

# Device Coverage Report 2023

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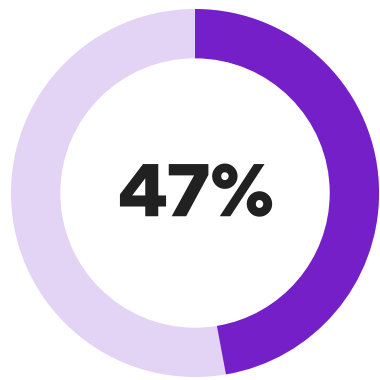
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# A Digital Unlock

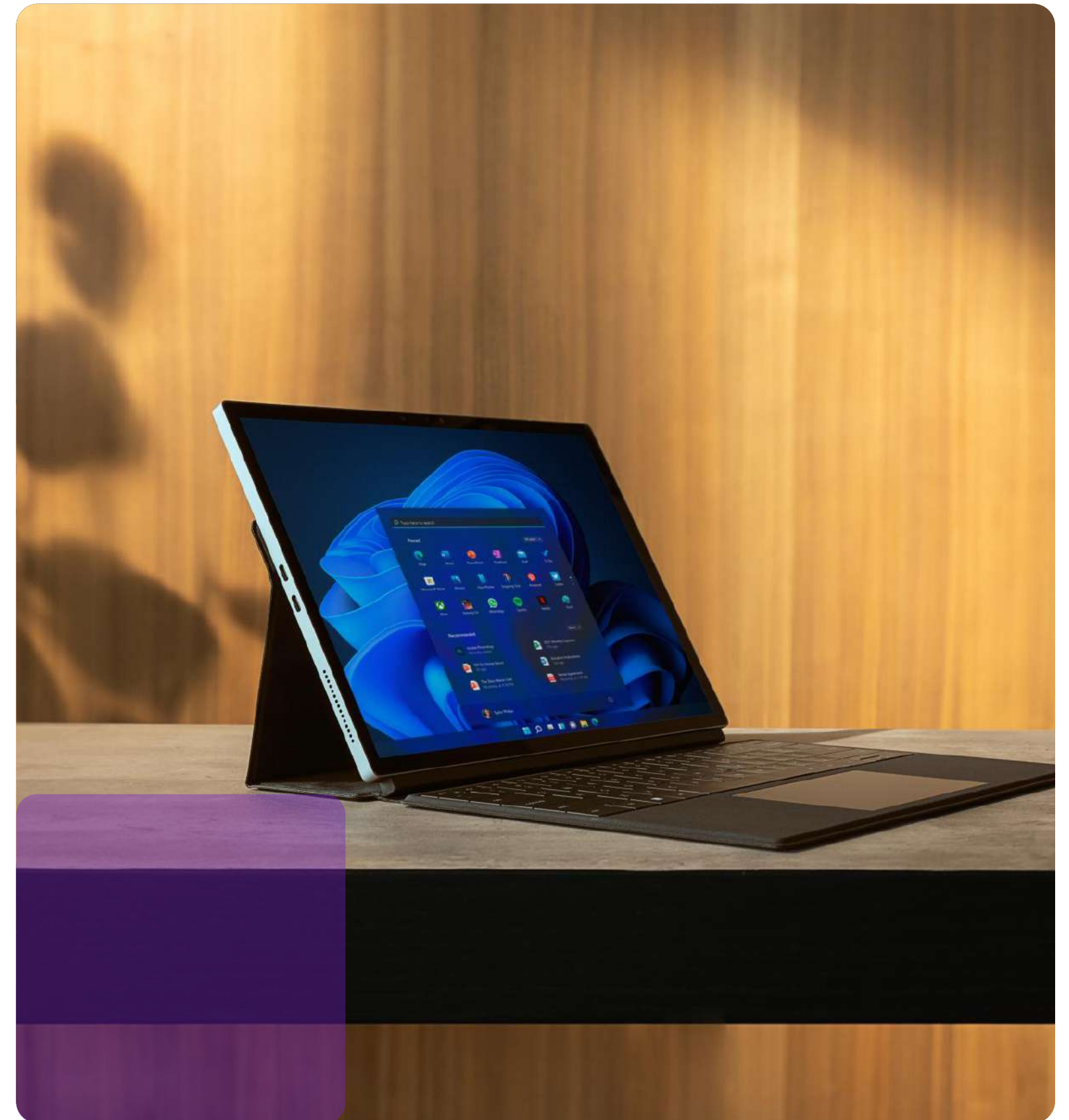
- The Pandemic has forced consumers to go digital for all their needs and necessities.



Consumers agree that they'll continue with **digital brand engagement.**

*Source: "Meet the Post COVID-19 consumer" report by Freshworks*

- With the advent of the Pandemic, businesses were disrupted and forced to take the online route to survive. And all those business that were already online or embraced the change made the most of the opportunity. It is a no brainer that the e-commerce businesses grew by leaps and bounds. While we always had the online shopping industry thrive from the early 2000s, with the likes of Boston Computer Exchange, eBay, Amazon and Alibaba. We've come a long way from deliveries that took forever to getting groceries to your doorstep in minutes at the click of a button. No doubt the Pandemic transformed the entire landscape of how



we shop today. But the big question was if this was just a bubble or the start of a new era of shopping.

- As the pandemic slowly receded its effect and businesses started to open their physical stores. The ones that took the online route surely survived, but the ones that gave up the idea saying it was just a bubble are paying a price similar to Kodak. The Digital Unlock has changed the consumer behavior for good. Today, there are a number of online consumers who continue to use various online channels to perform their daily tasks such as grocery shopping, ordering food, buying outfits, etc.
- The Digital Unlock has given consumers a new way of doing business. Businesses that were born during the pandemic have started to invest in physical spaces to create an experience center where consumers can come and experience the products before they make their final purchase online. Back in the day an “Experience Center” would’ve sounded alien to us, but today it has become a familiar term and a widely accepted concept.
- The New age businesses are more focused on scalability by taking the route of online digital apps and not restricting themselves to a particular geography. The boon of digital apps has made it possible for many businesses and business owners to expand their horizons beyond a specific geography or time-zone. Thanks

to pandemic, the acceleration of digital apps has become a blessing in disguise. Despite the unlock, the digital app world seems to be growing exponentially.

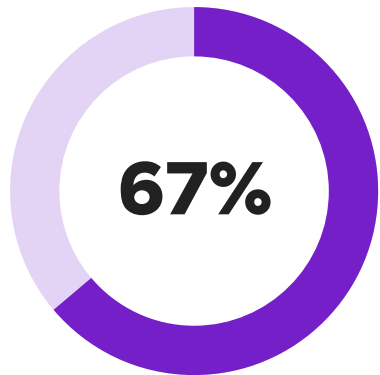
- There has also been a shift in our language and mindset of “recommending apps” over “recommending people”. These days when we ask – “Do you know any nannies in the area?” we hear people respond saying – “Have you tried this app, it’s quite easy?”. Our times have changed from recommending personal contacts and friends to business apps and tech tools.



**A study by Census Bureau's Annual Retail Trade Survey (ARTS) showed that e-commerce sales increased by \$244.2 billion or 43% in 2020, the first year of the pandemic, rising from \$571.2 billion in 2019 to \$815.4 billion in 2020."**



# Businesses Moving towards Digital First Approach



Organisations **accelerated** their digital transformation strategy due to COVID-19 crisis.

*Source: A commissioned study conducting by Forrester Consulting on behalf of KPMG, July 2020*

- The new age businesses are no more restricted to geographies and have an unlimited imagination. This is possible because of the changing nature of businesses.
- Back in the day, to start a business, you needed a lot of investment, physical space, employees, etc. Today all of these things are no more a limitation. You can practically run your business with just a phone and a good internet connectivity.

- Businesses these days are focusing on getting online to ensure scalability and a much wider reach. In today's world even before business owners launch their businesses, they want to make sure that they have a social media handle or a website where all the news and updates are going out on a regular basis.

## 2.1 Shift in Mindset & Culture

- There has been a switch in the mindset of many business owners to be moving from a limited geography and reach to a broad look at businesses from a Digital First approach. Businesses are now focusing on taking the Digital First approach. The Digital First approach as it helps businesses scale up their solutions. It's helping them reach a wider audience by strengthening the online presence through digital apps, websites and social media marketing.



- To see businesses flourish, it is vital to implement and bring these changes in terms of the mindset and culture of evolving with the current technologies around us.

### ● **Move from Legacy to New Business Models**

- Kodak is a classic example of failing to move from a successful yet legacy business model. Though they invented the digital camera years before it became known to

the public, they decided to sit on the invention because it threatened the legacy film industry instead of acting on the opportunity.

- On the contrary, Bell Atlantic saw that landlines were dying and decided to lead the charge in the transition to mobile phones. You know them today as Verizon.

## 2.2 Apps – The New Business Model

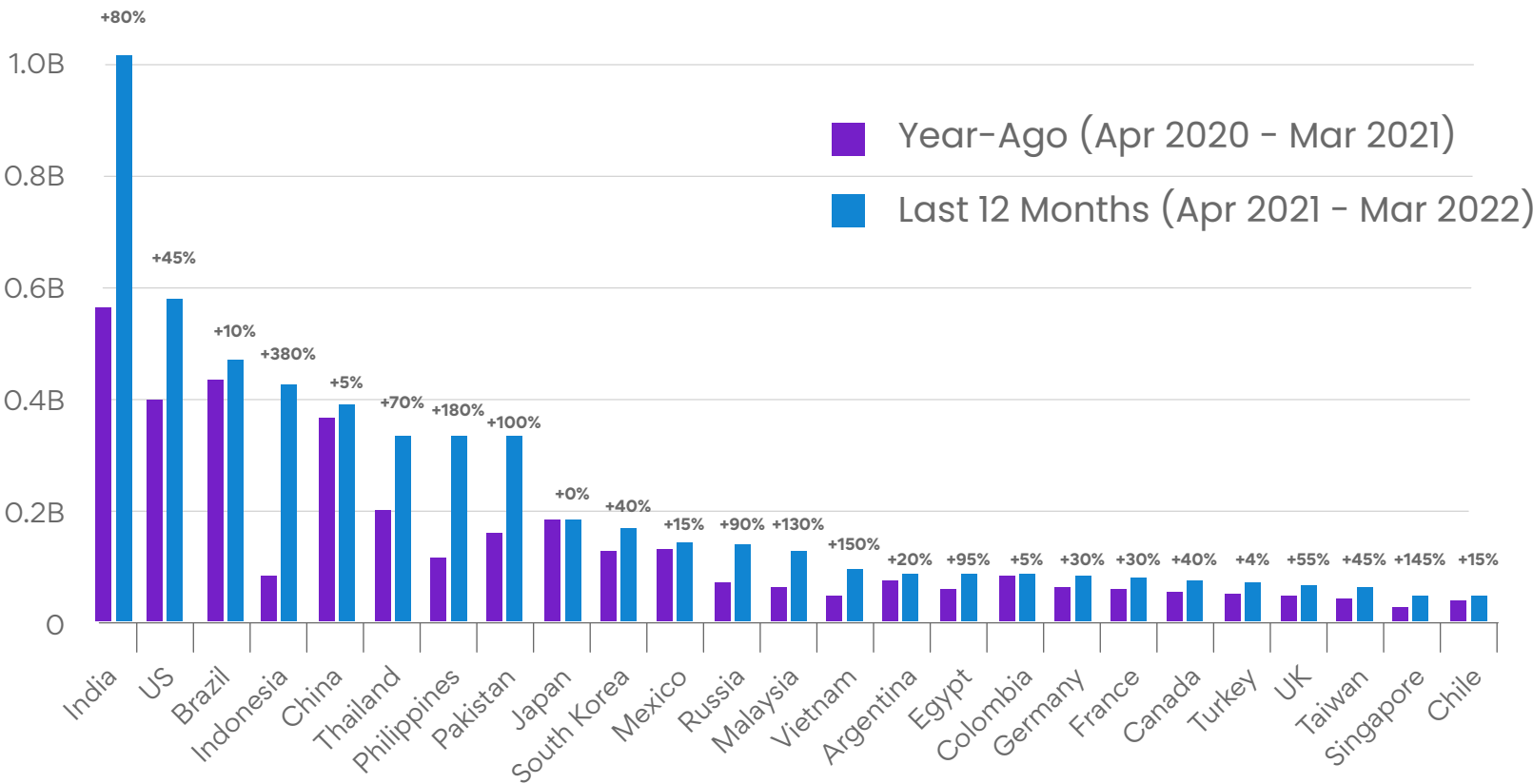
The new business model revolves all around digital apps. There are so many tons of apps that we can access on the play store for both android and iOS these days.

Consumers all around the world have been excessively using Food & Drink Apps from since the pandemic and the post-pandemic period. eCommerce, healthcare and fintech apps also witnessed a similar trend. This shows that **the growth of apps is not going to decline and infact grow year-on-year**. Hence it becomes crucial for businesses to focus on building great apps that are easily usable and accessible to consumers.

The Digital-First approach allows business owners to focus on getting their businesses up and running in no time. While building apps and creating a strong online presence is half the battle won. It is also key to ensure that the other business logistics like product inventory, shipping and handling, etc. are taken care of.

- It is no doubt that with every new model of business there are a few challenges that come with it. And in the case of Apps – much of the spotlight goes on the performance of apps. It is essential to ensure that your apps perform seamlessly and provide a great user experience, functionality, ability to handle various tasks effortlessly. For that we need to ensure that we test them thoroughly on all fronts before we release it in the market.
- Apps are the new mantra for the success. And if we don't evolve with it, there are high chances of getting left behind like the Blockbusters and Kodak.

Growth in Usage in Food & Drink Apps Top 25 Markets by Time Spent



Source: data.ai Intelligence Note: Total Time spent on Android Phone: Worldwide excluding China: Based on store defined 'Food & Drink' category

# Challenges of A

## Digital-First World

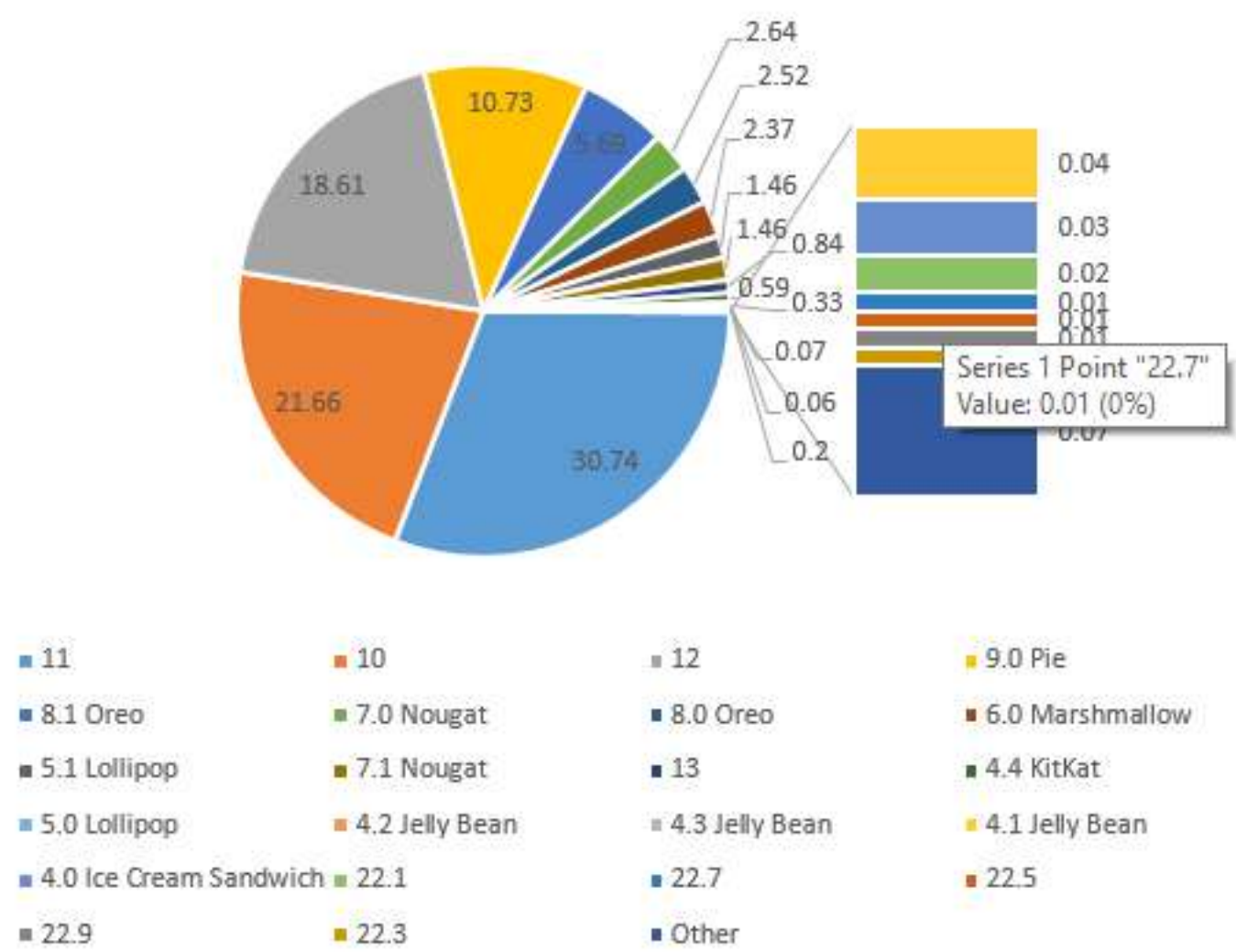
### 3.1.1 Testing Infrastructure

Testing your Digital Apps thoroughly requires you to perform various types of app tests to check for the performance. While testing the app on various parameters shed light on different aspects. It is also important to test these parameters on a number of different devices as the app behavior varies across different devices.

- The different types of app tests you need to perform are :-
  - Usability Testing.
  - Performance Testing.
  - Security Testing.
  - Interruption Testing.
  - Manual Testing.
  - Compatibility Testing.
  - Localization Testing.
- Performing these different types of tests require an extensive testing infrastructure that will provide insights into the performance of the app across devices and different parameters. When you have a robust test strategy and an equally good test infrastructure, you are sure to release apps that are of high quality and seamless performance.
- Since there are a lot of things at play, ensuring that you test your apps on the right testing infrastructure makes a big difference.
- What are some things to look out for in a Testing Infrastructure?
  - Scalability
  - Analytics
  - Cloud Based
  - Advanced Automation
  - Parallel Testing, etc.
- Testing your apps on a cloud based testing infrastructure will enable you to overcome the bottleneck of waiting on the team to connect to a solution or an in-house setup. You will need to be at the location of the device at all time, which is not very feasible if you want to connect to a device that you want to test on. Also in order to test on a On-Premise test on the go.
- Advanced Automation Techniques and Parallel Testing capabilities enable the users to accelerate their testing efforts to quickly test and release quality apps faster.

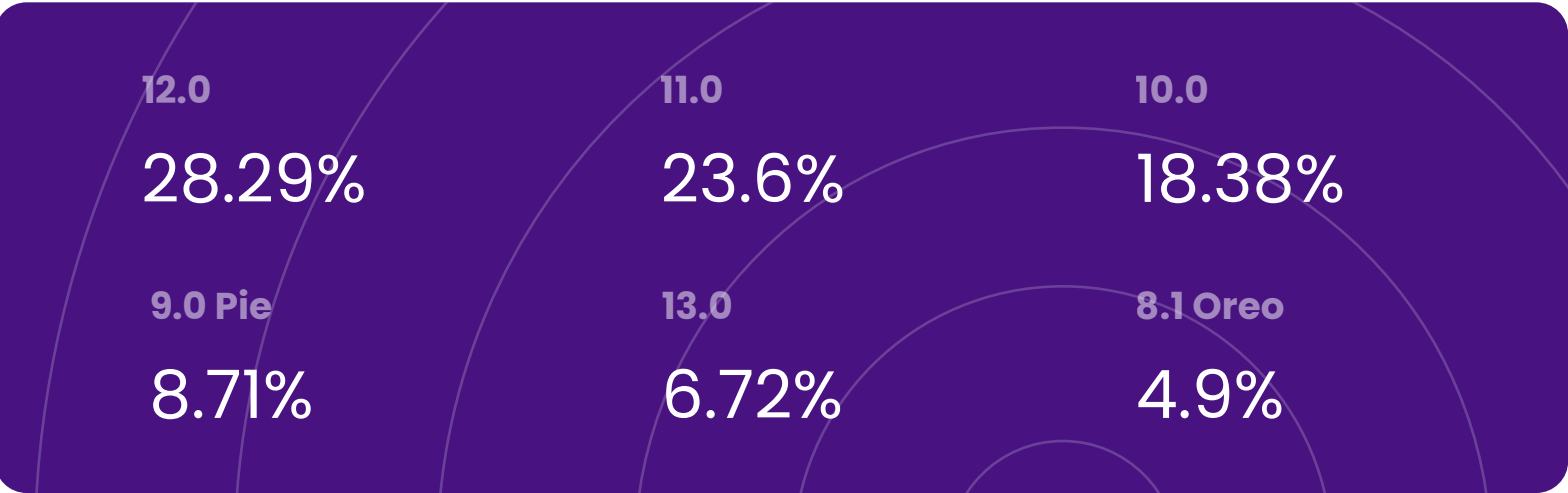
- Analytics are another big area that play a crucial role to monitoring the performance of the app while testing. Without the right analytical data, the app developers will not be able to pinpoint the exact issue that needs fixing and will spend a lot of time figuring out what the problem is in the first place. Having an exhaustive test report will help testers and developers to performing their testing and development task more efficiently when they are able to look at a report, identify the issue and resolve it asap.
- Other important aspects like scalability, testing features, performance metrics, etc., help us enhance our testing tasks to test and release quality apps faster.

Android OS Fragmentation Worldwide Jan21 - Dec 22



### 3.1.2 Challenges with Fragmentation

#### ● OS Fragmentation



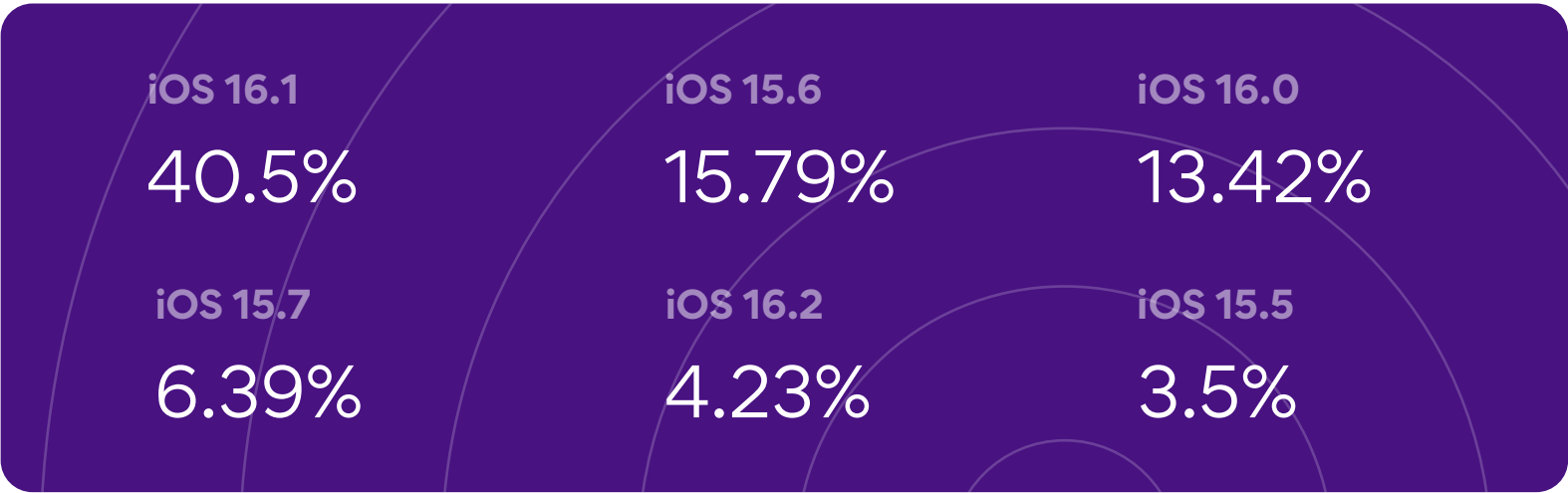
Mobile & Tablet Android Version Market Share Worldwide - December 2022

Almost **70% of the Android Device Users are either using Android versions 10, 11 or 12.** While the other majority of 20% use Android 8, 9 and the latest Android version 13. The rest 10% use phones that are running older version of Android 7 or below. Getting phones that are running Android versions that are almost 7 to 8 years old could become a major challenge here.



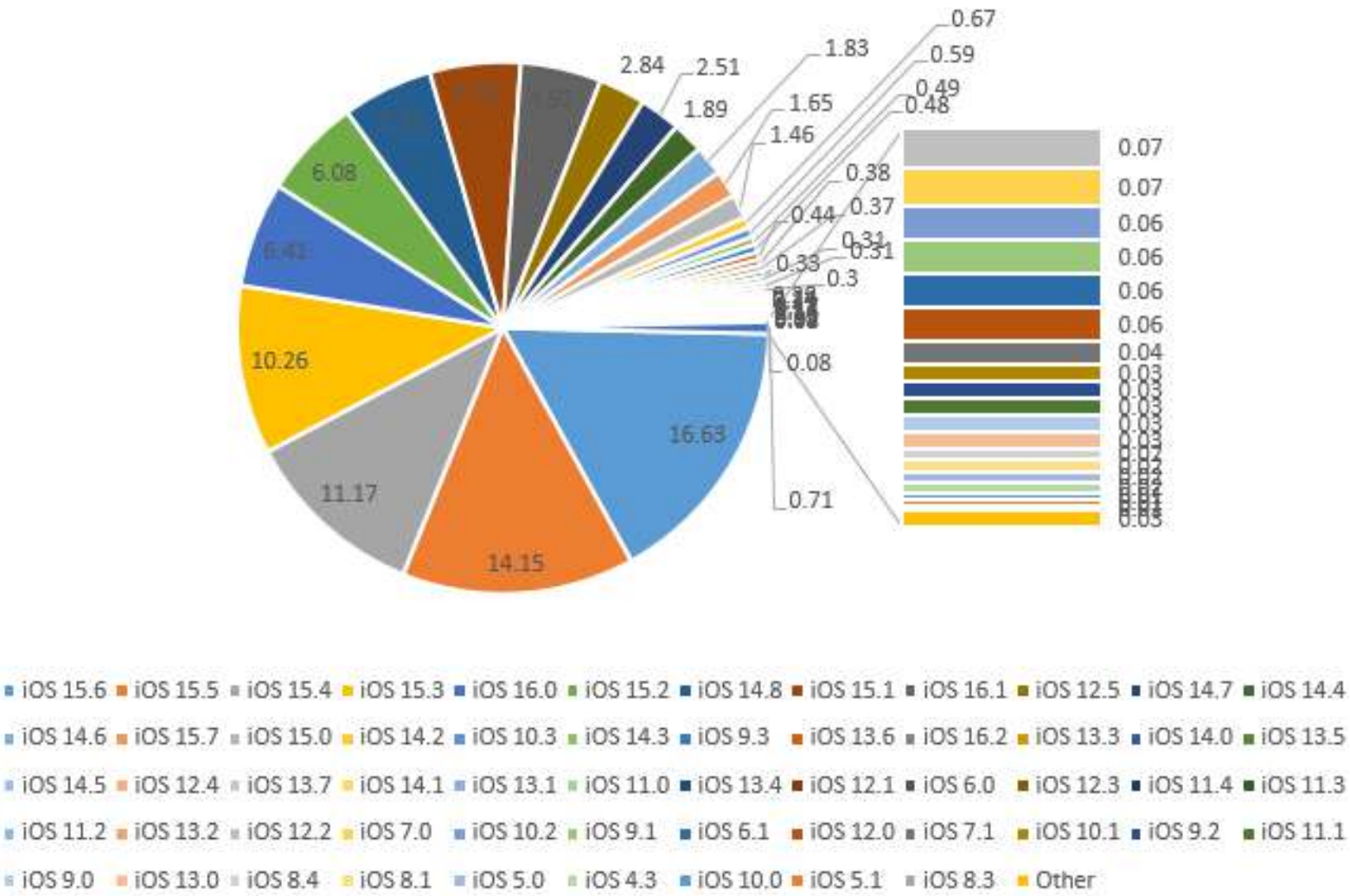
Unlike the Android users, people using Apple devices upgrade to the latest iOS version 16.1 with a vast majority of 40% in Dec 2022. And through the year 2022 **almost 70% of the users have been using iOS version 15.0 or higher.** Which means most of the Apple users upgrade their phones with the latest version.

Since apple developers constantly upgrade the iOS version. It becomes difficult for testing teams to keep pace with getting access to the latest devices and versions, and here maintenance becomes a challenge.



Mobile & Tablet iOS Version Market Share Worldwide – December 2022

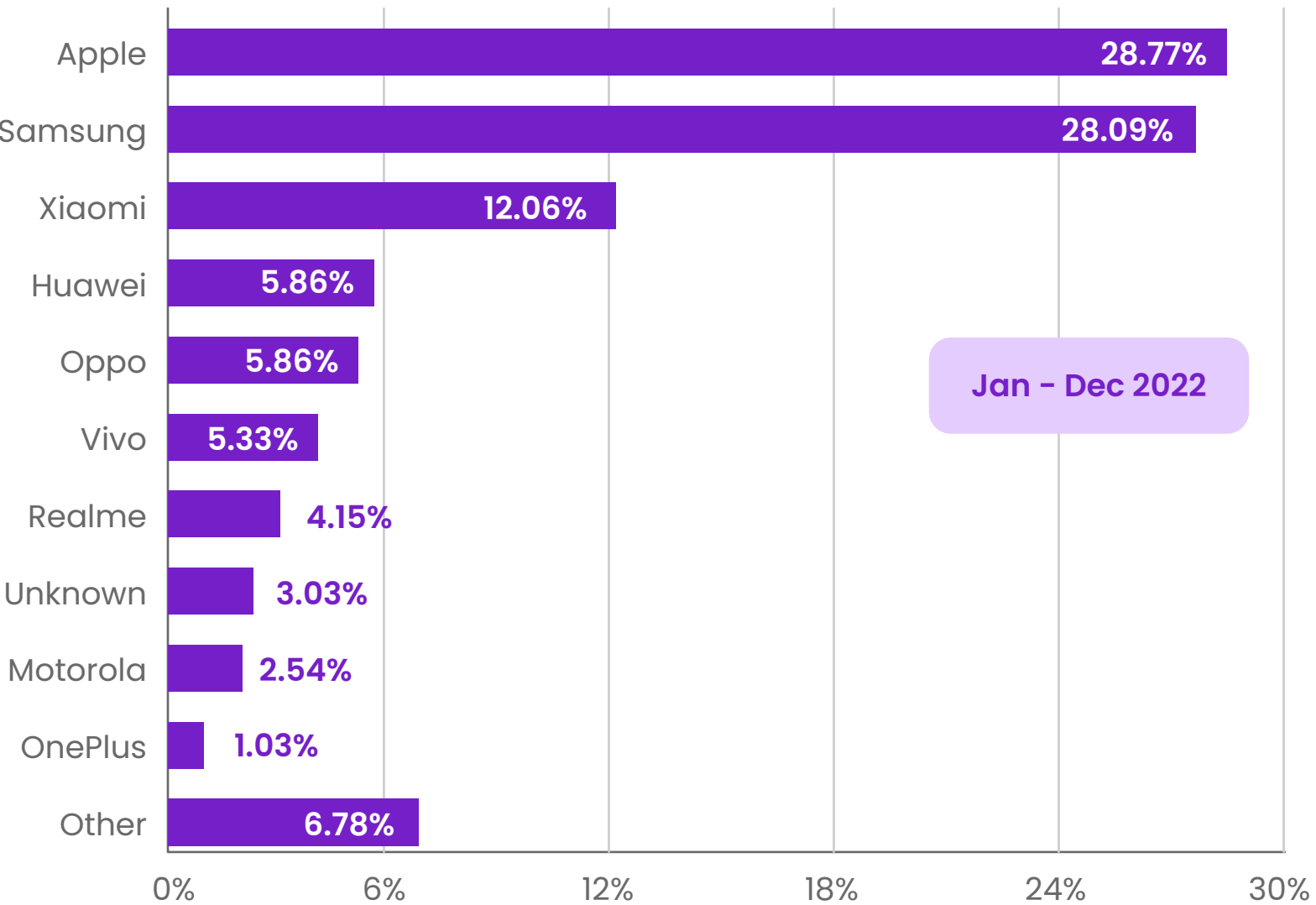
Mobile & Tablet iOS Version Market Share Worldwide  
Jan - Dec 2022



● **Device Fragmentation**

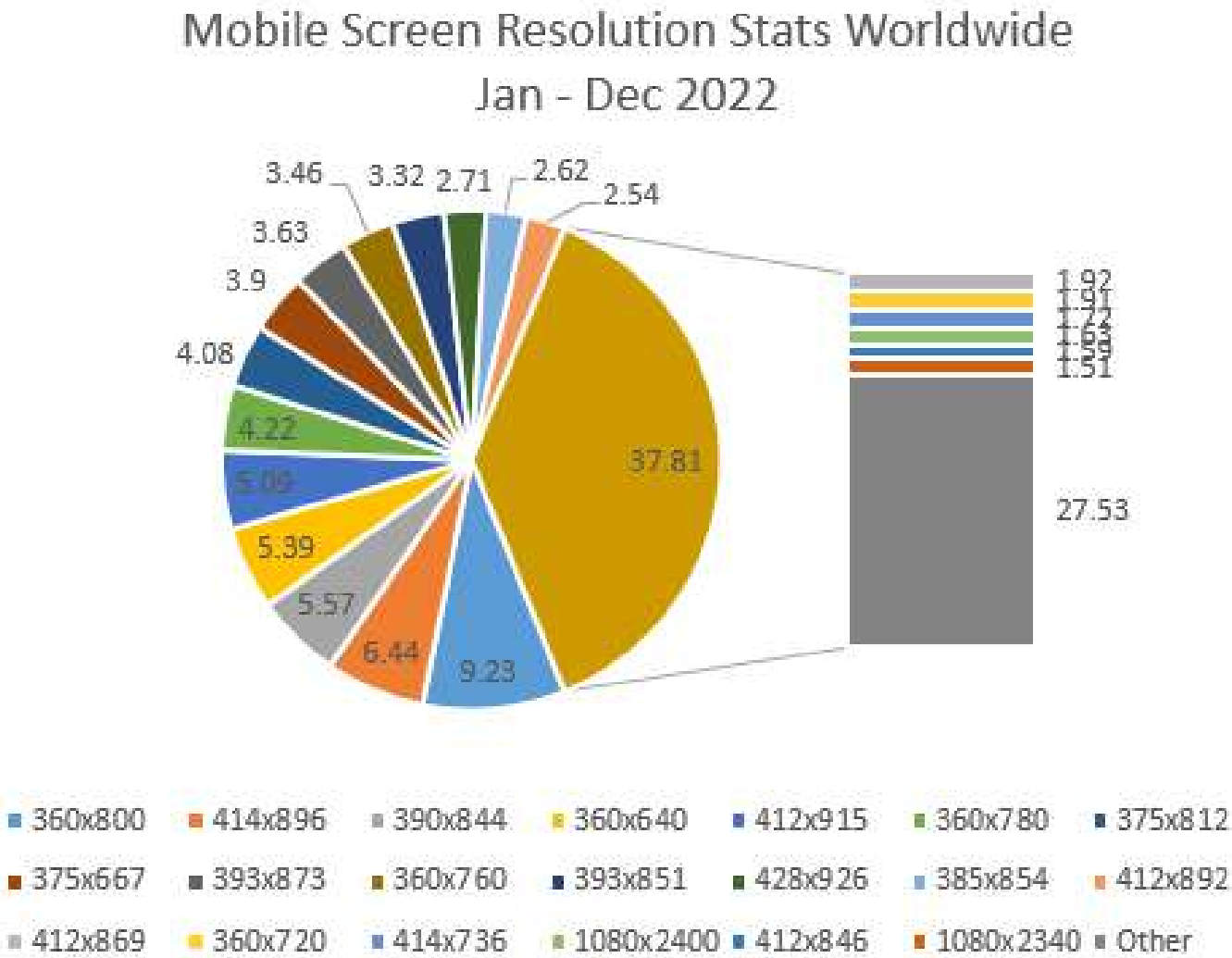
Almost **60% of smartphone users either use devices manufactured by Samsung or Apple**. While there has been a decline in the use of Apple phones through the year, Samsung phones has been holding its place at a 28% average Market share. The **other major OEMs include Xiaomi, Huawei, and Oppo capturing almost 25%** of the market share.

**Mobile & Tablet Vendor Market Share Worldwide**



● **Screen Fragmentation**

**A majority if the users use phones that vary between 5" to 6" inch screen sizes.** And since there is a significant amount of users that use a wide variety of screen resolutions. Ensuring that your apps render on the different screen resolutions become vital for the success of the apps.

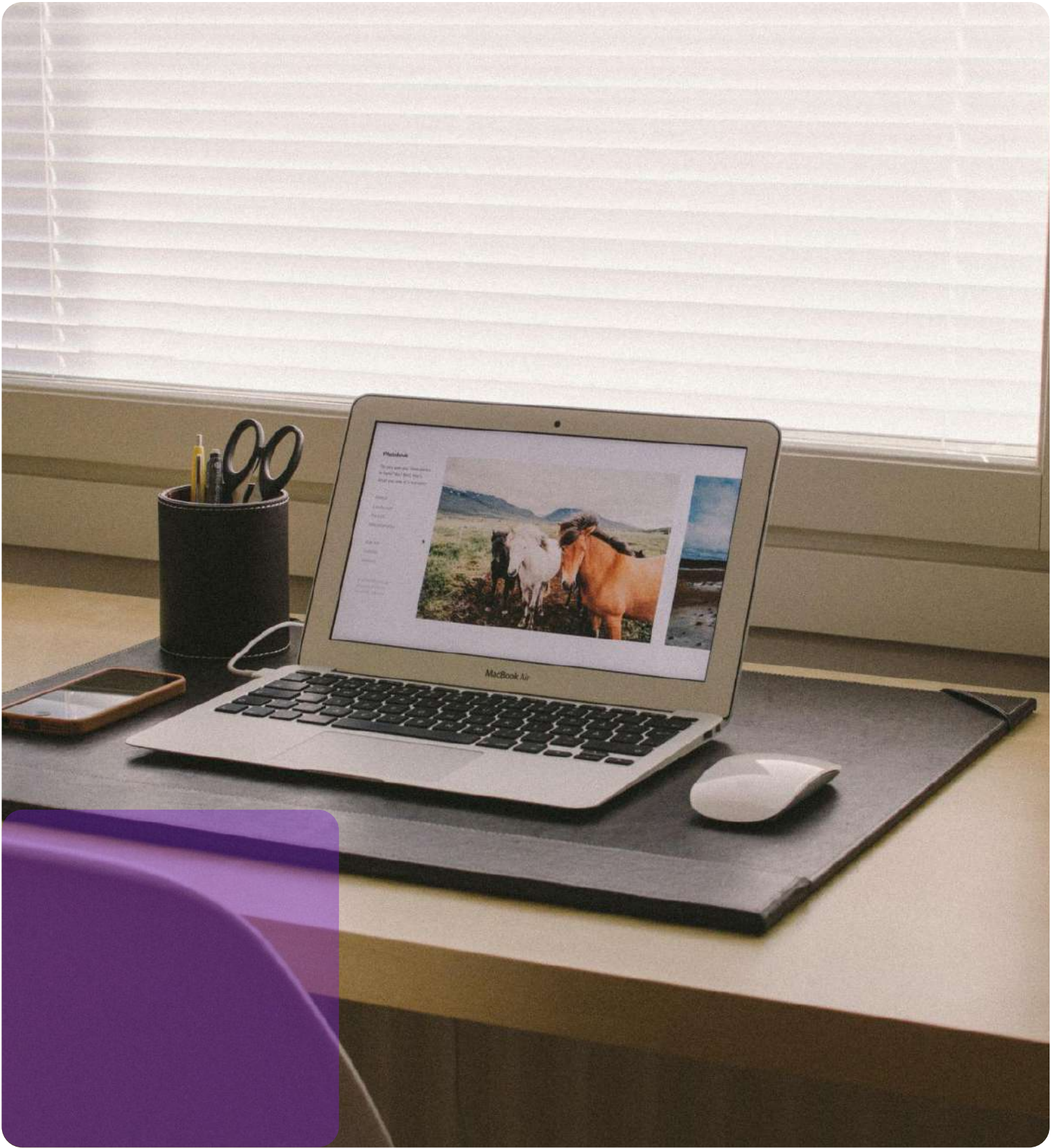
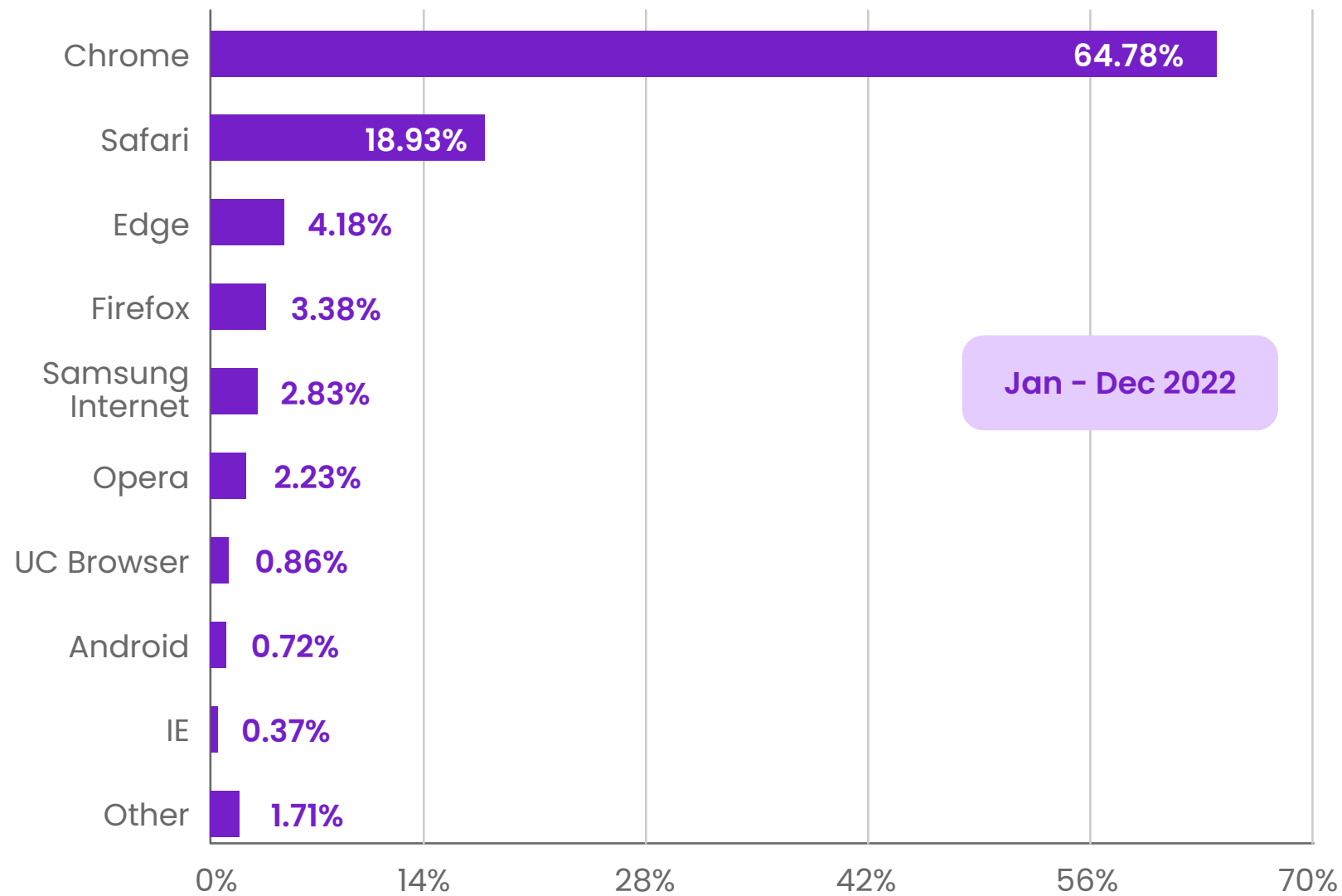




● **Browser Fragmentation**

It is a no brainer that Google Chrome is the most widely used browser be it on Android phones or desktop computers. But since Chrome itself has a lot of versions combined with different screen resolutions. **Testing your apps on these different combinations of browsers, versions and screen resolutions becomes almost impossible to cover all possible combinations.**

**Browser Market Share Worldwide**





# Overcoming Fragmentation

## Challenges

Ensuring that you test on the right set of devices/ browsers will solve the problem of these fragmentation challenges. We have compiled a list of popular devices and browsers that you will need to test your apps on to ensure an Optimum, Moderate and Maximum test coverage. This list of recommended devices and browser is compiled from different market studies, usage statistics from our platform and the overall device usage statistics from different research firms. We believe that this list will act as a guideline to improve your test coverage.



# Top 30 Mobile Devices to Test On in India

Basic/Optimum Device Coverage	No.	Phone make and Model	OS	Version
	1.	Samsung Galaxy A12	Android	12
	2.	Samsung Galaxy S21 5G	Android	12
	3.	Samsung Galaxy A12	Android	11
	4.	Samsung Galaxy S21 5G	Android	11
	5.	Apple iPhone 14 Pro max	iOS	16
	6.	Samsung Galaxy S22	Android	12
	7.	Samsung Galaxy S21	Android	12
	8.	Samsung Galaxy S22 Ultra	Android	12
	9.	Samsung Galaxy A12	Android	10
Moderate Device Coverage	10.	Samsung Galaxy S20 FE	Android	12
	11.	Samsung Galaxy S22 Plus	Android	12
	12.	Samsung Galaxy S21 Ultra	Android	12
	13.	Samsung Galaxy A52s	Android	12
	14.	Google Pixel 7	Android	12
	15.	Samsung Galaxy S22	Android	11

Moderate Device Coverage	No.	Phone make and Model	OS	Version
	16.	Samsung Galaxy S21 5G	Android	10
	17.	Samsung Galaxy S21	Android	11
	18.	Google Pixel 7 Pro	Android	12
	19.	Samsung Galaxy S22 Ultra	Android	11
Maximum Device Coverage	20.	Samsung Galaxy S21 Plus	Android	12
	21.	Samsung Galaxy S21 Ultra	Android	11
	22.	Samsung Galaxy S22 Plus	Android	11
	23.	Samsung Galaxy S20 FE	Android	11
	24.	Google Pixel 6a	Android	12
	25.	Samsung Galaxy A52s	Android	11
	26.	Google Pixel 7	Android	11
	27.	Samsung Galaxy S10 Plus	Android	12
	28.	Motorola Moto G(4) Plus	Android	12
	29.	Samsung Galaxy A21s	Android	12
	30.	Google Pixel 7 Pro	Android	11

# Top 30 Mobile Devices to Test On in USA

Basic/Optimum Device Coverage	No.	Phone make and Model	OS	Version
	1.	Apple iPhone 14 Pro	iOS	16
	2.	Apple iPhone SE 3rd gen	iOS	16
	3.	Apple iPhone 13 Pro max	iOS	16
	4.	Apple iPhone 13	iOS	16
	5.	Apple iPhone 12 Pro Max	iOS	16
	6.	Apple iPhone 11 Pro	iOS	16
	7.	Apple iPhone 14 Plus	iOS	16
	8.	Apple iPhone 13 Mini	iOS	16
	9.	Apple iPhone 14 Pro max	iOS	16
Moderate Device Coverage	10.	Apple iPhone 11	iOS	16
	11.	Apple iPhone 14	iOS	16
	12.	Apple iPhone SE 3rd gen	iOS	15
	13.	Apple iPhone 13 Pro max	iOS	15
	14.	Apple iPhone 13	iOS	15
	15.	Apple iPhone 12 Pro Max	iOS	15

Moderate Device Coverage	No.	Phone make and Model	OS	Version
	16.	Apple iPhone 11 Pro	iOS	15
	17.	Apple iPhone 13 Mini	iOS	15
	18.	Apple iPhone 11	iOS	15
	19.	Apple iPhone 13 Pro	iOS	16
Maximum Device Coverage	20.	Apple iPhone 12	iOS	16
	21.	Samsung Galaxy A12	Android	12
	22.	Apple iPhone 13 Pro	iOS	15
	23.	Samsung Galaxy S21 5G	Android	12
	24.	Apple iPhone 11 Pro Max	iOS	16
	25.	Samsung Galaxy A12	Android	11
	26.	Apple iPhone 12	iOS	15
	27.	Samsung Galaxy S21 5G	Android	11
	28.	Apple iPhone XS	iOS	16
	29.	Samsung Galaxy S22	Android	12
	30.	Apple iPhone 8 Plus	iOS	16



# Top 30 Most Used Desktop OS and Browser Combinations on pCloudy

Basic/Optimum Device Coverage	No.	Desktop OS	Browser Version
	1.	Windows 8.1	Chrome 91.0.4472.124
	2.	Windows 10	Chrome 98.0.4458.102
	3.	Windows 10	Chrome 89.0.4389.114
	4.	Windows 8.1	IE 11.00.9600.16384
	5.	Windows 8.1	Chrome 81.0.4044.92
	6.	Mac HighSierra	Safari 13.0.5
	7.	Windows 8.1	Chrome 84.0.4147.125
	8.	Windows 8.1	Chrome 83.0.4103.116
	9.	Windows 10	Chrome 85.0.4183.83
Moderate Device Coverage	10.	Mac HighSierra	Chrome 81.0.4044.92
	11.	Windows 8.1	MS Edge 96.0.1054.62
	12.	Mac Bigsur	Safari 15
	13.	Windows 10	Chrome 96.0.4664.93
	14.	Windows 10	Chrome 103.0.5060.134
	15.	Windows 8.1	Chrome 97.0.4692.71

Moderate Device Coverage	No.	Phone make and Model	Browser Version
	16.	Windows 10	IE 11.00.18362.1
	17.	Windows 10	Chrome 105.0.5195.102
	18.	Windows 10	Chrome 97.0.4692.71
	19.	Windows 10	Chrome 107.0.5304.63
Maximum Device Coverage	20.	Windows 10	Chrome 104.0.5112.81
	21.	Mac Catalina	Safari 15.5
	22.	Windows 10	Chrome 90.0.4430.72
	23.	Windows 10	MS Edge 96.0.1054.62
	24.	Windows 8.1	Firefox 89.0.2
	25.	Mac Monterey	Safari 15.3
	26.	Mac Monterey	Safari 15.1
	27.	Mac Catalina	Chrome 84.0.4147.105
	28.	Windows 10	MS Edge 105.0.1343.33
	29.	Windows 10	Chrome 99.0.4844.84
	30.	Windows 8.1	MS Edge 103.0.1264.49

# pCloudy Device Coverage

## Report 2023

### What is this report about?

We have identified that due to the constant influx of new mobile devices and browser versions every year. It becomes difficult to keep track of the what devices or browsers to test on in order to get a maximum test coverage. We believe this report will help you address that very question and help you get started with testing your apps on the right set of devices to ensure a wider test coverage. We have compiled the list of the Top 30 most used devices on the pCloudy platform through the year. Our user based of over 250K+ users choose a particular device and run their tests on them to ensure that they release quality apps that become a grand success. With over 5000+ device and browser combinations to choose from we have identified these 30 devices in India and the US to help you test accurately for the required region. We have even included the list of top 30 OS and browser combinations that have be popularly used on the platform. We hope and believe that this report will help you go a long way in identifying the right set of devices to test to ensure a wider test coverage and release of quality apps in the market.

### How did we collate this report?

We have gathered data from the usage pattern of devices by our users on the platform. The data provided is a compilation of the usage statistics that are recorded throughout the year. Though we have clients that use our platform from different regions on the globe, a majority of our user base comes from the US and India regions specifically. The report consists of the 30 most preferred devices for testing in the US and India based on some specific parameters. This year we have included a list of 30 most preferred browsers on platform to help you get a headstart on exploring web app testing.

# Solution

Now that we understand that there are a tons of Browsers and Devices across the globe and what's more is that the complexity increases as you include other parameters like geography, network bandwidth, device OEM, etc, the combinations of OS-devices, and OS-browsers practically become endless.

The other challenge that we've highlighted early on is the need for testing apps thoroughly over a combination of devices and browsers to ensure the release of high quality mobile and web apps. There are a whole lot of other aspects such as test analytics, automation etc, that will we need to look into in order to ensure thorough testing of the mobile and web apps.

Testing your apps on a cloud based testing solution like pCloudy provides a ton of benefits. Some of them include –

- Access to 5000+ device and browser combinations
- Early access to latest Devices and Browsers
- Insightful Test Analytics
- Advanced Automation Capabilities
- Use of AI for Visual Testing Capabilites
- DevOps Ready
- Easy integration with popular testing tools or plugins

pCloudy makes your testing journey a walk in the park with a ton of features that allow you to test with much ease across 5000+ browser and device combinations giving you a wide test coverage to ensure that the functionality of your apps never fail.





## CONTACT US

Take a leap with



A comprehensive solution to increase the speed of your App Testing  
by enabling Continuous Testing



Device Lab



Browser Lab



Rapid Automation



Automation execution  
@ Scale



Test Analytics



DevOps