



NORTH-WEST UNIVERSITY  
YUNIBESITHI YA BOKONE-BOPHIRIMA  
NOORDWES-UNIVERSITEIT



# PROGRAMME IN COMMERCIAL ACUMEN IN TELECOMMUNICATIONS

(14-days (over six months) short learning course)



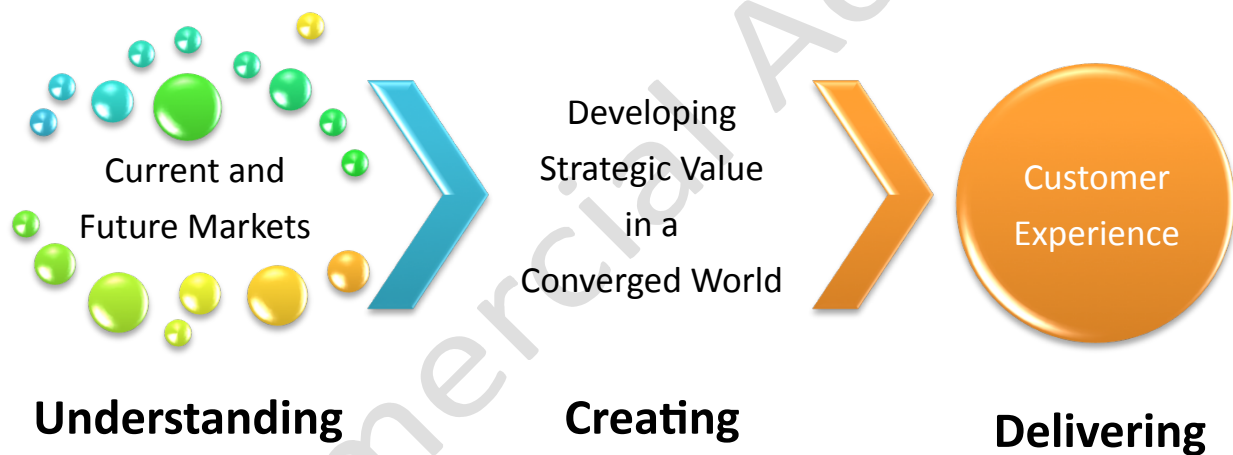
Compiled by ITS  
+27 (0) 82 355 2711  
2017

## BACKGROUND

The Programme in Commercial Acumen in Telecommunication Short Course (PCAT) is presented through the School of Business and Governance of the North-West University (NWU) in conjunction with the Institute for Technology Strategy and Innovation (ITSI).

The course aims to equip participants with **knowledge** and **practical skills** to enable them to:

- a) Obtain a deeper **understanding** of customer needs in the current and future market contexts and understand your company's positioning within these markets;
- b) **Create** solutions to improve the customer experience in a changing communication landscape in the medium term; and
- c) Implement practical solutions to **deliver** a better customer experience in a Converged environment.



The programme will use the latest insights into **Management Theory, Case Studies** and **Practical Workshops** to empower the participants to make a meaningful contribution to the organisation upon completion of the programme.

The programme therefore focuses on improving the entire customer experience in the short, medium and long term, within the context of a changing social, regulatory and technology landscape. A variety of management modules will be covered which includes the latest thinking in digital transformation, distribution channel reframing, pricing strategies, innovation, new product development, complexity management, increased customer knowledge through Machine Learning and Narrative Enquiry as well as ICT and enterprise architectural issues.

## OUTCOMES OF THE PROGRAMME

The programme outcomes are defined around the three core areas of:

- 1) Understanding the changing marketplace.
- 2) Developing Strategic Value in a Converged World.
- 3) Delivering the Best Customer Experience.

The outcomes of the programme are:

- Clearly understand the social, regulatory and technology changes in the market and the business opportunities it holds for your company.
- Build insights into innovation and design thinking that need to be used in product development.
- Appreciate your company's value proposition and brand identity and how it aligns with new products launched under its brand and the link to provide a better customer experience.
- Discover the importance of experimentation, entrepreneurship and innovation that can lead to breakthrough differentiation.
- Conduct a thorough market analysis through the use of narrative enquiry and machine learning in order to identify unique needs within the market segments identified.
- Develop communication strategies and meaningful brand loyalty through solutions that resonate with your company's context.
- Understand the importance of pricing innovation in different market segments.
- Understand the importance of the customer journey and how modifying each touch point can improve key KPIs.
- Create an understanding of how innovative pricing approaches drive commercial value and customer experience.
- Discuss frameworks, tools, insights and examples across a range of topics to apply and share with teams and leaders in the company.
- Establish a deeper understanding of Systems Thinking and Project Management principles in order to improve the Product Development roadmap.
- Develop an understanding of the technological and BSS/ OSS environments and the impact it has on service delivery options.
- Build a foundation in Project Finance Management controls and budgeting.
- Deliver a group based report in delivering the Best Customer Experience.
- Construct a personal plan of ideas, actions & commitments on how to resolve challenges & improve businesses processes

The Commercial Acumen course will cover the Technology requirements, Operational requirements, Tactical requirements and Strategy of a vast array of areas within the value chain with the focus on delivering the Best Customer Experience.

## MODULES DEFINED AND DEBRIEFED

The different modules in sequential order are listed below. These modules are context as well as content driven. Experts from the academic environment as well as from industry are used to present and facilitate the sessions.

<b>Module Name</b>
<b>SECTION A: UNDERSTAND (4 days)</b>
Business Unusual: New opportunities in the world of Telecommunication
Introduction to Complex Adaptive Systems
Reframing Business
Design Thinking
New product Development
Introduction to the Business Model Canvas
<i>Case Studies</i>
<b>SECTION B: CREATE (4 days)</b>
Branding and CRM in a Digital World
Brand Alignment and Market Segmentation
Narrative Enquiry
Introduction to Artificial Intelligence (AI) and Machine Learning (ML)
Core Needs analysis and Market Segmentation through AI
Billing Strategies and Revenue Assurance
<i>Case Studies</i>
<b>SECTION C: DELIVER (4 days)</b>
OSS/ BSS and eTOM
Systems Thinking & the impact on process improvement
Systems Thinking Tools
Change Management
Project & Programme Management
Financial Management & Project Finance
Business Planning

## CASE STUDIES ON COMMERCIAL ACUMEN IN THE TELECOMMUNICATIONS DOMAIN

A number of Harvard Business School case studies will be discussed during this course. The cases will be used throughout the course and discussed in detail. The participant will be required to prepare these cases fully in their groups to optimise the time used during their discussion.

Commercial Acumen needs to be addressed from 3 different perspectives:

- **From a strategy perspective:** the impact of technology on business models and strategy.
- **From a customer service perspective:** the integration of new technologies, gathering and management of data, and automation and enhancement of business processes.
- **From an implementation perspective:** new organisational forms, changing communication requirements, changing the information ecosystem underlying the business, and new performance measurement and incentive structures.

The Case Studies that will be discussed during the course will aim to cement the management insights that have been conveyed to the participants and will allow them to apply their knowledge in ecosystems that differ from their own. This will also guide their thinking in determining which business ideas are applicable in which ecosystem. The depth of immersion into management theory is quite useful, as it forces the participant to come up with innovative, yet grounded business ideas to deliver an enhanced customer service within the case study.

#### **Converged Telecommunication Strategy case studies:**

- ▶ Transforming Verizon 2015: Going Above the Network.
- ▶ Deutsche Telekom in 2016: Driving Disruption from Within the Industry.
- ▶ Developing New products in Emerging Markets.

#### **Market Innovation through Digital Disruption case studies:**

- ▶ Starbucks Canada: The Mobile Payments Decision.
- ▶ Use Big Data to Create Value for Customers, not just Target them.

#### **Enhanced customer service through Process Innovation case studies:**

- ▶ Transforming Verizon: A Platform for Change.
- ▶ Volkswagen Group: Driving Big Business With Big Data.

### **SECTION 1: UNDERSTANDING NEW TECHNOLOGIES, PRODUCT DEVELOPMENT AND BUSINESS MODELLING (4 days)**

In this section the participants are oriented and given an introduction into:

- ▶ Business Unusual: New opportunities in the world of Telecommunication.
- ▶ Introduction to Complex Adaptive Systems.
- ▶ Reframing Business.
- ▶ Design Thinking.
- ▶ New product Development.
- ▶ Introduction to the Business Model Canvas.
- ▶ Telecommunication Strategy Case Studies.

## ***PCAT 101: Business Unusual: New opportunities in the world of Telecommunication***

### Description:

This module will strive to make sense of forthcoming realities made possible via the Ubiquitous Internet, unpacking innovative business models and business trends from around the world and relating that to the more specific challenges the company faces. From this, business opportunities will start to emerge and will be discussed. The module will also highlight new business models spanning the entire economy and that are made possible by recently adopted user patterns in the world of mobility, artificial intelligence, user centric computing and social networking.

On the one side, the module will take the participant on a fascinating journey into a world where established business models are turned on its head. On the other side, the module will highlight the use of new technology in existing business models that enables significant advances in business efficiency and customer insights.

### Outcomes:

- ▶ Debrief new business models relevant to a hyper-connected business environment.
- ▶ Describe possible technological influences on the near future.
- ▶ Explain the concept of Disruptive Technology.
- ▶ Discuss the changes in customer requirements in a changing regulatory, technological and social landscape.
- ▶ Demonstrate knowledge and insight into the changes due to the abundance of processing power, storage space and bandwidth.
- ▶ Apply the perspectives of abundance and scarcity on new business opportunities.
- ▶ Understand and discuss the economic understanding of abundances and scarcities.
- ▶ Discuss the implications of the era of transparency.
- ▶ Explain the impact of IOT on the Telecommunication landscape.
- ▶ Explain how Big Data and AI can be used to identify areas of improvement.

## ***PCAT 102: Introduction to Complex Adaptive Systems***

### Description:

The VUCA acronym is by now synonymous with a description of an increasingly unpredictable world. Aside from platitudes about agility and responsiveness, the key question that is seldom answered is as follows: How do our management techniques differ in a world of predictability from the world of uncertainty and unpredictability?

In this module, the participant will be introduced to the Complex Adaptive System ontology. The premise that Human systems are by nature Complex Systems and that a new mind-set is required to manage Human systems more effectively, underpins this ontology.

Ask yourself the following questions:

- How often did the cause-and-effect relationship hold in the world of human complexity?
- How often did the marketing campaign reach its exact objectives?
- How often did the change management campaign have the exact desired outcome?
- How often did a new product enter the market based on exact projections?

It is abundantly clear that the predictable cause-and-effect relationship does not hold in the world of human complexity. Why do we then continue to use the management models and theories that the softer sciences borrow from their exact science cousins? Why do we want forecast sale projections on a new untested product? Why do we require financial projections from a small start-up? Why do we force marketing managers to accurately project customer uptake?

Complex Adaptive Systems is an alternative understanding of the world in comparison with the Ordered System ontology that was born out of the world of physics. The field is a few decades old and built on related disciplines such as evolutionary biology, virology and anthropology.

By introducing the participants to a number of theories and concepts based in the above-mentioned fields, it may be possible to obtain a deeper understanding of the mind-set we require to be successful in a world of increased complexity. The true lessons of Mother Nature will come to the fore and help guide our thinking in establishing a new management mind-set so that we can more effectively manage the turbulence ahead.

Outcomes:

- ▶ Define the difference between the 3 main ontologies.
- ▶ Explain what is meant by a Fitness landscape.
- ▶ Appraise how you can use a Fitness landscape in the domains of strategy, marketing and innovation management.
- ▶ Consider what is meant by non-linear thinking.
- ▶ Explain the impact of strange attractors, emergence and modulators on the field of innovation.
- ▶ Discuss the value of diversity and boundary conditions in nature and in the world of business.
- ▶ Compare the difference between resilience and robustness.
- ▶ Explain how self-similarity and self organising systems can impact your market research methodology.
- ▶ Discuss the importance of Exaptation in a changing business landscape.
- ▶ Explain the importance of the Cynefin Framework in managing innovation.

- ▶ Explain why Emergence forms the foundation of Unstructured Machine Learning.

### ***PCAT 103: Reframing Business***

#### Description:

In times where the only constant is change, organisations need to reframe their thinking, strategy and processes to stay competitive and relevant. We are operating in a complex world where a “best practice fits all” solution to challenges does not give optimum results any more. In this module the notion of reframing a business to ensure relevancy is discussed and debriefed. Extraordinary possibilities of success and failure lie in a gap between what is possible and what is organisational reality. The changing conditions brought about by an explosion in technology in general, are brought into context to optimise these possibilities.

#### Outcomes:

- ▶ Provide a vision of the future translated into precise objectives through the reframing of the business.
- ▶ Discuss various perspectives on the creation of new value in the economy.
- ▶ Assure a process of mindset reframing necessary to translate visions and objectives into results.
- ▶ Understand new perspectives on the strategies and companies that played leading roles in shaping new competitive landscapes.
- ▶ Identify the tools that can be used to alter the competitive landscape.
- ▶ Explain the interaction between the map and the landscape.
- ▶ Engage in and facilitate creative thinking sessions based on the Crane Methodology.

### ***PCAT 104: Design Thinking***

#### Description:

Design thinkers use four kinds of logic to understand their world. The four kinds of logic are referred to as deductive, inductive, abductive and complex adaptive thinking. The Design Thinking school of thought allows an organisation to use multiple perspectives to harness the knowledge at its disposal, to create and manage the requisite outcomes.

This Module gives participants new insights and a new set of tools in developing innovative alternatives for addressing business problems. The participants will be encouraged to explore creativity from individual and team perspectives, identify possible roadblocks within the organisation and identify innovation opportunities within the environment.

#### Outcomes:

- ▶ Use Commercial Acumen guidelines to define the Design Philosophy of the system and the User interface.



- ▶ Understand the challenge of innovation in a tightly constrained environment.
- ▶ Develop a broad range of high-value alternatives.
- ▶ Identify and work through conceptual blocks in idea generation.
- ▶ Utilise both top-down and bottom-up tools to frame business problems.
- ▶ Use customer experience as a driver of insightful idea generation.
- ▶ Cycle between qualitative iteration and evaluation to improve strategic options.
- ▶ Explore and communicate ideas with a broad set of tools.
- ▶ Review different creativity methodologies and models and select those that are appropriate for your business needs.
- ▶ Identify hurdles in your organisation's innovation.

### ***PCAT 105: New Product Development***

#### Description:

This module will focus on the provisioning of theoretical models in order to create insight into various dimensions of technology strategy. The insights will vary from the strategic context to the impact of various types of technologies on current business models. The insight will be solidified by using case studies that will portray the complex decisions that have to be made in order to make the correct decision in a changing environment. Aspects such as Disruptive Innovation and New Product Adoption Maps will be studied in detail, as well as various techniques to identify the core need of the client in order to construct more acceptable products or services into the marketplace. A deeper insight into the creation of new products and services will be discussed. Different types of projects will be highlighted, as well as the varying techniques in a managing them.

#### Outcomes:

- ▶ Conduct lead user research and use new techniques to generate new business ideas.
- ▶ Construct well-informed actions plans that will adapt the implementation strategy of a new product or technology to the key challenges posed by the various stages of the Technology Adoption Life Cycle.
- ▶ Utilise a New Product Development Map and structure various projects based on different core competency contributions.
- ▶ Understand the New Product Development Market.

### ***PCAT 106: Introduction to the Business Model canvas***

#### Description:

This part of the course provides an introduction to the Business Model Canvas and how it can be used to define not only a Value Proposition of a company, but also that of a new product. Participants will be introducing the various types of Value Propositions as defined by its Value Discipline. This insight will

later be used to define the Value Propositions and Value Discipline of the Operator and all its competitors. This will lead to a better understanding of your competitors and how it competes within the marketplace.

Outcomes:

- ▶ Use the Business Model Canvas to map a company and its Value Proposition.
- ▶ Apply the Business Model Canvas to map a new product.
- ▶ Align Resources with the Core Market needs.
- ▶ Identify various types of Value Disciplines.
- ▶ Use Value Disciplines to map the Value Proposition of the Operator and its competitors.

**PCAT 107: Case Studies**

Case Study discussions:

These case studies will allow the participants to obtain a deeper insight into new business models that disrupt the status quo. The insight gathered from the Complex Adaptive Systems module will be integrated into various Technology Management frameworks to allow a deeper understanding of market co-creation and eco-genesis – the combination of technology probes and sense making techniques to develop new behaviour patterns within markets.

- ▶ Transforming Verizon 2015: Going Above the Network.
- ▶ Deutsche Telekom in 2016: Driving Disruption from Within the Industry.
- ▶ Developing New products in Emerging Markets.

**SECTION 2: DEVELOP STRATEGIC VALUE IN A CONVERGED ENVIRONMENT (4 days)**

This section is aimed at introducing alternative ways of thinking, as well as developing a new skill set that is required to develop strategic value and to understand the market more effectively and includes the following.

- ▶ Branding and CRM in a Digital World.
- ▶ Brand Alignment and Market Segmentation.
- ▶ Narrative Enquiry.
- ▶ Introduction to Artificial Intelligence (AI) and Machine Learning (ML).
- ▶ Core Needs analysis and Market Segmentation through AI.
- ▶ Billing Strategies and Revenue Assurance.
- ▶ Case Studies.

## ***PCAT 201: Branding and CRM in a Digital World***

### Description:

Customer management may be seen as the application of customer knowledge across the organisation to maximise mutual value. This module incorporates various customer-centred strategies such as service customer journey modelling, retention strategies, loyalty programmes, satisfaction programmes and relationship marketing, where all is aligned to best serve the most important asset of the organisation, the customer. In short: “CRM: It’s about how your company make the customers feel!” It is also important to understand and expand your brand and get customers to be loyal to your brand. The power of branding and brand alignment is also discussed. The key insight will be to manage all these elements within a Digital Ecosystems dominated by Social Media, Big Data and Ubiquitous connectivity.

This module will also allow the participants to map the Customer Journey for a specific product or service. The participant will be introduced to a variety of Customer Journey mapping tools that will enable them to enrich the CRM process.

### Outcomes:

- ▶ Identify ways of getting and keeping the right customers through Big Data analysis.
- ▶ Understand the concepts of customer lifetime value and how to use it.
- ▶ Motivate employees to understand the personal benefit they will derive from focusing on customer relationships and the digital processes that must be in place to support it.
- ▶ Benchmark your performance against those who are successful at establishing and maintaining profitable relationships.
- ▶ Understand the concepts of branding and how it is used by several organisations.
- ▶ Identify ways of using the brand to differentiate both the company and its products in a new Digital Era.
- ▶ Discuss the concepts of brand promises and how they are used.
- ▶ Distinguish between main brand strategies and the way it can be implemented in organisations.
- ▶ Benchmark your positioning against that of competitor products in the marketplace.
- ▶ Identify the various steps in the Customer Journey map.
- ▶ Explain how you can use digital processes to support the entire Customer Journey.
- ▶ Explain how your processes can be changed or re-engineered to optimise the Customer Journey.
- ▶ Apply the Egg model to map the Customer Journey, as well as the supporting processes that have to be put in place.
- ▶ Classify online and offline activities to enrich the Customer Journey.

## ***PCAT 202: Brand Alignment and Market Segmentation***

### Description:

This module provides a further discussion on Branding. Brand identity is critical for a company that has a variety of different products and market segments. It is critical that any new product and its associated advertising campaign be aligned with the overall brand identity of the company. The different brand identities of the competitors will also be analysed and critiqued. Various different techniques will be discussed to differentiate market segments, although the company will still align its various activities under its dominant brand archetype.

Outcomes:

- ▶ Explain the link between brands and archetypes.
- ▶ Identify the major archetypes used in the most dominant brands.
- ▶ Link the archetypes to the companies own brand position.
- ▶ Analyse and discuss the different brand identities of the competitors.
- ▶ Compare different market segmentation strategies.
- ▶ Explain the pros and cons of different market segmentation approaches.
- ▶ Link Core Benefits to targeted market segments.
- ▶ Discuss the various market segments used by a Company's competitors.
- ▶ Discover how Brand Archotyping can be used in a Market-of-One scenario.
- ▶ Explain how AI and Big Data can realistically create a Market-of-One.

***PCAT 203: Narrative Enquiry***

Description:

Narrative enquiry is used to identify hidden patterns of behaviour and thoughts that cannot be identified using traditional patterns of inquiry. To understand the patterns that exist within a complex social system, we use a process of narrative inquiry. The reason for this focus on stories is that human beings make meaning of their life experiences through the stories we tell our fellow human beings. We string together different experiences and stories we hear into coherent narratives that make sense to us. This over time influence how we make decisions and how we behave. We should be careful to use linear scale questions which gift or guide the answer we want, and limit the insight that we can obtain from the customer. We need to gather and understand the narratives that are informing people's meaning-making and decisions. A narrative inquiry can take many different forms depending on the methods we choose to use, be it narrative circles or micro-narrative enquiry. In essence, the process involves gathering stories by asking open questions that contain no hypothesis.

Outcomes:

- ▶ Understand the deep inefficiencies and inaccuracies of the current methodologies used in market research.
- ▶ Obtain a deeper understanding of human brain behaviour and sense-making.

- ▶ Identify hidden patterns of human interaction.
- ▶ Obtain a deeper insight in organisational diagnostics and market research.
- ▶ Link micro-narratives with human sense-making to create advanced decision support, research and monitoring capability.

### **PCAT 204: Introduction to Artificial Intelligence (AI) and Machine Learning (ML)**

#### Description:

The most valuable resource we have in the universe is intelligence, which is simply information and computation. However, in order to be effective, technological intelligence has to be communicated in a way that helps humans take advantage of the knowledge gained. The optimal way to solve this problem is a combination of human and machine intelligence working together to solve the problems that matter most.

One of the most important departure points in the AI and ML journey, is to develop a deeper understanding of the difference between Human and Machine Learning. This understanding is one of the most important foundations of this course, as it highlights the differences of the outcomes of each approach. It also allows us to understand the limitations of each approach and allows us to optimise our endeavours in order to obtain the optimal value of each approach. In the end, it is the synergy that will be created in the joint understanding of the outcomes of Human and Machine Learning that will lead to the overall success of AI in the workplace.

#### Outcomes:

- ▶ Explain the foundational elements of Human Learning.
- ▶ Compare the foundational elements of Machine Learning.
- ▶ Identify the foundational differences between Human and Machine Learning.
- ▶ Discuss the optimal way to combine Human and Machine Learning.

### **PCAT 205: Core Needs analysis and Market Segmentation through AI**

#### Description:

One of the disciplines in ML is called *Unsupervised Machine Learning*. These Algorithms are normally used when there are no labels associated with data points. These ML algorithms organise the data into a group of clusters to describe its structure. This allows complex data to appear simple and is organised for further analysis. One of the most popular uses of *Unsupervised Machine Learning* is to obtain novel market segmentations based on user behaviour (if sufficient data sets of user behaviour exists about your company's customer base). This section will provide insight into the algorithms and ML techniques used to obtain deeper market insight by making use of various *Unsupervised Machine Learning* algorithms. (<https://www.dezyre.com/article/top-10-machine-learning-algorithms/202>)

#### Outcomes:

- ▶ Explain the use of ML to obtain deeper insights into user needs and behaviours.
- ▶ Analyse how Unsupervised ML is different from Reinforced Machine Learning and Supervised Machine Learning, and why it is used for Market Segmentation.
- ▶ Conclude what insights can be gathered from novel market segmentation approaches.

### ***PCAT 206: Billing Strategies and Revenue Assurance***

#### Description:

In this module the participants are given an overview of different Billing strategies and the impact they have on revenue. Dynamic billing, as well as Revenue Assurance will be covered in this module.

New Business Strategies and Business Models are discussed in a world where revenue is inexplicably moving from a voice dominant revenue environment to an environment typified by data convergence.

#### Outcomes:

- ▶ Compare the notion of “from subscriber to broadband consumer” – evolving value propositions for broadband consumers.
- ▶ Discuss the evolution of enterprise value propositions.
- ▶ Explain the process from bit and voice minute to value wholesaling.
- ▶ Understand business models for and charging of new services.
- ▶ Explain how you can practically implement dynamic billing services linked to network capacity.
- ▶ Identify which processes should be in place to assist with Revenue Assurance.

### ***PCAT 207: Case Studies***

These case studies will allow the participants to apply ideas in developing new initiatives to improve marketing and customer service within the Harvard Business Case Studies under discussion.

#### Case Study discussion:

- ▶ Amazon.com, Inc.
- ▶ Starbucks Canada: The Mobile Payments Decision.
- ▶ Use Big Data to Create Value for Customers, not just Target them.

### **SECTION 3: DELIVERING THE BEST CUSTOMER EXPERIENCE (4 days)**

This section is aimed at providing the participants with the necessary tools to implement the ideas that originated in the previous modules, and the tools to manage people, systems, projects and the financial implications associated with it. In this section, the skillset required to manage and implement the chosen

business project will be discussed. The key focus will be on the alignment and management of human, digital and financial resources in order to implement the desired project. This section consists of:

- ▶ OSS/ BSS and eTOM.
- ▶ Systems Thinking & the impact on process improvement.
- ▶ Systems Thinking Tools.
- ▶ Change Management.
- ▶ Project & Programme Management.
- ▶ Financial Management & Project Finance.

### ***PCAT 301: OSS/ BSS and the eTOM framework***

#### Description:

This module will give the participants an overview of the eTOM framework and how it can be used to architect, plan, execute and manage processes across the various OSS / BSS systems within your company.

#### Outcomes:

- ▶ Understand the need for Operational Support Systems, Inventory Management, Performance Management and Network Data Management.
- ▶ Discuss the Operational Challenges in the Telecommunication Market.
- ▶ Understand the various OSS/BSS frameworks/models.
- ▶ Explain how the eTOM framework can be used to plan and manage new BSS processes.

### ***PCAT 302: Systems Thinking & the impact on process improvement***

#### Description:

Systems thinking is a discipline of seeing the whole picture, recognising patterns and interrelationships within the organisation's wider ecosystem and learning how to plan and implement more effective, efficient and creative system solutions. This course will introduce students to basic concepts of systems thinking. The primary emphasis will be the introduction of basic systems thinking fundamentals.

System Thinking is a holistic approach to analysis that focuses on the way that a system's integral parts interrelate and how systems develop, change and adapt over time and within the context of larger systems. The systems thinking approach contrasts with traditional analysis, which base its foundation on reductionist analysis. ([www.searchcio.techtarget.com](http://www.searchcio.techtarget.com) › BPM › Business terms)

In a variety of business contexts, management models are used to reduce complexity. A recipe approach is proposed to solve the problem in a few steps. In reality, simplicity and common approaches are far from effective in dealing with complex, dynamic and diverse problems. Despite the initial apparent ease and comfort, focus tends to be on the elements of the problem, rather than the “bigger picture”; and

typically there is no consideration of interactions and the belief that there is one best solution. As more and more programme failures escalate, there is an increasing need to improve and create better results through systems thinking.

The ideas around Business Process Reengineering will be juxtaposed with ideas on Resilience to ensure Efficiency and Agility where and when needed. The primary emphasis will be the introduction of basic systems thinking fundamentals, i.e. defining a systems perspective about any situation or problem, solving problems within that perspective, describing and modelling a problem and designing and improving upon system solutions.

#### Outcomes:

- ▶ Understand and document system thinking objectives.
- ▶ Establish a basic understanding of systems thinking terminology and theory.
- ▶ Understand processes, methods and tools used within the system thinking world.
- ▶ Evaluate when it is appropriate to apply thinking methods, i.e. reductionist methods (i.e. data collection, scientific method) as opposed to applying systems thinking methods (i.e., Systems Engineering, Breakthrough Thinking/Smart Questions, etc.).
- ▶ Describe and model solutions that will enable system thinking (mind maps, feedback & causal loops, behaviour over time diagrams).
- ▶ Apply systems engineering and analysis techniques to various problems.
- ▶ Convert system thinking objectives into a problem statement that can be solved by traditional engineering disciplines.

#### ***PCAT 303: Systems Thinking Tools***

#### Description:

The Systems Thinking Body of Knowledge has developed a number of tool and practices that can be used to instil system thinking within contemporary business challenges. In this session we will look at a variety of tools to assist the participants in System Thinking. This will include the discussion on the following tools:

- ▶ The impact of Digital on the design of new processes.
- ▶ The difference between Hard, Soft, Evolutionary and Complex Adaptive Systems.
- ▶ Hard Methods: Systems Analysis, Systems Engineering, Operations Research.
- ▶ Soft methods: Soft Systems Methodology, Rigorous Soft Method, Breakthrough Thinking.
- ▶ Systems Engineering & System Architecting.
- ▶ System Concept & Design.



## ***PCAT 304: Change Management***

### Description:

Digital transformation is the result of a changing technological and social environment, which in turn lead to a changing business environment. The impact is not only on strategy and leadership, but also the never-ending quest for increased productivity and customer service.

These forces cause organisations to implement new systems that require quick adoption by its employees. The resulting need for change management is now becoming prevalent within organisations; the ability to drive and implement Digital Transformation projects is becoming an important competency for most management roles in modern organisations.

As with many large transformation projects, digital workplace initiatives are often met with resistance from a variety of vested interests in the organisation. The management of stakeholders within the change process will be critical to its success.

### Outcomes:

- ▶ Identify the actions required to identify the various stakeholders and possible actions to obtain their buy-in.
- ▶ Compare positive emerging archetypes to assist with adoption strategies.
- ▶ Identify adjacent possibilities to create probing strategies to enhance adoption.
- ▶ Explain the importance of creating user personas and stories.
- ▶ Develop sense-making methodologies to manage the various probes to modulate change.

## ***PCAT 305: Project & Programme Management***

### Description:

Projects normally require top management to play a strong and focused role; hence there is no lack of visibility or available budgets. The most critical success factor in these projects is the right project management.

This module will focus on the key skillsets and techniques that are required in managing a successful project. Initiatives often have to contend with developing and implementing new processes while the old processes are still active and used to support the current business activities. Techniques like Agile and DevOps, which have their foundation in IT Project management, will also be discussed within the context of projects.

### Outcomes:

- ▶ Explain why Project management does not have to be comprehensive and that the focus on the key projects management deliverables (scope, schedule, project status, risks, benefit planning) is normally sufficient.
- ▶ Explain what is meant with Agile and DevOps and how these ideas are merged into project management.
- ▶ Explain the planning of the agile implementation steps, together with the ability to manage dependencies (between several projects).
- ▶ Analyse alternative scenarios via the use of project management tools such as Microsoft Project.
- ▶ Discuss the importance of scope management.
- ▶ Evaluate why changes to the business case or business model play a key role in changes to scope.
- ▶ Discuss why speed and the delivery of results are always at the forefront while iterations and extensions come later on.
- ▶ Appraise when and how the customer becomes involved.
- ▶ Plan how vendors and external partners (software suppliers, consulting partners, other service providers) are integrated into project planning.
- ▶ Plan the early integration of the post-go-live process.
- ▶ Explain why management activities are determined by persons that in the end are responsible for the planned benefits.
- ▶ Discuss why overall project planning and management activities should never be performed by the vendor or software manufacturer, but rather by a neutral and independent third party.

### ***PCAT 306: Financial Management & Project Finance***

#### Description:

The primary objective of every business enterprise is to make a profit, which is used to compensate the owner for the use of his capital and/or to reinvest in the enterprise. This module introduces the participants to both financial and management accounting concepts that are critical to the successful understanding of and participation in operating a business undertaking.

#### Outcomes:

- ▶ Interpret financial statements to apply trends and make assumptions.
- ▶ Distinguish between different financial ratios that would be most useful to the primary users of financial statements.
- ▶ Critically discuss how changes in activity affect cost behaviour, contribution margin and net income.
- ▶ Explain the link between budgets and the strategic plans and the processes that organisations use to create budgets.
- ▶ Motivate decisions about significant outlays on long term projects and their financing.
- ▶ Review and analyse the unique risks that multinational organisations face.

## Business Planning – The Process

### Description:

Participants will be immersed in the process of writing a Business Plan for the purposes of compiling a report.

### Possible Outcomes dependant on the type of Innovation chosen:

- ▶ Discuss Commercial Acumen's role on Innovation, entrepreneurship and change.
- ▶ Get insights into introducing the Business and its Management.
- ▶ Define Products and Services.
- ▶ Assess the Market.
- ▶ Develop a Marketing Plan.
- ▶ Manage Sales and Distribution.
- ▶ Determine Financing Requirements.
- ▶ Consider Key Financial Data and Financial Projections.
- ▶ Develop a competitive Business Strategy.
- ▶ Manage technology.
- ▶ Populate the resources map.
- ▶ Integrate all the above into an executable Business Plan.

## ASSESSMENT

The assessment framework of the PCAT is built around the following:

- ❖ Individual and group assignments to assess the understanding of the key concepts and that will be relevant to the applicant's functional environment.
- ❖ A theoretical examination.
- ❖ Group report on Telecommunication Case studies.
- ❖ Peer-to-peer assessment is conducted in the contact sessions and is facilitated by the presenter/facilitator. Reflection is done to ensure an understanding of the knowledge areas that are covered.

## The PCAT Faculty

### **Theko Makhoalibe (B.A. M.Phil)**

Theko is a Business Futurist and Strategist focusing in the areas of strategic foresight, business model innovation and digital platform architecture through tech start-ups. He is currently consulting with Blank Canvas Int. in their strategic advisory services portfolio and Sustainability Summit. He is managing

partner and Head of Strategy of IoT Africa Holdings (Pty Ltd), which is an innovative company in the ICT space with the aim to open Africa's digital corridor through IoT technologies.

He is affiliated with various think tank institutions ranging from the Institute of Futures Studies as a research associate, the Centre for Global Enterprise as a global scholar, a member of the MIT Solve CoLab Intelligence community and a member of the MIT tech start-up network where he founded three platform start-ups. He is the winner of the MIT Global Start-up Lab Ignitor award and the prestigious UCT Genesis Innovation award.

He holds a degree in Human Resources and Organisational Psychology from the University of Kwazulu Natal, a Post Graduate Diploma in Future Studies from the University of Stellenbosch Business School and he is currently completing his Masters thesis (MPhil in Future Studies) with the University of Stellenbosch (due to complete in 2017). His thesis research area focuses on "How can business in Africa harness exponential technologies in the Fourth Industrial Revolution by 2025".

#### **Roald Kvevli (B.Sc Eng MBA)**

Roald has resumed his role as an Independent Telecommunications Consulting Professional and is currently focused in the areas of telecommunications business and technology strategy, telecommunications technology rollout and planning, telecommunications network and product costing, telecommunications cost optimization, business planning and modelling, and network systems integration. He holds a degree in Electronic Engineering and an MBA.

#### **Dr. Jay van Zyl (PhD)**

Jay is an innovator and entrepreneur in the world of technology innovation. He spent the last 20 years working at the cusp of innovative technology and business models in product design and delivery. His interests include mega-waves of change and how humans transform themselves through cycles of innovation. The first half of his career he spent on caring about the "how" of innovation, leading up to the completion of his PhD in 2001. The influence of digital and technological inventions on the human, lifted his focus to the "why" humans innovate. After working for six years on "Built to Thrive", he realised that the world of innovation is entering another major wave of re-invention.

He is an adjunct faculty at the Gordon Institute of Business Science and California State University. "Built to Thrive, making your mark in a connected world" was published in 2011 and focuses on the social aspects of innovation. The "Process Innovation Imperative" book focuses on innovation in product companies originally published in 2003. He recently worked with the "Innovation for Jobs" community in Silicon Valley as the lead analytics partner based at the Stanford Research Institute.

### **Tonie Tollig (B.Eng M.Eng)**

Tonie has a large differential skill range which he primarily acquired while being involved in the Telecommunication sector for the past 15 years and has experience in the following key areas:

- Regulatory, Engineering and Operational Business & Cost Modelling – Played the principal role in many projects requiring modelling for cost analysis, regulatory models (LRIC, CCA & AS), scenario planning and the launch of new operations and/or networks as well as products/price plans.
- Business Analyst and Telecommunication operational specialist- Define, design and/or optimise the business, functional and operational requirements of mobile and fixed telecommunication operators. This was performed with the intention to perform revenue assurance, launch new operators, launch new mobile products and/or source and implement prepaid and postpaid Billing and Customer care systems.
- Network Technical Consulting - Knowledge of mobile -, fixed (fibre and copper) - and fixed wireless access, ISP, network core and related voice technologies. He has consulted to mobile, fixed operators and regulators with regard to the strategy, implementation, and operational complexities and costing of these.
- Strategic Consulting – Tonie has been a core member of a number of Telecoms Industry Strategic Consulting Assignments, and has built up a commanding knowledge of the strategic background and core drivers of the Telecoms industry as a whole. His contribution has primarily been focused around marketing and technical related issues.

### **Pieter Geldenhuys (B.Eng MBA)**

Pieter Geldenhuys has a degree in Electronic Engineering, an MBA specialising in Technology Strategy and is currently busy with a PhD thesis on Innovation Management. He is guest lecturer at Cornell University, Henley Business School, Duke, GIBS and NWU. He was the previous Vice-Chair of the Innovation Focus Group at the ITU (International Telecommunication Union) in Geneva, Switzerland. He is the Founder and Director of the Institute for Technology Strategy and Innovation, aligned with North-West University.

### **Ryan Gould (B.Com, MA (SA))**

Ryan is a Chartered Marketer with almost 2 decades of marketing experience across several disciplines and segments. Ryan was the previous CEO of IPSOS South Africa and the General Manager: Brand & Communications at MTN.

He specialises in Customer Insight, Marketing Intelligence, Strategy and Business Planning, Brand development, Integrated Marketing Communications, Digital marketing, PR, Sponsorship and Media Strategy.

### **Dobek Pater (MA MBL)**

Dobek Pater currently works at Africa Analysis in the capacity of a Telecommunications and Market Analyst. Dobek has participated in numerous telecommunications projects, assessing both telecommunications markets and telecommunications technologies in various countries in Africa. Dobek has experience in servicing a diverse base of clients (operators, service providers, infrastructure suppliers, government departments and agencies), as well as market monitoring bodies such as regulators.

### **Sonja Blignaut (B.Sc)**

Sonja is the Co-founder and executive director of the Narrative Lab (TNL). TNL's main focus is the application of complexity principles and narrative research to assist large organisations to understand intractable problems and gain actionable insight.

### **Dr. Melani Prinsloo (B.Com, M.Com, PhD)**

Melani is a director of Infusion, a marketing research company in South Africa and teaches marketing and customer relation management while also being adjunct member of faculty at Ecole Nationale Ponts et Chaussees, Paris, France; Grenoble School of Management, France and Helsinki School of Economics. Her work has appeared in journals such as Advertising Express, International Journal of Technology Marketing and International Journal of Marketing Research.

## **DELIVERY METHODOLOGY**

The principle of customisation is 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 of contact blocks. Where circumstances dictate and technology is available, delivery via video conferencing might take place. Each of the modules will have a complete study guide. In some of the instances textbooks will also be supplied as well as relevant articles.

## DURATION AND ACCREDITATION

The programme consists of 14 contact days (12 facilitated days and 2 days for the report) and will be presented over a period of 6 months. The programme will be registered at NQF Level 6 (7) with 60 credits.

## CONCLUSION

The purpose of this document is to give a brief summary of the sections and 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 academic world as well as in the Financial Services and Technology environments. A unique training environment is created where new ideas can be created, internal ownership of the ideas can be fomented and business cases can be created out of these ideas. This is the key to realising ROI on training expenditure, while allowing new ideas to take the organisation into the future.

## ACKNOWLEDGEMENTS

The following online resources were inter alia used in informing some of the content of this document:

- [https://hbr.org/search?search\\_type=search-all&term=case+studies](https://hbr.org/search?search_type=search-all&term=case+studies)
- <https://web-app.usc.edu/soc/syllabus/20091/32387.doc>
- <https://blogs.nvidia.com/blog/2016/07/29/whats-difference-artificial-intelligence-machine-learning-deep-learning-ai/>
- <https://www.dezyre.com/article/top-10-machine-learning-algorithms/202>
- <http://www.nonlinearcreations.com/Enterprise/how-we-think/articles/2017/02/Change-Management-for-digital-workplace.aspx>
- <https://www.campana-schott.com/de/en/company/ceo-blog/blog-detail/the-moment-of-truth-how-important-is-project-management-to-the-digital-transformation/>
- <https://www.campana-schott.com/us/company/ceo-blog/blog-detail/the-moment-of-truth-how-important-is-project-management-to-the-digital-transformation-1/>
- <http://www.heinz.cmu.edu/Courses/308syl.pdf>
- <http://www.datasciencecentral.com/profiles/blogs/human-brain-vs-machine-learning-a-lost-battle>