more and more to side with Oppo. Oppo is also known very well for its well executed branding strategies at point of purchase. Oppo is the fourth highest Samsung competitor in the world.

5) Vivo

Another Chinese company with the same advantages as Oppo, but which lacks the marketing skills of Oppo is Vivo. Vivo started its business in 2009 and because of its Manufacturing capacity and the wide market at its disposal, capture a good chunk of the market share very fast. Within 3-4 years, Vivo had established itself in 100 countries like China, India, Malaysia and others. It closely follows the footsteps of Oppo in product design.

6) Lenovo

Lenovo is a competitor to Samsung in Smartphones as well as in Laptops. While in laptops, Lenovo is far ahead of Samsung, in Smartphones, Lenovo is far behind. Lenovo phones are loved for their simple design but one key feature separates Lenovo from the rest – Battery life. Lenovo phones are regularly known to have a high battery life above 3500 mah in smartphones

7) Sony

The Sony Xperia series was a breath of fresh air for the brand after the phasing out of Sony Ericsson – the tie up between Sony and Ericsson to make and distribute smartphones. Sony Xperia took the market by storm when it launched smartphones which were water resistant and could stay safe even if dropped in the pool. Smartphone industry being what it is, others soon copied the example and there were multiple brands marketing their waterproof mobile. Yet, Sony had a first mover advantage and it got the attention of many consumers. Till date, Sony Xperia series and other Sony smartphones are loved by consumers.

8) HTC

The HTC Design and the HTC M series are strong Samsung competitors and the M series is a premium smartphone which has many features of the galaxy series but at lesser prices. At the same time, the advantage HTC has is its very good in branding and packaging and it comes in the competitive price segment. Instead of pricing to penetrate the market, HTC prices its products between the likes of Oppo and the likes of Samsung, therefore having the best of both segments.

9) Motorola

The MOTO G series of Motorola is one of the most popular series of Motorola Smartphones. Motorola phones look very

smart and have unique designs, which is a differentiator for Motorola in this tough Smartphone market.

10) Microsoft

People would expect Microsoft to be a major player wherever it steps in. However, it is definitely not so in the Smartphone market and Microsoft is far behind amongst Samsung competitors. The reason Microsoft does not have wider acceptance in the market is its operating system. People either want Android or they want IOS. However, no one is running behind windows 10 on a Smartphone, which looks like a PC software repackaged as a mobile software. But we can never expect Microsoft to sell phones with software made by Google or Apple. So it is unlikely Microsoft will climb up the ladder as a Samsung competitor.

11) Google's Pixel

Pixel could have seen a higher market share if only it was regularly available in the market!! Google has again underestimated demand, fizzing out the excitement of purchasing a google phone.

12) Micromax 13) Asus 14) Gionee 15) Intex 16) Iball

17) Nokia, these are also in the competition but not giving fierce competition such as Apple and Xiaomi in the market. People are having the advantage of having high end smartphone range in almost affordable price if compared to the facilities and features provided by the leading smartphone manufacturers.[1]

III. COMPARISON

The following is the comparative table that shows various aspects of the mobile manufacturers and their brands like display screen size, battery, RAM, ROM, internal storage and many more.

Specification	iPhone X	iPhone 8 Plus	iPhone 8	Galaxy Note 8	Galaxy S8	Galaxy S8 Plus	Essential Phone	LG V30	iPhone 7	iPhone 7 Plus	Pixel	Pixel XL	HTC U11
Display	5.8 inches	4.7 inches	5.5 inches	6.3 inches	5.8 inches	6.2 inches	5.71 inches	6 inches	4.7 inches	5.5 inches	5 inches	5.5 inches	5.5 inches
Resolution	2436 x 1125	1334 x 750	1920 x 1080	2960 x 1440	2960 x 1440	2960 x 1440	2560 x 1312	2560 x 1312	1334 x 750	1920 x 1080	1920 x 1080	2560 x 1440	2560 x 1440
Processor	A11 Bionic	A11 Bionic	A11 Bionic	Snapdragon 835 (2.35GHz and 1.9GHz, octa-core)	Snapdragon 835 (2.35GHz and 1.9GHz, octa-core)	Snapdragon 835 (2.35GHz and 1.9GHz, octa-core)	Snapdragon 835 (2.45GHz and 1.9GHz, octa-core)	Snapdragon 835	A10 Fusion	A10 Fusion	Snapdragon 821 (quad-core)	Snapdragon 821 (quad-core)	Snapdragon 835 (2.45GHz, octa-core)
RAM	TBA	TBA	TBA	6GB	4GB	4GB	4GB	4GB	2GB	3GB	4GB	4GB	4GB, 6GB
Storage	64GB, 256GB	64GB, 256GB	64GB, 256GB	64GB, 256GB	64GB	64GB	128GB	64GB, 128GB	32GB, 128GB, 256GB	32GB, 128GB, 256GB	32GB, 128GB	32GB, 128GB	64GB, 128GB
Rear camera	12 megapixel (wide)	12 megapixel (wide)	12 megapixel (wide)	12 megapixel (wide)	12 megapixel (wide)	12 megapixel (wide)	13 megapixel (monochrome)	16 megapixel (wide)	12 megapixel (wide)	12 megapixel (wide)	12.3 megapixel (wide)	12.3 megapixel (wide)	12 megapixel (wide)
Front camera	7 megapixel	7 megapixel	7 megapixel	8 megapixel	8 megapixel	8 megapixel	8 megapixel	5 megapixel	7 megapixel	7 megapixel	8 megapixel	8 megapixel	15 megapixel
Battery	TBA	TBA	TBA	3,300mAh	3,000mAh	3,500mAh	3,040mAh	3,300mAh	1,960mAh	2,900mAh	2,770mAh	3,450mAh	3,000mAh
Water protection	IP67	IP67	IP67	IP68	IP68	IP68	N/A	IP68	IP67	IP67	N/A	N/A	IP67
Weight	0.36 pounds	0.33 pounds	0.45 pounds	0.43 pounds	0.34 pounds	0.38 pounds	0.35 pounds	0.35 pounds	0.30 pounds	0.41 pounds	0.31 pounds	0.37 pounds	0.37 pounds
Dimensions (in.)	5.85 x 2.79 x 0.30	5.45 x 2.65 x 0.29	5.28 x 2.65 x 0.30	6.40 x 3.07 x 0.34	5.86 x 2.81 x 0.31	5.86 x 2.81 x 0.31	5.57 x 2.80 x 0.31	5.97 x 2.97 x 0.29	5.44 x 2.64 x 0.28	6.23 x 3.07 x 0.29	5.56 x 2.74 x 0.29	6.09 x 2.91 x 0.29	6.06 x 2.99 x 0.31
Starting price	\$999.00	\$699.00	\$799.00	\$930	\$749.00	\$849.00	\$699.00	\$849.00	\$549.00	\$669.00	\$649.00	\$749.00	\$649.00
Misc.	Face ID scanner	Wireless charging	Wireless charging	5 Fov. iris scanner, USB-C, wireless charging	Iris scanner, USB-C, wireless charging	Iris scanner, USB-C, wireless charging	Modular attachment system	Quad DAC for hi-fi audio	Force Touch home button, no headphone jack	Force Touch home button, no headphone jack	Google Assistant, fast charging	Google Assistant, fast charging	Sevenside function

Table 1.: Showing the comparative tabular form of various features of smartphones.



IV. FEATURES AVAILABLE IN VARIOUS SMARTPHONES

- Display
- Resolution
- Processor
- RAM
- Storage
- Rear camera
- Front camera
- Battery
- Water protection
- Weight
- Dimensions (in.)
- Starting price
- Face ID scanner
- Wireless charging
- S Pen
- Iris scanner
- USB-C
- Modular attachment system
- Quad DAC for hi-fi audio
- Force Touch home button
- No headphone jack
- Force Touch home button
- Google Assistant
- Fast charging
- Squeezable side function

These are the few features available in almost all the smartphones except from few specific ones, the display is one of the most important feature and it ranges from 4.8 to 6.2 inches mostly it is around 5.5 with touchscreen function, people usually select above 5 inch screen size due to obvious reasons like entertainment, reading, image viewing etc. similarly the other features like processor, storage, RAM, camera, finger print scanner, facial id, etc. are also important in the selection of smartphones. The point to ponder here is that, people are using readymade smartphones with some or little variations in design and features.

The arrival on common ground can also be seen in the feature sets. While there are some outliers, most smartphones have a camera of around 5MP, include GPS and WiFi, and support an app store in some shape or form. In most cases, popular apps (perhaps Angry Birds, or Facebook, or Twitter) are available across-the-board, and in the future, the increased use of widgets and web-based app technologies will mean that essentially all apps and services are available regardless of device operating system.

With Strategy Analytics recently noting that smartphones make up nearly one quarter of total device shipments, software has become a much more important part of the device package, meaning vendors and operators are presented with a challenge. While it is easy to compare devices based on facts such as processor speeds, camera specs, and other hardware features, differentiating based on software capabilities is a far more complex proposition, and certainly less easy to convey in a consumer advertising campaign. This again makes the main differentiating feature the price, which

will certainly be an unwelcome development for vendors looking to preserve already pressured margins.

V. PRODUCT DIFFERENTIATION

In economics and marketing, product differentiation (or simply differentiation) is the process of distinguishing a product or service from others, to make it more attractive to a particular target market. This involves differentiating it from competitors' products as well as a firm's own products. The concept was proposed by Edward Chamberlin in his 1933 The Theory of Monopolistic Competition.[2]

Product differentiation is a marketing strategy whereby businesses attempt to make their product unique to stand out from competitors. Businesses do this to gain an edge in industries where multiple competitors produce similar products. There are other methods businesses can employ to gain that edge, like pursuing a low-cost strategy and advertising, but while those are legitimate marketing strategies, they are different from product differentiation. Product differentiation means that some feature, physical attribute, or substantive difference exists between a product and all other alternatives.

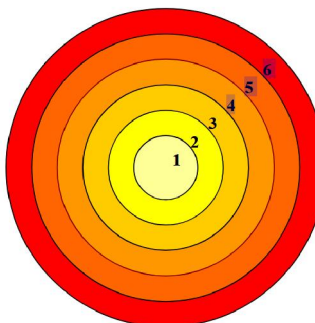
Examples of Product Differentiation

You don't need to travel far to see product differentiation at work. A trip to your local grocery store will provide a number of examples. Look in the cereal aisle for some bran flakes and you'll likely have two options - generic bran flakes, probably packaged in fairly plain packaging, or Wheaties, the 'breakfast of champions.' What is the difference between the generic brand flakes and Wheaties? Very little. But Wheaties is differentiated by its packaging. [4]

VI. PRODUCT DIFFERENTIATION IN SMARTPHONES

Theodore Levitt's 2 classic concept of product levels is used to determine the criteria under which companies can be organized into strategic groups. According to him the product levels are four, but later on Philip Kotler³ adds one more and thus the product levels become five:

1. Core benefit – Kotler
2. The generic product – Levitt
3. The expected product – Levitt
4. The augmented product – Levitt
5. The potential product – Levitt



1. Core benefit
2. The generic product
3. The expected product
4. The augmented product
5. The potential product
6. The compliant product



The Six Product Levels - The sixth product level is the level of compliance of the product with the group's standard. We can assume that the sixth product level is a combination of the benefits and functions of the product which are at the other five levels. Thus, 1st level + 2nd level + 3rd level + 4th level + 5th level 6th level. The sixth level presents the whole way of functioning of the product, the total amount of benefits that it offers to the consumer. For example, all Smartphones today offer to the consumer almost the same array of benefits such as a hard disc memory and a possibility to put an additional memory card, Bluetooth, Infrared, GPRS, EDGE, WAP, built-in modem, WiFi, HSCSD, XHTML, USB, Push-to-talk, Mobile Java – all of them work together thanks to the operating system and represent the functional value of the sixth level.

Differentiating smartphones on hardware grounds it is just next to impossible, if Samsung comes up with a new smartphone with a 5 inch display screen, a 4k camera, 8GB RAM, some Snapdragon chipset, 64 GB memory, this same phone can be replicated and released by other brands. The timeframe by which this happens can be as short as a week to 15 days. A smartphone manufacturer can no longer differentiate their product on hardware alone anymore. Similarly if we talk about the camera, one camera, two camera, front and back side, two camera on front, high mega pixels and so on, everyone who is in the manufacturing business of smartphones have limitation in hardware part and other people are replicating the same with some modifications and launching their product in the market. This effect the market cap. And the growth of the companies, new threats are continuously added to the list and they are eating the share of the existing players.

VII. SOFTWARE BECAME THE DIFFERENTIATOR AMONG CHINESE SMARTPHONE MANUFACTURERS.

Many major Chinese smartphone brands bought Android licenses and started creating their own forks. You have Cyanogen, Xiaomi creating their MIUI fork, Meizu with Flyme. All these Android forks have now become a major threat to Android, the open source platform they were built and derived from. A well known but unpopular Korean example is Tizen from Samsung, along with Amazon's Fire OS, which did not do well either.

Software became the differentiator among Chinese smartphone manufacturers.

This led to another rather unexpected development in the market. Since software became more and more important and sourcing hardware easier and easier, software companies are now entering the smartphone market.

Software is not easy to replicate, and takes effort to create, test and deploy in the market.

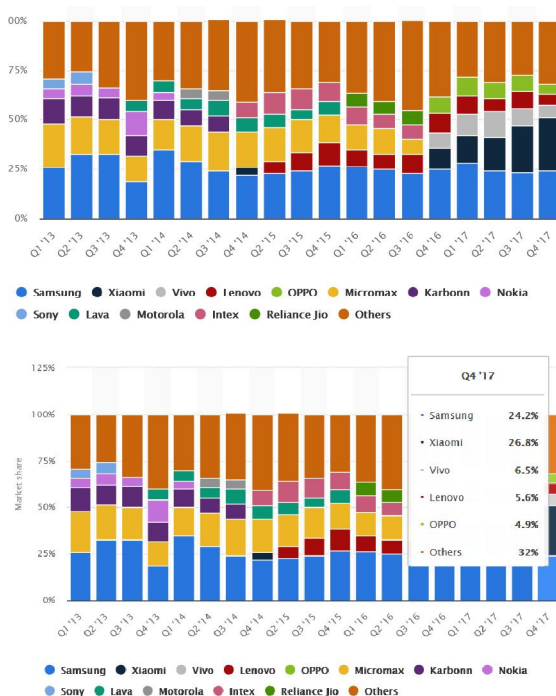
Software could also be updated regularly, with new services and features being added to the same smartphone. Thus, instead of software development depending on the hardware, hardware is being manufactured according to the software.

The most successful example is Xiaomi, which was an ecommerce portal with impressive software.

Along with software being the key differentiator and offering from smartphone brands, it became a source of revenue. Once an add-on service, over-the-top (OTT) services have developed into the main revenue generator for many telecom companies.

And the Chinese have perfected the art so well, many smartphone models are sold at a price lower than what it took to manufacture them. Every brand thus develops an ecosystem around them of content producers and sellers, ecommerce players, app ecosystem etc.

The following images showing Smartphone share held by vendors in India from 1st quarter 2013 to 4th quarter 2017 the growth of various mobile device manufacturer from 2013 to 2017 and the various major players like Samsung, Xiaomi, vivo, Lenevo, OPPO, Micromax, Reliance Jio etc. in the list there are some Indian and some are Chinese mobile device manufacturers the market share of Samsung has been decreased from 26% to 24% from 2013 to 2017, Nokia was there in the race in 2013 but in 2017 it is not in the list another Chinese manufacturer Xiaomi was not in the list in the year 2013 but in 2017 Xiaomi has taken a strong position with 26.8% in Indian market. This shows the stronger acceptance of smartphones in the Indian market with new and advanced features are accepted by the users.



Smartphone share held by vendors in India from 1st quarter 2013 to 4th quarter 2017 [4.]

IX. GLOBAL MARKET SHARE HELD BY LEADING SMARTPHONE VENDORS FROM 4TH QUARTER 2009 TO 4TH QUARTER 2017 [5.]



Following images gives the details of Global market share held by leading smartphone vendors from 4th quarter 2009 to 4th quarter 2017, this shows the global position of mobile device manufacturers Samsung was on 3.3 % in the year 2009 and in the year 2017 it is on 18.4%. it is a great increase in the global position. The position of Apple is somewhat on better side like from 2009 it is on 16.1% to 19.2% in 2017. The percentage of other mobile manufacturer 17.6% in 2009 to 38.6% in the year 2017. There has been intake of other manufacturer who are eating the market share of other established brand.

The below news caption shows the growth of Chinese smartphones makers grabbing 53% market share in India, Xiaomi is leading the race, to promote the Indian manufacturer of smartphones Indian government is also supporting, recently government has increased the custom duty from 15 % to 20 % on mobile phones, but still after this reform, people are favoring smartphones who are providing their desired features in the smartphone. [6.]

Chinese smartphone makers grab 53% market share in India, Xiaomi leads race

To boost Indian smartphone makers, FinMin Arun Jaitley in the Union Budget announced a hike in customs duty on mobile phones to 20 per cent from 15 per cent

IANS | New Delhi Last Updated at: February 14, 2018 14:04 IST

http://www.business-standard.com/article/companies/chinese-smartphone-makers-grab-53-market-share-in-india-xiaomi-leads-race-118021400288_1.html

X. CUSTOMIZE SMARTPHONES

Another mobile device revolution or evolution is underway, as some of the technology companies are beginning to develop devices that are more customizable and reusable than the current crop of the readymade smartphones and wearable.

Google project ARA – is the codename that Google’s Advanced & Project (ATAP) group uses for its initiative to create an open source hardware platform.

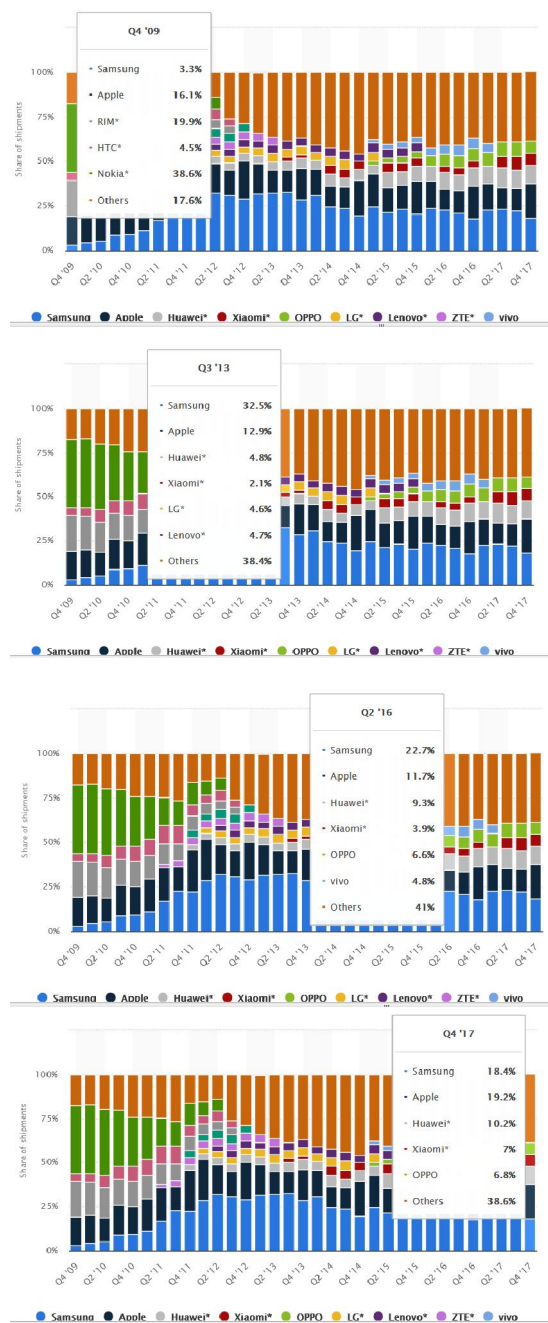
ZTE Eco – mobile – is working on mobile prototype, known as ECO – Mobiles, the concept prototype features removable camera, display and battery components as well as core model for GPU, CPU, RAM, ROM. Eco – mobile allows people to customize or upgrade their mobile phones more cheaply. More importantly, it is highly efficient component exchange mechanism, making the most of materials and reducing waste.

Blocks modular smart watch - Blocks is currently developing a modular smartwatch that will use the open source TIZEN platform that is supported by Samsung and Intel.

Bug Labs modular gadgets - According to their website this company helps organizations innovate in the rapidly growing IOT market. Bug Labs provide open source hardware module called “Blocks” that can be used by customers to create their own customized electronic devices.

Seek thermal infrared camera accessories for smartphones -This device is plug into android power phone via a micro USB port and into iPhone via Apple’s proprietary lightning connector.

People are using smartphones - readymade smartphones by mobile manufacturers all the mobile manufacturer are providing almost similar type of features with some differentiation or some are with brand value.





Now, it's time for smartphones customization its people choice what they want in their mobile device like applications from Google play store, we are still using factory made ready to use smartphone with no customer choice.

Many mobile manufacturer are coming up with unique feature in their mobile phone like thermal camera, molecular sensor, mini mobile with 4G ready, robust mobile for field work, the body of mobile phones are made up with the aero plane grade aluminum, convertible mobile with zoom camera, modular components that can be added for better functionality.

The **author is proposing a new concept** in which the mobile user are free to customize their mobile device or smartphone more smartly as per their specific need or usage. The above mentioned features are very attractive and these are not present in every mobile phones and if user wants to have the current mobile phone with the added feature this cannot be possible, in other case the user want to club two different features in one mobile device like thermal and molecular sensor it is not happening right now, but what if the user are given the power to custom made their smartphones and they are ready to pay the price for that it would be mrricle to the user and the manufacturer they will know what to produce and in what quantity to produce there will be a total market shift from pushing the goods to the market to the need specific manufacturing, the money goes into the advertisements and promotions will be saved all the manufacturer will have to agree on a certain point may be region specific to cater the needs of the public. For this, there would be a website on which user has to register and choose each and every component of his smartphone and place the order in a mentioned time frame the product will be delivered to the customer. This can be done on the brick and mortar way also, like the customer will go to the speific shop where the user can choose the components in the list with or without help of the vendor and choose the brand name to be put on that smartphone and order the same and for confirmation the price has to be paid through vendor or to the direct transfer or through the payment gateways. The warranty and the service part will be adhered to the brand name that was chosen by the customer at the time of registration or ordering the customized smartphone. No other company will be able to attend the service request for the same, this will give the revenue generation for the specific brand name for the later stage, as the mobile is customized it can be serviced by the authorized service center only.

There could be the win – win situation for manufacturer and the customer in long run, the customer is getting what he wants and the manufacturer is getting confirmed order with the price and a lifetime service contract for the custom made smartphone.

XI. CONCLUSION

To conclude the article, in fact it is a new beginning of the research to find out what the customer want, to know the tentative demands of the proposed features in the smartphones and to better serve the needs of the customers in the near future the mobile device manufacturer can go for a

survey before launching the website, this is an extended part of the research the current paper is limited to the proposal of customizing the smartphone as per the need and demand of the customer, as by the facts and figures in the research paper it can be concluded that the upgraded technology is welcomed by the users and people are liking new featured mobile devices with quality product, 53% increase in the Indian market of the Chinese mobile devices is not a miracle, it is people demand with the factory readymade mobiles it is unimaginable with the custom made smartphone specifications.

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