

# Linking and Recovering the Information of the User Sims for First Discontinued to the Latest using Big Data

Dr. M E Purushoththaman

Professor  
Department of CSE  
Hyderabad - India  
*mepurshoththaman@yahoo.com*

Ms. Bhavani Buthukuri

Assistant Professor, Department of CSE  
KKR and KSR Institute of Technology and Sciences  
Guntur – India  
*bbhawani.bhavani@gmail.com*

**Abstract** : Today's scenario is that a individual can carry his(he /she) mobile everywhere. It becomes a body part to the young generation, particularly. Each mobile is simply multifunctional device which became inevitable in everyday life. Many mobile service vendors are available for few decades in the market. Generally these vendors sell their company Subscriber Identity Module (sim) cards with attractive features. These sims are sold to the users through the outlets of each company by satisfying a minimal documents submission and verification and activated within a small period. Any number of sims a candidate can buy and get activated. Most importantly any moment of time a user can stop using or discontinue the existing sim without furnishing any reason and get another one by following the same process. This paper is intend to see the accountability of sim(s) which were used by a user for some time and stopped using it and applying for a new one. It is also to see the number of sims from different vendors used by the same user and the cause to discontinue using any particular sim. Everyday huge number of sims getting activated by the service providers and how far the data is maintained.

**Keywords** : *service vendors, mobile, sims, accountability, big-data.*

\*\*\*\*\*

## I. INTRODUCTION

Communication, this word ruled the world of technology for more than four decades. The computers from the biggest to tiny play a vital role since then. Broadly the invention of computers diverted from its sole purpose to all other purposes from scientific to entertainment. It bought a great change in the human life from thinking to acting for the time required. The connectivity among the people improved in these decades via the technology. The development in technology brought the entire part of the globe reachable any moment of time from anywhere to everywhere. The improved speed by the electronic devices and the cost reduction in the hardware made the human to decide faster and forced them to change their mind also faster. As a fact when mobiles were introduced both caller and the receiver both have to pay for using it. Then scenario changed only for the caller to pay. Now the market sees more features with reduced cost calls, messaging, video conferencing and more through internet connection. Initially all private vendors suppose to use the government established lines, workstations, towers etc,. Then with the government approval the private vendors start to lay their own lines and towers for their personalized improved services. The public also happy to see more vendors in the market and competition started among them lead to reduced cost on services. People start to have more than one contact to express their status.

Now problem started with using multiple sims from same / different vendors and change their numbers frequently for

some or other reason. No vendor maintained any record of multiple sims usage from other vendors, if any used by the party. Whenever an application received for a new sim, documents seek only for the new sim and is activated. It is also a fact that the detail of multiple of contact numbers used by any user of the same service vendors and why if any of them stopped using at any particular time. This kind of activity may lead to involvement in anti-social activities and terror activities. In this paper it is suggested to bring the number of sims used by any particular user from the beginning to date.

## II. TECHNOLOGY OF MOBILE

For this, it is important to understand the very basic technology based on which this communication world is established.

Here we give a small introduction of the basic technologies used in mobile operation and their impact briefly.

All radio access technologies have to solve the same problems: to divide the finite RF spectrum among multiple users as efficiently as possible.

Time-division multiple access (TDMA) provides multiuser access by chopping up the channel into sequential time slices. Each user of the channel takes turns to transmit and receive signals. In reality, only one person is actually using the channel at a specific moment. This is analogous to time-sharing on a large computer server.

Frequency-division multiple access (FDMA) provides multiuser access by separating the used frequencies. This is used in GSM to separate cells, which then use TDMA to separate users within the cell.

Code-division multiple access (CDMA) This uses a digital modulation called spread spectrum which spreads the voice data over a very wide channel in pseudorandom fashion using a user or cell specific pseudorandom code. The receiver undoes the randomization to collect the bits together and produce the original data. As the codes are pseudorandom and selected in such a way as to cause minimal interference to one another, multiple users can talk at the same time and multiple cells can share the same frequency. This causes an added signal noise forcing all users to use more power, which in exchange decreases cell range and battery life.

Orthogonal Frequency Division Multiple Access (OFDMA) uses bundling of multiple small frequency bands that are orthogonal to one another to provide for separation of users. The users are multiplexed in the frequency domain by allocating specific sub-bands to individual users. This is often enhanced by also performing TDMA and changing the allocation periodically so that different users get different sub-bands at different times.

Global System for Mobile Communications (GSM, around 80–85% market share) and IS-95 (around 10–15% market share) were the two most prevalent 2G mobile communication technologies in 2007. In 3G, the most prevalent technology was UMTS with CDMA-2000 in close contention.

GSM uses TDMA and FDMA for user and cell separation. UMTS, IS-95 and CDMA-2000 use CDMA. WiMAX and LTE use OFDM.

In theory, CDMA, TDMA and FDMA have exactly the same spectral efficiency but practically, each has its own challenges – power control in the case of CDMA, timing in the case of TDMA, and frequency generation/filtering in the case of FDMA.

Some of the big service vendors, in the sense of providing service in more than one state or nation, spread on many countries and covered much geographical area on the globe and their impact on the individual and the different stages of their lives and the subscribers strength, economy of the each nation.

### III. THE LARGEST MOBILE NETWORK OPERATORS IN THE WORLD

A mobile network operator can also be known as a cellular company, wireless service provider, mobile network carrier,

wireless carrier or simply MNO is a wireless communications service provider that either controls or owns the necessary infrastructure required to sell and deliver services to its users. The services include billing, back haul infrastructure, provision of computer systems and marketing, wireless network infrastructure, repair organizations, radio spectrum allocation, and customer care. The telecommunications industry has evidently developed over recent years to become a significant part of business and day to day life for all people from all walks of life.

#### *China Mobile*

With subscriber strength of 851.2 million, China Mobile is undoubtedly the champion mobile network operator in the world. China Mobile was conceived in 1999 as a result of the China Telecom break which was originally founded on September 3<sup>rd</sup>, 1997. The headquarters of China Mobile are located in Beijing, People's Republic of China, and it has since dominated the mobile service industry in China. China Mobile is under the direct control of the People's Republic of China as it is an enterprise owned by the state. It is also listed in the Hong Kong stock exchange and the NYSE as a public company. China Mobile has a market share of 70% and continues to control the vast majority of its mobile services market with the remaining 30% being shared between China Unicom with 20% shares and China Telecom with 10% shares in the mobile service market. In 2007 China Mobile branched when it bought Paktel in Pakistan and launched the Zong brand one year later.

#### *Vodafone*

Headquartered in London, United Kingdom, Vodafone a British multinational telecommunications company. It is the second largest mobile network operator in the world with a subscriber's strength of 469.7 million users. Vodafone was founded in 1991 predominantly offering mobile network services in the regions of Oceania, Africa, Europe, and Asia. The company operates and owns mobile networks in 26 countries and has partner networks in more than 50 additional countries. Vodafone provides its corporate clients with IT and telecommunications services in 150 countries through the Vodafone Global Enterprise division. Vodafone, a constituent of the FTSE 100 index is primarily listed on the London Stock Exchange and is secondarily listed on NASDAQ. Vodafone was ranked the fifth largest mobile network operator by revenue.

#### *Airtel*

With subscriber strength of 348.1 million users, Airtel, an Indian telecommunications company, is the third largest mobile network operator in the world and the largest in India. Bharti Airtel Limited was founded on July 5th 1995

by Sunil Bharti Mittal and is headquartered in Bharti Crescent, 1, Nelson Mandela Road in New Delhi, India. The company offers mobile network services such as voice services depending on where the country is located, 4G LTE, GSM, fixed line broadband and 3G. Airtel operates in 18 countries in the regions of Africa and South Asia. IBM provides Airtel with IT support whereas its equipment is maintained and provided by Nokia Solutions and networks together with Ericsson.

### Other

As the telecom industry keeps evolving so is the emergence of new mobile network operators who have either merged with other companies, bought them off or simply re-branded. Other top mobile network operators in the world include América Móvil, Telefonica, China Unicom, MTN, China Telecom, Telenor, and Vimpelcom.

### The Largest Mobile Network Operators In The World

Rank	Company	Total Subscribers (in Millions)
1	China Mobile	851.2
2.	Vodafone	469.7
3	Airtel	348.1
4	America Movil	280.6
5	Telefonica	276,5
6	China Unicom	265.1
7	MTN Group	234.7
8	China Telecom	216.8
9	Telenor	214.0
10	Vimpelcom	205.5

### Advantages :

Old data of the individual may give some clue to solve the cases pending against any individual, till date.

Easy to maintain the track of the users.

Easy to administer the contacts and bring control on the usage.

Possible to put control on the number of sims allotted.

Conclusion : The details of each user should be updated and made available by using the big data to have transparent data base so that any anti-social activities can be traced out and protect the people committing or indulge in any terror

activities. The data submitted by the individual user should be verified by a third party and submission of clearance report only next sim could be activated The data of sims used from the first sim to existing sim till date, should be linked and verify their details submitted. A system of submitting the cause to discontinue the currently using sim or surrender it before applying to the new one will protect the individual involving in any anti-social activities. It is also suggested that introducing the rule for limitation of issuance of sim cards to any individual.

### REFERENCES

- [1] [Jump up^ "Operation Data". China Mobile. 2017-10-31.](#)
- [2] [Jump up^ "Annual Report 2017" \(PDF\). 31 March 2017.](#)
- [3] [Jump up^ \(PDF\). Airtel. 2017-09-30 \[http://www.airtel.in/wps/wcm/connect/bd14a7e4-fbee-4e23-8f6d-631a4872ed2d/National-Press-Release\\\_O2FY18-Sep17.pdf?MOD=AJPERES&CONVERT\\\_TO=url&CACHEID=bd14a7e4-fbee-4e23-8f6d-631a4872ed2d\]\(http://www.airtel.in/wps/wcm/connect/bd14a7e4-fbee-4e23-8f6d-631a4872ed2d/National-Press-Release\_O2FY18-Sep17.pdf?MOD=AJPERES&CONVERT\_TO=url&CACHEID=bd14a7e4-fbee-4e23-8f6d-631a4872ed2d\). Missing or empty |title= \(help\)](#)
- [4] [Jump up^ "3Q 2017 Reports" \(PDF\). América Móvil. 2017-09-30.](#)
- [5] [Jump up^ "Operation Data". China Unicom. 2017-10-31.](#)
- [6] [Jump up^ "Report 3Q 2017". 30 September 2017.](#)
- [7] [Jump up^ "China Telecom Corporation". China Telecom.](#)
- [8] [Jump up^ "Report 3Q 2017" \(PDF\). Veon. 30 September 2017.](#)
- [9] [Jump up^ "3Q Results 2017" \(PDF\). MTN Group. 30 September 2017.](#)
- [10] [Jump up^ "Report 3Q 2017" \(PDF\). 30 September 2017.](#)
- [11] [Jump up^ "August 2017 TRAI Report" \(PDF\). 31 August 2017.](#)
- [12] [Jump up^ "3Q 2017 Telenor Group Report" \(PDF\). 30 September 2017.](#)
- [13] [Jump up^ "Annual Report 2016" \(PDF\). 31 December 2016.](#)
- [14] [Jump up^ "STC Investor Factsheet" \(PDF\). STC. Retrieved 25 August 2014.](#)
- [15] [Jump up^ "Etisalat 1Q Report 2017". Etisalat. 31 March 2017.](#)
- [16] [Jump up^ "December 2016 TRAI Report" \(PDF\). TRAI. 17 February 2017.](#)
- [17] [Jump up^ "Q1 2017 Results" \(PDF\). Ooredoo. 31 March 2017.](#)
- [18] [Jump up^ "How Verizon, AT&T, T-Mobile, Sprint and more stacked up in Q3 2017: The top 7 carriers". FierceWireless. November 10, 2017.](#)
- [19] [Jump up^ "How Verizon, AT&T, T-Mobile, Sprint and more stacked up in Q3 2017: The top 7 carriers". November 10, 2017.](#)
- [20] [Jump up^ "July 2017 TRAI Report" \(PDF\). TRAI. 31 July 2017.](#)
- [21] [Jump up^ "Results Q1 2017" \(PDF\). MTS. 31 March 2017.](#)
- [22] [Jump up^ "Operator group ranking, 2015". GSMA intelligence. 28 April 2016.](#)
- [23] [Jump up^ "Financial Results Q3 2016" \(PDF\). Maxis. 30 September 2016.](#)

- [24] Jump up^ ["Press Release"](#) (PDF). TRAI. 31 August 2016.
- [25] Jump up^ ["Axiata - Annual Report 2015"](#) (PDF).
- [26] Jump up^ ["Financial Results Q3 2016"](#) (PDF). TIM. 30 September 2016.
- [27] Jump up^ ["December 2016 TRAI Report"](#) (PDF). TRAI. 17 February 2017.
- [28] Jump up^ ["Press Release Q3 2016"](#). MegaFon. 30 September 2016.
- [29] Jump up^ ["About MCI"](#). MCI. 31 December 2016.
- [30] Jump up^ ["Report 4Q 2016"](#) (PDF). 31 December 2016.
- [31] Jump up^ ["Financial highlights 3Q 2016"](#) (PDF). 30 September 2016.
- [32] Jump up^ ["Quarterly Investor Update"](#) (PDF). Retrieved 25 October 2017.
- [33] Jump up^ ["December 2016 TRAI Report"](#) (PDF). TRAI. 17 February 2017.
- [34] Jump up^ ["Financial highlights 2016"](#). Turkcell. 31 December 2016.
- [35] Jump up^ ["Operational Highlights 2016"](#). 31 December 2016.
- [36] Jump up^ ["Iridium Q2 2016 Results"](#) (PDF). 2016-06-30.
- [37] Jump up^ ["Globestar Announces Q1 2015 Results"](#). Globalstar.com. 2015-03-31.
- [38] Jump up^ [\[1\] Archived](#) 3 January 2010 at the [Wayback Machine](#).
- [39] Jump up^ [\[2\] Archived](#) 6 November 2012 at the [Wayback Machine](#).