Tomorrow starts today

Seamless Communications
Driving Efficiency and Customer Engagement
# Introduction: What is Seamless Communications?

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Introduction – What is Seamless Communications?

There is a new digital reality in business. Consumers are increasingly connected by ever-advancing technology; they are ‘always on’ and expect businesses to be similarly available. The pace of business is getting faster, with near-immediate responses no longer seen as a benefit but as the norm.

The number of mobile workers is also continuing to grow, while the need for access to specific data, applications and expertise at any point can be critical. Mobile connectedness has therefore become key for any smart enterprise that wants to operate effectively and efficiently.

In today’s digital environment, employees need to be able to work from just about any place at any given time, from their office to their home and anywhere in-between. Workers need to remain fully integrated with their organisation and customers, irrespective of where they are. **Location becomes unimportant; it is availability that is crucial**, making staff omnipresent.

This becomes important in serving the new digital customer, who demands the best experience at the best price, anytime, anywhere. There is increased importance placed on the personalised journey that has evolved from a linear purchase path to a dynamic, omni-channel experience. The digital customer is always in the channel, but evaluation, not purchase, has become the new focal point.

Businesses have to adapt to these changes by enabling their workforce to be as connected as the customer. This can be challenging, especially for employees who are mobile, on the shop floor, or in the field.

The coherency of a company will therefore be increasingly determined by the intelligence of its network. In essence, the network becomes the organisation, spreading to connect all aspects of the company.

A seamless communications capability, therefore, aims to alleviate any disconnection between mobile and stationary networks and services. This allows the company to provide a uniform communications environment so that employees, customers and other third-party participants can communicate easily and efficiently across different media and technologies.
In order to provide an exceptional customer experience and digital interaction, many organisations are embarking on a digital migration journey that will result in a more aligned customer experience strategy.

By implementing a seamless communications capability with new technologies such as mobility, social media, cloud computing, big and small data, machine-to-machine (M2M) communication and new connectivity platforms, companies can negotiate a far more complex environment. This represents an opportunity for them to refine business processes, models and strategies.

The key customer-experience related aspects that are the forefront of a digitalised seamless communication capability, and which are very different from the traditional or analogue era, are:

**Access to Information:** Digital customers expect immediate or real-time access to required information, as opposed to waiting for an organisation or supplier to provide it when available.

Businesses need to be able to interact with customers in real time at the customers’ convenience and to respond through their chosen channel be it SMS, social media, video, etc.

**Personalisation:** The days of one-size-fits-all marketing campaigns are over. Digital customers expect personalised interactions with companies and brands and expect that they leverage information (or data) from previous interactions.
Get closer to customers
- Position at the centre of customers’ commercial lives through new Products & Services
- Build customer intimacy through social media and direct comms.
- Reward customer loyalty through analytics

Offer a seamless experience
- Put mobile at the core of the offering
- Ensure consistent user experience across multiple channels - omnichannels
- Allow for a non-linear customer journey - across mobile, call centre and in-store

Reduce cost to serve customers
- Reduce the cost of recruiting new customers - digital marketing and sales channels
- Reduce the cost of maintaining and retaining customers - digital fulfilment and customer service

Connectivity platform
- Convergence
- Unified Communications & Collaborations
- Hosted collaboration
- Wi-Fi

The digital approach starts with research in order to identify and successfully provide customers with a personalised experience, preferably proactively. Organisations need to establish the capability to capture and compile an intelligent view or dashboard of customer interactions and information. This can be accessed in real time across the organisation (sales, call centre, marketing, product management, finance, legal, etc.).

Proactive contact: In the non-connected world, it is the customer who, in most cases, initiates contact, typically to enquire about a service or product, or to report back on the level of satisfaction on service rendered or experienced.

In the digital era, customers expect us to proactively monitor the services we provide, the customer-satisfaction levels they experience, and to notify them of new products or services that may be of interest.

Digital input and output: Paper-based and people-intensive processes are often tedious, laborious and complex, which significantly erode the customer experience. In the analogue world, most business workflows and processes are designed and implemented for the convenience of the organisation, not the customer.

Digital users truly dislike interactions and processes that are not digitalised or readily available day or night. This provides a reason to move on to an alternative vendor. The digital user expects all input and output to be digitalised.

Connectivity: Traditional communication capabilities are not conducive to the digital era as these services have not been deployed, designed or integrated for a multi-digital collaborative environment.

It is important to leverage the benefits of a unified mobility, telephony, rich media, video and data connectivity platform to enable real-time collaboration internally and externally to the organisation, anytime, anywhere.

With the focus on the customer experience and business drivers, organisations need to embrace a digital migration strategy that is mapped to their specific needs and is supported by a seamless communications framework, comprised of a solid connectivity foundation, and building blocks that will enable the execution of the strategy.

1Source: Tony De Sousa, ‘DIGITAL MIGRATION: Some Considerations’, 2015
When implementing seamless communications in a business, it is important to build it around a digital solutions framework that can be divided into three distinct layers.

At the top level, there is the ‘solutions’ layer, which looks at the business solutions that will be enabled by the communications infrastructure. It also looks at what types of customer-facing or internal solutions can be created or customised and what the capabilities of the solution will be; what business benefits it will provide and what processes it will enable. The solutions layer is focused on the business outcomes that are planned to be achieved and the resultant competitive advantage for the organisation.

These solution capabilities are enabled by a middle layer of ‘services’. This layer provides telecommunication and IT services that the business needs and includes services such as mobility, unified communications, collaboration capabilities and cloud services, etc.

The foundation layer is that of ‘infrastructure.’ It covers the underlying infrastructure that is needed to provide the communication and IT services at the middle layer. This can include access infrastructure (such as fibre access, Wi-Fi and radio access networks), network infrastructure and data centre or cloud infrastructure.

A ‘solution’ is therefore typically based on ‘services’ and application functionality that run on IT and telecommunication ‘infrastructure’. By fully integrating the network and communications elements of the services and infrastructure layers within the digital solutions framework, it is possible to create a seamless communications functionality within a business.

By linking this seamless communications capability efficiently into private and public data centre infrastructure and cloud services, one completes the foundational layers for creating dynamic and competitive business solutions.

The main elements of this digital solution framework are shown in Figure 2.
The Solutions Layer

There are many business solutions that can be enabled by implementing a seamless communications capability within a company.

These solutions are built on a foundation layer of communication services and infrastructure that can inform either private industry digital solutions or public e-services strategies.

Seamless communication capabilities have been seen to support solutions in government with initiatives such as the idea of e-citizen collaboration. This would allow citizens to communicate and interact with various government agencies through a variety of mobile and web applications. They can then receive notifications and alerts through a variety of channels and give input back in a seamless flow of information between government and citizens. By moving government services online it is possible to reduce friction and turnaround time for bureaucratic services that are currently major ‘pain points’ to both government and citizens.

Another such example is a digital document management solution that leverages the pervasive connectivity of a seamless communications capability to enable the digitalisation of all paper-based tasks and associated manual processes. By digitalising tasks, such as invoicing, ordering and record keeping, the business can optimise the processes and ensure secure delivery and storage of all data. It also means that all data is available to anyone who needs it at any time, from anywhere, as it is no longer tied to a physical object, and the company can implement a more robust audit trail around who accessed, changed and utilised the data.

The services and infrastructure layers

The layers of the digital solutions framework are a suite of communications services that are underpinned by an integrated infrastructure. Together they provide a ‘seamless communication platform.’
The communications services and infrastructure layers can, when provided in a well-integrated fashion, be viewed as a seamless communication platform. This platform and its associated communication services provide a foundation that underpins the digital ICT systems that run in a modern business. Examples of communication services on the services layer and network elements on the infrastructure layer are shown in Figure 3. The Business Convergence Centre is a one-stop service management interface.

Traditional communication capabilities are not conducive to the digital era as these services have not been deployed, designed or integrated for a multi-digital collaborative environment. We need to leverage the benefits of a unified mobility, telephony, rich media, video and data connectivity platform to enable real-time collaboration internally and externally to the organisation, anytime, anywhere.
A seamless and converged communication platform provides a digital business enablement layer within a company that allows employees to work seamlessly and effortlessly from anywhere, across all platforms while being constantly connected and able to access any information and applications they need.

For a seamless communication network to be effective, it must be pervasive and have high scalability and availability so that it is accessible at any time, from anywhere. It must also be built on a single, simplified network architecture to ensure seamless access across all channels.

There are several different aspects that make up a seamless communications network and allow it to function at a high level. The first aspect is access. Being able to easily access all communications services is essential to providing a seamless communications experience. Access, therefore, includes multiservice fibre or broadband access as well as converged, fixed, mobile and data services.

By having an efficient consolidation of access bandwidth, it is possible to have a single access link for voice, data and video traffic to each enterprise site.

Over this access, it is possible to implement unified communications functionality that includes application access and communication functions on any device, across any access network. It also allows the company to enable IoT and M2M functionality as well as real-time collaboration across the enterprise and all its channels. It can also provide integrated access at company sites or at a data-centre location for VPN and Internet breakout, while offering consistent performance for the private and public cloud.

Seamless communication works by bringing together several discreet elements and combining them into a single communication platform.
Unified Communications:
Unified Communications and Collaboration (UCC) play a very important role in seamless communications as they serve to transform disparate (silo) communication systems into a common interface that makes it quicker and easier to communicate. UCC solutions are designed to work off a single communications platform. It, therefore, breaks down geographical, communication mode, device and user-accessibility barriers, thus enabling people to be reached easily anywhere, anytime.

Enterprise Mobility:
Enterprise Mobility refers not only to mobile employees and devices, but also to the mobility and accessibility of corporate applications outside the business premises. For example an employee may upload a corporate presentation from his or her desktop PC to a cloud storage service, and then access it from an iPad to present offsite at a client.

M2M Services:
Machine to Machine (M2M) refers to any technology that allows both wireless and wired systems to communicate with other devices of the same type. M2M is generally imbedded in industry processes and gives businesses the ability to remotely activate, deactivate, identify, authenticate, read-out, locate, command, update and roll back their fleet of embedded devices.

Voice / SIP Services:
SIP Trunking enables end-to-end connectivity by converging effective voice communication over an all IP network. This allows for convergence of voice and data, and in particular digital applications, like video, on to a single common underlying network. As a result, SIP Trunking reduces networking complexity and costs.

Broadband Access:
Broadband connectivity is the most basic form of Internet or VPN connectivity available to businesses. It can be fixed, wireless or both and offers a cost-effective means for multiple users and devices to connect concurrently and work freely while in the office or on the move.

Broadband is generally used as a stepping stone to more powerful leased line services, both for data connectivity and Internet breakout and can be useful for customers with remote sites that need to reach the Internet directly or connect to the enterprise’s secure VPN.
Fibre Access:
Fibre offers cost-effective and high-speed connectivity, which allows business applications to become increasingly bandwidth-intensive.

Fibre works together with various high-speed technologies, such as Metro Ethernet, DWDM and NGSDH. Services can be offered as point-to-point, as well as point-to-cloud connectivity, depending on customers’ needs.

Business to Business to Consumer (B2B2C)
Wi-Fi Access:
Wi-Fi is an important tool that can be used for many industry-specific solutions as it has the power to combine Internet connectivity with omni-channel management applications. It can be used to create a seamless ICT experience, for both an enterprise and its patrons.

Businesses, such as a coffee shop or hotel, can offer Wi-Fi access to their customers and use it to grow incremental revenue or to derive big data analytics (for example tracking customer usage of a loyalty programme).

Metro Ethernet:
A Metro Ethernet Layer Network provides intra- and inter-metro connectivity and offers point-to-point, point-to-multipoint or multipoint-to-multipoint connectivity between multiple customer sites or branches.

Metro Ethernet can also be used as an access technology into cloud-based services such as VPN, global VPN, high-speed Internet, SIP trunking (next generation voice) and data-centre hosting.

LAN:
A Local Area Network (LAN) has the capability to interconnect all the computers and devices within a company on to a network.

A fully integrated LAN service portfolio will also provide services extending to the management and support of the end-user devices and applications.

MPLS VPN (Virtual Private Network) Services:
A Virtual Private Network (VPN) emulates a private network across a public network. It enables a computer or network-enabled device to send and receive data across shared or public networks as if it were directly connected to the private network, while benefitting from the functionality, security and management policies of the public network. Multiprotocol Label Switching (MPLS) is a protocol for speeding up and shaping network traffic flows.

All of these elements can be integrated into a powerful seamless communication platform, allowing employees to work more efficiently and effectively with easier access to all the tools and resources they need.
Unified Communications Role in Seamless Communication

Communication technologies have advanced rapidly over the years. The advances have improved professional and personal experiences, by bringing together silo systems and applications under a single unified interface, to facilitate a seamless communication experience. As a result, employee productivity, efficiency and customer experiences have been enhanced to include interactive and proactive collaboration.

UCC enables an omni-channel engagement model by creating a seamless integrated experience for users on devices and applications that previously operated in isolation. The inefficiencies of legacy systems are therefore significantly reduced, if not completely eliminated. Day to day business operations are improved by optimising business procedures and boosting human communications through simplified processes. UCC has further enhanced communication by enabling anywhere, anytime communication using any device, application or network.

The omni-channel UCC model allows an individual to send a message in one medium and receive the same communication on another medium. For example, an individual can send an SMS from a mobile phone and the receiver can get the same message as e-mail on a desktop computer.

With a silo environment, the recipient would have to rely on their mobile phone as the only means to receive the outstanding message. If the recipient has, for example, left the phone at home, this can lead to missed communications that may require urgent response. A UCC user can avoid missing a critical opportunity, and ensure prompt and effective customer service, as the type of device used is independent of how and where the message is received.

Besides seamless integration of devices and processes, a UCC omni-channel function facilitates seamless handover. For instance, a conversation that was initiated on a landline can be seamlessly ‘handed-over’ to a mobile phone without interruption, allowing for greater mobility.

Similarly, someone can switch easily from an instant messaging to a phone call or a video conference and vice versa. Thus the UCC omni-channel user experience improves the way users interact with each other.
Another important aspect of a UCC environment is being able to seamlessly connect with an available expert, or collaborate on a project to improve time-to-market. The presence tool in UCC facilitates faster decision making by enabling seamless access to expertise, irrespective of where they may be located in the world.

Since UCC eliminates not only device but also distance barriers. It is now possible to connect and streamline virtual collaboration on projects, to work faster, more flexible, and with greater productivity, helping to deliver better business outcomes that better meet customer expectations. This ability to increase productivity and meet customer expectations enables UCC functionality to improve business revenue.

Seamless connection with Unified Communications can further be achieved from the deployment model perspective. In this case, a cloud deployment model such as UCaaS, that is hosted off-site, can provide seamless communication to an organisations’ employees.

As everything is stored in the cloud and accessible via an internet connection, employees retain the same level of accessibility and flexibility in real time. They have seamless access to any resources they need, irrespective of whether they are in the office or working remotely.

Cloud-based models can also provide customers with seamless on-demand consumption options for UCC procurement. This enables them to meet unpredictable business cycles (upscale and downscale as desired) and manage different user roles within the organisation, while also supporting the seamless service integration needed to deliver a UCC experience.

Seamless connectivity allows for an omni-channel experience which provides a customer-centric view where interactions occur via multiple channels and also facilitates handover, collaboration functionalities and location independent access. UCC delivers the required outcomes by enabling users to interact in whatever combination of channels is required to improve efficiency, productivity, and customer experience.
A Seamless communications platform can have the benefit of being provided by a single service provider. This means that the system is secure and managed with a single service management contact point for orders, trouble tickets and installations, moves, additions, changes and de-installations (IMACDs). The service-related interaction between the enterprise and the communication provider(s) is ideally provided via a single service management interface, such as the Business Convergence Centre (BCC) provided by Telkom Business.

The main role of the Telkom Business Convergence Centre is to make it easy to integrate, enable and manage the seamless communications services through a single service management interface.

One of the main drawbacks that is preventing companies from implementing a seamless communications system within their business is the high level of complexity involved in integrating so many different communication technologies.

Telkom Business has the power, scope and expertise to partner with companies facing this problem and provide them with end-to-end seamless communications capabilities, designed to suit their particular communication needs, including:

- Seamless integration of any access medium into the enterprise
- WAN Fixed, mobile, Wi-Fi, satellite and M2M connectivity to the enterprise
- WAN for all corporate applications
- Flexibility and efficiency benefits
- Cloud-ready networking

To help companies implement this seamless communications capability, Telkom Business has developed the BCC. When you partner with Telkom, the BCC consolidates all service-related interactions across a seamless communications capability.

The BCC provides customers with a converged, single point of contact service desk that offers efficient and effective control and management of the service/solution provided to the customer.

The BCC is based on industry best practice processes and principles, embracing and following the ITIL framework. Telkom, by means of the BCC, is able to manage the end-to-end solution provided to the customer, whether or not such services are provided by Telkom itself, or through its suppliers, thereby improving service efficiency, reliability, end-to-end ownership and ultimately improved customer experience.

The BCC ensures a greater success rate of first call resolution as well as enabling effective tracking of IMACDs and avoiding duplication of tasks, which enhances customer focus. It also provides for and enforces KPAs and KPIs to ensure continuous process and service improvement and continuous management and measurement of service performance.

The key benefits of the Telkom Business Convergence Centre include:

- **Single point of contact** – The BCC provides the customer with a primary point of contact for all service and business support requirements. This optimises the client’s experience by giving one client interface for all queries and allows Telkom to gain a single view of customer requirements and needs.

- **Master Service Aggregator** – Telkom will take on the role of primary contractor and manage all third parties. By handling all supplier evaluations, contract negotiations, performance reviews, renewals and terminations, Telkom will ensure the client receives value for money.

- **Streamlined process** – The client is able to manage all service delivery, assurance and billing through a single integrated platform that measures, monitors and assesses performance, in order to provide continuous improvements.
Companies have to move from the traditional communication environment to a seamless communication environment to fully become digital players. To illustrate some elements of this transition, the following are examples of the changes across various layers of a seamless communications capability:

### Traditional communication environment

#### Fragmented Access
Fragmented and duplicate Access mediums – ADSL, mobile SIMs, leased lines, primary rate voice access, mostly fixed connectivity to enterprise applications.

#### Selected Devices connected
Multiple end-users and devices not connected. Non-standard mobile devices not allowed. Limited connected sensors. Limited Wi-Fi offering Internet access to customers.

#### Fragmented Network / Data Centre / Cloud
No end-to-end manageability and performance analysis. Separate access, network and hosting/cloud providers.

#### Independent Communications Technologies
Communications hardware and software not interoperable – legacy access, PBX, Internet access not able to link services, limited use of video applications.

#### Standalone Communications and Business Processes
Customer solutions and supporting business processes not integrated into a standardised communications capability, non-standardised communications platforms, limited social media integration for customer interaction.

### Seamless communication environment

#### Converged Access
SIP, VPN, Internet over fibre or next generation copper access with fixed or mobile redundant backup (improved manageability and cost efficiency). Pervasive (fixed and mobile) access to enterprise applications and new mobile apps for employees and external customers (improved efficiency and customer experience).

#### Connected devices
Connected End-users and Devices - BYOD, IoT, Wi-Fi used where customer transactions occur for customer Internet access in exchange for customer tracking. Customer interaction and advertising (improved customer experience). Pervasive connected sensor network with analytics integrated into business processes (improved efficiency and cost effectiveness).

#### Connected devices
End-to-end Network and Application performance management across Network, Data Centre and Cloud (improved manageability).

#### Seamless Communications Platform
Communications infrastructure and services cohesive and optimally tied into network routing, data centre and cloud services (improved manageability). Video applications used for improved conferencing and collaboration (improved efficiency).

#### Digitally Enabled Business Processes
UC / M2M / mobility - business processes communication enabled (improved efficiency). Social media integrated in contact centre infrastructure and business processes as a customer service channel (improved customer experience).
One example of where a seamless communication capability can have a large impact on a business is in a retail environment. It is desirable for a retail outlet to connect, monitor and control a number of discrete store elements through a seamless communications network, as shown in figure 4 below.

There are a number of technologies that can be integrated to provide an enhanced user experience to the customer, improve the workflow of employees and give the business a distinct competitive advantage.

Some of the technologies and communication systems that can be seamlessly integrated in a store environment include:

- Stock control and management can be improved through technologies such as Radio-frequency identification (RFID) tags on products and Wi-Fi location sensors and digital shelf-weight sensors that can be integrated to provide a single view of stock distribution and movement through the entire supply chain.

- Energy efficient technology such as temperature and heating, ventilation and air conditioning

**Figure 4: Connected In-Store Technologies Drive Competitive Differentiation in Retail**

*Forrester Research Inc., The Enterprise Network Enables Business Innovation by Dan Bieler and Andre Kindness, July 8, 2014*
(HVAC) sensors, can digitally monitor and adjust in-store climate control to maintain optimal levels for food storage and customer comfort in the most energy efficient way.

- Auto light sensors can also make sure that only rooms/areas being utilised are lit, creating further savings on electricity.

- Infrared motion detectors can be integrated with door hinges, parking space sensors and security cameras for the operation of automatic doors, the monitoring of traffic flows within the store and security applications.

- Different technologies can also be integrated to improve and enhance the customer experience.
  - Mobile devices, used by both store employees and customers, can be utilised to help navigate the store, check stock levels, integrate with the online channel, receive special offers, etc.
  - The point-of-sale technology can also be modified to add a variety of value-added services and to interact with other technologies in the store, including cards, mobile devices and RFID tags.
  - Stores can also interact directly with customers through digital signage and interactive gesture recognition technology.

All of these technologies, and more, can be integrated into a single system that can be controlled and monitored from a central location, providing valuable data and real-time feedback from an entire network of stores. Figure 5 below shows the central role of the network in connecting the different retail store elements.

Figure 5: The Enterprise Network is the Nervous System of the Connected Business

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Conclusion: The Benefits of Seamless Communication

There are many advantages to implementing a seamless communications capability within a business.

**Increased efficiency** - By being able to communicate more effectively, there is improved employee efficiency and productivity, as well as improved customer relations, due to faster response times and better data availability and quality. This leads to reduced processing time for various tasks.

**Single platform** - All communication-related network and service requirements are provided for seamlessly by a communication service platform that removes the complexity of integrating various technologies, services and modes of communication for a customer.

**Enables UC&C** - Convergence of fixed, mobile, video and data in a single platform, which enables organisations to simplify and leverage the benefits of a converged communications environment and enables unified communications and collaboration (UCC).

**Single Service Management interface** - The Business Convergence Centre (BCC) provides a single Service Management interface that integrates all service requests, problem handling and contact centre interaction into a single one-stop interface for all solution service-related interactions. The BCC provides a single service aggregator function across multiple suppliers. Its operations are based on the IT Infrastructure Library (ITIL) service operations standard.

**Future-proof** - The seamless communication network concept can be enhanced in the future to portray a future-proof, cloud-ready, software-based platform that will incorporate new technological developments, such as software-defined networking.

**Single service provider** – Telkom Business has the capability to provide an end-to-end seamless communications network eliminating the difficulty of managing and integrating various suppliers and technologies. This creates reduced complexity as well as lower costs and greater accountability.

**Converged access** – A seamless communication network provides fixed, mobile, Wi-Fi, satellite and M2M connectivity to the enterprise WAN for all corporate applications and enables a unified applications experience across private, hosted or hybrid cloud. Applications can be accessed on any device, across any access network at any time.

**Enables digital migration** – A seamless communication network creates the building blocks of digitalisation for a business and can be aligned with the company’s digital migration strategy.

A seamless communication platform is therefore an essential tool for any business that wants to become part of the new digital reality. It can alleviate potential disconnection between mobile and office workers and allows the company to provide a uniform communications environment so that employees, customers, and other third-party participants can communicate easily and efficiently across different media and technologies.
Telkom Business knows that increasing digitalisation will have a huge impact on the future of many companies, and implementing a seamless communications strategy will be an important part of this.

In order to successfully implement a seamless communications platform, organisations must ensure that they have the necessary underlying connectivity and infrastructure. Telkom Business has the power to help companies become part of the new digital reality through a solutions-based collaboration.

Telkom Business is a single source for all seamless communication technology including:

- Voice and VPNS
- BCC management of their VPNS
- UC solutions
- SIP trunks over MetroLAN

Telkom Business’s solutions strategists will work with companies to devise the correct strategy to meet digital needs.

**Capability**

Telkom Business is a leading technology solutions provider with an extremely wide geographical coverage. It is the only service provider that can offer true and affordable convergence across fixed, mobile, data and cloud.

Telkom’s key differentiators distinguish it from other providers and make it the partner of choice for fully converged coverage of communications, cloud, mobile and integrated business solutions.
# Telkom Business’s key differentiators

<table>
<thead>
<tr>
<th>Largest, most reliable fixed network</th>
<th>Leading POP Infrastructure &amp; backup</th>
<th>World-class Unified Communication services</th>
<th>Best mobile data network in South Africa</th>
<th>Innovation in M2M and POS</th>
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<tr>
<td>Telkom has 149,000km of fibre across South Africa</td>
<td>Most extensive POP infrastructure – IP Net, Exchanges, Fibre distribution points, Internet POPs, Internet breakout, international investment in undersea cables</td>
<td>Hosted/virtual PBXs</td>
<td>98% population coverage in SA</td>
<td>Telkom is the only service provider to include advanced M2M and PoS, complementing traditional connectivity</td>
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<tr>
<td>Multiple redundancy, best availability and uptime in SA</td>
<td>Data Centre backup (9,700 square metres of hosting)</td>
<td>UC ready network (rich media capable)</td>
<td>Sites: LTE, 3G</td>
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<td>MDNS sites: 45,000+</td>
<td>Device management</td>
<td>2,601 mobile base stations constructed at 31 March 2015</td>
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<td>Internet subs: 574,000+</td>
<td>Advanced UC with collaboration and telepresence</td>
<td>High data quality and speed with extensive LTE coverage</td>
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<td>World-class network monitoring and management (24x7)</td>
<td>End-to-end SLA and network prioritisation</td>
<td>&quot;Best mobile broadband operator in SA&quot;, 3rd consecutive year: MyBroadband Awards 2014</td>
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<td>Application performance monitoring</td>
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<td>&quot;Best fixed broadband service provider in SA&quot;, 4th consecutive year: MyBroadband Awards 2014</td>
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<td>Network &amp; application performance management</td>
<td>Converged Communications</td>
<td>Cloud and IT services</td>
<td>Wi-Fi hotspots</td>
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<td>Manage user-experience, networks and applications</td>
<td>Introduce Unified Communication platform and services</td>
<td>Provide all integrated IT, data centre and cloud services</td>
<td>Campus Wi-Fi roll-out in customer locations</td>
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<td>Deliver QoS classes for applications</td>
<td>Hosted IP Contact Centre</td>
<td>12 Data centres in South Africa. 3 x Tier IV design certified</td>
<td>Free access to Telkom’s existing Wi-Fi hotspots as part of Mobile data offer</td>
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<td>Manage IT assets in the data centre and cloud</td>
<td>ISO20000 certified for hosting</td>
<td>Faster time to market</td>
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<td>Full range of Cloud solutions (Public, Private, Hybrid) offering IaaS, PaaS and SaaS</td>
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<td>Business requirement based IT solutions</td>
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<td>Data Residency / Sovereignty</td>
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<td>Economies of scale</td>
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<td>Service Level Agreements</td>
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Glossary of Acronyms

B2B2C - Business to Business to Consumer
BCC - Business Convergence Centre
BYOD - Bring Your Own Device
DWDM - Dense Wavelength Division Multiplexing
HVAC - heating, ventilation and air conditioning
ICT - Information and Communications Technology
IMACD - Installations, Moves, Additions, Changes and De-installations
IoT - Internet of Things
ITIL - Information Technology Infrastructure Library
KPA - Key Performance Area
KPI - Key Performance Indicator
LAN - Local Area Network
M2M - Machine to Machine
MPLS VPN - Multiprotocol Label Switching Virtual Private Networks
NGSDH - Next Generation Synchronous Digital Hierarchy
RFID - Radio-frequency identification
SIP - Session Initiation Protocol
UC / UCC - Unified Communications and Collaboration
UCaaS - Unified Communications as a Service
WAN - Wide Area Network
References


[4] Gartner, Social Media for CRM Will Force a Shift from Contact Centres to Customer Engagement Centres, April 1, 2013

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