Network Group

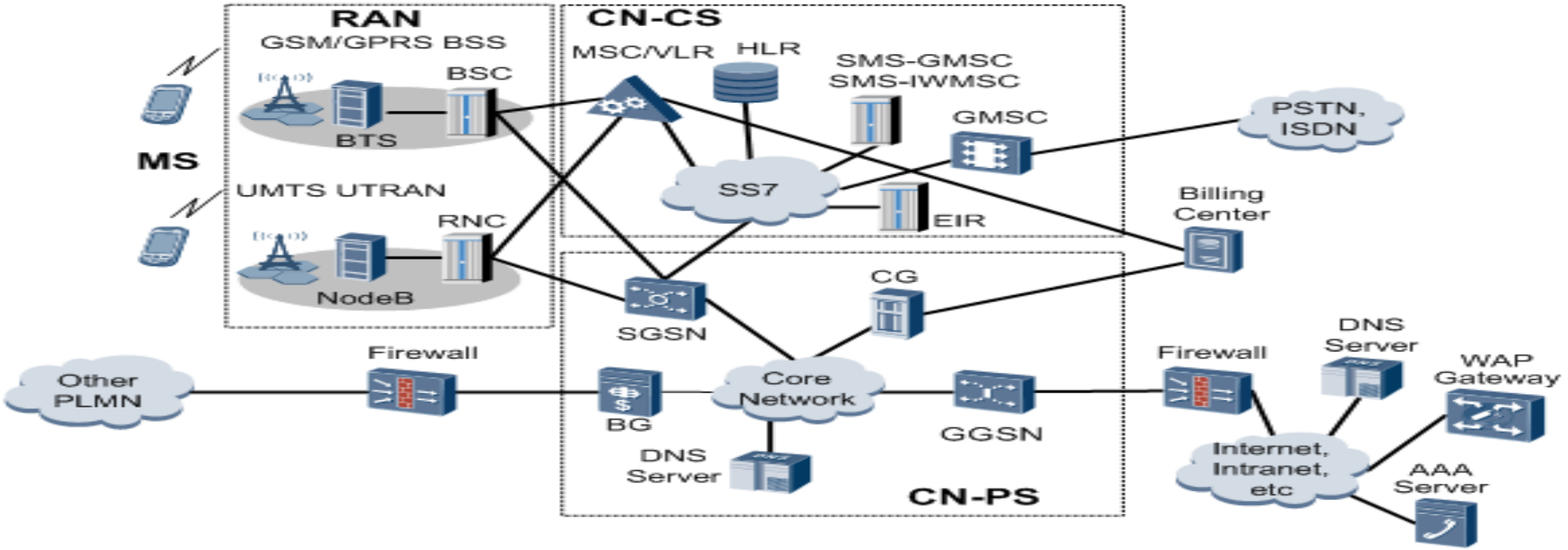
Induction Slides 2020

Network Group Induction Program Outline

- **Introduction**
- **Various Departments of the Division**
  - Planning (Engineering),
  - Transmission Planning
  - Operations & Maintenance,
  - Network Performance and SLA,
  - IP Network Infrastructure.
- **Work Flow**

Introduction

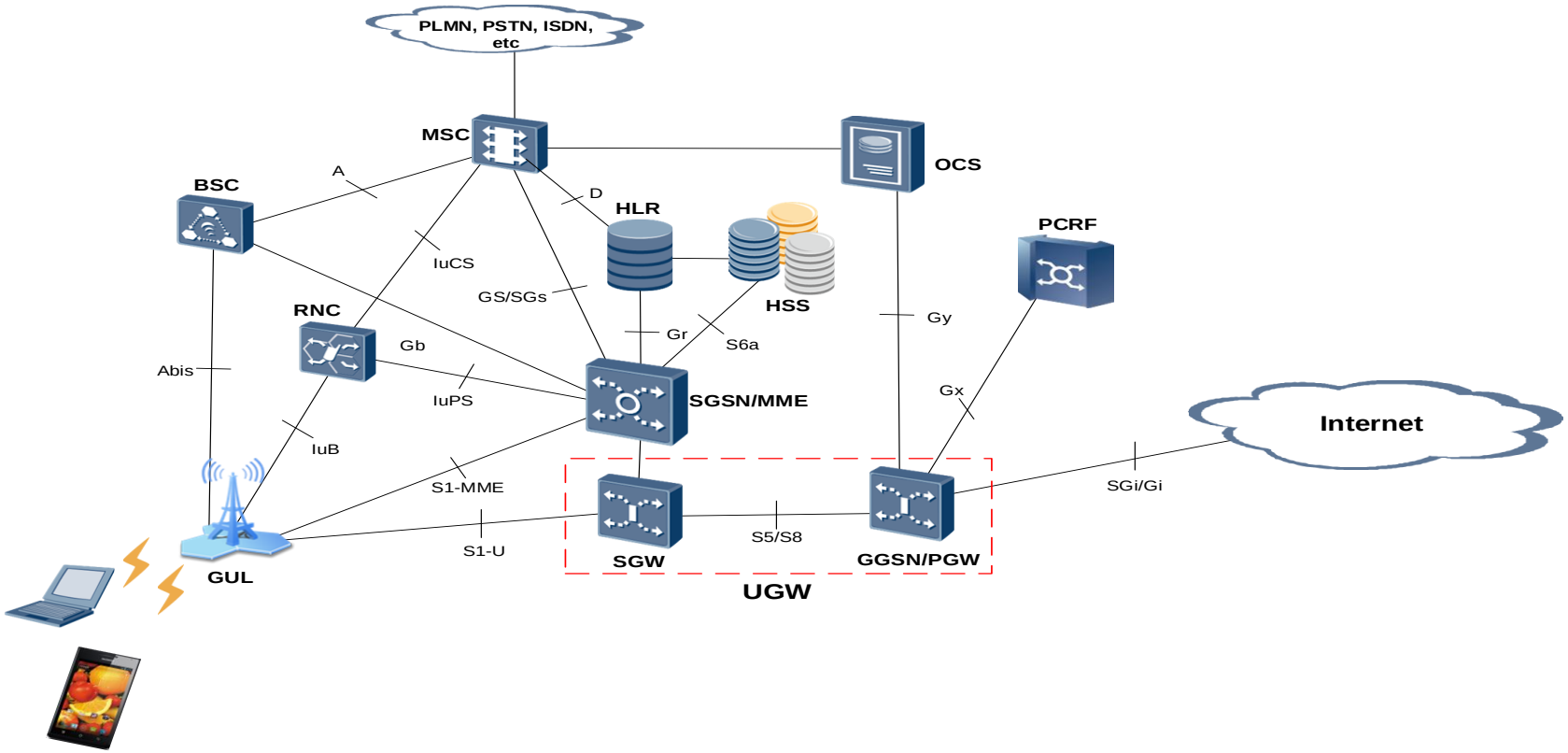
2/3G Network



MS: mobile station	RAN: radio access network	SMS-GMSC: Short Message Service - Gateway Mobile Switching Center
CN-CS: core network-circuit switching	CN-PS: core network-packet switching	SMS-IWMSC: Short Message Service - Interworking Mobile Switching Center
BSS: GSM base station subsystem	UTRAN: UMTS terrestrial radio access network	HLR:Home Location Register
BTS: base transceiver station	BSC: base station controller	MSC: Mobile Switching Center
NodeB: UMTS base station	RNC: radio network controller	VLR: Visitor Location Register
SGSN: serving GPRS support node	GGSN: gateway GPRS support node	GMSC: Gateway Mobile Switching Center
CG: charging gateway	BG: border gateway	EIR: Equipment Indentity Register
DNS: domain name server	AAA: authentication, authorization and accounting	SS7: Signalling System 7

Introduction

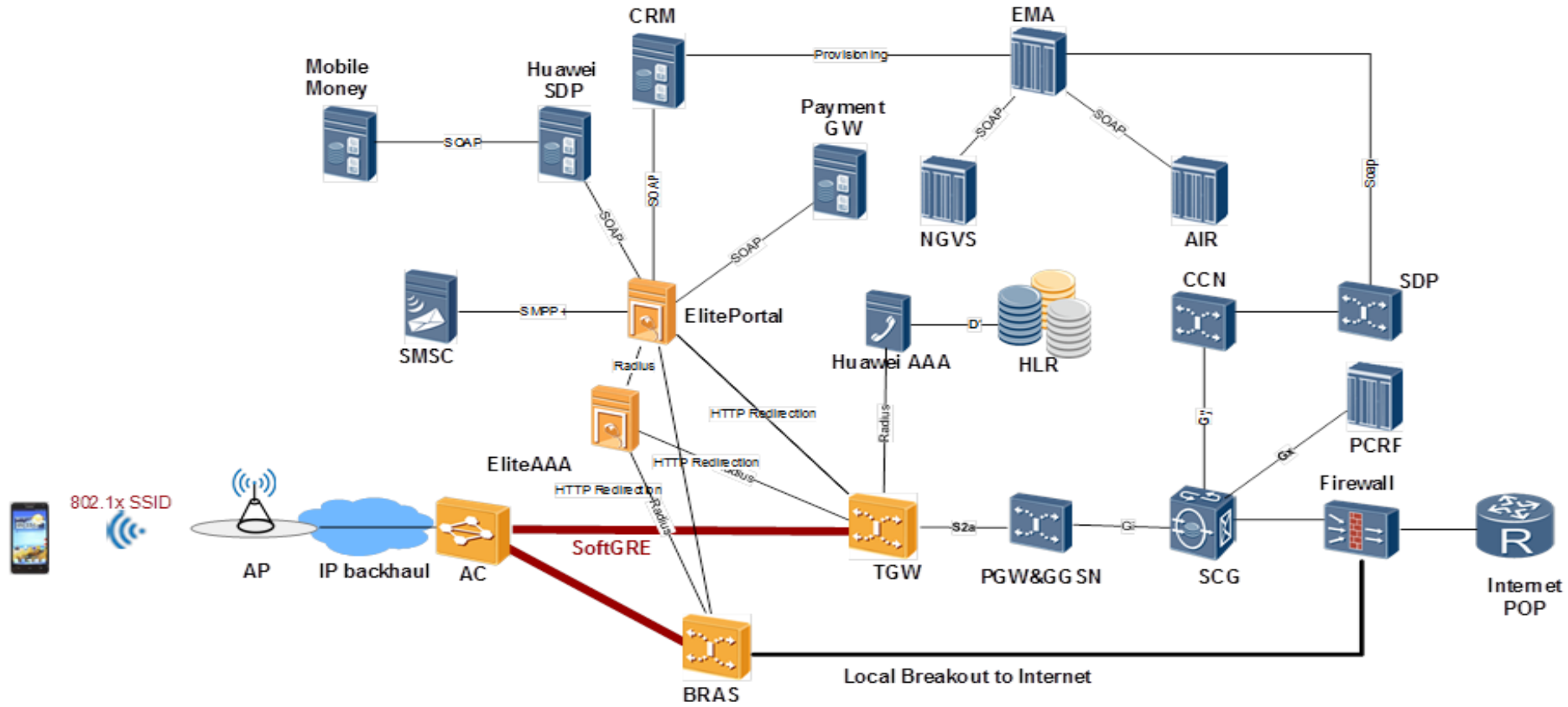
2/3/4G Network



BTS: base transceiver station	BSC: base station controller	NodeB: UMTS base station
RNC: radio network controller	SGSN: serving GPRS support node	eNodeB: evolved NodeB
MME: mobility management entity	HSS: home subscriber server	S-GW: serving gateway
MCF: Mobile Content Filter	HLR: Home Loaction Register	SCG: Service Control Gateway
P-GW: PDN gateway	PCRF: policy control and charging rules function	Mobile Switching Center
CCN: Charging Control Node	EMM: Ericsson Multi-Mediation	PCRF: Policy and Charging Rules Function

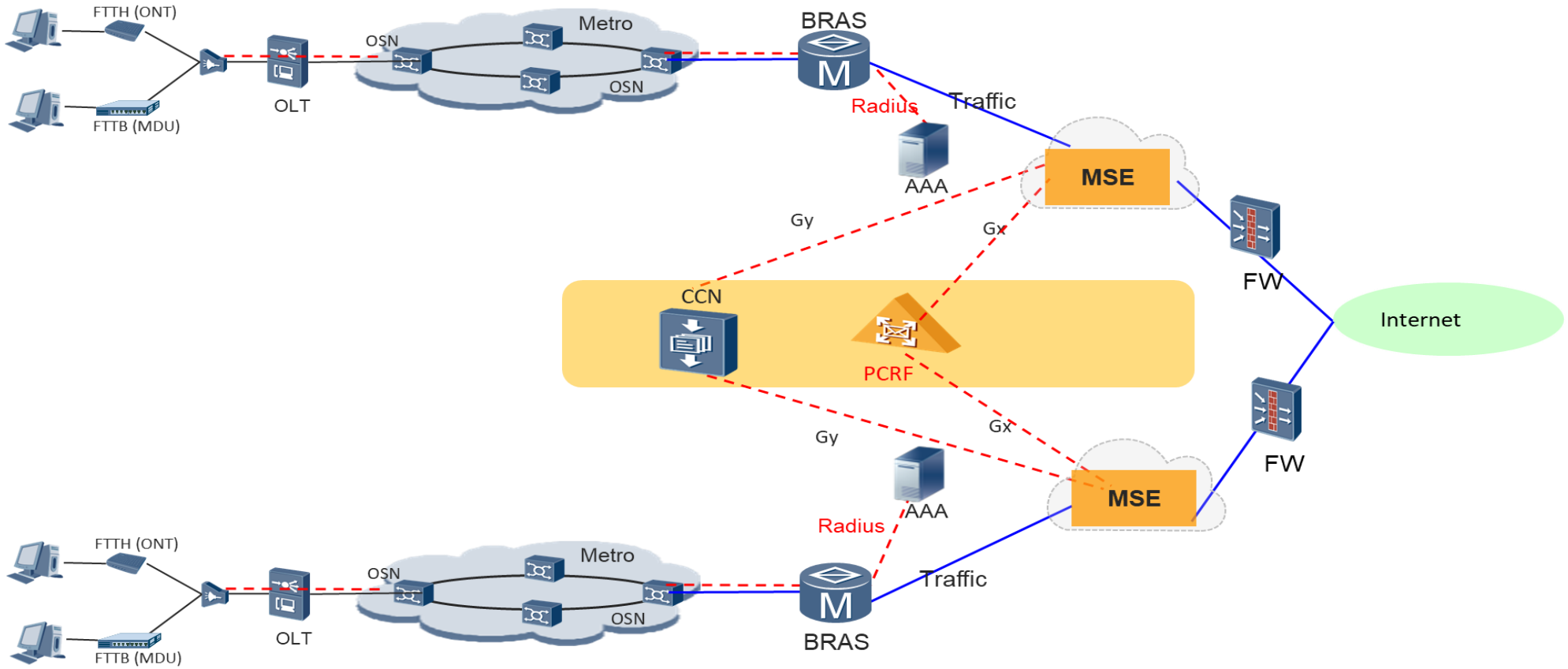
Introduction Cont'd

Wifi Network



Introduction Cont'd

FTTx (GPON) Network



Introduction Cont'd

The Network Group is responsible for the proper functioning of MTN-Ghana telecom equipment which makes our core business.

This Group is divided into 5 major departments each handling specific tasks and duties without overlapping via its various teams of hard working sections. The Departments are;

- Planning (Engineering),
- IP Network Infrastructure.
- Network Performance and SLA,
- Operations & Maintenance,
- Transmission Planning,

Introduction Cont'd

Network Group (NWG) works in close conjunction with all other Groups. Mostly with

i. Marketing

ii. Capital Projects Group (CPG)- Projects and roll out

iii. Information Systems Division – Billing and Charging and IN

iv. Huawei Manage Service (MSO) – Operations and Maintenance

Planning Department (Engineering)

This is made up of:

- Core Planning
- RAN Planning

The department is responsible for planning and setting the norms for the different aspects of the telecom equipment mainly:

- Radio Access Network Planning and Optimization
- Core Network Planning and Optimization
- Offer and Proposal Studies and preparation
- Budgeting for new expansions areas.
- Monitoring of network performance and ensuring it is within defined thresholds.

Transmission Planning Department

This department is responsible for:

- Transmission Planning and Optimization
- Offer and Proposal Studies and preparation
- Budgeting for new expansions areas.
- Monitoring of network performance and ensuring it is within defined thresholds.

Operation & Maintenance Dept.

This department is made up the following sections:

- Network Operations
- Network Maintenance

The Operation & Maintenance Department works hand in hand with the Huawei Manage Service (MSO) Team. The Huawei MSO is an outsource Operation and VAS Department. Its work is to monitor and control all network's systems provided by the company.

Operation & Maintenance Dept. Cont'd

- The Operation and Maintenance Department's work is;
- Ensure that Huawei MSO performs according agreed SLA/KPIs.
- Ensures network issues are reviewed, reported, processed and resolved in specified timelines per SLA.
- Monitor QoS and strive to meet the Network Group's objectives.
- Attends to Internal & External customers' complaints.

Operation & Maintenance Dept. Cont'd

- Ensure problems/faults are escalated to the appropriate internal/external stakeholders to speed up problem resolution according to agreed KPIs.

Networks Performance and SLA Dept.

- This department is made up of the following sections:
  - Network Quality Monitoring & Reporting
  - Network Systems Support

- The Networks Performance and SLA department is responsible for identifying network problems, resolving and ensuring quality network by:

- Responsible for all Managed Service contract reviews and change management activities.

- Directing various inspection test procedures.

Networks Performance and SLA Dept.

- Establishing and maintaining records for network quality controls.
- Liaise with vendors and Managed Service Provider to ensure integration of statistical platforms and ensure integrity of reports.
- Develop policies, processes and procedures for the Group.
- Build up statistics to perform trend analysis and trouble shoot areas of non-performance.

IP Network Infrastructure Dept.

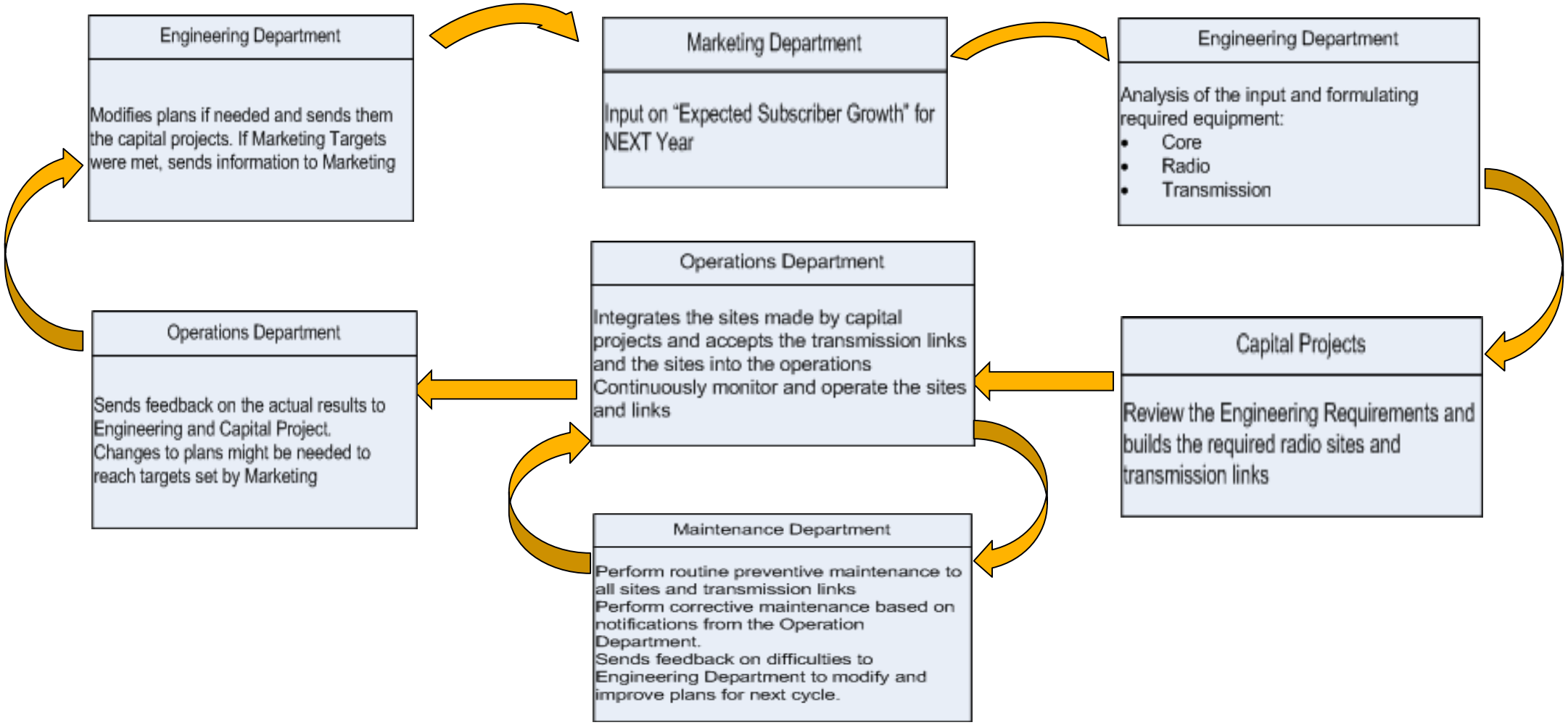
This department is made up of the following sections:

- IP Networks Planning & Implementation
- IP Networks Security

The department is responsible for planning and setting the norms for the different aspects of the telecom equipment mainly being:

- Planning for Network Equipment like Routers, Switches and other network equipment for the company.
- Ensuring adequate head room on all Networking nodes.
- Planning IP related activities and ensuring the security of the MTN Network against attacks.

Work Flow

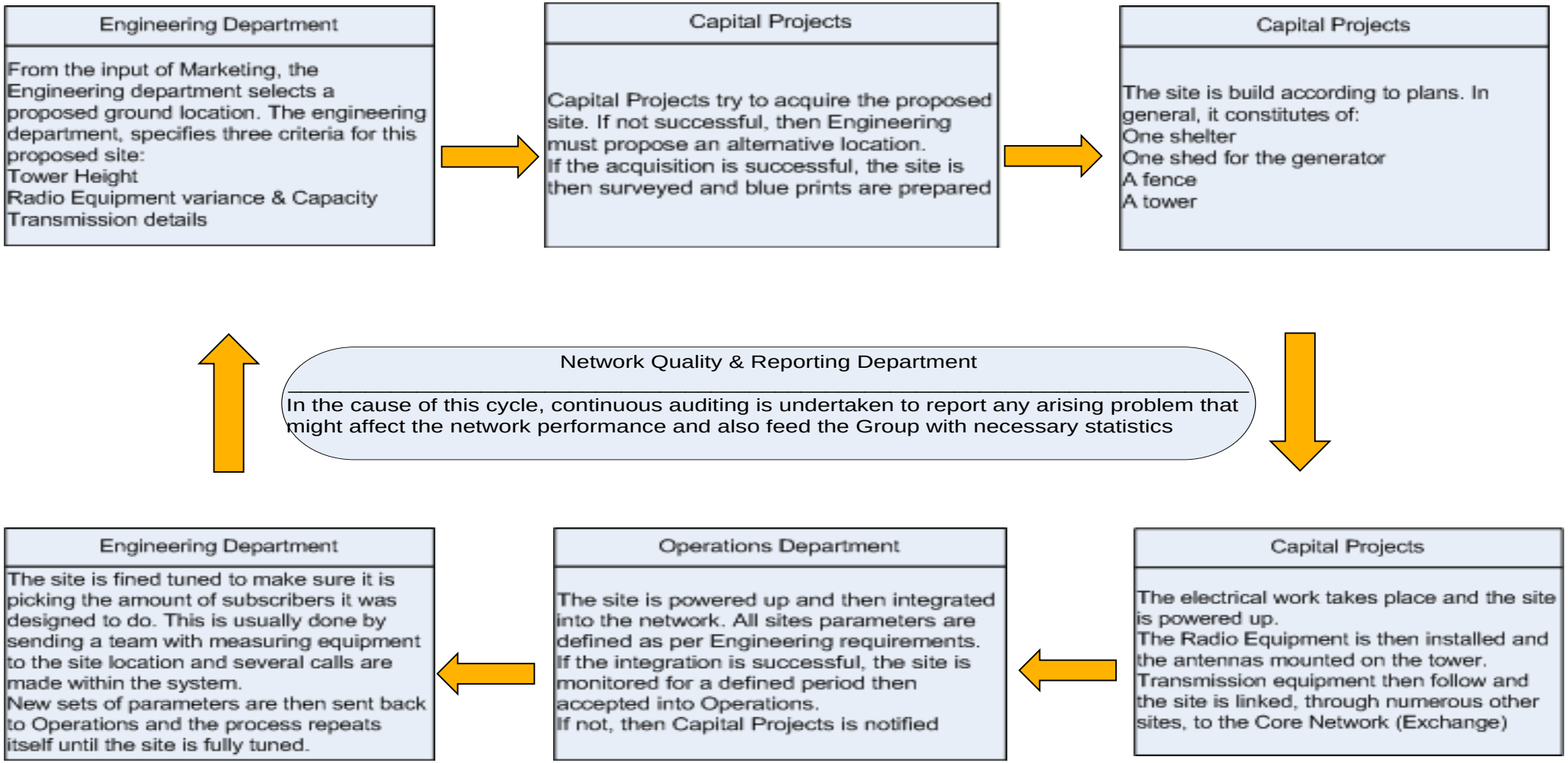

Engineering Department
Modifies plans if needed and sends them the capital projects. If Marketing Targets were met, sends information to Marketing
Marketing Department
Input on "Expected Subscriber Growth" for NEXT Year
Engineering Department
Analysis of the input and formulating required equipment:
• Core
• Radio
• Transmission
Operations Department
Integrates the sites made by capital projects and accepts the transmission links and the sites into the operations
Continuously monitor and operate the sites and links
Operations Department
Sends feedback on the actual results to Engineering and Capital Project.
Changes to plans might be needed to reach targets set by Marketing
Capital Projects
Review the Engineering Requirements and builds the required radio sites and transmission links
Maintenance Department
Perform routine preventive maintenance to all sites and transmission links
Perform corrective maintenance based on notifications from the Operation Department.
Sends feedback on difficulties to Engineering Department to modify and improve plans for next cycle.

Work Flow (Cont.)

The work flow, described earlier, is not a one time job but rather a continuous process. Sometimes, this process overlaps and does not work continuously with previous processes.

In the Network Group each cycle is named “Phase” which normally last for approximately, 6 months.

Work to put ONE site into Operations



Work Flow (Cont.)

The work flow, described earlier, is repeated for every single site. As seen, it is not a one man job, but rather a team work with cross functional dependencies.

A good candidate for the Network Group is a dependable Team player with abilities to bring up innovative ideas and shear them to find suitable solutions to frequent problems.


y'ello
everywhere you go
MTN