EMERGING TRENDS IN DIGITAL MARKETING IN INDIA SUBTOPIC - MOBILE APPLICATION

-Harsh Khandelwal[1]

ABSTRACT

In this modern era the digital marketing is very essential for human utilization of information sharing. Digital marketing is the forms of electronic media for reach the client in way of promotion of products or brands. It is consisting of online marketing, internet marketing or web marketing. In the present situation about the digital marketing encompasses banner advertising, search engine optimization (SEO) and pay per click. In the side of digital marketing also includes e-mail, RSS, voice broadcast, fax broadcast, blogging, podcasting, video streams, wireless text messaging, and instant messaging. Digital marketing has a very wide scope. It is the process of electronic communication with the data to transformation the information to digital by the customer goods and the services towards marketplace. Digital Marketing is moved emerging trending industry around the global. The purpose of the digital marketing is apprehensive with consumers and allows the consumers to intermingle with the product by high caliber of digital media. Nowadays the mobile users are increase compare to previous year. It is very hard to uptick their sales. A change of different handling like messaging on the website and advertisement on the sites would give a big push by sales team. Innovation with Digital Marketing product is used more, where innovation without Digital Marketing product is out of stage. There are prosperity of opportunities and predictions. There are some online marketing for Amazon, flipchart, eBay, club factory and other marketing companies will do the marketing strategies. Latest data shows that there are 450 million internet users in India.

Keywords: ***Digital Media, Electronic communication, industry, product, business, innovation, Mobile Apps, Mobile Technology, Education and Research.***

[1]3rd year student of Indore Institute of Law

INTRODUCTION

Internet, social media, mobile apps, and other digital communications technologies have become part of everyday life for billions of people around the world. According to recent statistics for January 2020, 4.54 billion people are active internet users, encompassing 59 % of the global population (Statista, 2020a). Social media usage has become an integral element to the lives of many people across the world. In 2019 2.95 billion people were active social media users worldwide. This is forecast to increase to almost 3.43 billion by 2023 (Statistica, 2020b). Digital and social media marketing allows companies to achieve their marketing objectives at relatively low cost (Ajina, 2019). Facebook pages have more than 50 million registered businesses and over 88 % of businesses use Twitter for their marketing purposes (Lister, 2017). Digital and social media technologies and applications have also been widely used for creating awareness of public services and political promotions (Grover et al., 2019; Hossain et al., 2018; Kapoor and Dwivedi, 2015; Shareef et al., 2016). People spend an increasing amount of time online searching for information, on products and services communicating with other consumers about their experiences and engaging with companies. Organisations have responded to this change in consumer behavior by making digital and social media an essential and integral component of their business marketing plans (Stephen, 2016).

Organisations can significantly benefit from making social media marketing an integral element of their overall business strategy (Abed et al., 2015a, Abed et al., 2015b, Abed et al., 2016; Dwivedi et al., 2015a; Felix et al., 2017; Kapoor et al., 2016; Plume et al., 2016; Rathore et al., 2016; Shareef et al., 2018; Shareef et al., 2019a; Shareef, Mukerji, Dwivedi, Rana, & Islam, 2019b; Shiau et al., 2017, 2018; Singh et al., 2017; Yang et al., 2017). Social media enables companies to connect with their customers, improve awareness of their brands, influence consumer's attitudes, receive feedback, help to improve current products and services and increase sales (Algharabat et al., 2018; Kapoor et al., 2018; Kaur et al., 2018, Lal et al., 2020). The decline of traditional communication channels and societal reliance on bricks-and-mortar operations, has necessitated that businesses seek best practices use of digital and social media marketing strategies to retain and increase market share (Naylor et al., 2012; Schultz & Peltier, 2013). Significant challenges exist for organisations developing their social media strategy and plans within a new reality of increased power in the hands of consumers and greater awareness of cultural and societal norms (Kietzmann et al., 2011).

Nowadays, consumer complaints can be instantly communicated to millions of people

(negative electronic word-of-mouth) all of which can have negative consequences for the business concerned (Ismagilova et al., 2017, 2020b; Javornik et al., 2020).

This study brings together the collective insights from several leading experts to discuss the significant opportunities, challenges and future research agenda relating to key aspects of digital and social media marketing. The insights listed in this paper cover a wide spectrum of digital and social media marketing topics, reflecting the views from each of the invited experts. The research offers significant and timely contribution to the literature offering key insight to researchers in the advancement of knowledge within this marketing domain. This topic is positioned as a timely addition to the literature as the digital and social media marketing industry matures and takes its position as an integral and critical component of an organisations marketing strategy.

The remaining sections of this article are organized as follows. Section 2 presents the overview of current debates and overall themes within the current literature. Section 3 presents multiple experts' perspectives on digital and social media marketing. Section 4 concludes the paper discussing limitations and directions for future research.

AN ANALYSIS OF RECENT LITERATURE

This section synthesizes the existing literature focusing on digital and social media marketing and discusses each theme listed in Table 1 from a review of the extant literature. Studies included in this section were identified using the Scopus database by using the following combination of keywords "Social media", "digital marketing" and "social media marketing". This approach is similar to the one used by existing review papers on a number of key topics (e.g. Dwivedi et al., 2017, Dwivedi et al., 2019a, Dwivedi et al., 2019b, Dwivedi et al., 2019c; Marriott et al., 2017; Shareef et al., 2015). Based on the classification provided by Kannan and Li (2017) the overall topics were divided into four themes: environment, company, outcomes, and marketing strategies.

MOBILE APPLICATION

According to Techopedia A mobile application, most commonly referred to as an app, is a type of application software designed to run on a mobile device, such as a Smartphone or tablet computer.

Mobile applications are consist of software/set of program that runs on a mobile device the vice and perform certain tasks for the user. Mobile application is a new and fast developing Segment of the global Information and Communication Technology. Mobile application is easy, user friendly, inexpensive, downloadable and run able in most of the mobile phone including inexpensive and entry level phone. The mobile application has wide uses for its vast functioning area like calling, messaging, browsing, chatting, social network.

communication, audio, video, game etc In large number of mobile application some are pre-installed in phone and others user can download from internet and install it in mobile phone. This large number of mobile application market served by increasing no of mobile application developer, publishers and providers. From the technical point of view the different mobile applications are run able in different managed platforms like iPhone, BlackBerry, Android, Symbian, etc.

CLASSIFICATION OF MOBILE APPLICATIONS

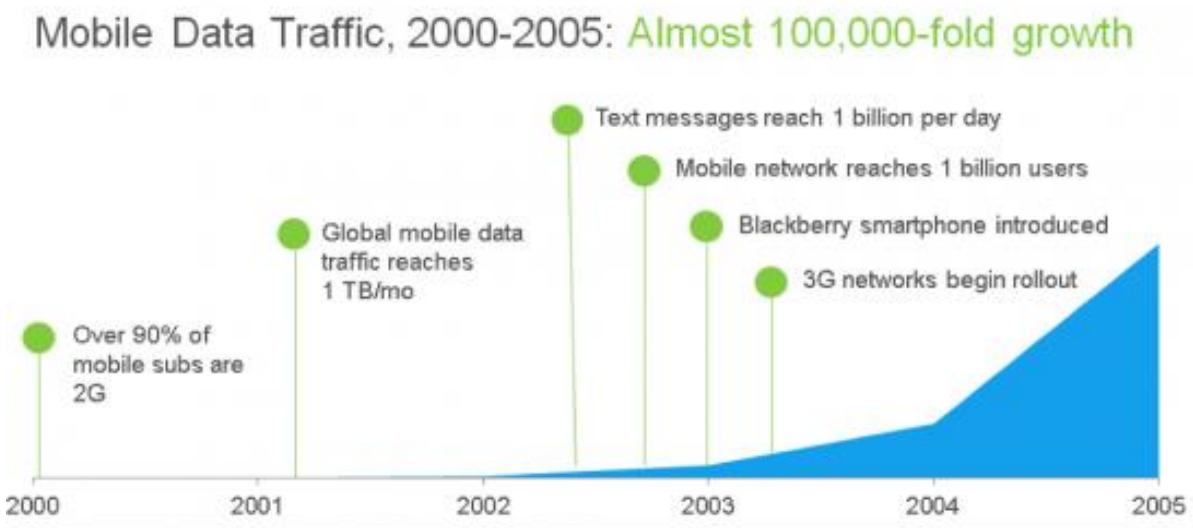
The popularity of mobile devices and development tools provided by the manufacturers of mobile operating systems or development environments professional producers allowed the creation of smart phones apps able to send and receive information to / from a data server resulting in portable solutions for a wide range of applications such as portable test systems, the monitoring and/or control, or portable data acquisition systems. Mobile applications can be structured according to several criteria, such as where the fields that can be used: General Information Applications that are used by users for information in various fields and can be for example weather applications; Network communication applications are applications that users communicate with other users through social networks or similar applications, such as Skype, Viber etc.; Entertainment applications that users access different games or read newspapers; Economic applications where users can make payments online, using e-commerce; Applications with personal accounts that can be used only by logging

MAJOR MOBILE MILESTONES - THE LAST 15th YEARS, AND THE NEXT FIVE

Pre-2000: The wireless wilderness shows early signs of development

In 1973, the first mobile phone call was placed with the words "guess where I'm calling from?", the motto of the early days of cellular voice. Mobile phones became commercially available in 1979, but the early phones were expensive and heavy, with large nickel cadmium batteries weighing them down. In the 1990s, lithium ion batteries were introduced, reducing the weight and size of the phones by more than half, and the phones began to be offered at more affordable prices. Also in the early 1990s, 2G phones deploying GSM technology were introduced, marking the shift from analog to digital communications. With GSM, limited data services such as text messaging and paging began to be available. The GPRS standard was introduced in the late 1990s, delivering packet-switched data capabilities to existing GSM networks and allowing users to send graphics-rich data as packets.

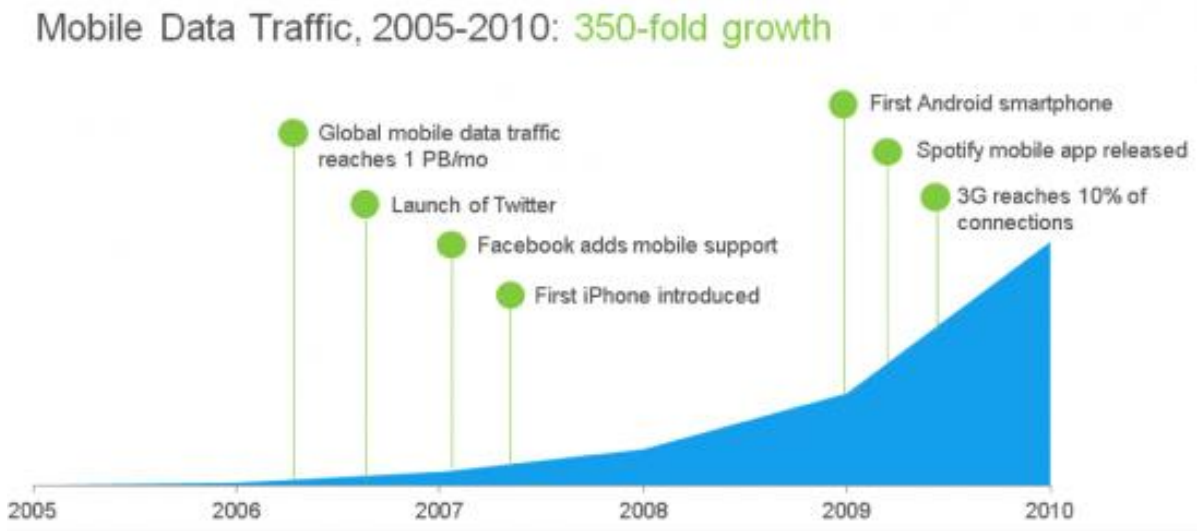
2000 – 2005: "Call me"



Mobile voice was still the dominant voice application in this era, but text messaging had already taken hold by 2000, with millions of messages sent each day. With the introduction of the Blackberry smartphone in 2003, email was added to the mix and text messaging adoption accelerated due to the keyboard device, which enabled rapid typing of longer messages. Though text messaging was the most common mobile application globally, it was not a majority of mobile traffic. In something of a surprise development, mobile data traffic was dominated by laptops. Laptops were connected to the mobile network though special-purpose laptop modems or by tethering to phone models such as the blackberry.

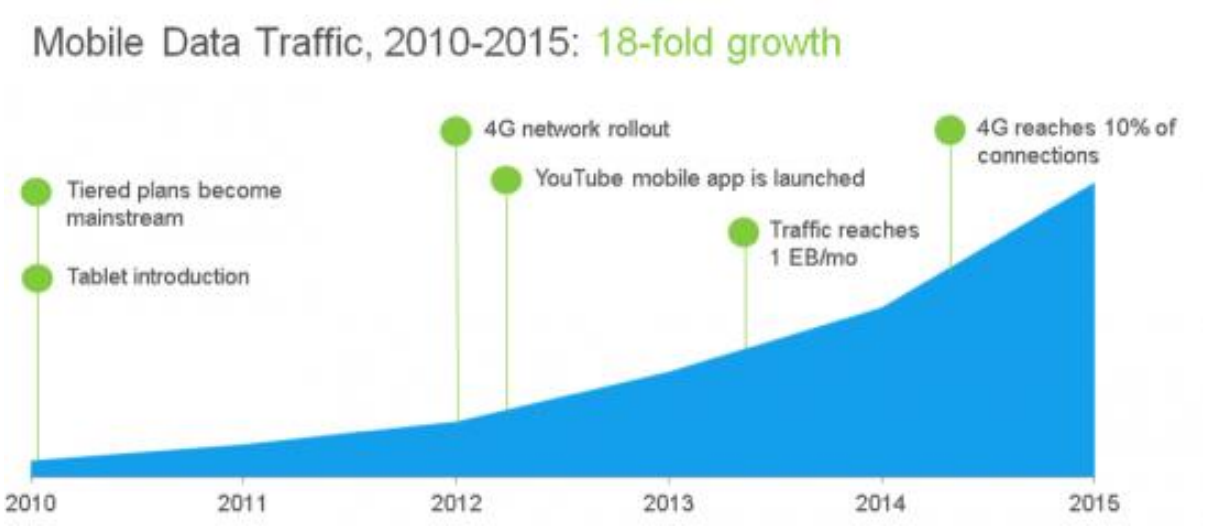
Even though phones far outnumbered laptops on mobile networks, the volume and types of traffic originating from laptops were so traffic-heavy that laptops became the dominant traffic driver. The speeds of mobile networks were still relatively slow in this era, with 2G data speeds generally remaining under 100 kbps. In 2003, 3G networks begin to be rolled out across the globe, providing data transmission speeds three to ten times faster than 2G.

2005 – 2010: "There's an app for that"



The next five years saw an explosion of mobile applications. The first iPhone was introduced in 2007, which enabled a much richer mobile experience. Smartphones were not the only factor responsible for the multiplying number and diversity of mobile applications, however. The increasing reach and availability of 3G networks was a crucial component. Not only did 3G offer increased speeds but 3G operators often placed no data limits on users at this time. As unfamiliar as it may seem to us today, early 3G networks were under-utilized and operators wanted to increase rather than limit data consumption. With 3G speeds, unlimited data allowances, and smartphones on the scene, the mobile applications industry took flight. Twitter was launched in 2006, Facebook went mobile in 2007, and the Spotify mobile app was released in 2009, along with many others.

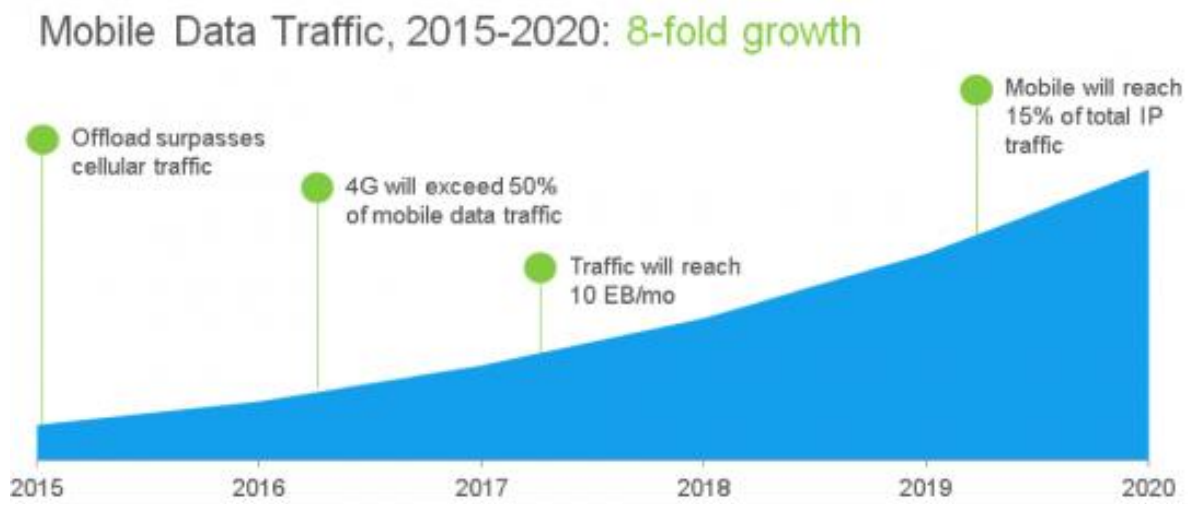
2010 – 2015: "Watch this"



The primary growth drivers in this era were video, multiple devices, and the continued increase in speeds and the launch of 4G networks. Video first appeared on mobile networks through cellular-connected laptops, so even before the appearance of smartphones, video was present as a traffic driver. But with 3G speeds and iPhone-style smartphone screens, mobile video reached a much larger audience. By the end of 2013, video was already nearing 50 percent of mobile data traffic. In 2010, tablets were introduced, some with mobile connections. Though the number of users in developed mobile markets had already begun to level out, the number of devices continued to increase, and the presence of large screen devices contributed to the use of high-bitrate applications such as video and gaming.

2010 also marked the introduction of data caps and tiered plans in a majority of mobile markets, worldwide. Though initially the effect of these data caps was merely to limit the consumption of mobile data “hogs”, these measures began to curb the usage of the average mobile data before 2015.

2015 – 2020: “Watch your data cap – where’s the WiFi?”



2015 was a milestone year for mobile data traffic in two ways. First, offload traffic exceeded cellular traffic for the first time in 2015. Emerging trends such as homespots are increasing the community prevalence of Wi-Fi. Globally, total public Wi-Fi hotspots (including homespots) will grow 7-fold from 2015 to 2020 from 64.2 million in 2015 to 432.5 million by 2020. With higher availability of Wi-Fi hotspots globally, and with continued pressure on users to remain with data caps, the average mobile user in 2015 opts for Wi-Fi wherever possible. With technology advances, dual mode devices are also smarter with switching between Wi-Fi and cellular networks.

Another milestone reached in 2015 was that 4G traffic surpassed 3G traffic for the first time. Although 4G connections represented only 14 percent of mobile connections in 2015, they already account for 47 percent of mobile data traffic, while 3G connections represented 34 percent of mobile connections and 43 percent of the traffic.

With the growing prevalence of 4G and the anticipated arrival of 5G, mobile users will enjoy higher quality mobile broadband and speeds over the coming years. But this growth in usage is currently mitigated by data caps along with the average mobile user's growing awareness of these limits. The top 1 percent of mobile users used to generate 52 percent of mobile data traffic per month at the beginning of 2010. At the end of 2015, the top 1 percent of the mobile users generated 7 percent of mobile data traffic per month.

While the focus has been on smartphones and tablets traditionally, new and upcoming devices will enable new models for data caps. For example, at 335 MB per hour, only 1.5 hours of a GoPro type of action camera using mobile data can generate more than the average monthly

traffic per typical user in 2015. Drones, home security, video and digital cameras and many such connected devices can create potential wild card consumption scenarios of mobile data traffic.

Operators around the world are offering creative sponsored data incentives such as free mobile data video streaming with select partners, data carry forward services and free trial toll free usage of social networking applications, among many other creative offers to decrease churn. Innovative data plans and network quality is a key differentiator in the mobile data business and it remains the chief determinant of user preference and carriers' pricing power and ARPUs.

Beyond 2020: Digitization, Mobile Internet of Things, and 5G

Beyond 2020, the wave of digitization will spread beyond communications, media, and content, to encompass every aspect of our lives and work. While current traffic is dominated by end-user devices, machine-to-machine connections represent an increasing number of connections and traffic. Digitization will bring a large number of very diverse devices and applications onto the mobile network, each with its own unique network requirements and traffic patterns. The mobile network will soon connect more things than people, and with 5G these things will potentially be connected at speeds that enable high-bandwidth data transmission. The drivers of the future will continue to be devices, speeds, and applications, but the nature of these drivers will change dramatically over time.

The mobile industry has moved at an exhilarating pace in the last 15 years, and we can't wait to see what the next 15 years might bring.

PAST 10 Years of Mobile Industry History

Any investor will tell you that past performance is not a guarantee of future results, but as investors of time, money, and energy in mobile enterprises, it's important to maintain a bird's-eye, macro-level view of the industry. The market for mobile software and devices has been steadily growing at a nearly geometric pace, and it shows no signs of slowing.

Since the mid 2000's, the industry—especially in terms of software, apps, and web interactivity—design has absolutely boomed and gone through immense advancements in every way imaginable way. This is because during the last decade (and even more so during the last five years), mobile phones have gone from being simple phones to being

fully-functional pocket-sized computers, with a mobile equivalent for almost every single feature of a full-blown desktop or laptop computer.

This general trend has naturally led to the development of an enormous industry that can basically be divided into two interrelated parts: mobile app development and mobile-friendly design. Mobile development has grown alongside thousands and eventually millions of increasingly-sophisticated mobile applications developed for ever-growing smartphone marketplaces. Modern mobile applications take advantage of built-in hardware abilities in astoundingly clever ways and perform robust web-based and organizational functions.

With the rising advancement of high-speed, large-bandwidth mobile networks like 3G, WiFi, and 4G, consumers can access the web on their smartphones as quickly and reliably as they can via a normal computer. At the same time, the growing access has prompted an explosion in the number of mobile-friendly or purely mobile websites; this in turn has increased demand for mobile design enormously, and that's where developers like you come in.

Today, the mobile phone market is outstripping ownership and use of landline phones in virtually every country on Earth, the steady conversion of more and more of these phones into smarter, more multimedia-friendly devices that work off WiFi, 3G, or 4G networks suggests that the future of mobile development and design will only grow stronger.

Let's go over some of the major ingredients that led to the rise of modern mobile design.

The First Cellular Networks

Starting from simple wireless analog-based (1G) portable phones, it wasn't until the late 1990's that cell phones turned into more sophisticated devices as the technology inside them started to spawn an ever larger number of features (features that nonetheless seem basic by today's standards). These first phones gave basic calling abilities to users and their convenient portable capacities are what established them as widely-used communications devices.

2G/GSM Networks and the Rise of Mobile Media

It wasn't until the mid to late 1990's that a new communications network, known as GSM—or 2G, as it was less often called—began to develop in which more mobile services could be offered. At this point, the first pre-smartphone devices began to appear, and the fact that data transmission over these next-generation devices was digital instead of analog

allowed them to carry many of the more basic smartphone features that we use as the basis for modern app development. Capabilities such as text messaging, downloadable content, and extremely basic web access gave consumers the ability to send emails, view a small selection of online multimedia, and download simple digital applications such as ringtones and music files.

The growth of the GSM, or 2G networks, is what really expanded mobile phone use so broadly that mobile devices eventually eclipsed landline communication tools. Despite the 2G networks explosive popularity amongst users of all income levels worldwide, these machines were still pretty basic compared to today's mobile devices.

3G Arrives

It wasn't until the early 2000's, with the development and service offering of the first 3G wireless digital networks that true smartphones arrived. In 2002 and 2003, network operators began to offer widespread 3G access based on more powerful wireless transmission technology that depended on efficient packet switching data transmission found in computer-based web connections instead of the 2G networks circuit switching mechanism.

With the arrival and rise of 3G, the modern era of wireless mobile smartphones as pocket-sized computers truly began, especially after 2005, when High-Speed Downlink Packet Access (HSDPA) was implemented into 3G and expanded its data carrying ability even more. The resulting explosion in online media accessibility created a tandem explosion in online media creation. At the same time, in order to take full advantage of all these web-based data options that phone networks now offered, mobile applications started appearing for smart phones—at first in small quantities but later at a rapid development pace. Also, the devices themselves had to be redesigned so that they could better display digital media and other interactive systems, taking full advantage of the growing apps market.

3G Arrives

Currently, even 3G itself is being slowly replaced by the much more powerful, purely packet-switching-based, data optimized 4G network. With this new technology, ten-fold increases over 3G in data transmission ability are coming into the picture, making access to digital media even more robust and further bolstering the demand for media-rich mobile applications.

Bye Bye Buttons

This is where the touchscreen phone with its large visual screen interface comes into the picture. Today, this is the replacement to the antiquated button control and small display screen based phones of several years ago.

The end result of this mix is the rapid replacement of old phones for new touchscreen devices and the deliberate obsolescence of older networks in favor of 3G and its even more powerful successor, 4G. In many countries, anything older than 3G is no longer even available and almost all new phones being sold feature a predominantly buttonless touchscreen design.

As of the most recent figures, there were over 1.6 billion 3G/4G mobile subscribers worldwide (up from only 297 million in 2007)

Mobile Operating Systems and App Marketplaces

Finally, we come to the growth of mobile device operating systems. Since modern smartphones are more like computers than cell phones in a classical sense, they naturally needed a fully-functional OS of their own. Because of this, several companies such as Research in Motion, Apple, Google, and Microsoft all came out with their own competing mobile operating systems that gave a full-scale interface to digital media access and software applications compatibility

Thanks to all these features, the mobile apps development landscape has exploded like few other industries ever have in history. Since 2010-2011, app marketplaces have grown for mobile operating system developers such as Apple with its iOS platform, Google's Android OS, and Microsoft's Windows Phone.

As of 2012, the Apple mobile apps market alone houses over 600,000 smartphone apps and has had over 30 billion downloads to date. Similarly, the Android OS market gives access to hundreds of thousands of additional applications and sees some 3 million downloads per day from its online platform.

These applications are developed by both major mobile market players and, even more overwhelmingly, hundreds of smaller third-party companies and teams that sell them through the major apps markets for a majority percentage of revenues per app. This mutually-beneficial sales relationship ensures an extremely robust mobile app market that constantly sees new innovation flooding in.

Mobile Website Design

Finally, the last major branch of the mobile development landscape—with the enormous growth similar to that of mobile device development—is mobile website design. The ever-faster Internet connectivity of modern devices virtually guaranteed their use for web browsing. As of early 2012, some 61% of American users were regularly accessing the internet through their smartphones or tablets, and of those, at least 30 to 40% are almost exclusively mobile Internet users who rarely if ever bother browsing from a desktop or laptop.

Naturally, this creates an immense demand for web design that's compatible with the much smaller and simpler screens of mobile phones and tablet devices, and this search for mobile web compatibility in online domain pages has been the latest trend in web design.

Thanks to this trend, most major site owners today have both a regular site for their URLs and a mobile-friendly version that is either automatically accessible as a special domain with its own mobile designated prefix or as a downloadable app that functions as a website. In general, these mobile versions of pages are visually stripped down versions of the full-scale original website that maintain core functionality.

COVID - 19 AND APPLICATION OF SMARTPHONE TECHNOLOGY IN THE CURRENT PANDEMIC.

1. SMARTPHONE TECHNOLOGY (SMT)

A smartphone is a newer class of cellular telephone with an integrated computer technology and other features such as an operating system, web browsing, and the ability to run software applications. They are called 'Smart' because they can provide information when you need them at the touch of your fingers and this can be used in a useful way. Currently smartphones are equipped with features such as camera, video recording, Global Positioning Service (GPS) navigation, and games, sending and receiving Electronic mail (email), web search applications for various purposes. SMT has influenced areas such as business, health, social life, education, and banking and further more.Mobile health 'mHealth' refers to the use of cell phone technology to deliver health care. The advent of SMT has increased the potential impact of mHealth intensely and has positive implications for patients' health and the patient-clinician relationship .

How is it different from telephone, video technology- comparison of smartphone technology (SMT) vs tele/video?

TM tools already exist in the market with telephone and video consultations having an increasing role in health care medicine. Information and communication technologies help in diagnosis, prevention and advice for management of acute musculoskeletal injuries and chronic orthopaedic conditions. TM has found increased role in the current COVID-19 in monitoring diabetic conditions and health of patients 'self-isolating' at home. Smart phone technology is an extended application of TM with the advantage of portability, with features such as camera, video recording, GPS navigation, sending and receiving email, web search at tips of fingers.

2. COMMUNICATION MODES WITH SMT

Video platforms: e.g. Zoom, Skype, Facetime (iPhone).

Audio platforms: e.g. telephone calls, advice etc.

Text platforms: e.g. Messaging, chat mode.

3. FIFTH GENERATION (5G) SMARTPHONE TECHNOLOGY REVOLUTIO

5G smartphone devices is a step forward in improving both patient care and physician competence, as well as decreasing resource consumption, which possibly may reduce healthcare costs.

5G has extremely high speed, mobility, energy efficiency and low latency, density than 4G . The data provided 5G for a virtual clinic will be as good as, or better, than the face-to-face clinic this will make virtual" clinics, Interdisciplary consultation, remote monitoring of patients a reality.

With high speed data transfer capabilities, huge medical data files of imagery eg MRI and PET scan could be transported speedily and reliably. Remotely controlled surgery (Telesurgery) will be a step closer to using high speed technology due to much improved image quality and real time video communication.

The 5G SMT phone have ultrahigh definition and 3D video facility which helps surgeons for operative management. It can create a humanized medical environment with artificial intelligence for patients in the ICU. Though it is useful but one should also remember its adverse systemic effects related to its use as well.

5G SMT phone with Artificial intelligence features can contribute to the fight against COVID-19 by i) early warnings and alerts, ii) tracking and prediction, iii) data dashboards, iv) diagnosis of COVID-19 patients determine best treatment plan and predict post-operative complications to enable early interventions when necessary,v) prognosis, treatments, and cures, and vi) social control.

NEW MOBILE TRENDS THAT ARE DOMINATING 2021

These are the top 14 mobile trends dominating the year so far. We expect these to continue trending upward.

1. Artificial intelligence (AI)

Artificial intelligence has penetrated our mobile world.

We're getting one step closer to mobile devices morphing into robots and taking over the planet. Obviously, I'm kidding.

While that day has yet to come, we are seeing advancements in mobile AI. You may be familiar with some of these:

- Alexa
- Siri
- Cortana
- Google Assistant

All of these are examples of AI that may even be installed on your mobile devices right now.

In addition to these popular forms of AI, mobile apps are now using software such as voice recognition to encourage hands-free use and ultimately optimize the customer experience.

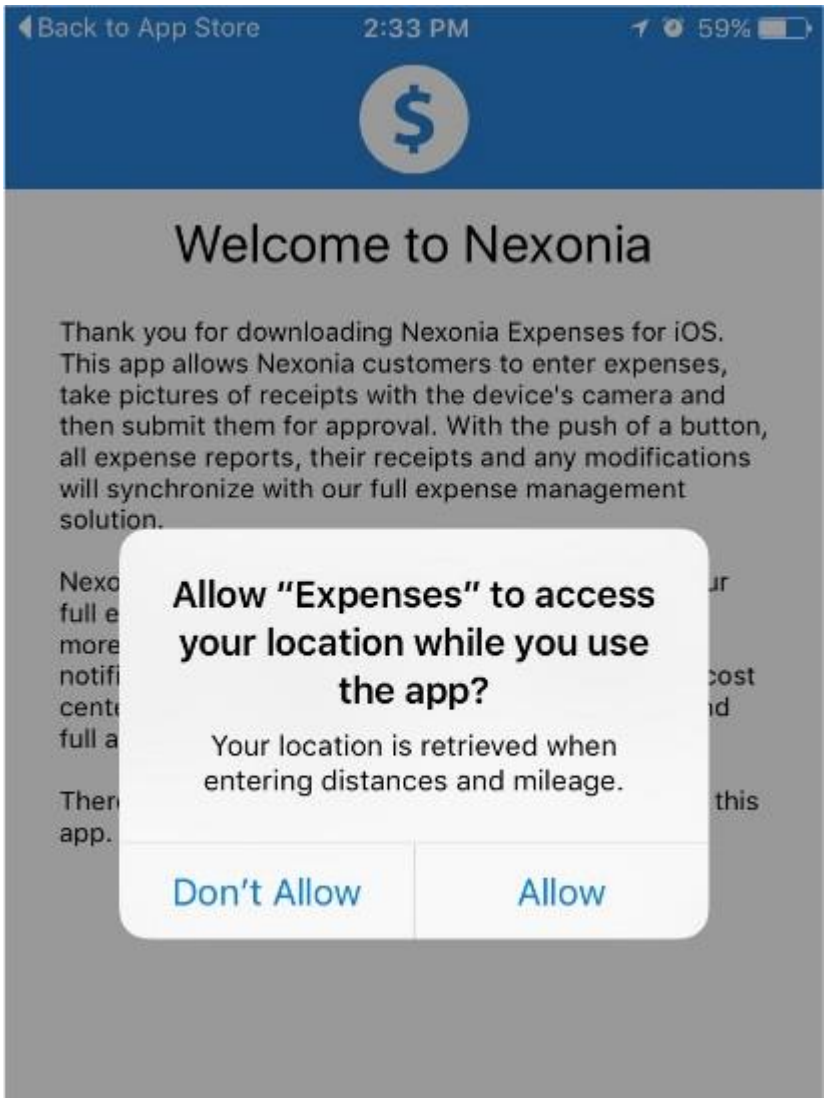
AI software is used to help developers and marketers learn more about the user.

Businesses are trying to get more revenue by using this information to create relevant advertisements that target specific audiences.

2. Location-based technology

Your smartphones and tablets are tracking your location. That's not a secret.

Mobile applications are also tracking your location, with your permission. Each time you download a new app, it requests your permission to use your location. Here's an example of this from Nexonia:



Each time you download a new app, you’ll get a notification similar to the one seen above. You may not even be able to use some apps to their full potential without giving them access to your location. For example, think about a ride-sharing app such as Uber.
They need your exact location to connect you with a driver.

But have you noticed an increase in apps requesting your location even if you don’t think it’s required to use the primary function of the app? That’s because 7 out of 10 apps on your smartphone share your data with third parties.
They do this to enhance their marketing campaigns.

If a business knows where a user is, it can send them targeted ads based on the location. An example of this is when an app uses geofencing technology. Here’s how it works.

Let's say you own a restaurant and have a mobile app. If an app user walks within a few blocks of your location, they'll receive a notification about your lunch special.
We've seen an increase in this strategy, and we'll continue to see it used in the future.

3. Augmented reality

Augmented reality takes something that's real and modifies it.
One of the best examples of this is the face filter options on Snapchat. Recently, Instagram impleOther mobile apps use this strategy to generate revenue.
Remember when everyone was going crazy about Pokemon Go? The entire premise of that game was based on augmented reality on a mobile device.
I found some mind-blowing statistics about the game and how successful it was:

- over 800 million downloads
- more than 5 million daily active users
- $1.2 billion total revenue

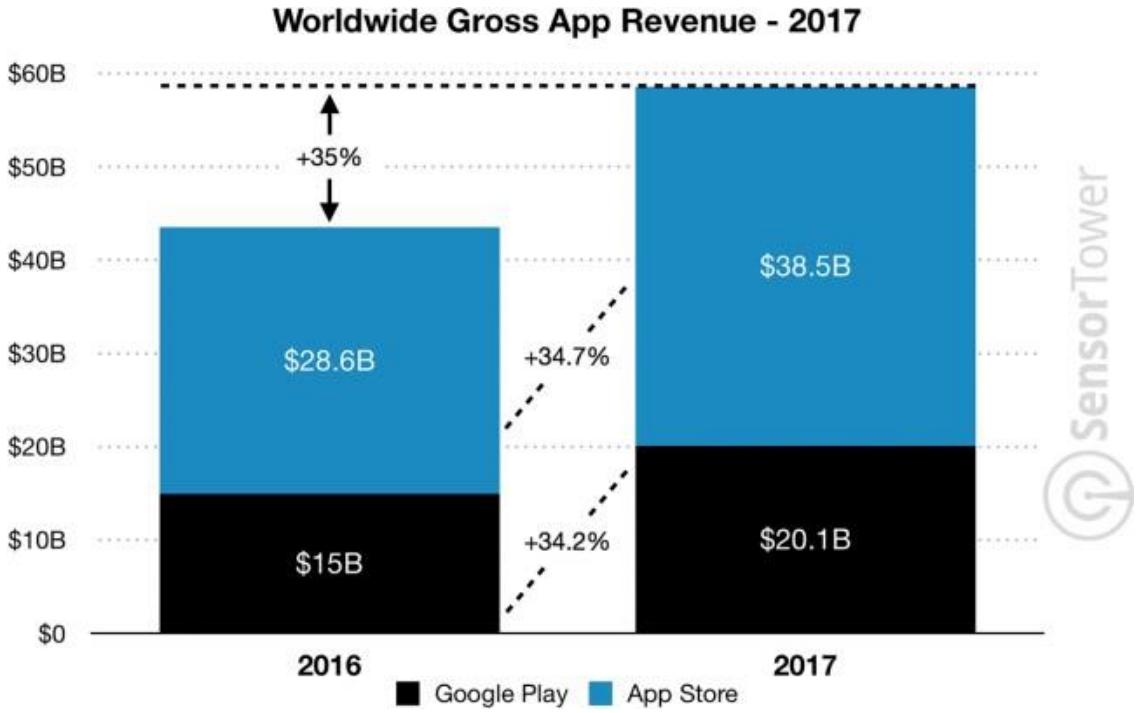
Those numbers speak for themselves. Based on the success of apps such as Pokemon Go, Snapchat, and Instagram, more businesses have been trying to incorporate augmented reality into their mobile technology.
This will help them create brand awareness, app downloads, engagement, and revenue.

4. Syncing wearable technology with mobile devices

Wearable technology has become increasingly popular.
I'm referring to things such as fitness bracelets, smartwatches, healthcare monitors, and glasses. They all can be paired with mobile apps.
Take Fitbit as an example. All the movements of a person wearing it can be tracked through an app. Users can check their heart rates and how many miles they walked in a day, among other things.
By syncing with mobile devices, these apps can be used socially as well. People can compare their progress with their friends and make it a competition.
As a result, it encourages the usage of the technology and increases engagement.
By the end of 2019, experts estimate that more than 125 million units of wearable technology will be shipped. That compares to just 50 million units shipped in 2015.
The reason for the popularity of this technology is its ability to pair with mobile devices.

5. Syncing wearable technology with mobile devices

Mobile apps are making a killing. Just look at the jump from 2016 to 2017 in terms of global app revenue:



There was a substantial increase in revenue through both the Apple App Store and Google Play Store.

This trend isn't slowing down. Mobile apps will continue to thrive.

6. Mobile devices syncing with homes

Mobile apps are being developed to help improve consumers' experiences within their own homes.

You can find businesses that sync your home air conditioning and heating with an app. That way, you can control temperatures whether you're home or not.

Instead of going to a central thermostat in the house, you can reach into your pocket and set everything on your phone.

Home security has been integrated with mobile technology as well. There are apps that have a video camera synced with your doorbell so you can see who is at your front door when the bell rings.

Home security cameras on the inside and outside of your home can all be controlled and monitored from mobile devices.

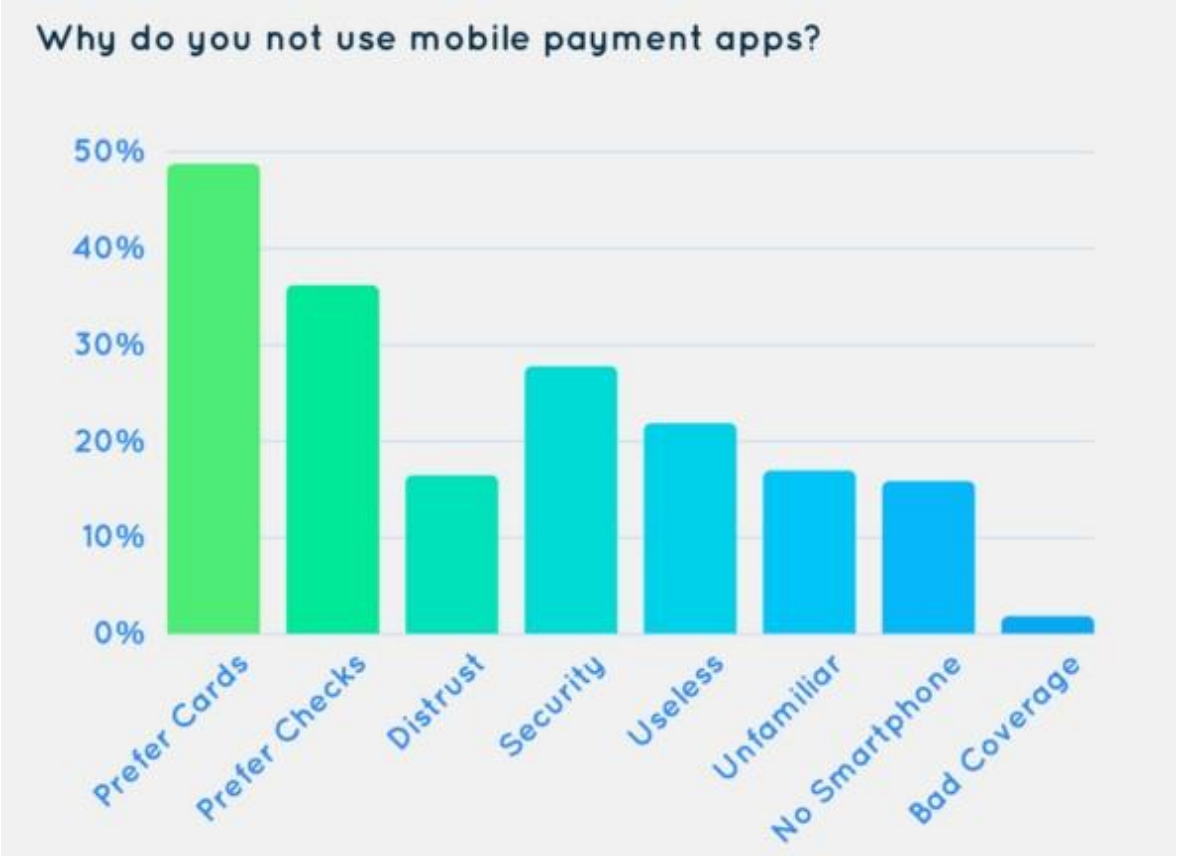
There are even smart refrigerators that connect with mobile devices. This technology gives you the ability to see inside your refrigerator while you're at the grocery store so you can see what you need to buy.

7. Enhanced mobile security

Saying that security is important would be an understatement.

With big companies having security breaches, consumers have become increasingly aware of the potential dangers of giving away their personal information.

Many people don't like the risks of providing sensitive information to businesses, especially through mobile apps. In fact, security and distrust are two of the top reasons why mobile users don't feel comfortable using mobile payment applications.



Furthermore, 56% of American consumers say they believe mobile payments will increase their chances of becoming a fraud or theft victim. Only 5% of people think these types of payment methods reduce those chances.

But as previously discussed, mobile app revenue is on the rise. While some consumers are reluctant to pay via mobile, others are not.

Businesses are recognizing these perceptions and improving their mobile security. They want their customers to feel as comfortable as possible when paying using mobile devices.

8. Small business mobile apps

Not long ago, mobile applications were just for the big players. But now everyone is developing them.

It doesn't matter how long you've been in business or how small your company may be, you can probably benefit from mobile app development.

Last year, more than half of small business owners in the United States said they had plans to develop a mobile app. Those apps should be in development and launching soon, if they haven't already.

Why are they building apps? Fifty-five percent of small business owners are using mobile apps to increase sales revenue.

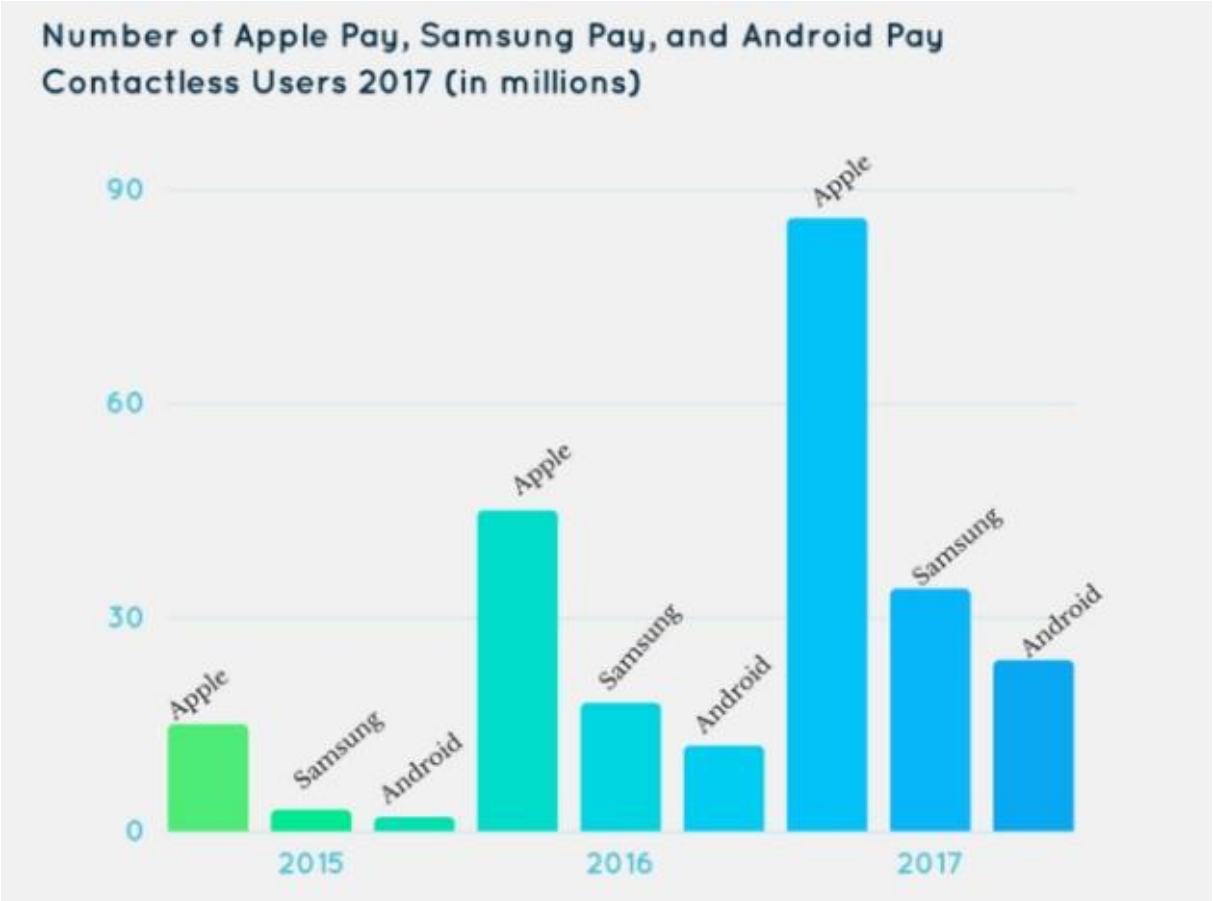
Apps also improve the user experience and help businesses stay competitive in a market that's always changing. You can't afford to fall behind, so you need to stay up to date with the latest technology.

9. Increased mobile payments

As mobile security improves and global app revenue rises, we'll see an increase in mobile payments as well. Among them are:

- bank apps
- PayPal
- Venmo
- Google Pay
- Samsung Pay
- Apple Pay

Just look at the jump in the number of payment apps users we've seen over the last three years:



These numbers are continuing to rise.

Again, this relates to mobile security. There is a direct correlation between how comfortable people feel making mobile payments and the increase in mobile payment popularity.

10. Transportation apps

For quite some time, we've seen apps for train tickets, local bus schedules, etc.

Ride-sharing apps, such as Lyft and Uber, have been dominating for years now as well. Even car sharing apps, such as Zipcar or Turo, are nothing new.

But new apps are bringing transportation to a whole new level. I'm talking about Bird and Lime Bike. Users can locate a scooter or bicycle from their mobile devices.

When they approach the transport, they can unlock it using cameras on their smartphones. Users get charged for the length of time they used the bike or scooter. When they're done, they can leave it anywhere.

Note that it's relevant to our discussion about location-based services and mobile payments. These new types of transportation are also integrated with mobile technology.

Bird raised $15 million earlier this year from investors. They are seeking an additional $100 million. It's safe to say they predict this will be a major part of the future in this industry.

11. Virtual reality

Virtual reality is not quite the same as augmented reality. You'll need more than just a smartphone to experience virtual reality.

Typically, a helmet or some type of goggles get used simultaneously with your mobile device. This technology may even come with a joystick or controller.

It's estimated that the global valuation for the virtual reality market will exceed $26 billion by the year 2022.

This won't happen overnight. We're already seeing virtual reality advancements and I expect those trends to continue as we move forward.

mented this feature as well:

12. Hybrid apps

Mobile app development can be expensive. Business owners have weighed the pros and cons of native and hybrid app development.

While both have their upsides, native development is more expensive. Furthermore, native apps can be built only for one platform at a time.

This is a problem for smaller businesses with smaller budgets for app development.

If you want to have your app available on both iOS and Android devices, you'd need to go through development twice, which is no easy task. Some businesses can't afford that.

But hybrid apps make this possible. It gives people the opportunity to launch their apps on the Google Play Store and Apple App Store simultaneously for a fraction of the cost.

That's another reason why more mobile apps are available for download, which contributes to the rising global app revenue as well.

13. Personal mobile devices in the workplace

Research indicates 87% of businesses depend on their employees to access work resources from their personal mobile devices. This is a big change from what we've seen in the past when businesses were trying to prevent this.

The concept is known as BYOD, or bring your own device.

In 2016, 78% of companies that disallowed BYOD said it was due to security concerns. But as I've already discussed, mobile security is improving, so now businesses are adapting and changing their policies.

Research shows there is a 34% increase in productivity when employees are allowed to use their personal mobile devices for work, which makes sense.

They are used to handling these devices on a daily basis. It's easier for them to navigate and stay organized.

This also helps businesses cut back on costs since they don't need to pay for new hardware.

14. Biometrics advancements

Biometrics are used to enhance security for mobile devices. Examples of biometrics include:

- voice recognition
- facial recognition
- signature recognition
- fingerprint recognition

Your current device may have some of these features installed. We'll see a lot more of this moving forward.

For example, let's say you've got an iPhone that was released in the last couple of years.

You're used to the fingerprint feature to unlock the device.

But now the new iPhone X has facial recognition software.

Other apps are using biometrics as well. For example, you may be required to use your fingerprint to make a mobile payment through some platforms.

CONCLUSION

Technology is constantly evolving. Just compare your current smartphone to the phone you had five or ten years ago.

As we continue, we'll see several different trends. Older mobile technology will be improved, and newer technology will be introduced.

The idea is to understand how consumers react to these changes. They are the ones who shape these trends. Identify the upward trends, and adapt accordingly to meet the needs of your mobile customers.