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RESEARCH ARTICLE

BIG DATA VS MOBILE AND CLOUD COMPUTING

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ABSTRACT

Lead Generation, Email Marketing, Data scrapping, Data Mining, Data Integration, Machine Learning, Relational Data Base using Azure and Probability is not single methods but when they are well combination then they can build a serious strong part for a company's revenue and perform to build strongest foundation for next 100 years milestone. Yes I am talking about the revenue since 2011 till 2017 actually in 2013 the revenue was $18.6 bn and now it reached to $45.3 bn in just 3 years. It would be an pleasant surprise for all entrepreneur and Big Data specialist to know about Money making by Big Data that will touch $50.1 bn in the year of 2017 in June to July according to wiki born.

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INTRODUCTION

Time has changed many things still changing this world from big to smaller and small things are becoming more efficient and sometimes in small device but working in a large data set with huge volume. Yes I am identifying Big Data which is really big and those computing system (Cloud computing and Mobile device) which is so light but very powerful with fastest speed capacity that made our life easy not only for single person but for Companies and this can be accessed from anywhere any place in this world.

Brief: The industrial landscape has numerously chanced bought by the emergence of cloud computing. From tech to business it is a successful revolution that has innumerable sectors which bringing about dual blend of boost of productivity as well as low cost. Let's have a look what is Cloud Computing and how mobile computing turn to cloud computing.

Cloud Computing: It is a computing that based on pay for use basis and can be referred to as simply "the cloud" is the delivery of on demand computing resource. Where every single object is called from application to data centres on internet. According to **Dr.J Broberg**, "Australian Postdoctoral Fellow", **The University of Melbourne**: Compute, Network and Storage capacity are being offered hardware based service "Clouds" where Hardware management is highly abstracted from buyer, Buyers incur infrastructure costs as variable OPEX, and Infrastructure capacity is highly elastic" – **McKinsey & Co.** Report: **"Clearing the Air on Cloud Computing"**

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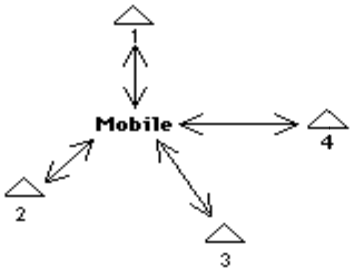
Mobile Computing

This is a computing technology that allows data, voice and video transmission via computer or any other wireless enabled device without having to be connected to a fixed physical link. It is just been a old computing technology which was a revolution in early 1998 to 2000, but by the bless of Cloud and constantly upgrading of Big Data this technology is being open for a vast platforms like Scientific Movies was in 1980s. Global System for Mobile Communication (GSM) refers as a digital mobile telephony system that is widely using in every corner of world. This technology use a variation of time division multiple access (TDMA) and Code Division Multiple Access (CDMA). But it a upgrade model of 1g.

The first generation of wireless mobile technology refers as 1g that been introduced in the 1980s and continued until being replaced by the 2G that Means 3 Core technologies GSM, TDMA, CDMA.
According to : AMPS Cellular by 'J. White', Harding University, Published October 24, 2006, Based on: http://www.privateline.com/mt_cellbasics/
When you turn on your phone, the Mobile Telephone Switching Office (MTSO) assigns a vacant radio channel in that cell to carry the call



Upon turning on your phone the mobile switch gathers signal strength reports from the different cells and assigns your phone to the cell with the strongest reading. In this simplified example, 1 represents the strongest signal and 4 is the weakest. Although it is easy to say that the cell site nearest you gets your call, it may not, depending on topography and other factors.

Reference: AMPS Cellular by 'J. White', Harding University, Published October 24, 2006, Based on: http://www.privateline.com/mt_cellbasics/

A picture can be a good example of Mobile technology

Picture from "Mobile Communication", "What and How To Do", "https://okmanjay.blogspot.com/2016/02/"

The main perception was

- Mobile Communication
- Mobile hardware
- Mobile Software
  - Azure by Microsoft
  - Android first developed by Samsung
  - IOS first revolution by Apple

Turning to Cloud Computing: It is said the rise of Mobility makes our world smallest. So there are few steps up gradation of Mobile technology which are 1G to 2G and then 1G only covered Maintain Calls and later SMS (Short Message Service) then for the idea of operate through satellite and using World Wide Web in Mobile 2g entered, internet and GPRS (General Packet Radio Service) entered, after in few days CCTV (Closed-circuit television) with mobile application grab the hand with apple entered in this world and then a rocket change was waiting though CCTV application was not applied by apple but it was a presence of IP (internet protocol) and Camera (VGA), radio and WI-FI, later by the bless of open source software a huge revolution been happen by Samsung and the First Android application published and still constantly updating this software its says every single minute upgrading . Then later cloud computing published with the idea of free access from anywhere to go. That means the centric view of technology where application should be available for purchasing; rentals even development wherever and whenever company or user wants. It is an approach of make money with consumes difficult technology but easiest rather than other technology in a pay –as – you go model. Technology will get a comprehensive virtual model from infrastructure through application delivery by Cloud Computing. According to Introduction to 'Cloud Computing DSP' – IP by "Yossi Cohan" there should be 7 points with 5 key cloud Characteristics.

1. Consumed over Internet/Cloud
2. Anywhere - location Independent (?)
3. Any Device - device Independent (?)
4. provided by 3rd party (?)
5. Shared infrastructure (multi-tenancy)
6. Little or no capital expenditure as infrastructure is owned by the provider.
7. Massive scalability is also common, though this is not an absolute requirement and many of the offerings have yet to achieve large scale.

5 Key Cloud Characteristics

1) On-demand self-service
2) Ubiquitous network access
3) Location independent resource pooling
4) Rapid elasticity
5) Pay per use

Source: NIST http://csrc.nist.gov/groups/SNS/cloud-computing/index.html

('Cloud Computing DSP' – IP by "Yossi Cohan" there should be 7 points with 5 key cloud Characteristics)

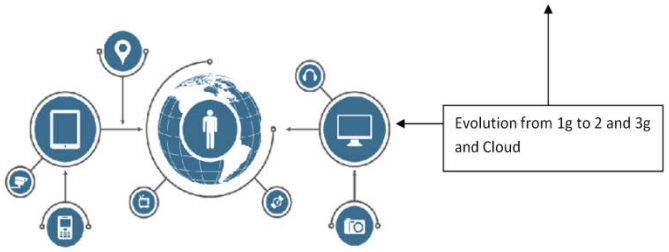
There are few information need to add on cloud computing and these are really important

Cloud is not a network computing not traditional outsourcing
It is a utility computing that provide a scalable environment for network centric application development, testing and deployment with pay-per-use base. IT is EAAS /XAAS that means everything as a Service which indicate a concept of being able to call up re-usable (IAAS (Infrastructure as a Service), PAAS (Platform as a Service), SAAS (Software as a Service), DAAS (Desktop as a Service), NAAS (Network as a service), CAAS (Computing as a service)) fine grained components of software across network.

How Samsung include vendors and who are Using these service

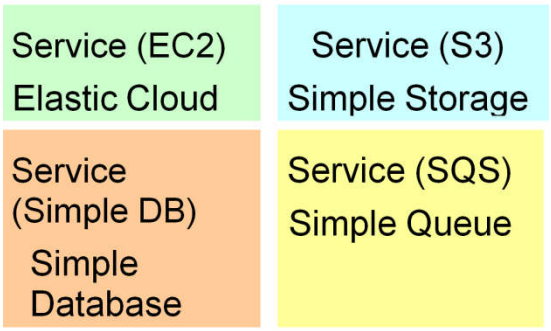
- Amazon using it with their (AWS, EC2 and S3) (Cloud and Big Data)

- Mozilla (EMC) (Cloud and Big Data)
- Goole using them (Cloud and Big Data) for their Search, Car, Artificial Intelligence, Android
- Microsoft (Cloud and Big Data) using them for their Application Azure and Cluster computing and search like Google.
- Salesforce.com is totally outstanding operation for Big data use and Cloud.
- Yahoo and Verizon recently added their service on cloud.
- IBM, VMware, Sun Micro system / Oracle, 3tera, Eucalyptus, Rackspace, Gogrid, Joyent, Terramark are privately using Cloud



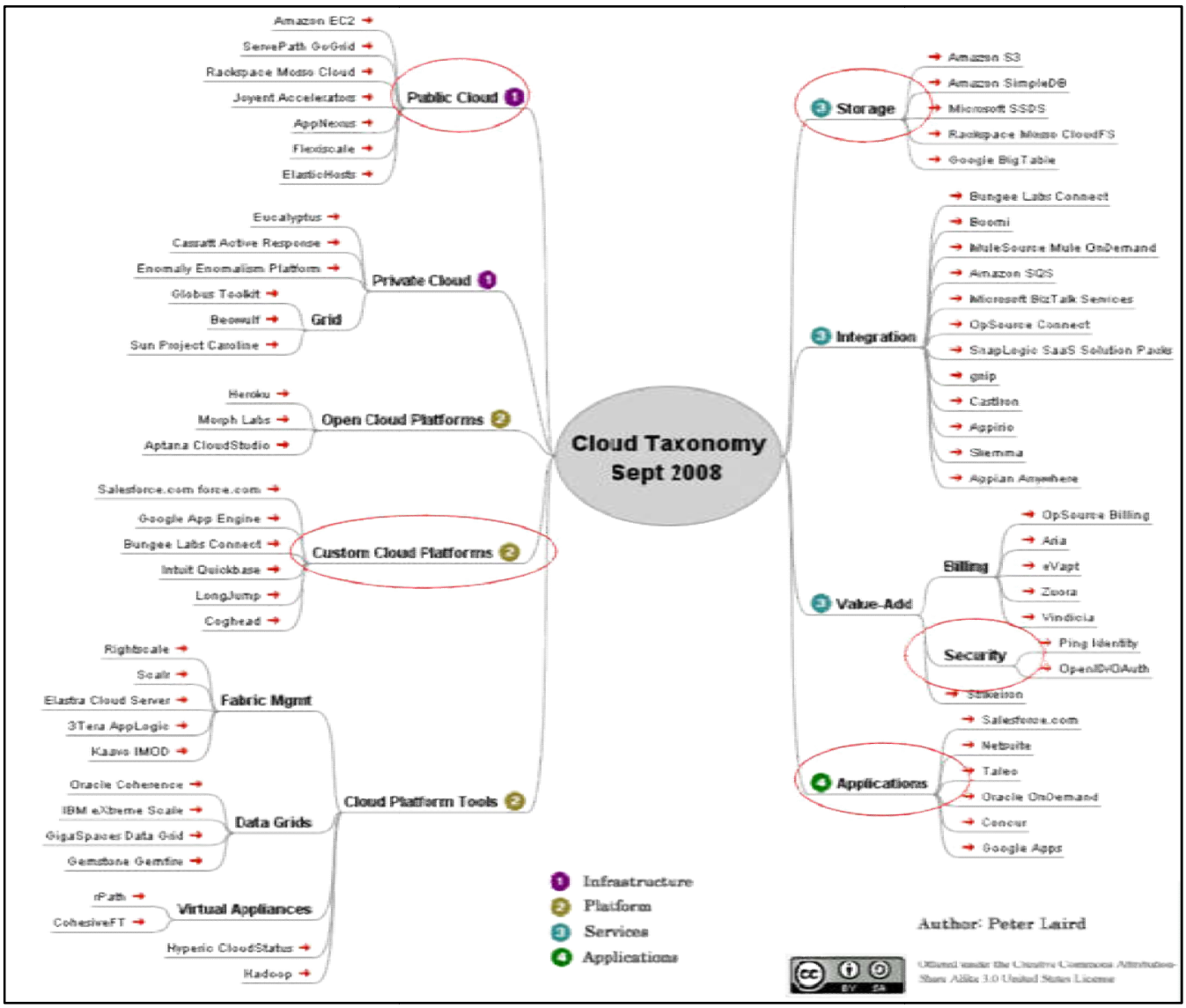
Now it is time to more elaborate about Big Data when it's comes already before proceed I would like to show a map of Amazons how they are using their cloud and the mind map system is being used

The main services Samsung is using on Cloud to take part of Amazon



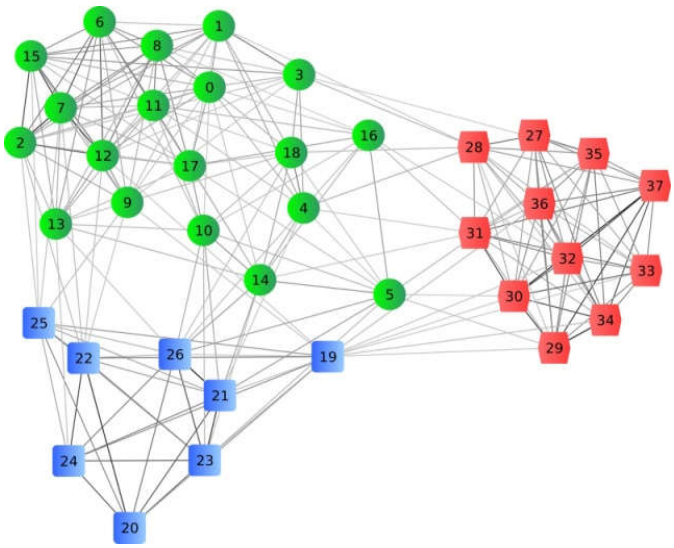
The mind Map reference as "dsp-ip.com, Fast Forward your Development" by "Yossi Cohan"

Big Data: Big data means really big data. That means the terms of Big Data is the set of data which are so large and complex where traditional techniques of data processing application is inadequate to deal with them. It has challenges against analysis, capture, data curation, search, sharing, storage, transfer, visualization, query; updating and information privacy that means all these items should be in Big Data cluster computing.



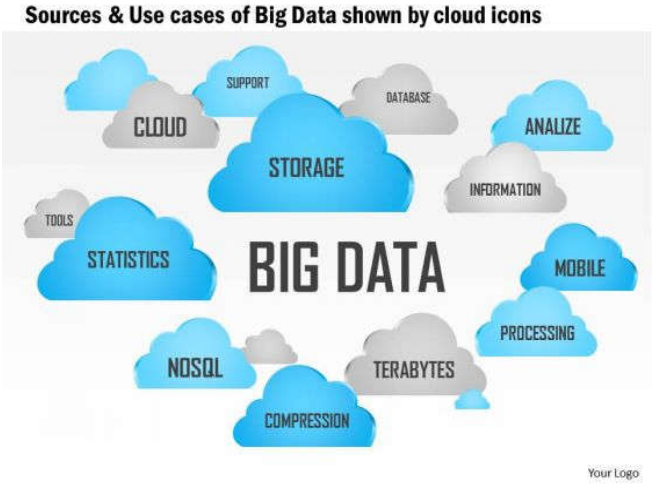
As we can say that cluster computing should be like the neural Network system type.

Let's have a look: how cluster look like



Picture Edited by DR. KEREM KOSEOGLU 2016/09/12

https://keremkoseoglu.com/2016/09/12/abap-group-operations-in-internal-tables/



Picture Edited by careerxls, "https://twitter.com/careerxls"

Challenges of and benefits of cloud computing, big Data and the digital platform

What comes under Big Data: There are few things comes under big data which are Black box Data, Social Media data, Stock Exchange Data, Power grid Data, Transportation Data, Clustering

Black Box Data: This Data components are being used for Aviation system to find out what sort of identifiable change or storage been made. Aviation like Etihad, Emirates, British Airways, American Airways and almost every aviation companies are using this Black Box Data. It captures recording of microphones and earphones, voice of the flight crews and the performance information of aircrafts.

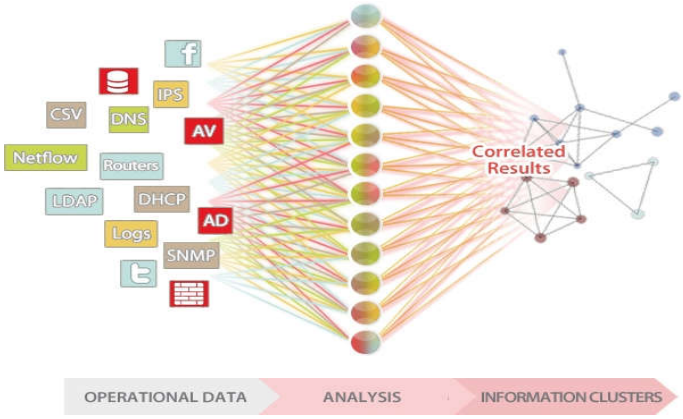
Social Media Data: Facebook, tweeter, even LinkedIn (Though LinkedIn is a professional network) even almost every media are holding Big Data for their aspects.

Stock Exchange: It says every days up and down rate of stock exchange data are being calculated by Big Data. So that its holding a huge importance of countries finance.

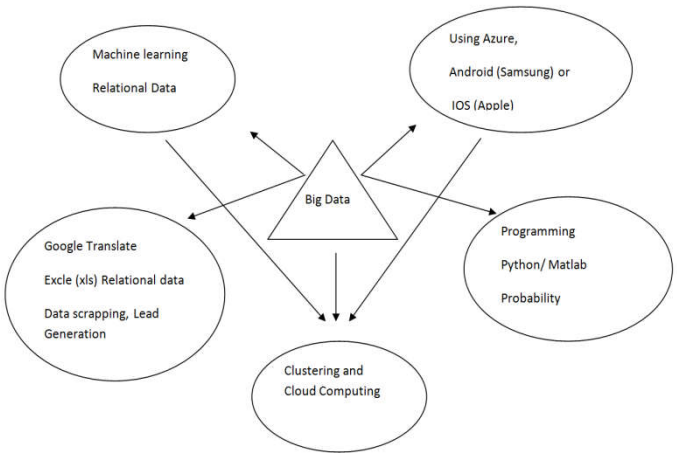
Power Grid data: The power grid data holds information consumed by a particular node with respect to a base station.
Reference: 'Hadoop – Big Data overview' by Tutorial Point (https://www.tutorialspoint.com//hadoop/hadoop_big_data_overview.htm)

Transport data: Big Data is using few first world transport services like National express, Arriva in UK, they are using it to understand distances of transport, calculate routes and so on.

Search Engine Data: As said on Google, Microsoft (Bing), Apple (Safari), Mozilla (EMC) (Cloud and Big Data) etc most of this vendor are focused more on relation with Cloud and Bid Data for Cluster computing and search like google, amazon, bing, facebook are linked like Neural Network.



Structured Data (Relational data, which is playing most important role for Big Data industry), sami-structured data (XML) and Unstructured Data (pdf, Doc, xls, media logs) are serious part of Big Data There are few parts that are most important and really valuable to understand and implement if person and company use Big data, mostly these parts are combine parts for a Big Data



Design by Mohammed Imtiaz Zahid

Benefit and Relation

Now if it comes at the relation between Cloud and Big Data we can say

Data is accumulation at a tremendous rate now a days

- Web visitors are clicking streams
- Transaction on supermarkets using clouds
- Sensor reading through IP (Internet protocol) (Cloud)
- Video camera Footage (Cloud)
- GPS trails
- Huge interaction to maintain international Space station (NASA) through Cloud and Data Cell
- Social Media interaction

According to L M Garshol it is converting to vvv from www

V: Volume which is becoming unmanageable
V: Verity of data growing is being complex and more different types of data are capturing every time
V: Velocity of few data are so fast to fear to loss either store them instantly so that it called stream processing. "Introduction to Big Data/Machine Learning by Lars Marius Garshol, Technology developer, http://www.slideshare.net/larsga/introduction-to-big-datamachine-learning/8-Data_accumulation_Today_data_is"

So that it is a promise been made by Big Data that data contains information with great industrial value, to make far best decision then extract those data insight. As said Big Data with machine learning is now giving out put as

- Many algorithm and techniques are being use to process data with verity
- Data range from very simple to extreme sophisticated are processing fast
- Difficult to see big picture of data which is really good
- Application range are huge by the bless of Machine Learning
- Crucial Math skill that means it is not necessary to use math manually (using brain) but use them (Math) on programming (Python)

Conclusion and Suggestion: If it's a suggestion issue for preferred organisation Samsung should make a focus on their velocity of changing items, it is not preferable to upgrade rocketed way which means a lots of different data makes company irritable to perform their productivity does not matter what they are using Big data on Cloud or Artificial intelligence. So they should be more careful what they are doing but will not collapse again with their S7 (☹).

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