**Technical explanation of Telecom project-**

-My project name is " T-Mobile billing system"

-which comes under vertical of Telecom & the client is 'T-Mobile Germany'

- I was involved in E2E process from Customer creation to Bill generation.

-whenever a customer wants a service from any service provider then he/she will go to shop (Retail store) from where CRM comes in picture.

-we use customize CRM like ‘T-Mobile\_CRM'

* CRM is nothing but a customer relationship management application use to

1) create customer

2) increase sell & marketing via SMS, mail.

-Also, we called as Business Enterprise application

- Each & every industry uses CRM application.

-CRM always connected with various system including billing s/m & store customer personal data, product & service information to the billing system.

-by using CRM, we can validate the identity of customer in order to prevent fraud.

-then there is OMS/OMOF comes & it is framed with CRM screen.

- it used to take order or which have the combo plans for selection as per customer need.

-also used to track the order starting from its creation to completion.

-OMOF is responsible to track the order status, there 2-possiblities

1) CRM/OMOF s/m directly contacts with provision s/m to provision the services and Network inventory s/m assign phone no, mb no or IP address.

2) CRM/OMOF s/m contacts with Billing s/m & BS contacts with provision s/m to provision the services and Network inventory s/m assign phone no, mb no or IP address.

-> OSS (Operation support system) : it have following functions

1)To manage their n/w operations & management.

- telecom n/w consist no of n/w element

-n/w element is group of equipment or physical device.

- send out notifications if any fault or any service is active, deactive.

2) service delivery

e.g., internet connectivity, voice over internet protocol, telephone, mb.

3)service assurance

- to monitor the n/w element malfunctions & resolve them before any service outage occurs.

-correct service assurance needed when service outage actually happens

e.g. to resolve n/w fault to have min service outage time.

-n/w fault have diff. severity level critical, minor, major, warning, clear.

3-2) fault management

-confirm identity, run diagnostic, resolve & update OSS.

-it is entire process of fault confirmation

-identify the n/w element using the fault.

4)customer care

-related to n/w configuration or service deliver to the customer-

-u must have interacted to ur service provide cc department to report fault.

-provided by Human agents, web apps, mb apps.

-it includes, training the cust , troubleshooting fault resolution, preventive maintenance, n/w upgrade related to h/w & s/w.

-it has 2 modules

1) Provisioning System

2) Network inventory system

1) Network inventory System:

- it will take command from OMS/BS like-Activate, Deactivate, Suspend, Terminate the services.

- This s/m maintain all n/w identifier like ph no, mb no, MSISDN (Mobile station international subscriber directory number),Ip address, email , add etc.

-if service is physical then it mange physical components like cable, cable connector, node, active & passive devices.

-allocates the n/w inventory resource that are needed service deliver

-service activation means making that service is live.

2) Provisioning system:

- this s/m responsible to maintain the life cycle of n/w identifier which starts with available & then flows through different stages like Activate, Deactivate, Suspend, Terminate, quarantine and again available.

- After taking Provisioning commands this s/m contacts with core n/w s/m to Activate, Deactivate, Suspend, Terminate the services

- it means the Provisioning s/m do the actual implementation of that particular services of customer where the services like-Activate, Deactivate, Suspend, Terminate services

-after successful provisioning the s/m send response to OMS/BS

-> Network switches

-generally billing s/m does not interact with n/w switches.

- it is responsible to provide all the services to end customer based on what services have been provisioned the customer.

- this s/m responsible to generate data or usage CDR/UDR (ie. responsible for controlling calls data download, sms transfer...etc).

-n/w switches include following

1) GSM- global s/m for mobile

-> MSC-mobile switching center which captures the all-voice calls.

2) SMS- short message service

-> SMSC- Short messaging switching center which captures the all SMS (text messages).

3) GGSN- Gateway GPRS support node (GPRS-general packet radio service)

-> it captures the all-Internet Data.

4) MMS- multimedia Message service

-> MMSC- multimedia Message switching center which captures the all-multimedia messages.

5) RPSC- roaming partner switching center

-> which captures the all roaming usage data of customer

--> n/w switches gives the Raw formatted CDR/UDR to mediation system as a input.

--> CDR- an event along with all attributes called as CDR.

--> data collector in the n/w switches capture the usage in the form of CDR (call detail record)

--> components of CDR-

1) Calling party no-receiver no

2) called party no-dialer no

3) call start time

4) call end time

5) total duration of call

6) date and time

7) call type- voice, sms, data.

8) unique sequence no to identifying the record

--> CDR also records information such as

- the identifier of the telephone exchange

- result of call (answered/waiting/busy)

- Trunk or route used to connect the call

- Any fault condition encountered.

- use of features (call forwarding,3-way calling( conference call))

--> the accurate recording of all information required in CDR and it depends upon the logic of switch used by organization.

--> if the switch record the data in-correctly then mediation s/m will not able to understand the completed calls and pass to billing s/m.