

TELECOMMUNICATION MANAGEMENT for NON-TECHNICAL MANAGERS (TMfnTM)



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BACKGROUND

A complete generation of highly competent managers have joined Telecommunication companies, but are sometimes at a disadvantage due to the Telecommunication jargon that is banded about. Important managerial decision is often influenced by the fact that the manager is not aware of the strategic implications of technological decisions. The *TELECOMMUNICATION MANAGEMENT for NON-TECHNICAL MANAGERS* short course is designed specifically for managers and executives who are new to the World of Telecommunications.

This short course provides a deeper insight into the key philosophical trends that define the ICT landscape on a day-to-day basis. It also provides a brief understanding how each of these technologies work, but more important it highlights the strategic implications of these technologies in a fast-moving ICT landscape. Business Models and a variety of Business Cases linked to various technologies (Mobile voice and data, Cloud and Fibre) are discussed to provide a deeper insight into the interlinked discipline of Telecommunication management.

The course is presented in such a way that difficult technical concepts are conveyed in an easily understood format. It also gives the managers a safe and secure forum where they could ask open questions about technology that may be difficult to do in other forums.

The *TELECOMMUNICATION MANAGEMENT for NON-TECHNICAL MANAGERS* short course is designed to assist executives and managers who are new to the field of ICT to make sense of this complex business and technological environment.

MODULES DEFINED AND DEBRIEFED

The different modules in sequential order are listed below. The course is presented over three (3) consecutive days.

<u>Module Name</u>	<u>Duration (days)</u>
Technological influences	0.5
Dynamics and forces in the ICT Environment	0.5
Telecommunication Network Strategy	1.0
Mobile Technologies	0.5
OSS / BSS & Telecommunication Business Models	0.5

A short description of each of the modules and its outcomes are given below:

Module TMN 101 Technological influences

Description:

In this module the participants are given a view of the future in terms of technological advances because the future is the time frame that we will spend most of our time in. The changing technologies that inform the ICT environment as well as their direct influence on the mobile environment are discussed.

Outcomes:

- ▶ Understand the ICT landscape and how the developments in the SA Telecommunication Environment influence the need for Converged Networks.
- ▶ Explain the impact and challenges associated with the technology explosion in the Telecommunication environment.
- ▶ Discuss the different technology based scenarios in the Telecommunication Environment.

Module TMN 102 Dynamics and forces in the ICT environment

Description:

In this module the participants are made to understand trends in the marketplace and how this drive ICT companies towards Converged Services. The notion of scenario planning is discussed and different scenarios are debriefed to enlighten participants in terms of possibilities, opportunities and challenges.

Outcomes:

- ▶ Explain scenario planning and the tools to be used to achieve that.
- ▶ Discuss the move towards Value Added Services within the South African context.
- ▶ Display a deeper knowledge of Convergence and the impact this will have on the Marketplace.
- ▶ Discuss the Telecommunication Marketplaces in the rest of Africa.
- ▶ Explain the impact on the ICT Environment if the trends that were highlighted are taken into consideration.
- ▶ Display a deeper knowledge of competitor activity and how to respond to them.
- ▶ Discuss the most important challengers in the ICT Environment in general and the Telecommunications Field specific.

Module TMN 103 Telecommunication Network strategy

Description:

In this module the participants are given a strategic view on the relationship between core and fixed networks and how that impacts on decisions regarding converged networks. This module provides for an overview on changing telecommunication landscapes.

This module also provides an overview of the tactical and strategic issues in the Telecommunication environment in general and specific issues related to core, fixed line and mobile technologies. In riding the wave of convergence, it gives a bird's eye view of service provider investments in these networks around the world and the respective drivers thereof. It also covers issues such as:

- From subscriber to broadband consumer – evolving value propositions for broadband consumers.
- Evolving enterprise value propositions.
- From bit and voice minute to value wholesaling.
- Marketplace dynamics.
- Applications in a world of abundant bandwidth.
- New application and convergence strategies.
- Network and service evolution scenarios.
- Business models for and charging of new services, and
- Value added services and competitor analysis.

Outcomes:

- ▶ Analyse typical examples of solutions available in the marketplace to understand 21st century networks requirements and to assess possible development and deployment roadmaps.
- ▶ Explain how cloud will impact upon Network strategy.
- ▶ Explain the impact of IOT on Network strategy.
- ▶ Understand the impact of Software Defined Networks.
- ▶ Understand and apply network optimisation strategies in a converged environment.
- ▶ Understand and apply network-dimensioning procedures in a converged environment.
- ▶ Differentiate between key products and philosophies of main vendors.
- ▶ Explain the opportunities for agile players.
- ▶ Evaluate the effectiveness of Voice over IP, web-voice integration in call centres.
- ▶ Simplify service provisioning and tarification.
- ▶ Implement Network security, firewalls, IPsec and security related issues.
- ▶ Analyse the reduction of capital equipment costs.
- ▶ Discuss Television over IP and other applications.
- ▶ Explain the strategy behind the operations of VoIP over an all IP Network.
- ▶ Implement a thorough security plan.
- ▶ Explain the differences between Layer 2 vs. Layer 3 and network equipment.
- ▶ Understand actual business logic applied by service providers around the world who already embraced the technology and its link with the local market context.
- ▶ Understand the impact of next generation technologies on the consumer retail, enterprise retail and wholesale offerings.

- ▶ Pursue how other service providers are moving beyond their traditional fixed or mobile borders.
- ▶ Understand how major telecom players worldwide are evolving their networks and services.

Module TMN 201 Mobile Technologies

Description:

In this module a deeper look is taken into the technologies used in mobile networks that have changed rapidly since the inception of mobile networks more than a decade ago. It covers some of these technologies as well as their application area. Since different types of networks may be constructed and various routes taken to these network configurations, it is necessary to be familiar with the various technologies and possible application of these technologies.

Tactical issues relating to mobile networks are also discussed. Participants are introduced to the elements involved with the tactical design issues of mobile networks. The planning of mobile networks is covered in this module as well as the different types of networks specific methodologies. The planning process is also divided into various subparts; in many instances it may be seen as an iterative process and is discussed accordingly

Outcomes:

- ▶ Explain the basic evolution of technologies in mobile telecommunications.
- ▶ Understand the elements in a radio network.
- ▶ Understand the elements of a transmission network.
- ▶ Understand the elements of the core networks.
- ▶ Explain the elements and composition of a GPRS / EDGE network.
- ▶ Discuss the WCDMA & HSDPA networks.
- ▶ Understand the opportunities in Software Defined Radio (SDR).
- ▶ Understand the impact of UTRAN LTE on network evolution.
- ▶ Explain propagation effects and parameters.
- ▶ Discuss the optimisation of the various types of mobile networks, e.g. GPRS networks.
- ▶ Discuss the key performance indicators for the various types of mobile networks.
- ▶ Understand WCDMA, WiMAX and UTRAN LTE network optimisation, in terms of radio and transmission networks.
- ▶ Discuss and understand the components of link budget calculations.
- ▶ Discuss the impact of Software Defined Radio and the implications for Frequency Refarming.
- ▶ Explain location selection.
- ▶ Understand network dimensioning.
- ▶ Understand basic design principles.
- ▶ Explain the radio network pre-planning and planning process.
- ▶ Understand capacity planning.

- ▶ Understand GPRS network planning and network optimisation, specifically radio network planning and the radio planning process.
- ▶ Understand WCDMA, WiMAX and UTRAN LTE network planning.

Module TMN 202 OSS / BSS & Telecommunication Business Models

Description:

The purpose of this module is to give the participants an introduction to Operational Support Systems (OSS) and discuss the impact of OSS on the operator's bottom line. The most important focal point is the introduction of the NGOSS and the effective implementation of these methodologies. OSS Management models are evolving and attention is given to the impact of converging networks on OSS/Network Management. Time is also spent on OSS/Network Management standardisation. This module will give the participants an overview of OSS X Service Management with regards to a horizontal unifier for resource management systems and value add to resource management. The module will also focus on the Business Models used by Mobile Network Operators.

Outcomes:

- ▶ Understand the need for Operational Support Systems, Inventory Management, Performance Management and Network Data Management.
- ▶ Understand the Operational Challenges in the Telecommunication Market.
- ▶ Understand the various OSS frameworks/models.
- ▶ Understand the role OSS plays in achieving Operational Excellence.
- ▶ Understand the impact of NGN technologies on OSS technology.
- ▶ Understand the emerging standards in Converged Network Management solutions.
- ▶ Understand the evolution of OSS.
- ▶ How to identify and apply common OSS Drivers.
- ▶ Understand future OSS Drivers.
- ▶ Discuss the operation issues related to Converged Networks.
- ▶ Describe the building of an optimal service ready network.
- ▶ Understand how to launch new services quickly.
- ▶ Understand how to provide secure visibility of network partitions.
- ▶ Understand the Business Models used by various Mobile Network Operators.

DELIVERY METHODOLOGY

The principle of customisation was taken into account with the development of this programme customising the learning interventions to the level of the target group and also to the outcomes to be achieved. One of the critical attitudes for success is one's relation to learning and development. Interventions with the correct emphasis on the relationship between Knowledge, Skills and Mindsets

were therefore constructed. All interventions are based on constructivist learning, accommodating multiple intelligences. This briefly means experiential learning and development with an emphasis also on peer-to-peer assistance and evaluation. Facilitator and expert intervention is central to the process for guidance and outcomes purposes.

Most, if not all, of the interventions will be delivered through physical contact sessions. Where circumstances dictate and technology is available, delivery via video conferencing will take place.

Each of the modules will have a study guide. In some of the instances textbooks will also be supplied as well as relevant articles.

REGISTRATION

This short learning course is registered with the NWU as a Short Learning Programme.

CONCLUSION

The purpose of this document is to give a brief summary of the modules that constitute the programme. The most important characteristic of this programme is that the knowledge transferred to the students is of such a nature that it can be practically applied. Although the programme encapsulates the latest thinking, both in a technology and management sense, the content of each of the modules is both practical and immediately implementable within the organisation. The facilitators on this programme have extensive experience in the Telecommunications environment and will therefore convey the content in such a way that the participants do not experience any gap between the reality they face every day and the content within the course.

Please do not hesitate to contact us for any enquiries.

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