

## IMPACT OF CORPORATE GOVERNANCE ON FINANCIAL PERFORMANCE OF USER INTERFACE/ USER EXPERIENCE AND MOBILE APP DEVELOPMENT\*

BY

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### ABSTRACT

*As the Internet, mobile technologies and cloud computing technologies have evolved, interface technologies have also evolved and designs for applications have changed drastically. User Interface development requires a lot of prototyping and experimenting along with user research, Adobe XD is an application which is very helpful for that. It is a vector based user experience and user interface design tool that is used for web apps and mobile apps. It is developed and published by Adobe Inc. Android has also progressed along the years. Android Applications are developed on many software platforms. But Android studio is one of the famous ways where one can develop an application for android. The main components that make up Android applications are tasks, services, assets, XML files, and Android Manifest. If one has a device attached to the computer with a compatible Android SDK version, one can create a virtual Android device and then run the application.*

### KEYWORDS

User Interface, User Experience Design, Android App, Adobe XD, Android Studio.

#### 1.Introduction

UI/UX- User Interface is also known as UI. User interface designing is a process of making visual connections to software or computer devices with a focus on appearance or style. User interfaces range from systems such as computers, mobile devices, games, etc. to application programs and content usage. User Experience (UX) refers to the overall experience related to the perception (emotion and thought), reaction, and behaviour that a user feels and thinks

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through his or her direct or indirect use of a system or a product. UI / UX refers to the complete interaction of a person with a computer, mental performance and a delightful interface display.

User research is also important for developing interfaces and apps. It includes-

- Finding ways ease use of items with the goal that the end result can be all the more handily used and utilized by the client.
- The second part is to examine the probable necessities of customers through accommodation examination, and really think about and procedure for technological advancement.
- Research to consider the requirements of clients, and to engage in the turn of events also, plan of items from the point of view of clients. For designers, it's about sorting out some way to make their pages more well-known with end users.

Adobe XD is used for UI/ UX designing. Adobe XD allows designers to complement the work they do best in the creative app of their choice with a toolset that aims at speeding up some of the most time-consuming aspects of app development, namely the transformation of wireframes into HiFi prototypes, the iteration of repetitive design elements, the injection of interactivity, as well as device preview and hand-off to developers.

Adobe XD's Repeat Grid feature, which allows for automatic placement of multiple pictures and texts in repeated elements, was almost ten times faster in this operation than achieving the same result in a graphic application.

Android Studio is the official integrated development environment (IDE) for Android platform development. It was announced on May 16, 2013 at the Google I/O conference. Android Studio is freely available under the Apache License 2.0. Future of Android and its SDK is very wide.

Android opens a wide area of possibility with new features and personal preferences, it has created a new era in sharing open source software equipment's, such free utilities and games, for mobile devices. Android Studio is made for Android development. It is available for download on Windows, Mac OS and Linux, and supplanted Eclipse Android Development Tools (ADT) as Google's essential IDE for local Android application advancement.

## 2.Literature Review

### 1.“User Interface Design”

S.Sridevi states that the user interface is arguably the most important element of a computer-based system or product. A plan model of the whole framework consolidates information, structural, interface, and procedural portrayals of the software. The requirements specification may establish certain constraints that help to define the user of the system, but the interface design is often only incidental to the design model. Once task analysis has been completed, all

tasks (or objects and actions) required by the end user have been identified completely and the interface design activity commences.

#### 2. "A Study of User Interface Design Principles and Requirements for Developing a Mobile Learning Prototype"

Maziar Seraf, et al. highlights techniques for planning and building up a learning model that are viable with small screen interfaces and limited capabilities of mobile devices. Identifying the best design strategy to stimulate and support learner's motivation is the most important fact that the developer should consider.

#### 3. "A Study on Understanding of UI and UX, and Understanding of Design According to User Interface Change"

Heonsik Joo showed understanding and production ability of the interface about internet, operating system, contents, and devices. This study aimed to make a list of 18 items in 4 areas for basic knowledge of UI/UX, establishment of design research, design concept, and design production. The paper concludes it is possible to cultivate competent IT professionals who have theoretical and practical skills if intensive major subject education is provided for them, and it is necessary to reinforce computer, graphics and design.

#### 4. "Evaluation of User Interface Design and Input Methods for Applications on Mobile Touch Screen Devices"

Florence Balagtas-Fernandez, et al. shares that with the appearance of touch screen phones, great UI plan and improvement on input strategies for applications running on such gadgets are significant components that add to its notoriety and achievement. This study was conducted to look at changed information methods and UI changes and assess their convenience. Two different prototypes with different styles of UI and input methods for mobile devices with touch capability were presented and then evaluated to see which design provided the user a better user experience and which offers the most ease and convenience.

#### 5. "A REVIEW ON USER INTERFACE DESIGN PRINCIPLES TO INCREASE SOFTWARE USABILITY FOR USERS WITH LESS COMPUTER LITERACY"

Ali Darejeh, et al. presents an audit on how programming ease of use could be expanded for clients with less PC proficiency. The literature was reviewed to extract user interface design principles by identifying the similar problems of this group of users. The paper states that albeit the issues of clients with less PC proficiency are diverse yet the primary similitudes between senior, kids and individuals with mental problems depend on intellectual issues.

#### 6. "User experience - a research agenda"

MARC HASSENZAHN, et al. share that over the previous decade, user experience has become a popular expression in the field of human – computer interaction or HCI and interaction design. UX has acquired an energetic flow lately, generally as a counter-movement to the predominant, assignment and business related ease of use worldview. The paper concludes that UX in the sense of a positive HCI would zero in on the best way to make extraordinary quality encounters instead of simply forestalling convenience issues.

#### 7. “User Interface Software Tools”

BRAD A. MYERS state in their paper that there are many kinds of user interface software tools, and then try to investigate that why some approaches and tools have worked and others have not. Many tools that cover progressively more of the user interface task, are indeed much more effective at helping the designer, and are helpful in creating better user interfaces. Open issues regarding the various tools are discussed in detail and also what the future holds.

#### 8. “Apply Android Studio (SDK) Tools”

Hana R. Esmaeel share that it is API libraries that are used for writing mobile applications and they can shape the look, the feel, and functions of mobile handsets. The SDK conveys various amazing assets to assist with Android development tasks. The emulator can likewise be utilized for running Android applications for all intents and purposes, without the requirement for the physical device. The paper also discusses some of the limitations of the SDK tools.

#### 9. “Android based mobile application development and its security”

Suhas Holla, et al. share that on the Android Market, users can download thousands of applications and that anyone can upload their programs without having to go through careful security checks. This makes Android a prime target for technological criminals. The paper suggests a layered approach for android application development. It can be used for web based application development. The paper concluded that mobile applications should be safe from the malicious traits and be safeguarded for the best interests of Android users.

#### 10. “Development of Native Mobile Application Using Android Studio”

Neha Verma, et al. describe Cross-platform mobile development as that can be utilized on different versatile mobile platforms and OS with a solitary coding. The application which is discussed in this paper is a Cab Service Application with the name of RS SHARING CAB. The paper shows how to develop native local application in android studio with their own example.

#### 11. “Real Challenges in Mobile App Development”

Mona Erfani Joorabchi, et al. highlight regions that require consideration from the innovative research and development community of Mobile Apps. The paper gives an outline of the current

difficulties looked by developers working. For instance, creating applications across various stages, absence of vigorous checking and investigation, and absence of automated testing tools, and furthermore emulators that are moderate or miss numerous highlights of mobile phones. The main objective of the authors was to discover the process and overcome the challenges faced during mobile app development across multiple platforms.

#### 12. "Factors Influencing Quality of Mobile Apps"

Venkata N Inukollu, et al. share that with the surge in the number of apps, the number of lamentable apps or failing apps has also been growing. The paper mentions crucial factors that cause apps to fail which include negligence by the developers, technical issues, inadequate marketing efforts, and high prospects of the users or the end- consumers are some examples of the points. With the aid of traditional software development life cycle phases, the authors develop an app to support the paper.

#### 13. "Mobile application development experiences on Apple's iOS and Android OS"

Kim W. Tracy highlights some of the differences that the authors ran across during a project. Most significantly, the development platforms of IOS and Android are very different and require different tools and techniques. The paper tries to share all the key points that may help developers to choose a OS and also to find the points that separates both.

Sr. no.	Title of researchpaper	Author(s)	Learning
1	User InterfaceDesign	S.Sridevi	User Interface Designing and how UI is incidental to the design model
2	A Study of User Interface Design Principles and Requirements for Developing a Mobile Learning Prototype	Seraj, Maziar, and Chui Yin Wong	User Interface Design Principles and Requirements for Developing a Mobile Learning Prototype
3	A Study on Understanding of UI and UX, and Understanding of Design According to User Interface Change	Joo, Heonsik	Understanding ofUI, UX and changesin designing of apps

4	Evaluation of User Interface Design and Input Methods for Applications on Mobile Touch Screen Devices	Balagtas-Fernandez, Florence, Jenny Forrai, and Heinrich Hussmann	Studies models that incorporate different styles of UI and input techniques for cell phones.
5	A review on user interface design principles to increase software usability for users with less computer literacy	Darejeh, Ali, and Dalbir Singh	User interface design standards by distinguishing the comparative issues of a group of clients.
6	User experience - a research agenda	Hassenzahl, M., & Tractinsky, N	To create outstanding quality experiences rather than merely preventing usability problems.
7	User Interface Software Tools	Myers, Brad A.	user interface software tools
8	Apply Android Studio (SDK) Tools	Esmael, Hana R.	SDK Tools, API libraries and their functions
9	Android based mobile application development and its security	Holla, Suhas, and Mahima M. Katti	Mobile application security tools
10	Development of Native Mobile Application Using Android Studio	Verma, Neha, Sarita Kansal, and Huned Malvi	Cross-platform mobile development and native app development
11	Real Challenges in Mobile App Development	Joorabchi, Mona Erfani, Ali Mesbah, and Philippe Kruchten	Current challenges faced by mobile developers

### 3. Technology brief

#### Adobe XD:

This software is a vector-based user experience and user interface design tool for web apps and mobile apps, developed and published by Adobe Inc.

This tool is mostly used for building wireframes and prototypes of the end result. It helps in visualizing how an end user will interact with the software and how we can improve the overall experience.

The prototypes made using this tool are realistic, with many features and the limitation in this software is only our creativity.

Adobe XD takes into account the production of complex intelligent models, offers device previews and online update of a model, and is incorporated with Creative Cloud applications through Creative Cloud Libraries support. It assists client with encountering developers to quickly make and repeat the design for versatile applications and sites.

Android Studio:

Android Studio is the official Integrated Development Area (IDE) for Android app development. In addition the incredible IntelliJ coding editor and designing instruments, Android Studio offers numerous highlights that upgrade your software when building Android applications.

It is based on the IntelliJ IDEA, a Java integrated environment for software development and it also merges its code editing and developer tools. The product was first declared at Google I/O in May 2013, and the primary stable version was delivered in December 2014. Android Studio is accessible for Mac, Windows, and Linux. It supplanted Eclipse Android Development Tools (ADT) as the essential IDE for Android application advancement. Android Studio and the Software Development Kit can be downloaded by searching on Google.

Every project in Android Studio has at least one modalities with source code and resource files. These modalities incorporate Library modules, Android application modules, and Google App Engine modules. Android Studio utilizes an Instant Push feature to push code and asset changes to a running application. A code developer helps the designer with writing the code and offering code consummation, refraction, and examination. Applications developed in Android Studio are then arranged into the APK design for accommodation to the Google Play Store.

#### 4.Arcitecture Diagram

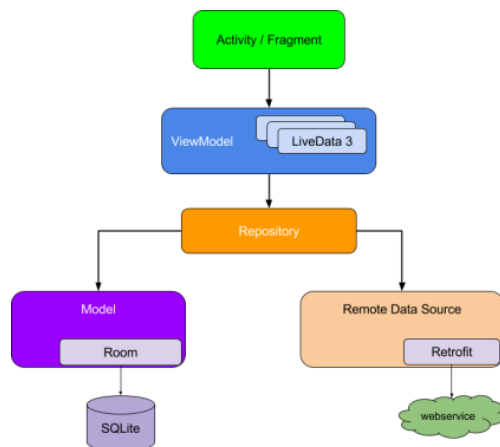


Fig. 1- Android Studio Architecture Diagram Source- <https://developer.android.com>

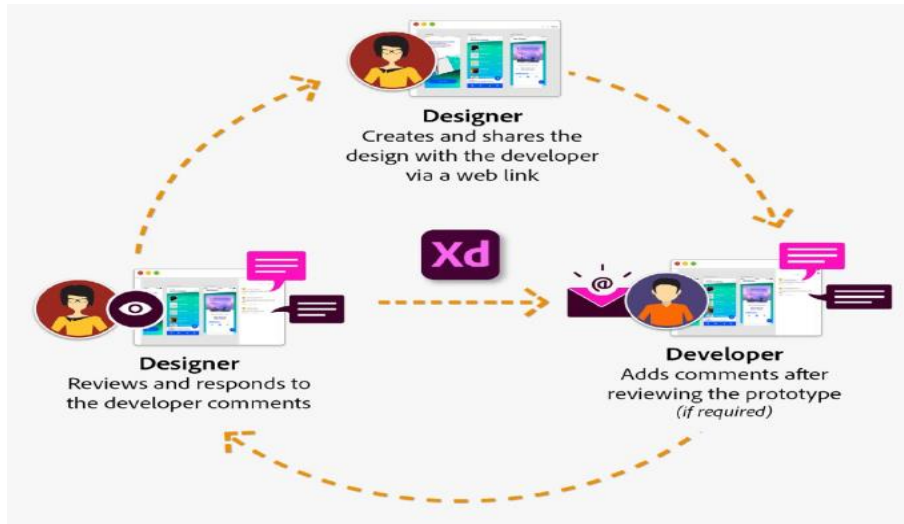


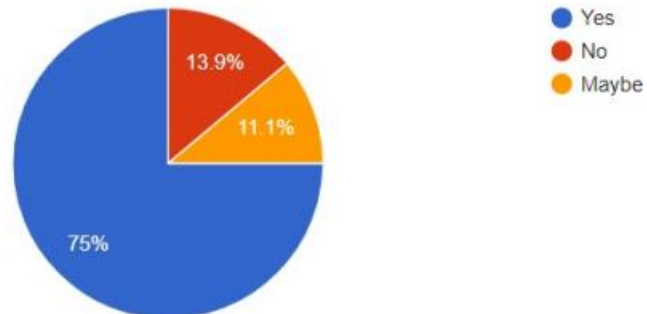
Fig. 2- Workflow Diagram for Adobe XD Source- <https://helpx.adobe.com>

### 5. Survey Diagrams- Source- Personal Google Form

1.

Have you ever heard the term user experience design?

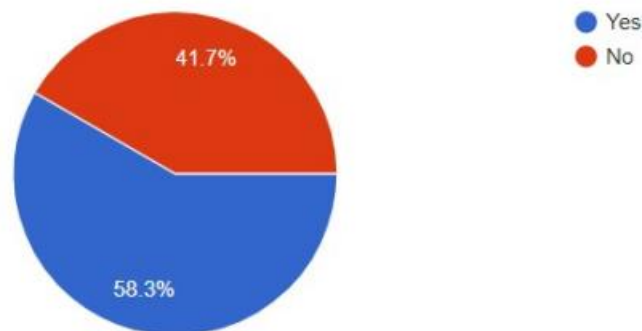
36 responses



2.

Do you know anything about Adobe XD?

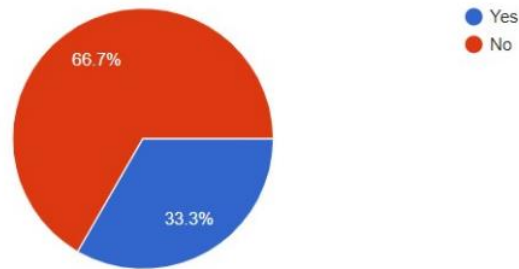
36 responses



3.

Do you know anything about Figma?

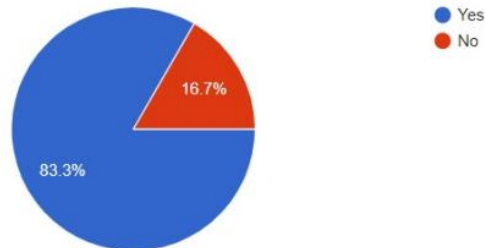
36 responses



4.

Have you ever developed an app?

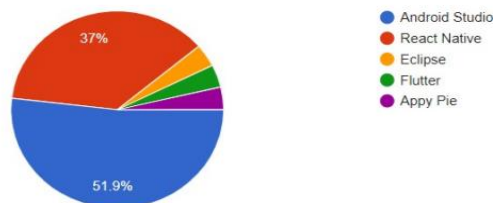
36 responses



5.

In which software do you mostly develop apps?

27 responses



## 6.Results

1.

For the first question of “Have you ever heard the term user experience design?”

75% people said yes 13% people said no

11% people were not sure

These numbers state that more number of people are aware of experience design and have come across it.

2.The question is “Do you know anything about Adobe XD?” Adobe XD is a very famous software for designing.

58% say yes

42% say no.

More People are aware of Adobe XD.

3.The question is “Do you know anything about Figma?” 67% say no

33% say yes

The numbers show that Figma is not known to many people in comparison with Adobe XD.

4.The question is “Have you ever developed an app?” 83% people say yes

17% people say no

Majority of responders have developed an app

5.The question is “In which software do you mostly develop apps?” 52% use Android Studio

37% use React Native 11% use other softwares

These numbers show that Android Studio is most popular for developing apps, followed by React Native and others.

7.Future Trends

For UI/UX-

The trend of minimal design where the colours are limited and designs are smooth and geometric will be in trend. It gives a minimalistic, rich feel without congesting many features. Making an important content stand out amongst all with an emphasis on typography will also be important in future.

For app development-

Web apps and instant apps will be a trend where content will load very fast and not take much space in mobile phones. Android Studio for developing always keeps providing new features for designing and prototyping.

8.Conclusion

To conclude, the main components of human machine interaction are what we call the interface. Adobe XD is the software to design the interface that will best fit your software product. UI configuration is an important piece of screen elements. Generally, the interface can be divided into two levels: perception (sight, touch, hearing, etc.) and sensation or feeling. Interface configuration is a task that requires a lot of professionalism and expertise. In a literal sense, it is two parts of the client and the interface, no matter how, it also additionally involves interaction between the customer and the interface, and so it most probably would be divided into three topics: client research, connection plan, and interface plan. UX in the sense of good HCI, therefore, will focus on how to build a superior quality experience rather than simply preventing usability issues.

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