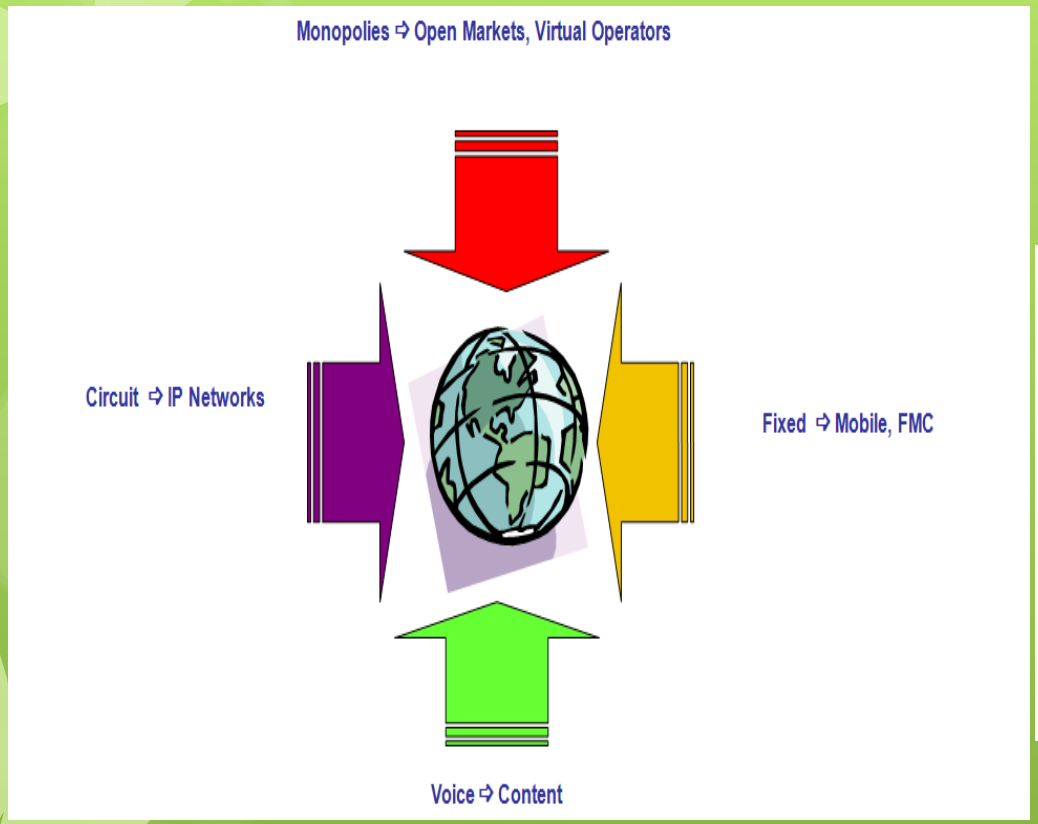
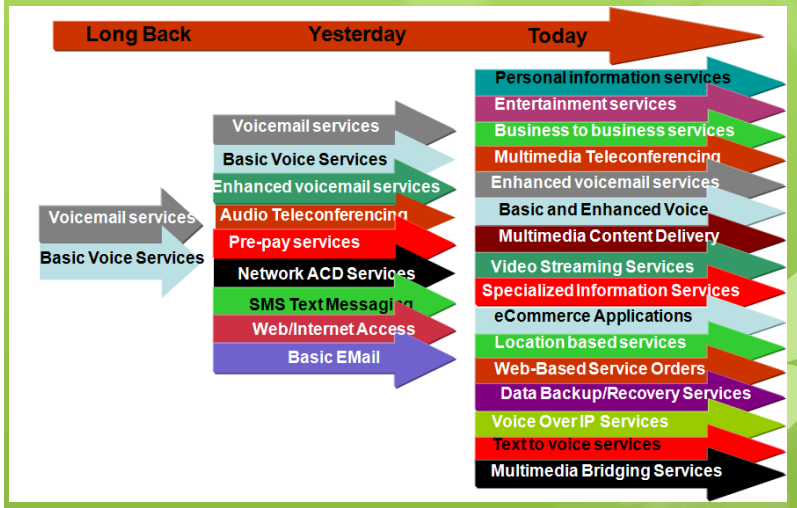
Introduction to OSS/BSS

Agenda

- Telecom Industry Trends
- Service Provider pain points
- Understand OSS /BSS
- Explore the different Models
- Understanding NGOSS

Telecom Industry Trends





Service Providers Needs

- Reduce manpower
- Simplify processes
- New ways of doing things
- Selected outsourcing

- Service innovation
- Reduce time-market
- Reduce time-cash
- Win market share wars

- Fast reactions
- 'Turn on a dime'
- Business process automation
- Eliminate systems lock-down

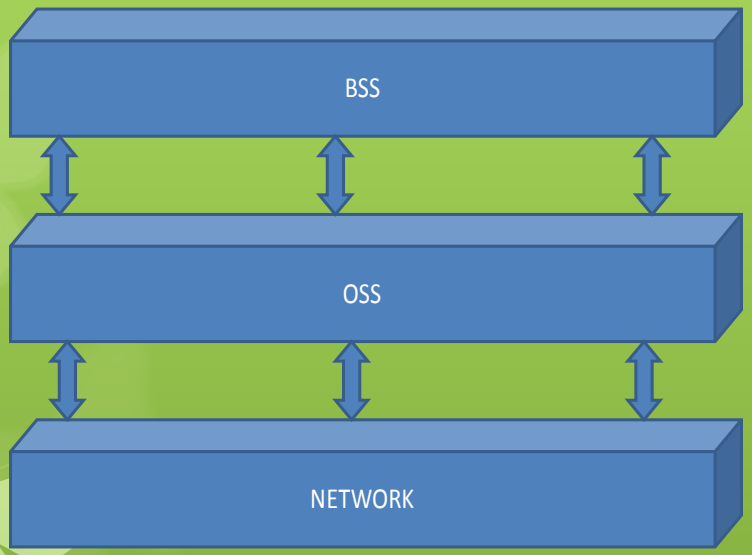
- 'Right first time' service
- Improve quality
- Improve customer service levels

Top 3 hurdles for Service Providers are

- Market needs is outstripping system capabilities, impacting time to market, affecting the bottom line (i.e Profit)
- Systems/Service development takes too long, is too expensive and too risky
- OSSs have become the roadblock to innovation, not a business-tool for competitive success.

What is OSS/BSS?

The traditional systems architecture in its most simplified form, of a Telecommunication operator consists of three layers.



Business Support Systems (BSS) layer

- The BSS layer has a focus towards customers and business suppliers/partners
- BSS deals with customers, supporting processes such as taking orders, processing bills, and collecting payments.

Operations Support Systems (OSS) layer

The OSS systems performs functions such as

- Maintaining network inventory
- Provisioning services
- Configuring network components
- Managing faults.

Network Layer

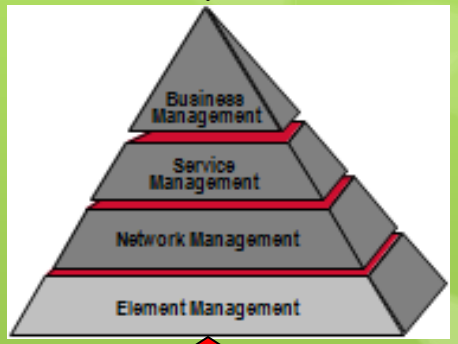
- The networks layer contains the service provider's network infrastructure.

Telecommunications Management Network (TMN) Model

- International Telecommunication Union (ITU) created a new OSS architecture definition/reference model
- This was called the TMN and established a 4-layer model applicable within an OSS.

- Business management layer: performs functions related to *business aspects, analyzes trends and quality issues*, for example, or to provide a basis for billing and other financial reports.
- Service management layer: performs functions for the *handling of services in the network*: definition, administration and charging of services
- Network management layer: performs functions for *distribution of network resources*: configuration, control and supervision of the network
- Element management layer: contains functions for the handling of *individual network elements*. This includes alarm management, handling of information, backup, logging, and maintenance of hardware

From a Top-down approach, each layer imposes requirements on the layer below



From a bottom-up approach, each layer provides capabilities to the layer above

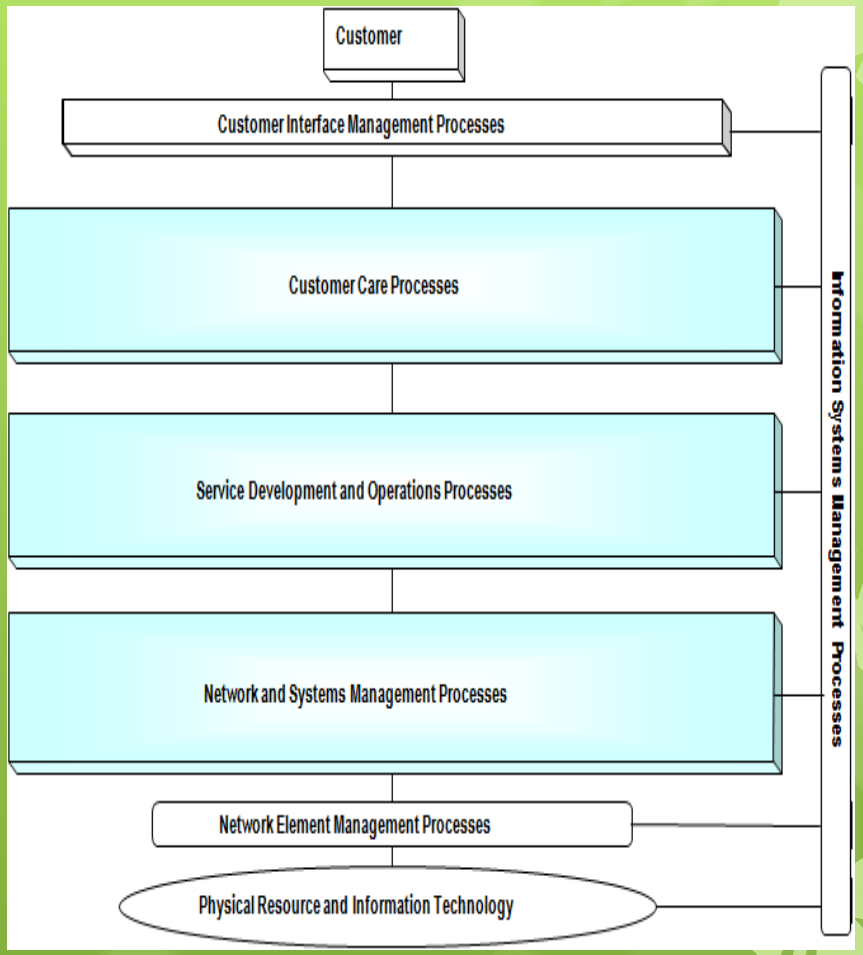
TOM Telecom Operations Map

Tele Management Forum (TMF)

- An international non-profit group.
- Formed with service providers, software developers, equipment suppliers and systems integrators
- Focusing on exclusively on management and operations issue

Telecom Operations Map (TOM) Model

- Offered a template of ***common business processes*** from the customer's point of view.
- It was an independent of organizations, technologies, and services.
- It supported the implementation of end-to-end operations integration, often called flow-through operations and automation.



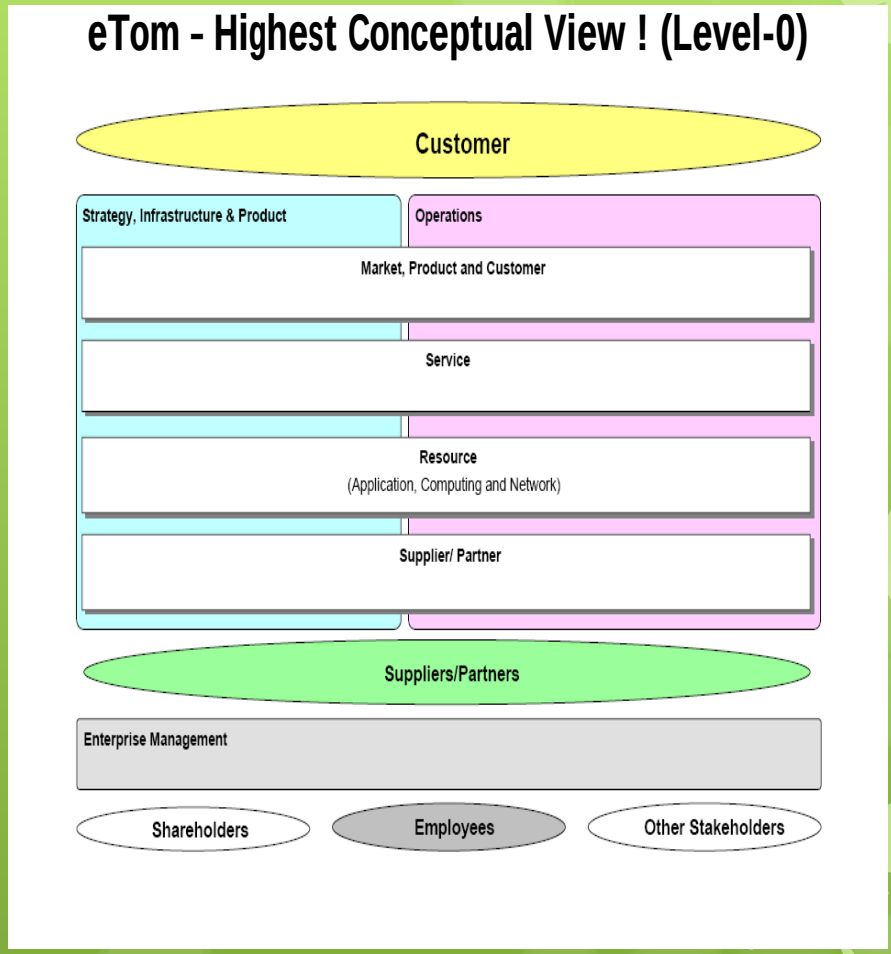
NGOSS

TMF proposed NGOSS (New Generation OSS) – “a business-oriented solution framework that specified a methodology for building OSS components”.

- eTOM: Business Process Framework defines the different core business processes that the service provider should have and the interactions between these processes.
- TNA: System Integration Framework provides the necessary structural underpinnings and building constructs to *support the analysis, design, implementation and deployment* of NGOSS-based open distributed computing solutions (BSS/OSS) for communications service providers. TNA stands for *Technology Neutral Architecture.*
- SID: Enterprise wide Information Framework defines the data that flows between various business processes. SID stands for Shared Information/Data.
- TAM: Application Framework defines the *role and the functionality of the various applications* that deliver OSS and BSS capability. TAM is the abbreviation for Telecom Application Map.

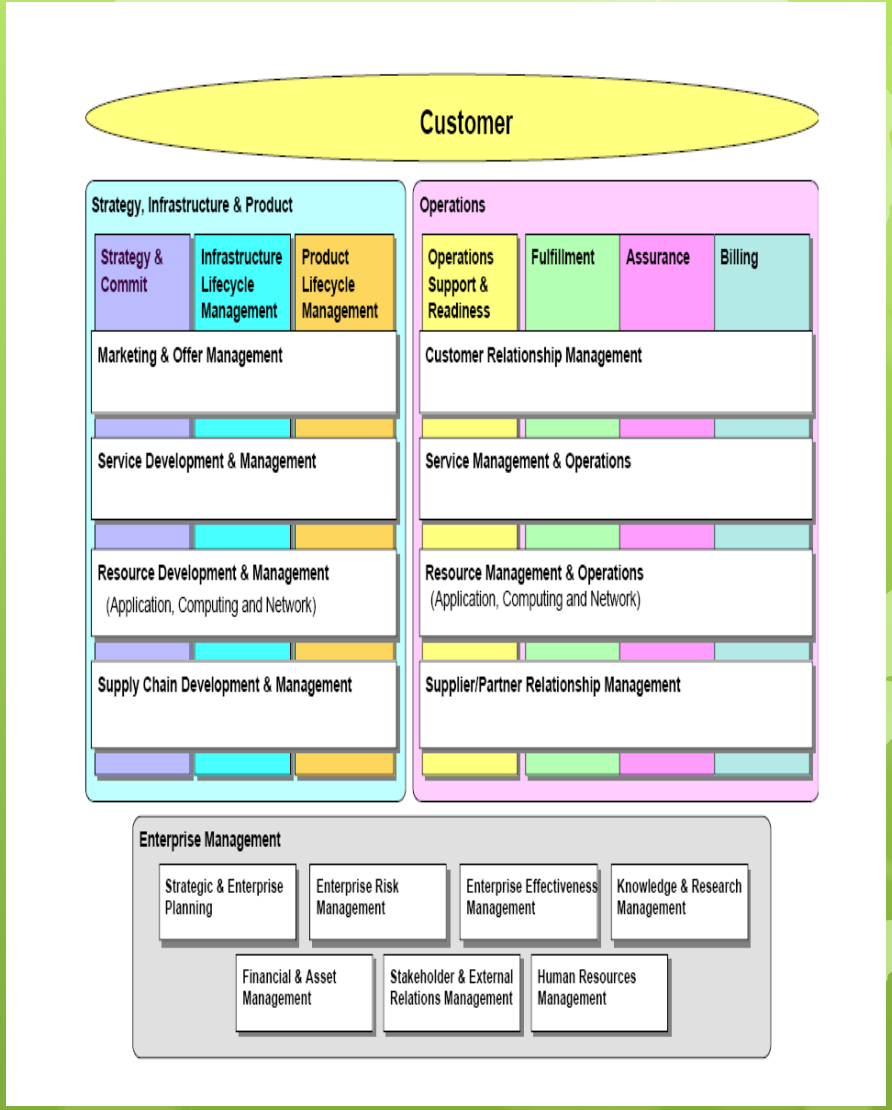
eTOM - Enhanced Telecom Operations Map

- Describes the ***full scope of business processes*** required by a service provider,
- Most widely used and accepted standard for business processes in the telecom industry today.
- Defines key elements and how they interact.



eTOM Level-1

- Shows *seven* end-to-end vertical process groupings, that are required to support customers and manage the business.
- Fulfilment process – where the order is captured, configured/provisioned on the network, installed and the service is activated
- Assurance process – where the issues affecting the service were resolved and the customer is assured of the service that he has subscribed to.
- Billing process – where adjustments were made to the customer bill and the customer is billed for the service usage.



Fulfillment, Assurance & Billing

Scenario

Mark is a customer

- He wants to take a new telephone/mobile connection
- He is relatively free on weekends and makes more calls during weekends
- He would like to have a special telephone number.

XYZ Telecommunication

- A popular telecom service provider with a wide customer base.
- They provide telephone and mobile services
- They had different products and services to address the different market segments

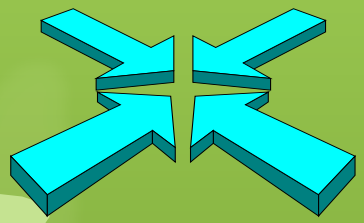
Customer Lifecycle - Customer Expectations vs. CSP response

Phases	1 Service Need Felt	2 Build Awareness	3 Competition Analysis	4 Service Procurement	5 Service Experience
Customer Expectation	• Availability of Information in a simplistic way • Non-committal conversations	• Product Demos • Trial Offers • Information Brochures with non-binding clauses	• Mini-SWOT – Fee Structure, Contract Binding, Upgrade Options, Service Quality, Billing Accuracy, Coverage, Product Options • Targeted offering - Products that align very closely to Customer Needs	• Best Price • Ease-of-procurement & Time-to-Procure • Installation / Start-up procedures • Channel Flexibility	• Ease-of-access to CSRs • Channel Options • VAS • Service Quality • Accurate Billing
CSP Focus Area	• Focused Marketing	• Product Brochures / Information booth • Ad campaign	• Articulate Value Proposition – Comparison Charts • Trial Offers	• Bundled Offers • Personalized Offers • SLA commitment • First Time Right	• Contact Center Efficiency • Unified Channel Experience • Cross-Sell & Up-Sell • Self-Care • Loyalty Points

Customer Places Order

Order needs to be Fulfilled (FULFILLMENT)

Operations Support



Company wants Revenues (BILLING)

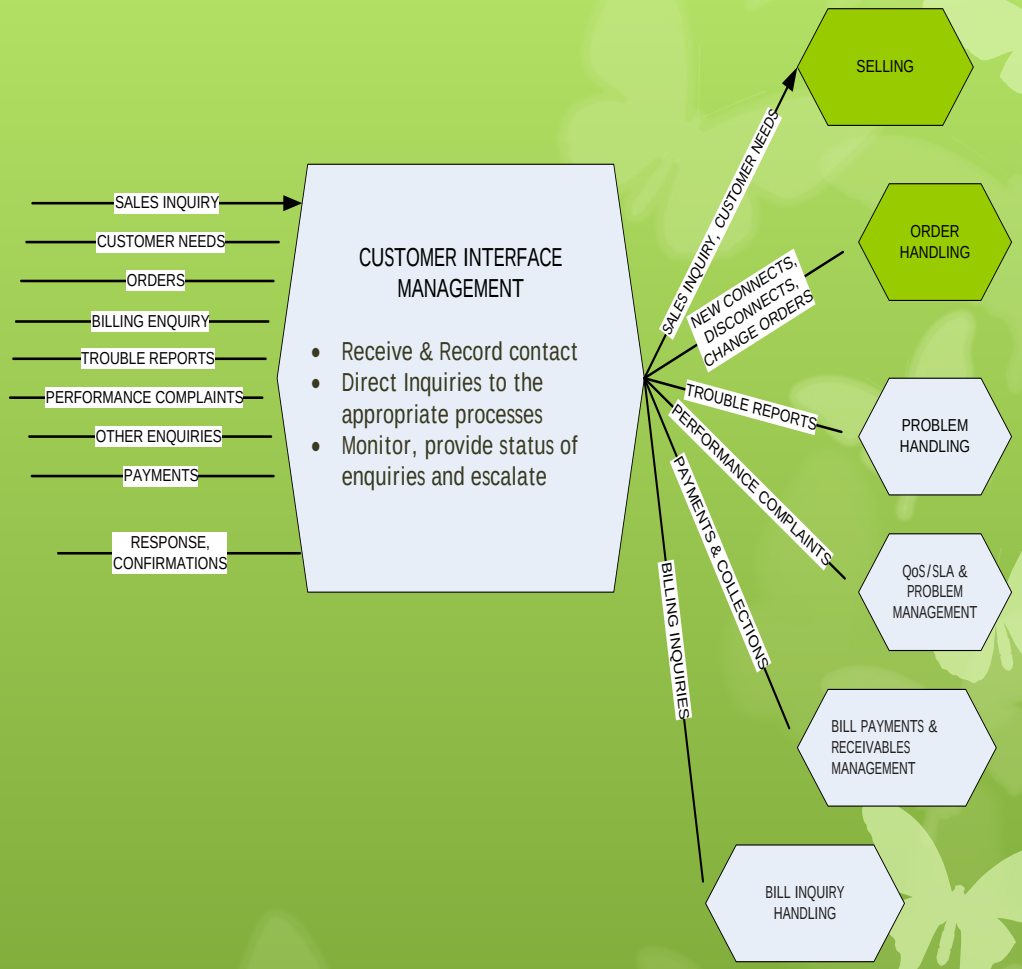
Service Quality needs to be assured (ASSURANCE)

Fulfillment Stakeholders

Fulfillment - CRM

Fulfilment process can be broadly classified into the following sub-processes.

- CUSTOMER INTERFACE MANAGEMENT
- SELLING
- ORDER HANDLING



Selling

- Selling is responsible for
  - managing prospective customers
  - qualifying & educating customers
  - for matching customer expectations
    - Products and services
    - Different Packages
    - Promotional offers
    - Discounts

Order Handling

Order Handling deals with

- pre-order feasibility determination
- credit authorization
- order issuance
- order status and tracking
- customer update on order activities

Order Handling typically classifies

- Add Order
- Change Order
- Move Order
- Disconnect order

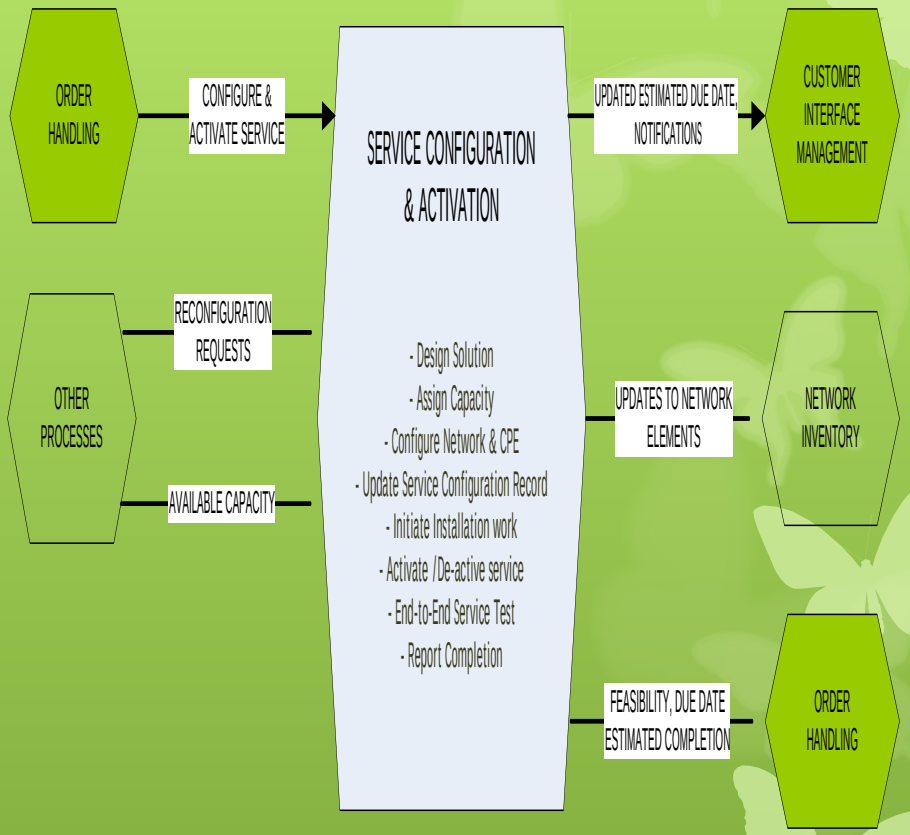
Fulfillment - Service Configuration & Activation

Service Configuration & Activation (SCA) is responsible for

- Allocation, implementation, configuration, activation and testing of specific services to meet customer requirements

Provisioning includes the designing, installation/configuration of the service at the customer premise or at the exchange (for example – providing the telephone wires, configuration changes at the telephone exchange)

Activation is the process of go-live for the service (for example – turning on dial tone for the telephone).



Scenario : New Customer (Retail) - COTS

Direct Sales Channel

Manual Update

Field Force

0. Initiate New Order

8. Manual Order Entry

11. Update CPE Inventory

11. Perform Field work

Work Force
-**Field Workflow**

Oracle CRM
- **Customer**
- **Account**
- **Order Capture**

7. Create New Order

15. Update Order Status

13. Update Activation Status

TIBCO
- **Middleware**
- **Messaging**
- **Process Manager**

7. Create New Order

15. Update Order Status

13. Update Activation Status

MetaSolv
-**OM**
-**Work Force**

14. Update Service Instance

Convergys
-**Rating**
-**Billing**

1. Capture Customer Information
2. Capture Service Address
3. Capture service required
4. Capture package Plan
5. Capture Deposit Info
6. Capture Due Date

Payments
-**Deposits**
-**Activations**

9.Handle Deposit & Activation Charges

12. Provision & Activate

10. Inventory & allocate

CNMS
-**Provisioning**

CNMS
-**Inventory**

CDP
- **Service Management**

SAP
-**Inventory**

Fulfillment – Key Terms

- Customer
- CSR
- Field Technicians
- Account
- Contract
- Products & Services
- Order
- Due Date
- Pre-order Feasibility Checks
- Credit Check
- Address Check
- Provisioning
- Activation
- SLA
- Partners

Assurance

Marks expectation from the Service Provider

- The service should be good
- His issues are addressed as soon as possible

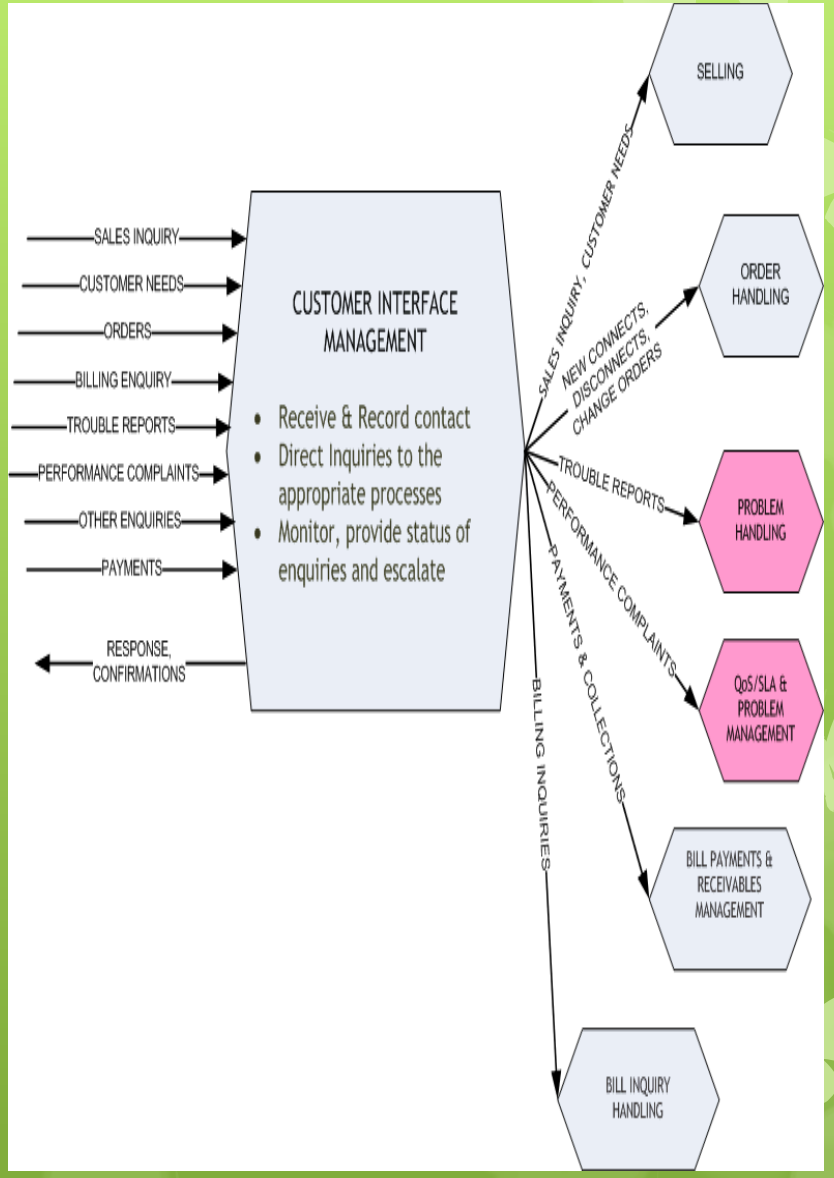
Assurance

- Execution of proactive and reactive maintenance activities
- Ensure that services provided to customers are continuously available
- Ensure availability, performance and quality of services
- Maintain SLA and / or QoS performance levels
- Perform continuous resource status & performance monitoring
- Collect data & analyze to identify potential problems
- Receive trouble report and resolve issues with minimum customer impact

Assurance

Assurance process can be classified with the following sub-processes.

- CUSTOMER INTERFACE MANAGEMENT
- PROBLEM HANDLING
- QoS/SLA & PROBLEM MANAGEMENT



Assurance

Problem Handling

- is responsible for receiving trouble reports from customers
- resolving them to the customer's satisfaction
- providing meaningful status on repair
- restoration activity to the customer.

QoS/SLA & PROBLEM MANAGEMENT

- Customer-reported issues would be treated as problems
- Performance reports would be the result of proactive internal monitoring within the service provider.

Retail Customer – Service Assurance

Customer

Contact Center

6.Field Repair

0. Customer Complaint

4.Manual Entry

SLA & Escalation

Self Care
- Complaint Capture
- FIR

2.Level1 routing

CRM
- Service Request
- Level1 resolution

3.Level2 routing

Remedy
- Level2 Routing

8.Update Status

7.Update Status

1.Capture Complaint

6.Update Status

Metasolv
- Level2 Routing

WorkForce
- Level2 Routing

5.Field Allocation

Billing
- Adjustments
- Plan corrections

CDP
- Adjustments
- Content Access
- Authentication

VMS
- Adjustments

SYSTEM
Correlated Faults
CNMS

TIBCO Interface Layer

Billing

Collection or usage records

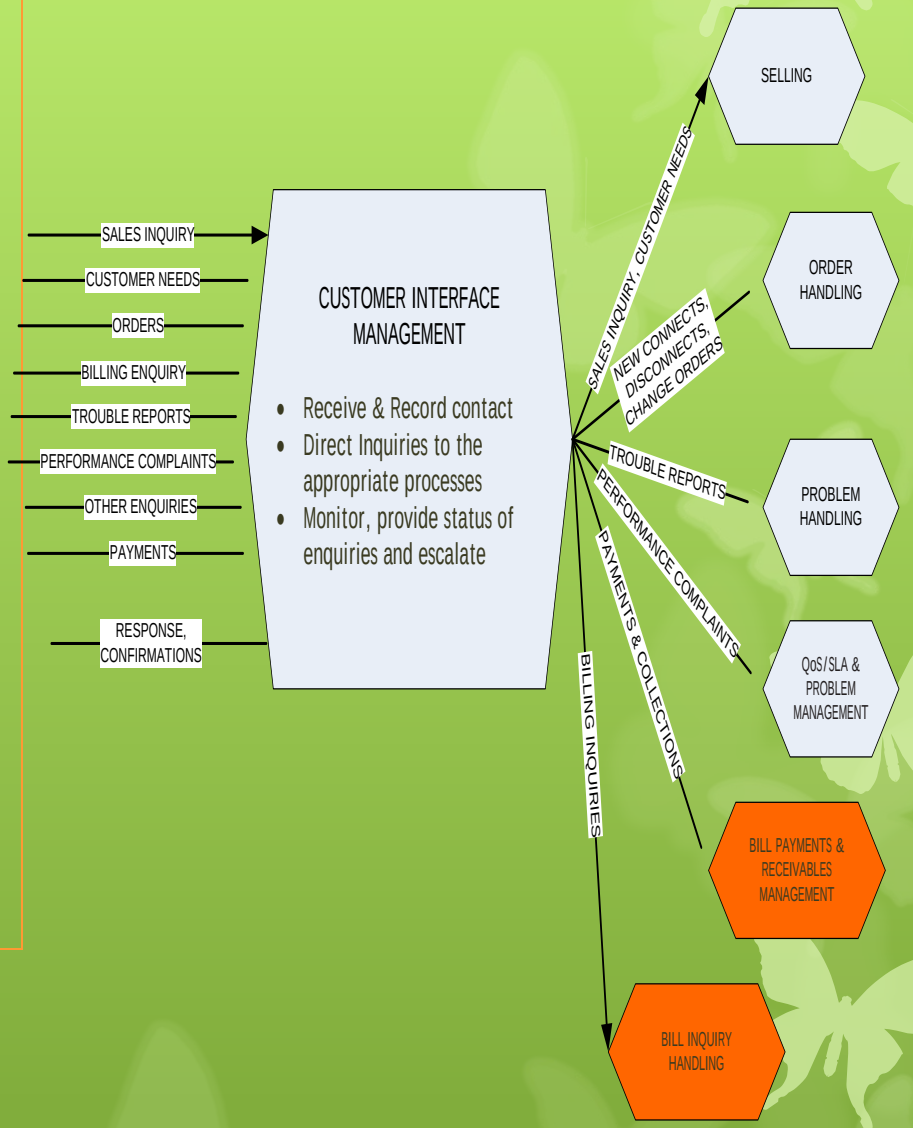
Rating & Calculation of Charges

Invoicing

Billing

In a broader classification, Billing process can be considered of consisting of the following sub-processes.

- CUSTOMER INTERFACE MANAGEMENT
- BILL PAYMENTS & RECEIVABLES MANAGEMENT
- BILL INVOICE MANAGEMENT
- BILL INQUIRY HANDLING
- SERVICE & SPECIFIC INSTANCE RATING



Bill Payments & Receivables Management

- ensures that service provider revenue is collected through pre-established collection channels
- procedures are put in place to recover past due payments.

Bill Inquiry Handling

- ensures timely and effective response of all customer bill inquiries and complaints.

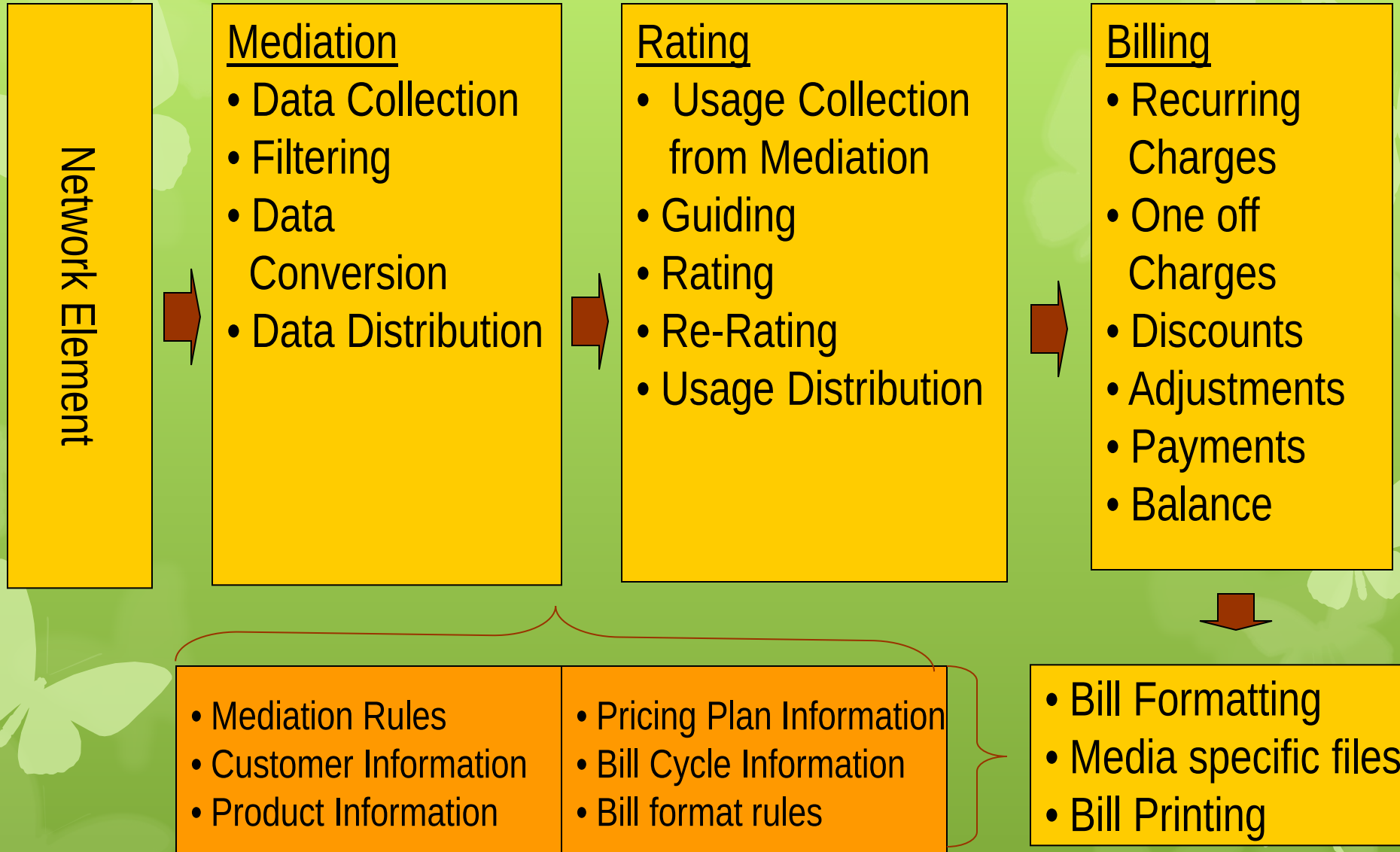
Bill Invoice Management ensures

- the bill invoice is created
- the appropriate taxes, discounts, adjustments, rebates and credits have been applied
- distributed to customers

Service & Specific Instance Rating processes

- manage service events by correlating and formatting them into a useful format.

Billing Functional Architecture



Mediation & Rating

- Call records known as call detail records or CDRs are generated at different network elements which connect the call
- CDRs are transferred automatically to a mediation system at regular intervals.
- There could be partial CDRs

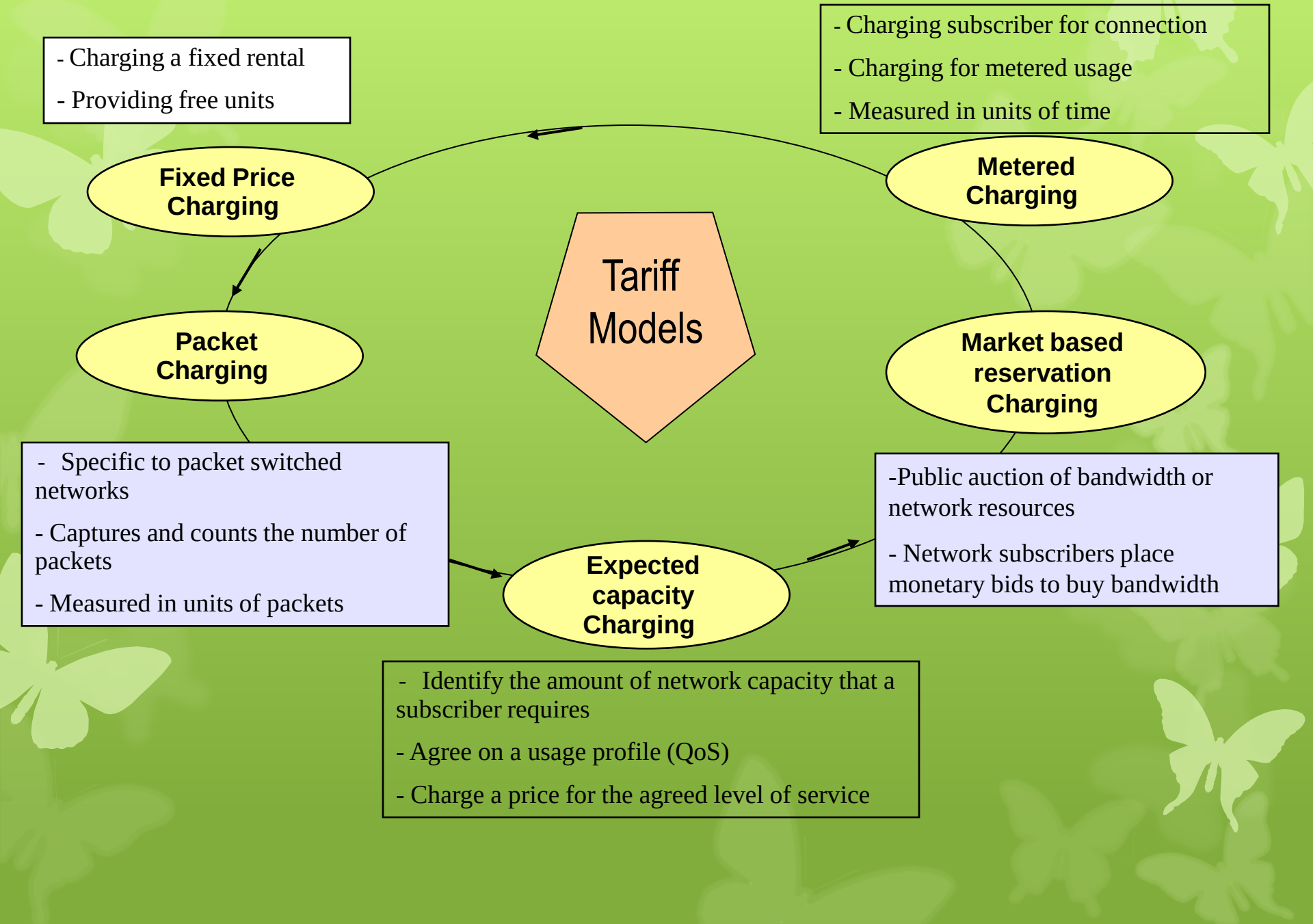
The mediation system

- converts these CRDs to a format understood by the billing system
- drops the duplicate records
- forwards them to the billing system.

Rating and billing

- Rates plans will be used
- Invoices will be generated

Tariff Models Evolution



Retail Customer – Billing - COTS

Key Entities of Billing

Customer- The company or the individual who has contacted with the organization.

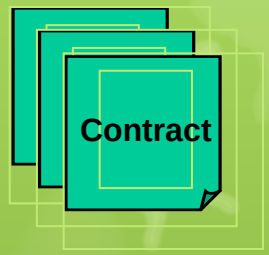
Account- A single entity that can receive a bill

Subscription / Service- Implies that a customer has "subscribed" to a particular service from the available service types.

Key Entities of Billing

Product- A specific service that results in a charge.

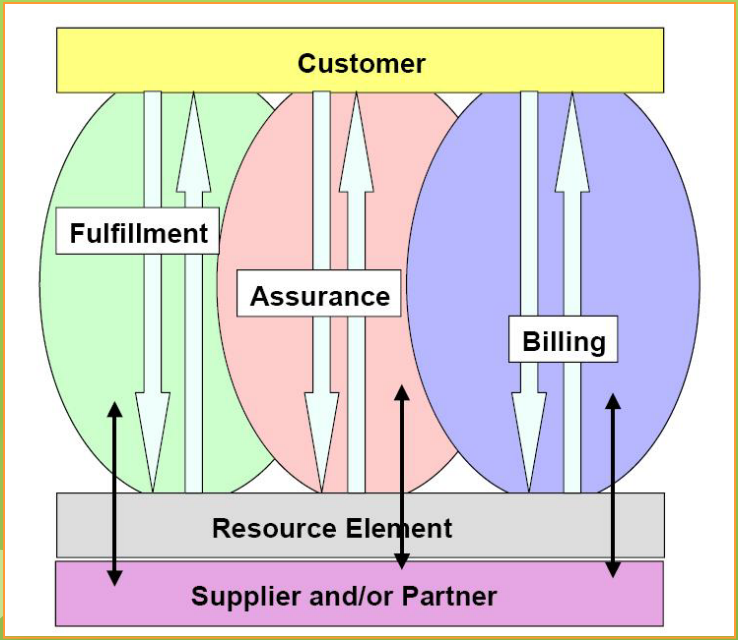
Contract- A special offering created for a customer with some products and services as bundle.



Product Package- Bundles together products and contracts into single entities

- To an account (all subscriptions)
- To a particular subscription

FAB ReCap



- The Customer predominantly initiates the Fulfilment.
- The Assurance process can be triggered by the Customer or the resource elements
- Billing flow is predominantly from data collection in the resource elements (regarding usage of resources) to bills presented to the Customer.
- The supplier/Partner layer includes processes that develop and manage supply chain that underpins products and organization infrastructure.

Thank You