Study and Analysis of the Influence of UX in MIUI – A Case Study on Xiaomi

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ABSTRACT

Purpose: *In an ever-changing world, we all have one thing in our hands that is constant, a Mobile Phone. When we buy a Smart Phone, we do make sure we buy the best one that offers a combination of Good Hardware, Great Software, and also a price that we can put for the features offered. In that way, we cannot deny the fact that Xiaomi also called Mi or Redmi phones are some of the best market players we have seen. Even though people generally look only for the hardware features of the phone, it is inevitable to use an Operating System that will take advantage of the hardware features and also be user-friendly. Mi offers such one OS to its users in the form of MIUI, a modified version of the Android OS that normally comes in stock android-based phones. In this paper, we try to understand how Xiaomi as a company has made the OS a marketing strategy for them to popularize their product and become one of the best-selling mobile phones in China and India.*

Objectives: *To understand the evolution and features that MIUI has to offer, to do a comparative study with its competitors and to provide suggestions to improve the company based on the analysis done.*

Design/Methodology/Approach: *This company analysis was done by referring to multiple online sources, such as websites and blogs that guide and review products based on MIUI from Xiaomi. The analysis of the influence of UX in MIUI was done with a SWOC Analysis.*

Findings/Result: *Based on the SWOC analysis of the company, keeping MIUI as a major criterion, the various opportunities and challenges that are there for Xiaomi are discussed. It is found that the company will be able to keep growing as long as it takes advantage of the current scenario and overcome its challenges.*

Originality/Value: *Based on secondary data available, this paper analyses the influence of User Experience in MIUI provided by Xiaomi.*

Paper Type: *A Case Study Analysis Based paper on the MIUI of Xiaomi Company*

Keywords: Xiaomi, MIUI, Company Analysis, Android OS, UI / UX of MIUI, Comparative study, Mobile OS

1. INTRODUCTION :

Xiaomi is a China-based Multi-National Electronics company that started in April 2010. It manufactures mobile phones, laptops, home-based electrical appliances, and many more. It is the fourth-largest smartphone manufacturer in the world, leading in both China and India [1]. It also has the privilege of being one of the youngest to be in the List of Fortune Global 500 positioned at 468th rank in the year 2019 and rose to 422 in 2020. Xiaomi has recorded its revenue as $29.795 Billion and got a net profit of $1.453 Billion in the previous fiscal year [2]. It has created a global impact with its products, especially smartphones. After Apple, Samsung, and Huawei, Xiaomi has self-developed mobile system-on-chip (SoC) capabilities [1]. It is safe to say that at least one person in a family in India is a Mi Phone owner [3]. The impact that Mi has created among the lower and middle class of the people of India is monumental [4]. It has surpassed Samsung and within a considerable amount of time [5]. Offering hardware that is up to the mark is not enough, it is also quintessential to pack an efficient and capable

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operating system along with it. This paper is not going to just study the company, rather it is to understand how this company used its OS to take over the market and be the players they are today. This paper consists of 5 sections. The first section gives a brief idea about the objectives of the paper; Second Section describes the methodology used; the Third section gives an overview of the MIUI by Xiaomi; Fourth Section lists the version history of MIUI released to date; Fifth Section describes the core features offered by Mi; Sixth section compares MIUI with other great market players in the same field; Seventh Section points out the Issues and Vulnerabilities of the OS; Eighth section discusses the marketing strategies taken by Mi; Ninth Section is the SWOC Analysis of the Company; Tenth Section discusses the impact of COVID-19 on Mi in short; Final sections are suggestions and conclusions based on the entire study.

2. OBJECTIVES OF THE STUDY :

- To understand the evolution of MIUI.
- To understand the features offered by MIUI.
- To compare and study MIUI with others.
- To understand the issues and vulnerabilities of the MIUI.
- To do a SWOC analysis of the company.
- To understand the marketing strategies of Xiaomi utilizing the MIUI.
- To provide suggestions based on the study.

3. METHODOLOGY :

The data and information obtained for this paper are primarily collected through secondary sources such as blogs, journals, articles, etc., and the Company Website of Xiaomi.

4. OVERVIEW OF MIUI :

MIUI (Me, you I) is Xiaomi's version of the Android OS that runs on their devices. It is a modified version of the Official Android OS and originally intended to bridge the gap between the apps and features shipped by Android and the ones that were needed by the users [6]. The smartphones that Mi has to offer come with two choices to the users, i.e., Android One and MIUI. Mi devices normally receive 1 major Android version update, but the MIUI Update for those Mi releases is available for 4 years. The first MIUI ROM was running on Android 2 and was initially created in Chinese by a start-up named Xiaomi Tech.

Smartphone makers normally customize the Stock Android offered and create a personalized look and feel to establish their brand. Almost all phones have a boot dialog that states "Powered by Android", which simply states it is indeed Android, but it was entirely customized to match the mission and vision of the manufacturer. MIUI is one of the most utilized and popular skins of Android in the world, and it gives a custom experience to its users [7]. It has so many features packed along that make the users feel welcome and comfortable that many users deny changing the brand of their phone just because of the OS. They have made customers stay with them by giving a user interface that is easy and simple to use. It was created with the users in focus and their needs and suggestions.

MIUI was the actual product of Xiaomi before they entered the smartphone manufacturing industry. It is the first one to come up with a complete phone management toolkit that comprises Antivirus Scanning, Storage Management, Dual apps, etc. [8]. It also offers a Theme Store that allows the users to customize their experience and create a personalized skin of MIUI for themselves. Xiaomi holds the Guinness World Record for selling the most smartphones on a platform in 24 hours. It sold 2.11 million units of Mi Phones [9]. The hardware of an electronic device cannot be judged by its performance without the help of software that utilizes its potential. MIUI is the flagship OS delivered by Xiaomi and it is still the highest used Modified Android Skin.

5. VERSION HISTORY OF MIUI :

The following table gives an overview of the MIUI Versions and their corresponding Android Versions, release date, and their latest stable version.

Let us look at some significant changes that Mi brought into MIUI to Enhance User Experience in various versions of the OS.

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After the primary release of MIUI V1, the user interface was modified and updated in the following 2 versions with minor changes till V3. In MIUI V4 they gave a new user interface and also added an anti-virus, which users needed to install separately in other operating systems. When MIUI V5 was released there was yet another new interface design and also Google services were removed from the China version of MIUI.

Table 1: List of MIUI Versions, Android Versions, Date, and Last Stable Release [6]

MIUI Version	Android Version	Release Date	Last Stable Release
MIUI V1	2.1	16-Aug-2010	NA
MIUI V2	2.1 – 2.3.6	NA	NA
MIUI V3	2.3.6	NA	NA
MIUI V4	4.0.4 – 4.1.2	NA	24.0
MIUI V5	4.1.2 – 4.4.2	1-Mar-2013	31.0
MIUI 6	4.4.2 – 5.0.2	29-Aug-2014	6.7.2.0
MIUI 7	4.4.2 – 6.0.1	13-Aug-2015	7.5.9.0
MIUI 8	4.4.2 – 7.1.1	16-Jun-2016	8.5.10.0
MIUI 9	4.4.2 – 8.1.0	10-Aug-2017	9.6.5.0
MIUI 10	6.0 – 9	19-Jun-2018	10.4.5.0
MIUI 11	7.0 – 10	22-Oct-2019	11.0.14.0
MIUI 12	9 – 11	27-Apr-2020	12.5.3.0

From MIUI 7 onwards, the bootloader was locked which means to install any other ROM apart from the MIUI versions supported, an unlock procedure was introduced which void the warranty and allows the user to install any recovery software and install any OS that would support the given hardware.

From MIUI 8 onwards, there were minor changes in UI, and system apps were updated. But the major addition in this version was the support for Second Space and Dual Apps. The second space feature will allow the user to create a second profile on the same device for any business or personal or even for kids, which will not give access to the Play Store or any apps that we wish to lock. It helps in keeping our files from camera, gallery, chats, browsers, etc. safe and gives restricted access to the phone. Dual Apps feature of MIUI is used to create two instances of the same app, which enables people who use two different mobile numbers to keep two Facebook or WhatsApp account and keep professional and personal life separate.

From MIUI 9 onwards, the Split Screen option was introduced, which allows the user to see two apps parallelly. Typically, when one app is open and if we need to open another app, we need to switch between them. Split Screen allows the user to open one app in a partial portion of the screen and another app in the remaining half of the screen. Key and Gesture shortcuts were added in this version. Another highlight of this version was the Face Unlock Feature, which was an up-and-coming trend and lacked in many phones at that time.

From MIUI 10, there were minor changes done to the UI, Notifications Functionality and also improved the system performance. There was an integration of Artificial Intelligence from this version, which specifically was released only in China called Xiao AI [10]. It is the equivalent of Siri and Google Assistant. It was only available in the Chinese version of the Update and not in the Global version.

From MIUI 11 onwards, Mi dropped support for devices running Marshmallow or below. It was running on Android 10 on some devices. A system-wide dark mode feature was introduced that allowed the entire OS to switch to the dark mode when necessary or as per the schedule put by the user. These were also part of the power saving mode – Monochrome Mode. It had special support for the all-in-one

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calculator and the notes app that MIUI had to offer. It brought smoother animations and optimizations. It also had features like Automatic Screenshot Management and Opt-out of Advertisement options. While taking a Screenshot of a long chat or an article on the phone, normally people take 3 to 4 screenshots, whereas MIUI allowed scroll on the screenshot mode, which takes a lengthy page screenshot by automatically scrolling [11].

From MIUI 12 onwards, which is the current version of MIUI, there were lots of features that were added as part of the OS, like New Icons, Improved Dark Mode, Super Wallpapers, that create seamless interstellar journeys as you switch between the Lock screen, Home screen, and Always-on display. A Weather screen that shows how it feels in the location chosen, Nature sound for notifications, added a Lite Mode, Video Toolbox, Ultra Battery Saver, Floating Windows, etc. MIUI 12 is more focused on providing privacy and takes the permission of the user for location, contacts requested by third-party apps only once. An inbuilt To-Do list along with the Mi Note App. Text messages can be grouped automatically and the use of AI help for calls [12].

6. FEATURES OF MIUI :

MIUI provides a lot of features to its users, and since it is officially tied up with the Xiaomi phones, all these features are targeted towards Mi users only [13]. Let us see some unique features Xiaomi offers through the MIUI which are not shipped along with Stock Android:

6.1 Dual Apps
Dual Apps is a feature that allows MIUI users to use two instances of the same app. This is helpful in a lot of ways for people who have two mobile numbers, especially keeping one for professional and the other for personal reasons. For example, one user can use dual WhatsApp accounts on the same phone, using one number for personal and the other for company/office purposes [14]. In other phones for the same feature, we need to install third-party apps with ads.

6.2 Virus Scanner
MIUI comes with an inbuilt anti-virus scanner that verifies for any misbehaving apps and apps that might breach the security of the phone. As soon as an app has been installed on the phone, the antivirus automatically scans the app for any vulnerabilities, and if found, it will immediately notify and will not proceed to open the app. It also provides payment monitoring which makes sure all payment apps are verified for any security breach. Currently, AVL, Tencent, and Avast provide the virus definitions [15]. In the stock android, this feature is not inbuilt and will need a third-party app.

6.3 App Lock
To lock apps from unwanted/unauthorized access, the App Lock feature of MIUI, which allows the user to lock any or all apps that need to be locked. It makes sure that the user either enters the pin or pattern or face/finger unlock to open an app apart from the screen lock which is done. It also allows hiding the notification content of the locked app. The password to open the lock can be customized with a pattern lock or unlock with a fingerprint/face [16]. Apart from this, MIUI allows the user to hide apps from the Home Screen and reveal the hidden apps only if the user does a pinch gesture. There are several third-party apps in the play store that are available for the stock android user to download and get this feature, but they come with a price or ads.

6.4 Second Space
When we want to keep our phones for work and home purposes separate, we mostly carry two mobile phones. MIUI addresses this issue via a feature called Second Space, which technically creates another profile of the entire phone in a completely separate area. While the first space can be the personal one with all our required apps, the second is one space in which we can set up apps that are needed just for work. Another improvement is that we can switch from one space to another directly from the lock screen [17]. This feature can, however, be installed by stock android users by installing another app from the play store.

6.5 Themes & Font

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MIUI comes with a Theme Manager that allows the user to customize the wallpapers, ringtones, fonts, etc. in a single place. Mi offers premium and other user-submitted themes that the users can download and modify to look as they would like their phone to look [18]. Apart from the general theme of the phone, the user can search and set HD or live Wallpapers, set ringtones from the local storage, or download one from the ringtone collection available at Mi. The theme manager also allows the user to change the complete system font, which is only possible in the stock android if the device is rooted.

6.6 Call Recording

Sometimes while we are on a call, we would like to record our conversation for a lot of reasons like recollecting the points mentioned, as a reminder or even as a memory. Either way, in the stock android you need to install a separate app and keep a different setting to enable this feature [19]. MIUI has this feature out of the box, which allows the user to turn on call recording as soon as the call gets connected and saves it in recordings that can be accessed later.

6.7 Music Player & File Manager

Most of the time the stock android OS will not have a dedicated music player or a File Manager. MIUI provides an excellent Music Player as part of its OS and in India, it is in collaboration with Hungama that provides music streaming and downloading service for its users, which makes it easier to listen to music anywhere and also the provision to access music from the phone, which the player does smoothly with a lot of presets and settings to listen to. In the same way, a comprehensive file manager is given with MIUI which has a lot of features that include the display of the file system as it is and also displaying the files based on types like, Images, Videos, Documents, Music, APK's, Downloads, WhatsApp and more.

6.8 Universal Casting

When we want to display our mobile screen in a projector or TV, we use a concept called Miracast, which normally sends videos up to 1080p via a Wi-Fi connection. MIUI comes with this Miracast inbuilt, which enables us to share our mobile screen on TV or a projector and use it for presentations or watch videos on our mobile on a Larger Screen [20]. Stock Android allows this only by installing an app that performs the same.

6.9 Floating Windows

When we want an app in Android to be floating above all other applications, we use the floating windows, and it is not new in Android. But MIUI has made it integrated with the notifications so that when a notification comes from an app, instead of just reading that from the notification shade, we can just open the entire app itself as a Floating window and keep it minimized while working with another app in the foreground. It can be closed by just swiping up from the action bar of a floating window.

6.10 Super Wallpapers

One of the features that MIUI has released recently is the Super Wallpapers. It is a wide picture of either the Earth or Mars currently on the start screen, and when we unlock the phone, it will zoom in and show a close-up view of the chosen planet. It is a very intuitive and cool feature of the MIUI 12 onwards. There are a lot of enthusiasts who are working on porting this feature to other OS also.

6.11 Control Center

MIUI comes with an option to keep 2 styles of the control center, one which is the Old Version in which we need to pull down the status bar to view toggles and notifications, whereas the New Version will allow us to see a Control Center that when we pull down from the left will show notifications and the right side will show toggles or control center. The buttons on this control center are live and are animated to show the action that has been performed.

6.12 Dark Mode

People who use mobile phones or laptops continuously will prefer to use Dark Mode on these screens to avoid strain on the eyes because of the brightness. MIUI provides a way in which the entire phone changes its mode to Dark to avoid stress on the eyes. It auto-adjusts the contrast to support this.

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Normally this feature is available at the app level where the app offers the choice of viewing the app as Lite mode or Dark mode, but MIUI takes it to the next level by making it universal to all the apps of the phone, including the OS itself.

6.13 Cleaner App

After using a phone for quite some time, it is normal that the phone would have accumulated a lot of cache files, obsolete and residual files. Also, sometimes it is difficult to find out which app is using a lot of RAM, or those residual files that simply take the storage space of the phone and also which app has utilized battery the most, etc. MIUI offers a solution that comes as part of the OS, called a cleaner app that clears all Cache files, Obsolete Files, Packages, Residuals, and also Memory. It also has reminders to clean that will notify when the trash size limit set has reached.

6.14 Screen Recorder

Screen Recording is a useful feature that allows the user to record the screen. It is possible as a separate app in all the stock android phones. MIUI provides it out of the box and saves it to the storage of the phone as a video file.

7. COMPARATIVE STUDY OF MIUI VS OTHERS :

Xiaomi has although put MIUI as its official OS also provides a choice to its users in some models of the phone with Android One, which is a proper rendition of the Stock Android OS. Even though MIUI has a lot of features to the advantage of the user, there might be users who would like complete control over what should and should not be in their phones. It always comes down to the choice of the users since Mi provides both of these via their array of smartphones. The biggest advantage of Android One is that it promises regular security updates to its users. It also promises two major Android Version Updates. For Example, if the phone has Android Oreo, there is a high chance that it will receive Android Pie and Android Q, which may not be the case with MIUI. Apart from MIUI and Android One which Xiaomi offers, there are a lot of other OS versions that are available on the market, with various other manufacturers. Based on the preference of the user and also the features other manufacturers offer, the decision of buying a particular phone becomes much clearer [21]. Let us have a glance at what others have to offer that is a competition to MIUI.

7.1 Oxygen OS

It is the Operating System that the One Plus Series of phones ship along with their flagship phones. It was released in March 2015. While MIUI tries to imitate the iOS design to an extent, Oxygen OS tries to follow a simple material design in its interface. The choices available in customization of the UI are scarce in Oxygen OS, whereas MIUI provides a lot of customizations that allow the user to change the details of the interface as per their preference. Finger Gestures are part of both the Operating Systems, even though MIUI has a more polished way than Oxygen OS. Features such as App locker, Turbo Gaming, Dual apps, various display modes, screen recording, scrolling screenshots, and more are available in both the UIs. Both provide an alternative to the Google Now Feeds in their ways and are always customizable and better than the one Google Now has to offer. Oxygen OS allows the user to uninstall some already installed apps which are added to it, whereas MIUI does not allow the user to uninstall any of those apps since they come as part of the system app. One more thing that the Oxygen OS has is that it has very little bloatware and thus no many unnecessary notifications which cannot be told in the case of non-flagship phones of Mi. They can be used by people without much technical knowledge too because of their clean interface. MIUI users might be utilizing all the features only if they know how to navigate their UI. We can safely say for speed and performance Oxygen OS has the upper hand and for the features offered out of the box, it will be MIUI [22].

7.2 One UI

The One UI is another version of Android which is specifically designed for Samsung devices from 2018 with Android Pie Update. One UI had the feature for Dark mode right from this version, even though other brands including iOS included this later. The aims of One UI are to provide a consistent and pleasant-looking appearance to their users. It allows the user to put apps that are not used frequently or recently to sleep and stop them from running in the background, saving battery and data. Apart from

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these, One UI offers a list of features that Samsung has added its touch to it like, Optimized Night Mode, Quick Access to widgets, Floating keyboards, Image Recovery, Customization of Icons, Call Notifications, etc. While MIUI offers most of these and more than One UI, to take advantage of all the features that One UI has to offer, phones with the corresponding hardware features are also needed, which might be a bit costlier than Mi Phones [23].

7.3 Color OS

Oppo and RealMe phones offer Color OS as their version of Android to the users. It is a minimalistic and user-friendly UI that resembles the MIUI version of Android. Even though both are deeply modified versions of Android, Color OS has more resemblance to the Stock Android than MIUI. No feature is exclusive to Color OS, but there are a few features that are common, and MIUI has to offer a lot more than Color OS. It claims to have better RAM management, a Private Safe, Customization of the App Icons, Improved Image and Video Capturing, etc [24].

7.4 EMUI

It is the modified version of Android that Huawei provides with all its recent smartphones. It was also called Emotion UI earlier. EMUI renders a more aesthetic look and feel in their home screen and icons. Multitasking in both are handled differently, and the way both are presented are efficient in their ways. EMUI is slow in updates compared to MIUI and the other variants of Android. It is not that efficient in background processing as MIUI does [25].

8. ISSUES & VULNERABILITIES :

Any phone needs to evolve and grow in its capabilities and features as per the user's experience with the UI and taking into consideration their suggestions, reviews, and comments. Let us see some issues that were reported by the users and how that affected their brand. Whatever be the hardware that is offered by the manufacturer, if the OS fails to take advantage of the Hardware and create a perfect harmony between the two, the outcome is not going to be as expected.

- **Overheating Issues:** Any smartphone on continuous usage will get heated up, which is normal. In some older models, Xiaomi had faced complaints and issues related to overheating of the device that led to software upgrades and improvements that were fixed in the consequent versions and editions of their phones. Mi Phones powered by Snapdragon 600 series normally faced this issue, and the following versions didn't have this issue as it was before [26].

- **UI Lag:** Since Mi does not use the stock launcher for its UI, the one which is available sometimes lags to render the screen, and that makes the user feel the phone is slow since that is the first screen the user gets to interact with. The recent versions of MI have given a more smooth experience in the UI; however, some users still face the lag [26].

- **Battery Drain:** Li-Ion batteries after a particular number of charge cycles or years of usage will typically become weak. However, when the apps in the phone keep using the battery, a drain is inevitable, and so even a new phone will soon have its charge reduced drastically based on the usage. Mi Phones had an issue that dropped the charge sooner than usual, which is now shown and monitored by the Battery Saver and Battery monitor that comes along with MIUI [26].

- **Bloatware:** Mi comes with a lot of feature apps as well as some bloatware which is part of the MIUI system, meaning that cannot be uninstalled or removed by the user until the phone is rooted, which will void the warranty of the phone. It becomes unnecessary to users who are never going to use that app.

- **Promotional & Ads:** Non-Flagship phones of Mi come with many apps that have a lot of ads. These apps also show notifications and occasionally ads that keep interfering with the user's experience of the device.

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- **GPS Issues:** Some users from MIUI 11 have had the issue of getting imprecise GPS readings for third-party apps, especially Google Maps. Permissions related to the access of GPS were facing an issue, and it was fixed later by another update [26].

- **OS & Security Updates:** A typical Android stock-based phone will get periodic security updates and major OS updates. But MIUI does not have many security updates and gives updates to the MIUI version and not the underlying OS.

- **Google Vs Xiaomi China:** Google and the Chinese government have had some disagreements, and so many Google-based services are blocked in China. So the Mi phones that are released in China do not come with the Google Play Store, rather a Mi Store [27].

- **Two App Stores:** As per the issue with Google, even though China does not get the Google Play Store, other users of the phone get both the app stores of Google and Mi. It is again an unnecessary one for users not from China.

9. MARKETING STRATEGIES :

Xiaomi has handled a lot of strategies in making their new brand popular in such a short period [28]. Let us see a few of the strategies that have made Mi a household brand and product.

9.1 Standard Products with Low Cost
While other smartphones were having prices that are not affordable by the common man and made the feeling that these premium smartphones are only for the upper class who could afford them, Mi changed this notion by providing Quality, Premium Look and Feel Smartphones for prices that could be afforded by anyone, which in itself was a strong and bold move by Xiaomi [8].

9.2 Right place, Right Time
Mi entered the market at a very appropriate time where it would prosper and never took a step down in any situation and are dedicated to providing smartphones in affordable and reliable ways. It created a perfect balance between people who only prefer branded phones, people who prefer that the phone's service center is close by, and people who just want a smartphone that would perform well [8].

9.3 e-Commerce Platform Usage
Instead of only relying on vendors who would sell their product through showrooms, Mi took advantage of the e-Commerce Giants like Flipkart and Amazon in India to get their products to the customers. The strategy followed by Mi by creating a scarcity in the market for their products in the initial stages of their release made people think that the ones who got the phones are lucky. The demand which was created was a huge success in their selling strategies [8].

9.4 Knowing the Customer
Mi made it a point to take feedback from as many customers as possible in getting to know what they are looking for in a smartphone and how Mi can improve the services and features offered [29]. In each of the revisions and updates of MIUI, all constructive feedback was put into action, and people can see a constantly upgrading software which becomes a reason for the huge fan base that Xiaomi has today [8].

9.5 Word of Mouth
More than ads in televisions, newspapers, and digital media, Mi got its popularity mostly by the word of mouth of its customers. Anyone who has bought a Mi phone would surely flaunt and recommend it to their friends and colleagues. Since they provide everything that a tech-savvy would like and any regular mobile phone user would like, it becomes widespread that Mi Phones are best in their quality, packaging, service, and software [30].

9.6 Unique Selling Point

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When a product has similar competitors, who offer the same product with the same configuration for almost the same rate, the customer often comes down to find out what is so unique or special in the product to choose it over the other [31]. The USP of the company would be the price, but when the same price is offered for similar products, MIUI will become the unique point that Mi can state and how people opt for Mi over other phones.

9.7 A professional & Attractive Website

Every time a product is released, Mi creates an aesthetically appealing and professional-looking website for that product series, which highlights the features of that particular series of phones in a very compelling way that people get a feel of what Mi has to offer. Referring to a website before buying a product is the first thing a person who is looking to buy a new phone would do. The websites that Mi creates will make anyone who visits it desire to own it along with its accessories.

10. SWOC ANALYSIS :

The SWOC Analysis of MIUI by Xiaomi is as follows:

Strengths:
- A stable Operating System with Regular Updates
- Free Cloud Service that provides essential features like Synchronisation of Contacts, SMS, Call Logs, Notes, etc.
- Provides a bundle of features that need installation of various apps in other UI's.
- A simple and Easy User Interface and User Experience [32]
- Lite Mode for Senior Citizens and Beginners that avoids clutters
- Comes with a majority of the Mi phones, making it a well-affordable option [33]
- Customization of the UI via Themes enables the users to choose their option of Wallpaper, Fonts, Ringtones, Icons, etc.

Weakness:
- It Lacks the Performance, Simplicity, Smoothness, and Security that comes with Stock Android.
- No many major OS updates, only MIUI updates.
- Comes with a few bloatwares that cannot be removed.
- OS seems heavy taking so much storage because of the various features inbuilt.
- Multi-tasking not as effective as the stock android
- Support for issues related to OS is very minimal online or in service centres.

Opportunities:
- To Explore more in the area of cloud computing and storage to increase the User Experience
- Exploring the possibility of removing unwanted features to make the OS a smooth and stable one.
- Providing Additional Features as an On-Demand Service
- Creating a Strong User Experience that stands out completely [34]
- More information about the features that MIUI has to offer in marketing rather than only focusing on the hardware specs of the phone.
- It can allow the user to choose whether the phone should have Android One or MIUI.

Challenges:
- Ban of Chinese apps in a few countries recently [35]
- A clear difference between MIUI and Stock Android in terms of performance, security, etc.
- Many companies have started providing lower-cost mobiles [33]
- Since distribution of the phone relies heavily on e-commerce platforms, not everyone will be able to obtain it.
- The waiting period to buy a phone makes people choose other phones that are readily available. [36]
- Not so welcome in all the countries where the brand makes a bigger impact.

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11. IMPACT OF COVID-19 :

Xiaomi and all other similar companies and industries had faced a decrease in their revenue because of the COVID-19 pandemic. From late March of 2020, several countries, including India, which had strict lockdown measures in place, Mi faced a great decrease in their sales and service. As the lockdown and other restrictions were lifted, sales of the products and services started recovering, and since most of them have turned online for their work, mobile devices are in huge demand everywhere [37]. Even though sales have recovered significantly for Mi, the number of smartphone activations has been limited because of various constraints in production. According to Mi, by July and August of 2020, the average number of smartphone activations per day in India went back to 72%, which is the same as in January 2020 before the restrictions began. Whereas in other places apart from India it reached 120% recorded in January 2020 [38]. Even though the pandemic had brought many businesses down, Mi has managed to keep track and proceed once the restrictions were relaxed and is still moving forward with innovations and solutions for the post-pandemic world.

12. SUGGESTIONS :

Based on the SWOC [39-40] analysis and the comparative analysis done in this paper, we can safely say that Mi is surely one of the strongest competitors in the mobile phone industry. However, there is always room to improve and excel in any field. Let us see some suggestions that can be deduced from the same:

   i.   MIUI should avoid the incessant advertisements that create a major issue with their bloat wares that come along.

   ii. To give a choice to the customer in any phone to choose the MIUI variant or the Android One variant which does not restrict people who like the hardware features of a phone but avoid it just because Android One or stock android is not offered.

   iii. To avoid the stock not available in flash sales that disappoint a lot of people even though they are ready to buy it.

   iv. To create features that are unique to MIUI and avoiding the replication of features, look, and feel of iOS Mobile.

   v.   To include a separate version of the OS specifically tailored to a country like India, which is the second-largest market for Xiaomi.

13. CONCLUSION :

The mobile phone industry is here to stay. The same cannot be said about the manufacturers. LG, a South Korean company, was the first to withdraw from the smartphone industry from April 2021 since it has incurred a loss of $4.5 billion over six years [41]. It is just the beginning, and if the manufacturers do not look for the need for the hour, customer's opinion, users experience, etc., they might also have to leave the industry soon. Mi is right now on the correct track of keeping its customers. But if it fails to study and understand the current market, it might also have a similar fate. It is always important to analyze the past, consider the present situation, and work with the future in mind. If Xiaomi can overcome all its challenges and consider its opportunities in the market, it can become the number one company in the Mobile Phone Manufacturing Industry not just in China and India, but the whole world.

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