

Mobile Applications In Context of Big Data A Survey

^[1] K Harshitha, ^[2] N A Poojitha ^[3] Chaithra A ^[4] Bhavya C P ^[5] Mrs Sheela devi
^{[1][2][3][4]} UG Scholars, ^[5] Asst Professor

^{[1]-[5]} Dept of Computer science Engineering, Sri sairam College of Engineering, Bangalore.

Abstract— A large scale research initiative aimed at generating innovations around handheld devices based research as well as community based evaluation of related mobile applications. Big data refers to huge amount of digital information collected from multiple and different sources. Since a key point of big data is to access data from multiple and different domains, security will play a very important role in big data research and technology. Due to increase the challenges in mobile data or mobile data challenge (MDC), Big data is required for analysis and curation of mobile data. The rapid expansion of mobile technology has introduced a versatile global infrastructure that internally generate vast amount of data like user identification, location, device name and externally generate data related to mobile apps like number of mobile applications, number of downloaded applications, number of failure applications, number of popular applications etc. This paper presents a survey of the mobile applications (apps) in the context of Big data.

Index Term: Big Data, Mobile Data Challenges (MDC)

I. INTRODUCTION

There are large amount of applications for handheld devices are available in the market. Software industries traditionally generated vast amount of mobile applications for the customers. The mobile apps on the other hand executing on powerful computational devices equipped with multitude of sensors that are capable of generating vast amount of data (geolocation, audio, and video) has brought data collection and crowd sourcing to the fingertips of virtually any of millions of mobile app vendors. Big data refers to the huge amount of data organization and government collect about us and our surroundings. Big data “size” is constantly growing because we create everyday millions bytes of data. The use of mobile computing technology is growing day by day rather than use of traditional desktop technology [1].

A large number of applications have been regularly developed. One of the most popular applications is social media apps. Social media apps Social data includes information from customer feedback streams, micro blogging sites like Twitter, and social media platforms like Facebook. Importantly, Facebook recently announced that the number of daily mobile users exceeded daily web users for the first time [2]. This shows that the adoption of mobile technology is continue to increase.

II. MOBILE COMPUTING

Mobile computing means operation performed by mobile devices is HCI (Human Computer Interaction) [3]. In mobile Computing different things involves like mobile communication, mobile hardware, mobile software. The term “mobile computing “ is used to describe the use of computing devices which usually interact in some with a central information system--while away from the normal, fixed workplace. Mobile computing technology enables the mobile worker to create, access, process, store and communicate information without being constrained to a single location. By extending the reach of an organization's fixed information system, mobile computing enables interaction with organizational personnel that were previously disconnected. Mobile computing is the discipline for creating an information management platform, which is free from spatial and temporal constraints. The freedom from these constraints allows its users to access and process desired information from anywhere in the space. The state of the user, static or mobile, does not affect the information management capability of the mobile platform being constrained to a single location. To facilitate the data management activities, users can carry Personal Digital Assistant (PDA), laptop, cell phones, etc. At present the current technology only provides limited transaction processing capabilities but soon such facilities will be available on all mobile devices such as cell phones, laptops, palmtops, etc.

Sl.No	Name of Apps	Generated Data in Every 60 seconds
1	Google Search Engine	694445, query Generated
2	Flickr	6600 pictures Uploaded
3	YouTube	600 video uploaded
4	Facebook	695000 status uploaded, 79364 posts and 510040 comments are Published
5	Twitter	320 new account, 98000 tweets are generated
6	Skype	370,000 video calls done by the users
7	LinkedIn	100 account are created
8	Answer.com	More than 100 question asked
9	YahooAnswer.com	40 new question asked
10	UrbanDictionary.co m	1 new definition is added
11	iphone apps	13000 apps downloaded

Table 1: Every 60 second, volume, velocity and variety of social and mobile data [4]

III. TRADITIONAL DATA PROCESSING SYSTEM

In the architecture, mostly structured data is involved and is utilized for reporting and analytics purposes. It is observed that there are one or more

unstructured sources involved, often those contribute to a very minute portion of the overall data and hence are not represented in the diagram for simplicity. However, in the case of Big Data architecture, there are various sources involved, each of which comes in at different frame of time, in different formats, and in different sizes.



Fig 1: Practical Example of big data [5]

The Enterprise Mobile Application Report evaluated the level of demand for mobile applications in the enterprise and the challenges that companies face to meet the demand. The survey captured responses from more than 480 participants that represent IT management, IT development and line of business across a range of industries in North America, Europe and Asia Pacific regions. The global survey analysis was completed by 451 Research in March 2015[6].

IV. METHODOLOGY IN MOBILE APPS

According to [7] a total of 8,470 respondents age 18–64 completed one of eight vertical specific online surveys focusing on Smartphone app discovery, acquisition, usage, and abandonment. The study was fielded between September 12 and September 22, 2014. Respondents met the following criteria for inclusion in this research:

- Smartphone users
- Have used any Smartphone app in the past seven days
- Have used one of the following types of apps on their Smartphone in the past 30 days:
 - ¾ Retail
 - ¾ Travel
 - ¾ Social

- ¾ Finance
- ¾ Gaming
- ¾ Entertainment
- ¾ Technology

A. Types of Smartphone apps used daily

- ¾ 68% Social and communication
- ¾ 33% Media or entertainment related
- ¾ 46% Games or gaming related
- ¾ 19% Retail stores or retail related

B. Sources of awareness of Smartphone apps

- ¾ 52% Friends, family, and colleagues
- ¾ 40% Browse the app store
- ¾ 27% Search engines
- ¾ 24% Company website
- ¾ 22% TV

C. Reasons for downloading an app

- ¾ 33% Recommended by others
- ¾ 31% Sounded interesting/fun
- ¾ 24% Familiarity with brand
- ¾ 18% Access exclusive documents

V. BIG DATA AND MOBILE ANALYTICS

Big data characterised by the following dimensions:

A. Volume

Dealing with the sheer amount of the data. This applies to the huge voluminous size or volume of the data that cannot be managed via traditional designers.

B. Variety

Size by voluminous data could be in a number of different forms such as structured or un-structured, text, images, videos etc. It can emanate from a number of different sources, contrivances, or channels such as online, offline, convivial media, mobile, sensors, cameras, TV etc.

C. Velocity

This applies to the immensely colossal volume of data that can emanate from a number of different sources at a high speed that cannot be managed via traditional denotes. Big data velocity deals with the pace at which data flows in form sources like business process, machines, network and human interaction with things like social media sites, mobile devices etc.

D. Veracity

By using veracity we can verify to the data, uncertainty, inconsistency and incompleteness of the data. This applies to the state or validity of the data in cognition to the time and also refers to the data in motion such as real-time streaming of data or data at rest like those stored in the database.

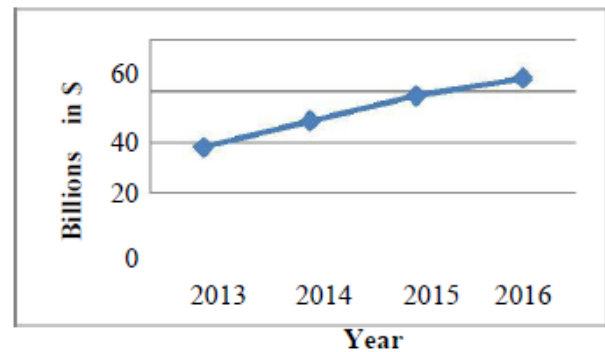


Fig 2: Big Data Market Forecast [8]

2014 was a big year for big data, a term that gradually gained momentum to become one of the most talked-about subjects in the tech world. With 2015 fast approaching, prepare for big data's total domination, as it, along with the Internet of Things, is set to be the focus of web and mobile. It will become standard for businesses to try and benefit from it by analyzing as much as possible. The number of mobile users is expected to increase in the coming years, with a greater dependency on mobile in general. By 2016, 61 percent of web traffic will come from wireless devices as opposed to desktops, contributing heavily to the growth of big data.

VI. CHALLENGES OF MOBILE BIG DATA IN MOBILE COMPUTING

According to IDC the big data market is expected to grow from \$3.2 billion in 2010 to \$16.9B in 2015. Due to the above characteristics described by volume, variety, velocity, and value, there are new challenges in order to efficiently deliver mobile big data in mobile device.

A. How to Store a Very Large Volume of Mobile app Big Data

As mobile big data have very large number of mobile data are available in the market [9], now a day's mobile data are available in pettabyte, zettabyte Exabyte etc. Due to the large amount of data we have to require big data.

B. How to Manage Mobile Social Data with Fast Velocity:

Velocity represent the speed of the data because of the mobility of big data, a group of replicas of the original mobile big data may be kept at different locations (e.g., content servers or personal smart phones)[10]. In every second huge amount of data generated by the mobile device, so may be the replication of the data, these replicas of the same original one as different data, it takes huge overhead to manage these replicas, resulting in a low rate of matching the speed of data production. Instead of considering about where the big data are from, the new generation MSNs should care about what the big data are.

C. How to Deliver Mobile Big Data with Variety

Data produced by the mobile may be structured or unstructured or text media. Within MSNs, different mobile social users may have different social features during mobile big data delivery due to variety. For example, different mobile social users may have different degrees of selfishness. Some mobile social users may have the will to share data or resources with other users while some mobile social users do not

D. Controlling Mobile Big Data Based on Value

Similar to the variety of mobile social users, different mobile big data also have different values. Due to the large volume of mobile big data, data packets to be transmitted in MSNs are always huge. This poses a new need to determine how to transmit these packets with proper priorities. For example, some packets with high demand and in emergencies should be considered to be served in time. According to [12]

¾ 82% organizations believe that the ability to manage and analyze big data is critical for them to meet their strategic objective.

¾ 88% organizations believe that the ability to share insights from Big data across lines of business is a must have for their business.

¾ 81% organization believes that Big data will amplify other technology innovation. People struggle in Big Data on the following points:

¾ 28% Beginners - Data quality

¾ 30% Advanced - Massive Data Volume

¾ 29% Mature - Skilled Manpower

VII. CONCLUSION

This article presents an overview of Big data and its expanding share in mobile applications. The characteristics defining analytics over Big data are discussed and challenges encountered in mobile computing due to mobile Big data are explained.

REFERENCES

- [1] Anderson E.Cristian, "Real Time Data from Big Time Fun: Harnesing The Power Of Mobile Technology and Social media for better species Management", IEEE conference, 2012, pp. 1-5.
- [2] http://www.computerworld.com/s/article/9236375/Facebook_revenue_jumps_40_percent_in_Q4_as_mobile_overtakes_Web_use
- [3] Devashish Goswami , "Mobile Computing", International Journal of Advanced Research in Computer Science and Software Engineering , Volume 3, Issue 9, September 2013,pp.846-855..
- [4] "Sizing "Mobile +Social" Big Data States", [Online] Available: <http://practicalanalytics.co/2012/10/22/sizingmobile-social-big-data-stats>.
- [5] "Practical Examples of Big Data Use". [Online] Available: <http://www.centrodeinnovacionbbva.com/en/news/practical-examples-bigdata-use>
- [6] "2015 Enterprise Mobile Application Report", [Online] Available: http://forms.kony.com/rs/656WNA414/images/Kony_Enterprise_Mobile_AppReport.pdf .
- [7] "Mobile App Marketing Insights: How Consumers

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Really Find and Use your
app”, [Online] Available: <https://think.storage.googleapis.com/docs/mobile-app-marketing-insights.pdf>

[8] “Big Data Vendor Revenue and Market Forecast 2013-2017” [online] available: http://wikibon.org/wiki/v/Big_Data_Vendor_Revenue_and_Market_Forecast_2013-2017.

[9] Bessis N., Sotiriadis, S., Xhafa, F., Pop, F., Cristea, V., “Meta scheduling issues in interoperable HPCs, grids and clouds”, Twenty sixth IEEE conference of Advance Information Networking and Applications (AINA) Grid Services, 2012, pp.874-883.

[10] Couronne T., Olteanu, A.-M., Smoreda, Z Thomas, “Urban Mobility: Velocity and Uncertainty in Mobile Phone Data”, IEEE third International Conference on Privacy, Security, Risk and Trust, 2011 pp.1425-1430.

