Telecoms Operator Profiles
Egypt, Nigeria and South Africa

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20 August 2010
Final Deliverable

“We accelerate growth”
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Aim and Objectives
The aim of the project is to provide Cisco with an overview of telecoms operators providing business services in selected countries.

Frost & Sullivan will achieve this aim by focusing on the following objectives:

- **Objective 1**: Provide profiles of the top four operators per country
- **Objective 2**: Determine the product and service offerings of each operators
- **Objective 3**: Establish the high level pricing strategy of the product offerings on a best effort basis
- **Objective 4**: Establish the African footprint and presence of the operators
- **Objective 5**: Determine the key sectors the operators currently focus on
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Project Scope

The scope of the project will focus on the managed services offerings of telecoms operators in three African countries:

**Geographic Scope**
- The project will focus on the following countries:
  - Egypt
  - Nigeria
  - South Africa

**Product Scope**
- The project will focus on the following product segments:
  - Managed services
  - MPLS
  - Network solutions
  - Converged solutions
  - Data centre solutions
  - Security solutions
  - Business applications

**Competitor Scope**
- Companies profiled will include:
  - TE Data
  - Linkdotnet
  - Raya
  - Orange
  - MTN Nigeria
  - Zain / Bharti
  - Globacom
  - 21st Century
  - Telkom
  - MTN Business
  - Vodacom Business
  - Dimension Data / IS

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**Frost & Sullivan**

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The project will be carried out by combining primary and secondary research.

Frost & Sullivan will utilise a 3 step approach to perform the required analysis:

1. **Internal Expertise**
   - Frost & Sullivan will tap into the cross-industry expertise across the various business units to understand market dynamics in each of the three countries targeted.
   - Our experienced team of consultants, with good technical and commercial understanding of telecommunications markets, will have discussions / interviews with senior stakeholders / managers in the targeted organisations.
   - This approach enables Frost & Sullivan to go beyond basic market information and obtain an in-depth understanding of telecoms service offerings to the corporate sector.

2. **Secondary Research**
   - Secondary research will be utilised to obtain basic information about the operators, including a product overview, reference customers, financial information.

3. **Primary research**
   - Primary research will focus on obtaining targeted information from operators and regulators to augment and verify information obtained from secondary sources.

Assessment of Managed Services Offering by Telecoms
Content – Introduction

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Introduction

In managed services, the service aspect is emphasised whereas the underlying technology is transparent to clients.

- Managed services is an umbrella term for ICT services which are outsourced to a third party provider.
  - Managed services can be provided on the customer's premises, similar to traditional outsourcing.
  - Alternatively, services can be provided at a third party provider's facility.

- Effort spent by the third party is ongoing and is usually managed through service level agreements.

- The types of managed services considered in this study are shown in the adjacent figure:
  - These definitions are somewhat fluid in their usage and in the way such services are sold to clients – for example, security services may be offered as part of IP VPN services.
  - Metro ethernet, in particular, may refer to different types of metropolitan networks.

- Managed services in Africa are most established in South Africa, where the market is estimated to be worth around US$2.75 billion.

- Egypt and Nigeria lag behind South Africa in terms of the size of the managed services market.
  - Egypt's managed services market is conservatively estimated at around US$150 million, whereas that of Nigeria could not be determined.
  - The smaller market size can be attributed to a lower GDP, smaller private sector and poorer infrastructure than found in South Africa.

Although managed services are the traditional domain of systems integrators, the entry by telecommunications operators into this sector has been a global trend.
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**Country Assessment**

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Egypt – Country Overview

A liberalised business environment and infrastructure investments have resulted in a vibrant telecommunications sector in Egypt

- Economic reforms since 2004 have resulted in a more favourable business environment with increased competition in the private sector and a liberalised and transparent regulatory regime
- This has spurred growth in general and encouraged foreign investment, although the global recession has resulted in lower GDP growth projections
- The telecommunications sector has been a beneficiary of this growth and also contributes around 0.5% to overall annual GDP growth rates per year
- Growth in telecommunications has been assisted by a strong commitment by government to ICT development
  - There have been extensive investments in infrastructure
  - Improving ICT skills has become a national priority
  - Targeted initiatives aim to leverage Egypt’s positioning to become a contact centre hub in the region
    - ICT hubs (Smart Villages) have been built in major centres
- These developments have opened up opportunities for vendors and service providers
- Of the 3470 companies active in the ICT sector 8% are listed as active in the broad telecommunications environment, as per the Ministry of Information and Communications Technologies (MICT)
  - This includes vendors, resellers and solution providers

Key Economic and Telecommunications Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
<th>Year/Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population 1)</td>
<td>78.8 million</td>
<td>July 2010</td>
</tr>
<tr>
<td>GPD (US$) 2)</td>
<td>187.9 billion</td>
<td>2009</td>
</tr>
<tr>
<td>Real GDP Growth Rate 2)</td>
<td>5.3%</td>
<td>2010 – 2011</td>
</tr>
<tr>
<td>Private Sector Contribution 3)</td>
<td>67.2%</td>
<td>2008</td>
</tr>
<tr>
<td>Telecoms Contribution to GDP 4)</td>
<td>4.2%</td>
<td>2010</td>
</tr>
<tr>
<td>ICT Sector Revenues (US$) 4)</td>
<td>7.24 billion</td>
<td>Q2 2009</td>
</tr>
<tr>
<td>Inflation 1)</td>
<td>10.2%</td>
<td>June 2010</td>
</tr>
<tr>
<td>Fixed Line Subscribers 4)</td>
<td>10.31 million</td>
<td>Q4 2009</td>
</tr>
<tr>
<td>Fixed Line Penetration 4)</td>
<td>13.4%</td>
<td>Q4 2009</td>
</tr>
<tr>
<td>Mobile Subscribers 4)</td>
<td>55.35 million</td>
<td>Q4 2009</td>
</tr>
<tr>
<td>Mobile Penetration 4)</td>
<td>72.1%</td>
<td>Q4 2009</td>
</tr>
<tr>
<td>Internet Users 4)</td>
<td>16.64 million</td>
<td>Q4 2009</td>
</tr>
<tr>
<td>Internet Penetration 4)</td>
<td>21.7%</td>
<td>Q4 2009</td>
</tr>
<tr>
<td>Broadband Users 5)</td>
<td>~ 1.5 million</td>
<td></td>
</tr>
</tbody>
</table>

Source: 1) CAPMAS, 2) IMF, 3) Egypt Central Bank, 4) MICT 5) Frost & Sullivan

- Egypt is successfully positioning itself as an ICT hub in the region leveraging its geographic position, skills base, multilingualism and ICT infrastructure
- The number of companies in this sector has increased steadily year-on-year, attesting to demand from both the private and public sectors for ICT products and services
The telecommunications sector is dominated by the three mobile operators, Mobinil, Etisalat and Vodafone Egypt, and the fixed line incumbent, Telecom Egypt (TE)

- Mobinil is the market leader in mobile communications with a market share of 45.9%, followed by Vodafone with 44.4% and Etisalat with 9.7%
- The mobile sector in particular is very competitive
- There are also more than 30 internet service providers but TE Data, part of Telecom Egypt, and LINKdotNET have a combined market share of around 90%

Over the last two years there has been considerable corporate activity amongst telecoms companies

- A second fixed line operator is expected to be licensed in 2010

The telecommunications sector is considered to be relatively advanced:

- Although mobile penetration is some way off 100%, Frost & Sullivan forecasts that mobile subscriber numbers will grow at a CAGR of 10.4% to 2015, reaching saturation in 2012
- Fixed line penetration and internet usage are considerably higher than the African average
- The number of fixed lines in operation is on a declining trajectory, as a result of increasing fixed / mobile substitution, price pressure from mobile operators, and tightened credit policies by TE

Egypt’s telecommunications and IT infrastructure has been marketed as excellent

- More than 95% of the population has access to telecommunications, with infrastructure concentrated in densely populated areas
- Fibre optic rings form the national backbone
- Extensive international connectivity within the region provides 97.2 Mb/s bandwidth but remains monopolised by TE
- GSM networks have deployed 3G and 3.5G

Nonetheless, only two-thirds of private businesses make regular use of the internet, according to MCIT statistics

- ADSL is the dominant connection method

This has led Frost & Sullivan to conclude that products and services aimed at the business sector, such as unified communications, managed services and data centres, are in their nascent stage with combined revenues of less than US$ 80 million in 2009

The distribution of enterprise sizes in Egypt is skewed towards small to medium enterprises which is both a restraining factor in the uptake of managed services but also offers opportunities for growth in this sector

Along with systems integrators, telecommunications companies and ISP’s are important participants in the managed services market as they, like telecommunications companies elsewhere in Africa, are looking for additional revenue sources which can augment declining voice revenues
Strategically diversified revenue sources have helped Telecom Egypt to maintain profitability margins

- Telecom Egypt is the fixed line incumbent with an impressive history spanning back to 1854 when the first telegraph line was built between Cairo and Alexandria.
- Telecom Egypt has a number of business lines:
  - TE Data, a wholly owned subsidiary, was formed in 2001 as an ISP and is used to sell much of TE’s corporate services and products, with the exception of wholesale carrier services.
  - Xceed, also wholly owned, is a systems integrator with particular strengths in BPO.
  - Other small affiliates include an IT venture capital fund and an e-commerce company, amongst others.
- Telecom Egypt also has exposure to the mobile market through a 44.95% stake in Vodafone Egypt.
  - Negotiations to up its equity in Vodafone Egypt were called off in June 2010, at least for the time being.
- Revenue growth over the last two years, coinciding with the global recession, has been essentially flat:
  - However, net profit margins have improved.
  - EBITDA margins have declined from 55% in 2006 but are still an impressive 51%.
- Retail voice remains the main strategic focus for TE but the company has been growing its wholesale business which now contributes 42% of revenues.
  - All mobile operators make use of TE’s infrastructure.
- Having restructured itself into client-facing business units,

**Key Company Facts**

<table>
<thead>
<tr>
<th>Year of Formation</th>
<th>1854, in its current form since 1998 TE Data launched in 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>80% government-owned, 20% free float</td>
</tr>
<tr>
<td>Listing</td>
<td>Primary – Egypt, Secondary – London</td>
</tr>
<tr>
<td>Revenues (US$)</td>
<td>1.83 billion overall</td>
</tr>
<tr>
<td></td>
<td>114 million – TE Data</td>
</tr>
<tr>
<td></td>
<td>786 million – wholesale (25% domestic)</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
<td>Estimated to be less than 20% excl wholesale</td>
</tr>
<tr>
<td>Profitability Indicator</td>
<td>EBITDA margin – 50.7%</td>
</tr>
<tr>
<td></td>
<td>Profit margin – 30.6%</td>
</tr>
<tr>
<td>Customer Numbers</td>
<td>10 million subscribers</td>
</tr>
<tr>
<td></td>
<td>TE Data ~ 2500 key enterprise clients</td>
</tr>
<tr>
<td>Market Share</td>
<td>Monopoly for fixed line services</td>
</tr>
<tr>
<td></td>
<td>60.9% market share for ISP</td>
</tr>
<tr>
<td></td>
<td>34.7% by raised floor for data centres</td>
</tr>
<tr>
<td>Competitive Positioning</td>
<td>Strong position in the wholesale segment thanks to monopoly position</td>
</tr>
<tr>
<td></td>
<td>Focus on business customers is relatively new</td>
</tr>
</tbody>
</table>

*Source: Frost & Sullivan, Telecom Egypt 2009 Annual Report*

**Telecom Egypt has a strong position in the wholesale market, including substantial interest in submarine cable systems, and is expected to focus increasingly on serving the needs of business customers.**
There are no firm plans for regional expansion but acquisitions to strengthen the enterprise service offering are under consideration.

Telecom Egypt derives most of its revenue from Egypt where it holds a monopoly on fixed line infrastructure.

The company has investments in four submarine cables:
- The cables are strategically important for TE growing its international footprint
- The flagship cable “TEN” is managed through TE France which also allows for further expansion in Europe

The cables allow TE to position itself as a Middle Eastern hub with other business units, such as Xceed providing synergies in product lines.

Further domestic expansion has been mooted.

TE Data has expanded into Jordan and reportedly has further plans to expand in the Middle East.

Infrastructure
- Telecom Egypt’s national backbone encompasses 27,000 km of fibre optics
- Copper is still dominant in the access network
  - Fibre-to-the-home (FTTH) is offered in select Cairo suburbs
  - Wireless networks, e.g. at tourist sites, broaden the network access to areas not easily accessible to fixed line infrastructure
- TE Data runs its MPLS network and solution offering over TE’s network
- No major infrastructure upgrades or expansion plans are expected for TE’s existing network at present
  - However, investment into local capacity is expected to meet the government’s stated intention to increase broadband penetration to 20% by 2013

Current Vendors

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSN</td>
<td>Telecom Egypt has a 10% shareholding</td>
</tr>
<tr>
<td>Microsoft</td>
<td>For the provision of personal cloud services including messaging and data storage</td>
</tr>
<tr>
<td>IBM</td>
<td>Data centre servers and software, particularly around distance-learning technology</td>
</tr>
<tr>
<td>Cisco</td>
<td>Unified communications platform</td>
</tr>
<tr>
<td>EMC</td>
<td>Storage solutions</td>
</tr>
<tr>
<td>Avaya</td>
<td>Call centre solutions</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan
### Data Centre
- TE Data’s data centre services include dedicated hosted as well as co-location hosting along with professional services.
- TE Data manages a 470m² data centre with flexible space provisioning, variable speeds and redundancies and enhanced technical support to meet customer needs.
- A second data centre is in the process of being built in order to meet demand from clients.

### IP/VPN
- TE Wholesale offers MPLS IP-VPN to provide enterprise wide connectivity for voice, data and video traffic both nationally and internationally through TE’s relationship with other carriers, for instance TATA Communications.
- Several options are available for the IP-VPN, including dial-up VPN, enhanced security services, network management and optimisation as well as required redundancy.
- Connections starting with 512kbps are offered to enterprises, whereas slower connections usually targeted at SME’s.

### Metro Ethernet
- TE Wholesale is able to offer high capacity leased lines based on MPLS to its clients for use as metropolitan area WAN’s.
  - However, the service is not currently branded as metro ethernet and is only offered to a couple of customers.
- Launch of a branded metro ethernet service is expected by the end of 2010.

### Unified Comms
- IP telephony is offered to the business sector through the service brand “Business Connect”, launched in mid-2009.
- Initial forays into unified communications did not prove as successful as hoped.
  - However, managed call centre solutions targeted at the SME sector have taken off where TE Data provides the full functionality and connectivity without SME’s having to invest in technology.

### Security
- Managed security is offered as part of internet physical security and is not currently a key service offering.
- Extension to physical surveillance systems is planned for the future.
- The partnership with EMC may well extend to RSA solutions in future, which will strengthen TE Data’s ability to provide managed security services.

*Customised solutions are targeted at large enterprises, whereas “off-the-shelf” solutions have been devised for the SME sector to address particular concerns imposed by enterprise size.*
Telecom Egypt and TE Data are able to exploit synergies in their offering to good effect

Key Client Sectors

- Telecom Egypt and TE Data remain primarily focused on the retail market for voice and data services.
- Given TE and TE Data’s large market share in telecommunications and its extensive network, customers come from across vertical sectors and enterprise sizes.
  - Because of TE’s monopoly on fixed line services and its near monopoly on international gateways, key clients include the three mobile operators as well as a number of ISP’s.
  - Business development has also been focused on the financial services and banking sector, which is seen as a key for managed services.
  - Other important verticals include government, transportation, educational institutions and multi-nationals.
- Customised solutions for different verticals are used to penetrate these markets.
  - This includes service offerings to Egypt's large SME sector.

Key Projects

- Wholesale services agreement with Vodafone Egypt to provide international gateway services and domestic infrastructure leasing.
- MPLS IP-VPN network for a Dubai-based broadcaster.
- Toshiba is a major client for the contact centres with more than 100 seats.
- Verizon Business is an important client for the data centre.

Competitive Positioning with respect to Pricing, SLA’s and Service Offering

- TE Data seeks to be competitive in its pricing and solution offering.
  - A client base of around 60,000 SME’s, usually more price sensitive than large enterprises, suggests that customers perceive TE Data’s and TE’s service offering as competitive.
  - Solutions for large enterprises are more typically customised and pricing is on a case-by-case basis.
  - Synergies between TE’s subsidiaries and a broad solution focus, rather than specialisation, are exploited with some success.
Egypt – Raya

Raya is an Egyptian IT company now diversifying its portfolio into other industries

- Raya, formed in 1999 from a merger of 7 IT companies, listed on the Egyptian Stock Exchange in 2005
  - Capital obtained in the IPO was used to fund further acquisitions and geographic expansion in the region
- Raya four business lines are IT services, contact centres, a reseller business and a new division focused on systems for smart buildings
  - The IT services division is a traditional systems integrator and also offers specialised IT training certificates
  - Raya Trade focuses on phones and airtime for mobile operators in Egypt, but sells hardware through a network of shops and online
  - Raya International appears to straddle these business units
- Revenues and profit margins over the last year have been impacted by reduced spending by customers
  - Raya Trade which contributes 75% of revenues has seen its revenue drop by 17.9% from the previous year, resulting in an overall decline in revenue of 14% for the group
  - Cash flow management and reduction in borrowing costs are expected to have a positive impact going forward
- Raya is committed to moving away from being largely a technology provider to becoming a solutions provider with an expanded product and service portfolio
  - Building deeper partnerships with clients is seen as important to increase annuity income and reduce reliance on low margin retail sales

Key Company Facts

<table>
<thead>
<tr>
<th>Year of Formation</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Public company</td>
</tr>
<tr>
<td>Listing</td>
<td>Egypt Stock Exchange</td>
</tr>
<tr>
<td>Revenues (US$)</td>
<td>325.3 million</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
<td>Not available</td>
</tr>
<tr>
<td>Profitability Indicator</td>
<td>Gross Profit – 13.7%</td>
</tr>
<tr>
<td></td>
<td>Net Profit – 2.2%</td>
</tr>
<tr>
<td>Customer Numbers</td>
<td>Not available</td>
</tr>
<tr>
<td>Market Share</td>
<td>25.8% by raised floor in data centres</td>
</tr>
<tr>
<td>Competitive Positioning</td>
<td>One of the largest systems integrators in Egypt with a broad range of services</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan, Raya 2009 Annual Report

- Raya sees geographic expansion into the region as an opportunity
- The company has also committed itself to investments in unrelated industries including a land transport company and a bottle recycling company, neither of which appear to have an obvious strategic fit with existing operations

Raya is focusing on transforming itself into a regional IT solutions provider instead of simply selling technologies
Raya is looking to strengthen its foothold in the regions fastest growing IT markets

- Raya International, which is trying to invigorate its operations through its 5 x 5 strategy, is focusing on the top 5 markets in the region with the highest projected IT growth rates, as shown above
- Services and products offered outside Egypt are focused on enterprise resource planning, software development and software infrastructure technology services, rather than on managed services
- Representation in the USA is for business development purposes to attract customers to Raya’s data and call centres in Egypt

**Infrastructure**

- Raya makes use of Telecom Egypt’s SDH network as a backbone on which it has built its MPLS network
  - Both IP and ATM are used on the MPLS network
- The network has a dual star topology with 10 distribution nodes and 48 access nodes
  - The network is designed to include redundancies in order to guarantee uptime to clients
- Internet connections will be upgraded within the next two years to provide 155Mbps
- Raya operates one network operating centre providing a single point from which all network activity is monitored and managed for its clients to ensure quality of service

**Current Vendors / Partners**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various hardware / software vendors</td>
<td>As a systems integrator, Raya uses products from Sun, HP, Microsoft, Oracle, Symantec, RSA, Nokia etc in its solutions and for reselling</td>
</tr>
<tr>
<td>Cisco</td>
<td>Gold Partner, MPLS network equipment provider</td>
</tr>
<tr>
<td>Microsoft</td>
<td>Gold Partner</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan
**Egypt – Raya**

**Although more a traditional systems integrator, Raya is growing its managed service offering**

- **Data Centre**
  - Raya operates a Tier 2 data centre with 350 m² capacity and has announced in June 2010 that it would be building another one for US$30 million as part of offering co-location services to a third party
  - Data centre services include dedicated and shared hosting as well as co-location
  - Different bandwidth requirements are catered for

- **IP VPN**
  - Through Raya Telecom, IP VPN services with internet access are offered to clients through the company’s MPLS core network
  - Remote access VPN may be offered in addition to clients requiring this
  - As security managed services form part of Raya’s portfolio, the company is able to offer these on top of the VPN

- **Metro Ethernet**
  - Not offered as a managed service

- **Unified Comms**
  - Raya has a business unit specifically devoted to contact centres signalling the importance the company attaches to this
    - 4% of total revenues come from four contact centres with 2200 multilingual agents
    - The call centres are ISO9001:2000 certified
    - The company also offers build-operate-transfer services for clients wishing to have their own call centre
  - Customer service, support and telemarketing services are offered to Egyptian and multinational companies with a presence in the Middle East, as well as call centre hosting

- **Security**
  - Raya is ISO 27001 certified and uses this as a selling point for security solutions and training courses
  - However, security is usually offered by network or infrastructure systems integration with a focus on set-up and continuous monitoring and assessment rather than as a managed security service
  - Partners for security include Symantec, RSA, anti-virus vendors, Cisco, Websense etc

*Raya has sought ISO certifications in quality and security management, as well as built Gold level partnerships with Microsoft and Cisco for leverage to back up its service portfolio and support offering*
Raya is a diversified IT company and one of Egypt’s leading systems integrators.

**Key Client Sectors**
- Given Raya’s competitive positioning as a large IT company in the Egyptian market, clients come from a wide variety of sectors and enterprise sizes.
- As well as offering general business solutions, Raya also has packaged marketing material and developed expertise for telecoms operators, government, the banking, finance, industrial and automotive sectors.
  - These sectors are specifically targeted in business development.
- Reference clients include the Central Bank of Egypt, the Bank of Alexandria, the Income Tax Authority and MCIT’s Smart Village initiative.
- Through its trade division, Raya also has exposure to SME’s as well as consumers, but products for this segment are more technology-centric than solution-centric.

**Competitive Positioning with respect to Pricing, SLA’s and Service Offering**
- Both customised and packaged pricing structures are offered depending on the enterprise size targeted and the solution.
- Raya is generally competitive in its pricing structure but for certain services such as Voice Connect it strives to offer enhanced value.
- SLA’s are used for its managed services and cover the following features with SLA’s dependent on the agreed levels for each:
  - Network uptime
  - Network reliability
  - Customer response time.

**Key Projects**
- Involvement in MCIT’s Smart Village initiative.
- Network and connectivity for the Library of Alexandria.
- Contact centre customers include Microsoft, McDonalds, Vodafone.
LINKdotNET is Egypt’s second largest ISP after TE Data, commanding around 35% market share.

Formerly a part of the Orascom group, the Egyptian internet business units in LINKdotNET were sold to Mobinil, the leading mobile operator, for US$ 130 million at the beginning of 2010.

- As Orascom is a significant shareholder in Mobinil, the company retains a now significantly reduced economic share of LINKdotNET.
- Orascom did not sell related businesses such as the software development subsidiary LINK Development, Connect Ads, a digital advertising company, and LINK Data Center.

The implication of the sale are probably greater for Mobinil’s value proposition, as it strengthens the latter’s ability to offer converged services and also allows Mobinil to move beyond voice in offering data services to consumers.

- Currently only around 10% of Mobinil revenues are from enterprise customers.

Although the company is focused on the consumer market, it has targeted offerings for the SME and enterprise market beyond traditional internet access.

For small enterprises solutions are designed to offer customers cost savings and enhanced value, such as virtual private servers and shared hosting.

The sale of LINKdotNET to Mobinil is likely to result in a strategic shift for Mobinil in how it targets the enterprise segment.

**Key Company Facts**

<table>
<thead>
<tr>
<th>Year of Formation</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Private company owned by Mobinil</td>
</tr>
<tr>
<td>Listing</td>
<td>N/A</td>
</tr>
<tr>
<td>Revenues (US$)</td>
<td>Unknown, but an upper limit of 90 million, deduced from Orascom Annual Reports and its market share, is estimated</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
<td>Between 20 – 30% of total revenue</td>
</tr>
<tr>
<td>Profitability Indicator</td>
<td>Unknown</td>
</tr>
<tr>
<td>Customer Numbers</td>
<td>Not disclosed</td>
</tr>
<tr>
<td>Market Share</td>
<td>35% market share for ISP</td>
</tr>
<tr>
<td>Competitive Positioning</td>
<td>2nd largest ISP in Egypt with a growing presence in the enterprise market</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan, Orascom 2009 Annual Report

- Solutions aimed at the enterprise sector are more complex and include a wide portfolio of managed services.
  - Related solutions, such as bespoke software development are also marketed as part of LINKdotNET’s enterprise solutions, thus offering enterprise customers an end-to-end solution.
Most of LINKdotNET’s revenues are derived from Egypt. However, the company also has operations in Algeria and the Gulf states. Despite its close association with Orascom, the company has not leveraged Orascom’s geographic presence in sub-Saharan countries. With the transfer of ownership to Mobinil, the geographic footprint is unlikely to change in the near future and will likely depend on Mobinil’s geographic expansion plans.

**Infrastructure**
- LINKdotNET’s public data network covers 90% of Egypt’s consumers, both business and residential.
- A next generation core network is built on IP MPLS with Gigabit IP routers connected by redundant STM1 connections.
- The MPLS distribution network uses redundant E1 links.
- The access network to the consumer is provided by XDLS and dial-up.
- Redundant STM1 connections provide LINKdotNET with its international bandwidth, provided by two Tier 1 providers.

**Current Vendors / Partners**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infonet</td>
<td>International connectivity</td>
</tr>
<tr>
<td>Juniper</td>
<td>Internet routers, SSL VPN products</td>
</tr>
<tr>
<td>Microsoft</td>
<td>Gold Partner</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan

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**Map**

- Subsidiary
- Head Office
- Other operations in Saudi Arabia, UAE, and Qatar

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**Geographic Footprint**

- Egypt
- Jordan
- Algeria
- Other operations in Saudi Arabia, UAE, and Qatar

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**Head Office**
Egypt – LINKdotNET

Services revolve around connectivity for businesses and data centres

- LINKdotNET offers a Tier 3 data centre services on a shared, dedicated or co-location basis
  - Tier 3 means there are several power and connectivity redundancies built into the centre
- 2008 market share for the data centre was less than 10%

| Data Centre | LINKdotNET offers a Tier 3 data centre services on a shared, dedicated or co-location basis
| IP VPN | Dedicated internet connections at speeds upwards of 64kbps are offered as well IP VPN over MPLS as a fully managed solution backed up by SLA's
| Metro Ethernet | Not offered as a managed service
| Unified Comms | Not offered as a managed service
| Security | Managed security is offered as part of IP VPN services and includes virus protection, network authentication through SSL VPN amongst others

*LINKdotNET’s service offering to enterprises is an extension of its ISP services focusing on connectivity solutions*
LINKdotNET has used its status as second largest ISP to extend connectivity solutions to enterprises.

Key Projects
- Involvement in MCIT’s Smart Village initiative

Key Client Sectors
- As the second largest ISP in Egypt, LINKdotNET’s corporate clients come from across all vertical sectors and enterprise sizes
- Several products are specifically targeted for the SME sector such as virtualised servers, whereby server hardware is shared by several companies

Pricing and SLA Strategies
- List prices are used for shared data centre services whereas dedicated hosting and co-location are quoted on a case-by-case basis
  - Several service levels determine the capacity offered in the data centre
- Services targeted at SME’s tend to be packaged with simple pricing, because of the lower complexity of the requirements

Key Projects
- Involvement in MCIT’s Smart Village initiative
Orange Business Services in Egypt form part of the France Telecom group, with 193 million subscribers amongst the top 10 largest telecoms companies in the world.

- Orange is the dominant brand under which France Telecom trades.
- Apart from Orange Business Services, Orange also has an indirect interest of 36.4% in Mobinil, the market leading mobile operator, and hence in LINKdotNET, purchased in 2010.

Given that telecoms operators are an important client sector, Orange Business Services is able to use Orange’s shareholding in mobile and fixed operators to its advantage.

An extensive global presence and the geographic reach of its network infrastructure is a clear competitive advantage for Orange, particularly with multinationals, and Orange uses this as a competitive differentiator.

Overall the company therefore has a three-pronged strategy with which to address the enterprise sector in Egypt.

- Basic mobile telephony with special corporate packages are offered by Mobinil.
- “Basic” internet access can be provided by LINKdotNET as well data centre services, not currently offered by Orange Business Services.

Orange Business Services focus is predominantly on multinational clients although it also offers services to smaller enterprises.
Orange has an extensive African network, with enterprise clients in almost all countries except Somalia.

Orange is widely represented in Africa where it manages mobile, fixed and internet operators.
- In several countries Orange is also leveraging its existing presence to expand the reach of its Business Services as a separate service offering.
- Orange’s network presence is more extensive than shown because the company has clients all over Africa.

Orange Business Services has offices in Egypt, as well as Senegal, Cote d’Ivoire and South Africa.
- No business services as such are offered in South Africa, but two large clients, SAB Miller and BHP Billiton, are based there.
- Innovation hubs are located in Cairo and Jordan.

Infrastructure
- Orange has extensive infrastructure in Africa which includes satellite and fibre backbones as well as participation in submarine cables.
  - These are managed through Orange Business Services.
- These are augmented by more localised telecommunications infrastructure of the mobile and fixed operators which Orange manages.
  - There was relatively little synergy with Mobinil’s network whereas this is not the case with LINKdotNET.
- Where clients require additional network infrastructure, or redundant links Orange Business Services may lease infrastructure.
- Vendors therefore include equipment providers as well as partners for distribution networks.

Current Vendors / Partners

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco</td>
<td>Gold Partner, telepresence solutions</td>
</tr>
<tr>
<td>Microsoft</td>
<td>Gold Partner</td>
</tr>
<tr>
<td>Avaya</td>
<td>Contact centre solutions</td>
</tr>
<tr>
<td>Checkpoint</td>
<td>Firewall solutions</td>
</tr>
<tr>
<td>Juniper</td>
<td>Equipment</td>
</tr>
<tr>
<td>Telkom SA</td>
<td>Partnership for distribution networks</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan
Egypt – Orange Business Services

Solutions in connectivity through IP VPN and integrated services are the main two product lines

- Orange Business Services does not operate data centres in Egypt, and given LINKdotNET’s presence in this market is unlikely to in the near future
  - However, the company is able to offer this service through data centres elsewhere in Africa or Europe

- IP VPN over MPLS is one of Orange Business Services flagship product offerings and is offered to corporate clients along with remote access VPN etc
  - Included here is high-speed ethernet and DSL

- Not offered as a managed service in Egypt

- Orange Business Services has an established global partnership with Cisco to be able to offer Telepresence to its global clients
  - Unified communications include other collaboration solutions, such as Microsoft Sharepoint, enterprise IP telephony, VoIP trunking, PBX’s amongst others
  - Services may be supplied in a managed environment, alternatively Orange Business Services supplies equipement and systems integration

- Not offered as a managed service in Egypt but security forms part of IP VPN solutions
  - The security vendor RSA is a global partner and Orange Business Services will offer these products if requested

*Orange Business Services engages both in managed services, particularly on the network side as well as providing systems integration*
Egypt – Orange Business Services

Global companies demand the same quality of service as elsewhere but at local prices

Key Projects
- MAF Carrefour MPSL IP-VPN network
- Emaar - property

Key Client Sectors
- Orange Business Services main target clients are multinational organisations with representation in Egypt
  - The favourable economic and stable political environment in Egypt has resulted in increased foreign investment, particularly from companies which are looking at Egypt as a gateway to the Middle East
- Egyptian national companies from all sectors are also targeted, with some concern that these are not converted sufficiently
  - As many Egyptian companies are also looking to expand into the Middle East Orange’s links into these countries has been an important differentiator
- The SME market is addressed but to a far lesser extent in Egypt

Pricing and SLA Strategies
- Orange Business Services are priced at the premium end of the Egyptian pricing range
  - Pricing is justified by the advanced value-adds and the company’s global presence
  - Equipment pricing is the same as elsewhere but service pricing is adapted for local conditions
- Pricing for services targeted at multinationals is customised to ensure that solutions meet expectations while at the same time working off a standardised price list
- Solutions for the SME market in other countries are packaged with pricing easy to understand per solution package
- Global clients expect to receive the same standard of service and infrastructure and SLA’s are used to guarantee this
Content – Country Assessment

- Aims and Objectives
- Project Scope
- Methodology
- Introduction

Country Assessment
- Egypt
- Nigeria
- South Africa
- Conclusions
- Appendix A
Nigeria – Country Overview

The Nigerian telecommunications market is the largest in Africa in terms of mobile subscribers

- Nigeria is the most populous country in Africa with an economy largely dependent on oil and gas revenues
  - The size of the private sector is comparatively small
  - The country has a reputation for high levels of corruption

- Liberalisation of the telecommunications market in 2006 as a result of the introduction of a unified licensing regime has resulted in high growth rates for mobile telecommunications
  - Mobile penetration was, however, still only at 48% in 2009
  - By 2014 the number of mobile subscribers is forecast to grow to 110.7 million

- Competition in the telecommunications market is intense with 15 operators providing fixed-line services and nine operators providing mobile services

- The traditional fixed-line market is increasingly dominated by CDMA operators, as the national incumbent, NITEL, continues to lose market share
  - A lengthy privatisation process for NITEL has been beset with difficulties, accounting in part for its poor performance

- Fixed-wireless CDMA technologies are expected to show strong growth in the next three to five years with better quality of service and greater network coverage
  - CDMA networks allow for easier deployment of non-SMS data services and applications and are therefore expected to capture a greater proportion of the data services market

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Key Economic and Telecommunications Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>152.2 million</td>
</tr>
<tr>
<td>GDP (US $)</td>
<td>165.4 billion</td>
</tr>
<tr>
<td>GDP Growth Rate</td>
<td>5.6%</td>
</tr>
<tr>
<td>Private Sector Contribution</td>
<td>43.3%</td>
</tr>
<tr>
<td>Telecoms Contribution to GDP</td>
<td>3.6%</td>
</tr>
<tr>
<td>Inflation</td>
<td>12.5%</td>
</tr>
<tr>
<td>Fixed Line Subscribers</td>
<td>98,000</td>
</tr>
<tr>
<td>Mobile Subscribers</td>
<td>72.4 million</td>
</tr>
<tr>
<td>Internet Users</td>
<td>505,000</td>
</tr>
<tr>
<td>Broadband Users</td>
<td>297,000</td>
</tr>
</tbody>
</table>

Source: 1) Economywatch, 2) EIU, EDC Economics, 3) World Economic Forum, 4) Frost & Sullivan 2010

- Starcomms is the market leader in the CDMA space, with 65% market share for fixed-line services

- Mobile services are offered by five GSM and four CDMA operators
  - However, MTN, Glomobile and Zain control approximately 85% of the mobile market by subscribers

- Like in other African countries, broadband internet penetration was below 1% in 2009, although some 100 ISP’s, both large and small, operate in the country

Nigeria’s mobile telecommunications market is expected to continue on its growth trajectory, assisted by improved coverage of a national fibre optic network infrastructure
Leading ISP’s include South Africa’s MWEB, 21st Century, Netcom and Rosecom

Despite current low numbers of internet users, demand for such services is high and wireless network operators are shifting infrastructure investments to fibre optic cables to meet this demand, resulting in high levels of activity around infrastructure deployment

- Globacom has invested US$700 million to deploy terrestrial fibre optic cables to link Nigerian cities
- Zain and MTN have deployed fibre optic transmission backbones to connect cities, and have invested US$700 million and US$300 million, respectively
- Phase 3 Telecom will roll out 14,000 km of fibre optic cables over Power Holding Company of Nigeria’s (PHCN) transmission lines
- Gateway Communications in partnership with Cambridge Broadband Network is rolling out a countrywide MPLS network in the course of 2010
- WiMAX and iBurst are in the first phase of a network roll-out in major urban centres like Abuja and Lagos, laying the foundation for future market penetration of these technologies

Generally, network infrastructure in Nigeria is concentrated in the major urban areas because of high network operating costs associated with the terrain and also limited spectrum availability

The majority of ISP’s rely on NITEL’s undersea cable

SAT-3/WASC for international bandwidth

- Exceptions are Globacom and 21st Century, which are connected to BT’s gateway and international MPLS network

The managed services market is in its early stage of development, but represents one of the fastest-growing areas in the Nigerian telecommunications industry

- In the past three years, the Nigerian managed services market has focused on outsourced customer care services such as contact centres in financial services and health care
- Telecommunications companies themselves are consumers of managed services in Nigeria
- All wireless operators have deployed fixed-line technologies to enhance the quality of their data services

As companies are searching for cost-effective and efficient ways of doing business, a growing number of service providers is specialising in network infrastructure support, data centres, unified communications and network security solutions

- 21st Century and Globacom are the two largest providers
- Both MTN and Globacom have established separate divisions to provide managed services
- Other major managed service providers include Zain, Internet Solutions, Gateway, Helios Towers, and SWAP Technologies and Telecomms etc resulting in low market concentration

Competition is expected to increase as more network operators expand into managed services

With declining voice ARPU’s in Nigeria, the managed services market is expected to show strong growth in the next three to five years as operators devote increased resources on developing this sector
MTN Nigeria has continuously improved its network quality of services and distribution channels over the past three years

- As part of the MTN Group, the largest operator in Africa, MTN Nigeria was the largest mobile operator in Nigeria with a 50% market share in 2009
  - Subscriber numbers have been growing at an average of 10% over the past three years
- ARPU has declined over the last three years, from US$18 in 2006 to US$12 in 2009
- Nonetheless MTN Nigeria remains the most profitable subsidiary, as measured by operating profit margin, within the MTN Group in 2009
- MTN Nigeria’s strategy has been to deploy new and advanced network technologies to offer value-added services to mobile subscribers
  - The company focuses on its core business of consumer mobile telecommunication through continued 3G mobile network investments
  - Its new WiMAX network was launched in November 2009 in high density areas of the country in order to provide the platform to target the SME segment more effectively
- In 2009, MTN created an Enterprise Solutions department and acquired VGC Communications
  - VGC Communications is a fixed-line service provider which will help MTN to target corporate customers and offer a high quality of service
- MTN is currently not well represented in managed

Key Company Facts

<table>
<thead>
<tr>
<th>Year of Formation</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>MTN Enterprise Solutions: 2009</td>
</tr>
<tr>
<td>Ownership</td>
<td>Subsidiary of MTN Group</td>
</tr>
<tr>
<td>Listing</td>
<td>N/A</td>
</tr>
<tr>
<td>Revenues (US$)</td>
<td>4.4 billion</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
<td>&lt;10% of total revenue</td>
</tr>
<tr>
<td>Profitability Indicator</td>
<td>EBITDA margin – 59.3%</td>
</tr>
<tr>
<td>Customer Numbers</td>
<td>30.8 million subscribers</td>
</tr>
<tr>
<td>Market Share</td>
<td>50% for mobile telecoms</td>
</tr>
<tr>
<td>Competitive Positioning</td>
<td>Focus on mobile operation</td>
</tr>
<tr>
<td></td>
<td>Also present in fixed-mobile converged services, advanced mobile technologies and enterprise solutions</td>
</tr>
</tbody>
</table>

1) Total revenues for Nigeria only

Source: MTN Annual Reports, Frost & Sullivan, 2010

MTN Nigeria is the largest revenue generating subsidiary within the MTN Group and continues to grow through integrated mobile and fixed solutions

- Creating a separate division focused on the enterprise segment signals MTN's intent to pursue this sector more aggressively and increase its market share in this segment
Minnesota’s geographic footprint will be discussed under MTN Business in South Africa.

**Infrastructure**
- MTN Nigeria provides services in 223 cities and towns, more than 10,000 villages and communities and along a growing number of highways in Nigeria, covering 36 states as well as the capital Abuja.
- MTN’s major technologies in Nigeria include GSM, GPRS, HSDPA, WiMAX and fibre optic cables:
  - MTN currently has the widest 3G coverage in Nigeria, with 1,700 sites.
  - MTN’s 3.5G network covers major cities.
  - MTN Nigeria’s digital microwave backbone is the most extensive and modern in Africa and stands at 10,450 km reaching 1,916 cities and towns in Nigeria.
  - In 2009, 110 km of metro fibre-optic links were rolled.
  - MTN’s IP-MPLS network is one of the biggest in Nigeria.
- MTN Nigeria is looking to increase its geographic coverage by extending its WiMAX network.

**Current Vendors**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension Data and Cisco</td>
<td>IP/MPLS network solution</td>
</tr>
<tr>
<td>Cisco</td>
<td>TelePresence Virtual Meeting solution</td>
</tr>
<tr>
<td>BT Teleconsult</td>
<td>Enterprise solutions</td>
</tr>
</tbody>
</table>

*Source: Frost & Sullivan*
Nigeria – MTN Nigeria

Unified communications are expected to take off as these provide a cost-effective means for business collaboration

<table>
<thead>
<tr>
<th>Data Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Not offered at present and have not yet developed a value proposition</td>
</tr>
<tr>
<td>• MTN will, however, partner to assist in the establishment of data centres</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP VPN</th>
</tr>
</thead>
<tbody>
<tr>
<td>• MTN Nigeria partnered with Dimension Data to build its IP/MPLS network</td>
</tr>
<tr>
<td>• The IP/MPLS technology allows MTN Nigeria to offer VPN services to SME customers, and ISP services reselling voice and data services to consumers, as well as providing the platform to extend unified communications services</td>
</tr>
<tr>
<td>• The implementation of a converged technology infrastructure simplifies the management and visibility of the network, and reduces congestion in the voice network</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metro Ethernet</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Branch Connect is a dedicated point to point leased-line service to connect branch offices to head offices and data centres through Wide Area Networks (WAN)</td>
</tr>
<tr>
<td>• The Metro Ethernet network provides digital transmission speeds ranging from 2 Mbps (E1) to 155 Mbps (STM1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unified Comms</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Solutions relating to unified communications include HyConnect (VoIP over fixed-line broadband network), messaging, and ePresence (video- and audio-conferencing)</td>
</tr>
<tr>
<td>• These services are offered as a separate component within its enterprise solutions, and are currently only available in Lagos, Abuja, Port Harcourt and Ibadan</td>
</tr>
<tr>
<td>• Direct Connect has been used by its corporate customers for contact centre services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Not offered at present</td>
</tr>
</tbody>
</table>

Managed service offerings are limited at this point, concentrating on the network infrastructure business but a large corporate customer base for voice services presents a platform for future managed service offerings
Key Client Sectors
- MTN Nigeria targets the financial service, oil and gas, manufacturing, and the government sector in Nigeria
- Revenue is mainly generated from the oil and gas, and financial services sector in Nigeria
- The company considers its market share in these verticals to be “healthy”

Competitive Positioning with respect to Pricing, SLA’s and Service Offering
- The company focuses on offering network infrastructure
- Pricing is subject to competitive pressures from other market participants
- Solutions and services are customised to suit individual client requirements with value-added services as a key differentiator
- A premium pricing model focusing particularly on value pricing is applied

Key Projects
- **IP MPLS Network**
  - In 2010, MTN Nigeria deployed an IP MPLS solution from Dimension Date and Cisco
  - A preconfigured kit was installed in 12 switch centres, and all of MTN Nigeria’s prepaid, corporate, third party and VAS network and VPN, were migrated to the IP MPLS network
  - Cisco assisted with automated provisioning during migration

- **Enterprise Solutions**
  - In 2008, British Telecom consultants partnered with MTN Nigeria to design and deliver enterprise services and solutions across Nigeria working with MTN Nigeria’s fixed network

Nigeria – MTN Nigeria
The oil and gas sector is an important vertical sector for MTN
Nigeria – Zain/Bharti Airtel

Zain’s primary focus remains a mobile operator with limited focus on managed services

- Zain Nigeria, originally Celtel Nigeria, was formed in 2000 and launched GSM operations in 2001
- After Zain acquired 65.7% of Celtel Nigeria’s equity, the operator was rebranded to Zain in 2008
- The Indian telecommunications operator Bharti Airtel purchased all but one of Zain’s African subsidiaries for US$ 9 billion in June 2010
  - It is expected that in due course Zain Nigeria will again be rebranded
  - Also Bharti Airtel is expected to introduce different operating practices which have allowed it to achieve significant operating cost saving in its home market
- By the end of 2009, Zain Nigeria was the largest African subsidiary in the group with a subscriber base of 14.8 million and revenues of $1.3 billion
  - However, the company made a net loss of US$ 125.4 million due in part to declining mobile voice service revenue
  - This has been accompanied by declining market share and high subscriber churn rates
- Zain Nigeria has been focusing its efforts on protecting market share, and investing in its core network to improve both capacity and coverage
  - 3G and 3.5 licenses were obtained in 2009 to offer broadband and other data services, which the company expects will help it retain subscribers and counter declining voice ARPU

Key Company Facts

<table>
<thead>
<tr>
<th>Year of Formation</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Subsidiary of Bharti Airtel Group in India</td>
</tr>
<tr>
<td>Listing</td>
<td>Non-listed</td>
</tr>
<tr>
<td>Revenues (US$)</td>
<td>1.31 billion&lt;sup&gt;2009&lt;/sup&gt;</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
<td>15% of total revenue</td>
</tr>
</tbody>
</table>
| Profitability Indicator | EBITDA margin – 30.0%
                        | Profit margin – -9.6% |
| Customer Numbers | 14.8 million subscribers<sup>2009</sup>
                     | Corporate clients unknown |
| Market Share      | 24% for mobile telecoms<sup>2009</sup>
                     | 5.0% for managed services |
| Competitive Positioning | The second last mobile operator in Nigeria. Content services |

Source: Zain Annual Reports, Frost & Sullivan, 2010

- Several marketing initiatives are in process to drive subscriber acquisition
- Managed connectivity services are slowly being offered to the corporate sector and are expected to become more important as a revenue driver in future
  - This offering aims to meet the needs of corporate customers to reduce their operational costs

With the acquisition by Bharti Airtel, Zain’s operation in Nigeria is expected to leverage Bharti Airtel’s considerable experience in infrastructure development to assist growth
The wide geographic footprint and strategic partnerships gives Zain / Bharti Airtel a competitive advantage in Nigeria

- Bharti Airtel took over Zain’s operation in 15 African countries
  - The company is expected to expand into the North African region, for example Morocco, in the near future
- Zain is mainly engaged in providing mobile telecommunications services in Nigeria and the rest of Africa
  - 3G broadband services are increasingly offered throughout the countries of operation
- It remains to be seen whether Zain leverages its One Network which connects 22 countries in Africa and the Middle East for its corporate service offering

Infrastructure

- The company has deployed GSM/GPRS, WCDMA and HSPA+
- Zain’s 4000 BTS cover over 1,500 towns and 14,000 communities across six geopolitical zones in Nigeria
  - Zain is planning to deploy 1,500 3G data sites within the next two to three years
- Zain is currently constructing fibre optic transmission backbones with a length of 2,900km to connect major cities in Nigeria
  - Bharti Airtel is likely to provide additional capacity and expertise for the rollout

Current Vendors

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ericsson</td>
<td>GSM and WCDMA managed network services</td>
</tr>
<tr>
<td>Motorola</td>
<td>GSM network expansion</td>
</tr>
<tr>
<td>Huawei</td>
<td>Mobile networking solutions</td>
</tr>
<tr>
<td>NSN</td>
<td>Fiber and Dense Wave Division Multiplexing managed network services</td>
</tr>
<tr>
<td>Other vendors</td>
<td>Software applications from Avaya, Dimension Data, EMC, Microsoft, Juniper, Oracle, SUN Microsystems</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan
Nigeria – Zain/Bharti Airtel

**Managed services remain an area for improvement in terms of offerings**

| Data Centre | • Not offered at present |
| IP VPN      | • The Direct Connect service offers connectivity between corporate PABX’s and Zain’s network over E1 circuits  
• The company offers converged services based on the IP network and employs a mix of wireless and fixed technologies to leased services  
• Point-to-multipoint microwave offers a good geographic coverage for lower bandwidth customers |
| Metro Ethernet | • An E1 connection with 30 voice channels is provided while additional E1 connections are provided in keeping with traffic volume or scaled accordingly based on the call volume  
• Cost reduction is based on a least cost routing facility  
• Metropolitan fibre links are implemented in three major cities - Abuja, Lagos and Port Harcourt |
| Unified Comms | • Not offered at present |
| Security | • Time of Day (TOD) disaster recovery means that the connection is kept alive between companies and their respective offsite server between 9pm and 9am each day  
• This service was developed to allow financial institutions to perform their daily backup offsite, utilizing an Ethernet link with gigabyte capacity across Nigeria |

**Zain Nigeria offers very limited managed services at this point centred largely around connectivity**
Nigeria – Zain/Bharti Airtel

A customer oriented approach and premium pricing model are key strategies going forward

Key Client Sectors

- Financial services are a target sector of Zain Nigeria
- Its leased line and disaster recovery services are specifically designed to suit the requirements of a decentralised organisational structure in the financial service industry
- Other sectors include telecommunications, health care and the public sector
- However, the corporate sector remains a small portion of overall revenues in the country

Managed Network Service

In June 2009, Zain and Ericsson entered a five-year managed services agreement whereby Ericsson will operate Zain’s nationwide GSM/WCDMA networks in Nigeria

Managed Network Services

In October 2009, Zain Nigeria chose Nokia Siemens Networks (NSN) as the service provider of managed network services whereby NSN will provide managed services for Zain’s multi-vendor Fiber and Dense Wave Division Multiplexing network in Nigeria

Competitive Positioning with respect to Pricing, SLA’s and Service Offering

- The following are the major factors that are taken into account:
  - Premium pricing with customized solutions
  - Highly available and reliable networks
  - High network stability when migration and interaction among different technologies
Nigeria – Globacom

Data services will become a revenue driver for Globacom by 2012 when its fibre infrastructure roll-out is expected to be completed

- Globacom is Nigeria’s second national operator (SNO) and as well as a leading mobile operator
  - It was the first company in Nigeria to offer per-second billing when it was formed in 2003
- With continuous investments in fibre-optic infrastructure over the past three years, Globacom has also become the second largest managed service provider in Nigeria
- On the mobile front, the company provides value added services targeted at consumers, such as MMS, mobile internet, ringtones and logos, text messaging, voice mail, roaming, supplementary, 3G, caller tunes, and voice SMS services
- Glo Gateway is the international gateway operator of Globacom and offers fibre-optic connectivity between the UK and Nigeria
- Apart from mobile services, which form its core business, the company aims to diversify its service portfolio to meet the challenge of declining ARPU of mobile services
- The company positions itself as a multi-service and IT solution provider through a combination of fixed and wireless technologies
  - The strategy around corporate customers is to develop high speed and secure data services through ongoing investments in fixed-wireless and fibre-optic technologies

<table>
<thead>
<tr>
<th>Key Company Facts</th>
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<tbody>
<tr>
<td>Year of Formation</td>
</tr>
<tr>
<td>Ownership</td>
</tr>
<tr>
<td>Listing</td>
</tr>
<tr>
<td>Revenues (US$)</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
</tr>
<tr>
<td>Profitability Indicator</td>
</tr>
<tr>
<td>Customer Numbers</td>
</tr>
<tr>
<td>Market Share</td>
</tr>
<tr>
<td>Competitive Positioning</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan

- A high pace of technology deployment, efficient services, an array of value added services as well as strong and unique marketing initiatives are key differentiators of the company
- The company has also not shied away from taking calculated risks such as initiating the construction of a submarine cable to the UK

Globacom has followed the trend of focusing on data services through fibre-optic infrastructure development and service portfolio diversification
Globacom is based in Nigeria and operates in five other West African countries
- It won an operating license in Senegal in June 2010 and is expected to launch services within the year
- Globacom also has an opportunity to expand to Mali in the near future by leveraging its Glo-1 undersea cable

**Infrastructure**

- Globacom has its own international gateway that not only carries international traffic for its own customers, but also for other telecommunications companies in the region
  - In 2004, the company set up an interconnectivity link with UK-based BT Group, called Glo Gateway allowing for the termination of calls directly to and from the UK, and the offering of a range of value added services
  - Globacom’s network provides global connectivity for Africa through major teleport and switching facilities in Europe and America
- In 2010, the company completed the high-capacity Glo-1 submarine cable connecting Nigeria and the UK, with branching units in 14 African countries
- In 2005, the company’s mobile network was interconnected to that of MTN Nigeria, which allows Globacom’s subscribers to use both networks

**Current Vendors**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSN</td>
<td>Radio Frequency Systems equipments</td>
</tr>
<tr>
<td>Alcatel-Lucent</td>
<td>Intelligent Network solution, messaging suite, multi-standard Evolium radio access and core network solutions, data-aware optical technology</td>
</tr>
<tr>
<td>Acision</td>
<td>Next generation messaging infrastructure</td>
</tr>
</tbody>
</table>

*Source: Frost & Sullivan*
With the completion of the Glo-1 undersea cable project in 2010, the corporate data solutions are expected to become more important as a revenue driver for Globacom in the near future.

**Data Centre**
- In 2010, a Level 3 data centre with 7,000m² space was under construction to offer principally disaster recovery services.

**IP VPN**
- IP VPN over ADSL is offered to corporate customers.

**Metro Ethernet**
- Metro Ethernet over optical fibre connects 13 cities in Nigeria for business and private use, including Lagos, Benin City, Ijebu-Ode, Abeokuta, Minna, Abuja, Kano, Kaduna, Zaria, Ibadan, Port Harcourt, Warri and Asaba.
- International Private Leased Circuits are offered through Glo-1, with simultaneous two-way transmissions of digital signals at speeds ranging from 64 Kbps to 155 Mbps.

**Unified Comms**
- VoIP, messaging and video conferencing services are offered as a separate component related to unified communications.
- Video conferencing services provide point-to-point and point-to-multipoint solutions and form part of the solution offering.

**Security**
- Security services are very limited but disaster recovery services are considered in this segment.
- These will be included in the data centre package.
Nigeria – Globacom
The Glo-1 submarine cable will provide Globacom with an important advantage over its competitors

Key Projects
- Network Capacity Expansion
  In 2008, Globacom chose Alcatel to update its mobile and fixed networks capacity to support up to 35 million subscribers, more than double the size of its subscriber base in 2009
  The network expansion covers radio access, mobile next generation core network and microwave transmission, IP/MPLS and optical network, fixed access networks, intelligent networks and valued-added services, and billing system
- Glo Undersea cables
  The company has recently completed the laying of its Glo-1 undersea cable and is expected to start on Glo-2 soon

Key Client Sectors
- Globacom’s key clients are spread across major industry sectors including telecommunications operators, oil and gas companies, manufacturers, government, and education and medical institutions
- The company has built strategic partnerships in the telecommunications sector with over 40 Tier One Carriers such as AT&T, BT, France Telecom, TeliaSonera, Sprint and T-Systems that use Globacom’s Gateway to connect their customers into Africa

Competitive Positioning with respect to Pricing, SLA’s and Service Offering
- Glo 1 will enable Globacom to offer more competitive pricing options for international connectivity in West Africa
- Solutions can be customized to individual company requirements
- With the launching of Glo 1, Globacom promises 99.9% up time reliability and high speed data, voice and video connectivity
Nigeria – 21st Century Technologies

21st Century has established a strong foothold in the managed services market in Nigeria

- 21st Century Technologies (21st Century) is a ICT service provider building converged multi-service and efficiently managed networks in Nigeria
- The company is the largest provider of managed services in Nigeria
  - 21st Century is also an important ISP offering broadband and dial-up connectivity to home users
- Fibre-optic networks to increase coverage and improve quality of service are currently being extended
- The company aims to help corporate customers in reducing their IT costs by providing disaster recovery sites
- IP VPN, broadband internet and its unique data centre offerings are the core services of the company to attract corporate customers
- Its key differentiator are greater network uptime, customized solutions and higher quality of service delivery than competitors
- Through leveraging its fibre-optic infrastructure development capability, the company is well positioned to expand into other African countries with its network connectivity business, but there is little indication that this is planned at present

**Key Company Facts**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of Formation</td>
<td>2000</td>
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<tr>
<td>Ownership</td>
<td>Private Company</td>
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<tr>
<td>Listing</td>
<td>Non-listed</td>
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<tr>
<td>Revenues (US$)</td>
<td>1.5 billion estimate</td>
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<tr>
<td>Contribution of Business Services</td>
<td>Not disclosed</td>
</tr>
<tr>
<td>Profitability Indicator</td>
<td>Not disclosed</td>
</tr>
<tr>
<td>Customer Numbers</td>
<td>50,000 fixed-line subscribers</td>
</tr>
<tr>
<td>Market Share</td>
<td>50% for managed services 5% for fixed line broadband</td>
</tr>
<tr>
<td>Competitive Positioning</td>
<td>Fibre-optic, Metro Ethernet, and MPLS networks, converged services and eBusiness solutions</td>
</tr>
</tbody>
</table>

*Source: Frost & Sullivan, 2010*

*Managed services although new are expected to become the key revenue driver by leveraging on its current strong focus on building fibre-optic links in Nigeria*
21st Century is focusing on infrastructure development in the rural areas of Nigeria

The company is based only in Nigeria where its network covers the major urban centres, with services available in all states of Nigeria.

The next phase of network infrastructure development is to roll out fibre-optic links to small towns and rural areas.

**Geographic Footprint**

The company’s fibre-optic long haul infrastructure links Lagos, Abuja and Port Harcourt.

**Current Vendors**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSN</td>
<td>EWSD PSTN switch</td>
</tr>
<tr>
<td>Ericsson</td>
<td>GPON (Gigabit-capable Passive Optical Network), IMS (IP Multimedia Subsystem), Fibre-to-the-Home (FTTH) technologies</td>
</tr>
<tr>
<td>Gytel, Watson</td>
<td>Modems</td>
</tr>
<tr>
<td>Other</td>
<td>Partnerships with Huawei, Schlumberger, Bharti Airtel, RAD Data, Intelsat, Schmid Telecom</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan
Nigeria – 21st Century Technologies

Building on its core competencies of network connectivity, 21st Century diversified its service portfolio into business solutions.

| Data Centre | • Hosted Servers and Data Center Collocation offering data synchronization, data storage and network management services are offered from two data centres are in Lagos
| | • Two other data centers are under construction in Abuja and Limpapa
| | • Disaster recovery sites were launched in 2010 whereby the company provides the required hardware and software |
| IP VPN | • IP VPN over MPLS uses Point-to-Point Tunnelling Protocol (PPTP) and the router supports multiple PPTP sessions
| | • As the company has a direct access to Intelsat via the company’s own gateway, network downtime is reduced when transiting through different hops |
| Metro Ethernet | • Metro Ethernet over an optical voice network is driven by an EWSD switching platform and is offered in Lagos
| | • The company offers scalable bandwidth speeds ranging from 256Kbps to STM-4 (622 Mbps)
| | • Both corporate LAN and intranet E1 networks are connected to the SAT 3 undersea cable, and the E1 network is connected to 21st Century’s network |
| Unified Comms | • The company is not yet offering unified communications but has individual component offerings such as video conferencing and VoIP |
| Security | • Perimeter security solutions were launched in 2010
| | • These services are offered as value-added services for existing clients and as revenue generating services to new customers |

21st Century has a strong position in the fibre-optic connectivity infrastructure offering high speed data services.
FTTH and FTTB connectivity are major revenue generators for 21st Century Technologies

Key Client Sectors
- The company has clients spread across all industry sectors in Nigeria
  - However key clients are concentrated in the oil and gas, telecommunications and the financial services sectors
  - Major clients include Total EPNG, Mobil, Etisalat, British Telecoms and Cable and Wireless, United Bank for Africa, and Guaranty Trust Bank
- The company also provides services to home users

Key Projects
- Residential Fibre-optic Broadband Network
  - In 2009, Ericsson signed a contract with 21st Century to supply, build and systems integrate a nationwide FTTH broadband network
  - In 2009, the company built residential internet links for Total’s residences in Lagos
  - In 2010, the company built DS3 links for the call centers of EMTS, a subsidiary of Etisalat
- Global 21CN MPLS Platform
  - In 2010, 21st Century partnered with British Telecoms to build a MPLS network connecting UK and Nigeria
  - The US$ 20 billion investment by British Telecoms will help build the most advanced IP network for use by business customers in the oil & gas and the financial services sector

Competitive Positioning with respect to Pricing, SLA’s and Service Offering
- SLA are designed based on the following factors to ensure 99.5% network uptime:
  - Network location
  - Customer requirements
  - Premium pricing is applied and standard prices are offered to organizations of all sizes across all industry sectors, notwithstanding that discounts are offered depending on the relationship with a particular customer
  - Equipment used for a particular project
  - Product and service offerings
Content – Country Assessment

- Aims and Objectives
- Project Scope
- Methodology
- Introduction

**Country Assessment**

- Egypt
- Nigeria
- South Africa

- Conclusions
- Appendix A
South Africa is the largest economy in Africa and has a vibrant and diversified private sector along with an advanced ICT infrastructure.

South Africa has been affected by the global recession, but is showing signs of returning to growth, although economists predict that GDP growth will not exceed 5% over the next four years.

The level of development of the telecommunications sector varies between fixed and mobile.

- Development has been hampered by an ineffectual regulator.
- Mobile penetration reached 100% in 2009 and this market can be considered to be mature, with declining revenue growth rates supporting this contention.
  - Vodacom and MTN have a combined market share in excess of 85% with the remainder contested by Cell C and the MVNO Virgin Mobile.
  - A fifth operator will be launched at the end of 2010 by the fixed line incumbent Telkom.
  - Advanced mobile technologies include 3G, WiMAX and iBurst, offering data transmission speed up to 21 mbps.

Fixed line services continue their declining trend, despite two fixed line operators contesting this space, as fixed-wireless and mobile offerings are substituted.

The broadband market has experienced strong growth over 40% since 2007, but penetration remains low.

Apart from telecommunications operators, there are about 20 large and medium ISP’s in South Africa, including iBurst, Internet Solutions, JC Broadband, Skyrove and Wireless G.

- With 38% market share in 2009, Vodacom has also become a dominant player competing against traditional fixed line services offered by Telkom.

However, infrastructure development remains an issue.

The South African IT and telecommunications industry are reaching maturity in terms of existing service penetration rate and market competition, which is deemed to see the beginning of the a new life cycle.
Managed services have become a revenue driver for network operators in the current economic climate due to its capital intensive nature and the monopoly power of the national incumbent over certain aspects of the network:

- Operators are reluctant to engage in infrastructure sharing, despite the obvious benefits of this strategy.
- As a result, infrastructure expansion and growth are challenged, which may hamper the growth of managed services.

- South Africa’s managed services market is at an early growth stage with service providers targeting large corporate customers particularly in the financial and public sectors in South Africa.

- A strategy shift by South African enterprises from capital to operating expenditure as a result of the recession has been an important driver of managed services.

- Managed services are provided by systems integrators, telecommunications operators and ISP’s:
  - There are approximately 17 companies operational within the market.
  - Market concentration is high as the market is dominated by a few players.

- IT system integrators have traditionally dominated this space due to the experience and knowledge they have gained in servicing their clients.

- However, the South African data centre market, in particular, has been going through a transformation with a number of non-traditional players entering the managed service market:
  - This includes fixed line operators, mobile operators and internet service providers such as Telkom, Vodacom Business, MTN Business and Internet Solutions.

- The primary types of managed services offered include data centre hosting, application hosting, web hosting, business continuity solutions, infrastructure support, global help desk, unified communications, IP VPN and specialized network security:
  - New and innovative services as an value-add like disaster recovery become an effective tool to retain customers.

The advancement of broadband technologies together with declining bandwidth cost are expected to promote the uptake of managed services across all industry sectors.
Dimension Data positions itself as a global systems integrator, support and outsourcing services provider

- Dimension Data is one of the largest service provider of systems integration and data centre solutions in South Africa, and also has an extensive global footprint
  - Formed in 1983, the company has been operational in the system integration market since 1990
  - In 1996, the company pioneered the migration to virtualized platforms
  - The company is recognised for its broad service portfolio

- Dimension Data has recently been acquired by Japan’s Nippon Telegraph and Telephone Corporation (NTT) for R24.2 billion in July 2010
  - Frost and Sullivan believe that there will be no short term changes in the manner in which Dimension data operates in South Africa
  - However, in the long-term synergies with NTT’s technologies are expected to enhance Dimension Data’s offering in South Africa and globally

- The company’s key focus is large and complex environments, particularly financial services and data centre service providers
  - The public sector is another area of focus

- Differentiating features include experience in multiple industries and geographies, partnerships which provide it with best-of-breed technologies and the availability of a large IT skills base

- Managed services offerings are emerging as a new area for growth in future
- Expertise spans across network Integration, security, converged communications, contact and data centres, and data storage

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**Key Company Facts**

<table>
<thead>
<tr>
<th>Year of Formation</th>
<th>1983</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Public Company</td>
</tr>
<tr>
<td>Listing</td>
<td>Primary listing JSE, LSE</td>
</tr>
<tr>
<td>Revenues (US$)</td>
<td>2.17 billion ¹)</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
<td>80.0% of total revenue</td>
</tr>
</tbody>
</table>
| Profitability Indicator | EBITDA margin – 6.4%  
  Profit margin – 3.3% |
| Customer Numbers  | Not available |
| Market Share      | 41.5% for managed services (excluding Internet Solutions) |
| Competitive Positioning | Leading systems integrator focused on network integration, support, outsourcing, converged communications, data centres and storage |

¹) Total revenue includes Internet Solutions revenue  
Source: Frost & Sullivan, Dimension Data Annual Reports, 2010

The company intends to build its own data centre in the future and is likely to become a direct competitor to Telkom
• Dimension Data is present in 10 African countries including Angola, Botswana, Ghana, Kenya, Morocco, Namibia, Nigeria, South Africa, Tanzania, and Uganda.

• The most recent expansion was the 51% equity acquisition of Telecom Morocco that focuses on the telecommunications infrastructure, and the purchase of a 51% stake in Always on Broadband in South Africa.

• In 2010, the company acquired a 51% interest in Magenta, a Chilean systems integrator, expanding its footprint to five countries in the Americas, namely USA, Canada, Mexico, Brazil and Chile.

Infrastructure
• Dimension Data continues its expansion of data centre capacity in Johannesburg and Cape Town in South Africa.
• The company deploys wireless, fibre optic cables, MPLS, and ADSL technologies.
• Dimension Data has built partnership with 17 vendors worldwide:
  - It is a Cisco gold partner in 29 countries and a Microsoft gold partner in five countries.

Current Vendors

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Systems</td>
<td>UCS product set</td>
</tr>
<tr>
<td>Microsoft</td>
<td>Microsoft Solutions, Microsoft Systems</td>
</tr>
<tr>
<td>Symantec</td>
<td>Security, storage and systems management solutions</td>
</tr>
<tr>
<td>Other - EMC, VMWare, McAfee, HP</td>
<td>Information infrastructure, system security and virtualization solutions</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan
Cloud services and virtualization have been identified as key areas of growth for Dimension Data.
Key Projects

- **Technology Lifecycle Management Assessment**
  In February 2010, Dimension Data developed its new Technology Lifecycle Management Assessment approach to help organizations reduce unnecessary risks, align IT infrastructure to configuration, security, and patch management best practices.

- **Turnkey Solutions**
  In 2010, Britehouse, a member of the Dimension Data group, offered network infrastructure, process, application and data solutions to large and medium-sized enterprises in South Africa. Combined with Dimension Data’s broader services strategy, Britehouse offers turnkey solutions including infrastructure, support, outsourcing and business software.

Key Client Sectors

- **Dimension Data’s key focus is large, complex environments, particularly financial services and data centre service providers**
  - Dimension Data has done particularly well in the financial services sector.

- **The fastest growing sector for Dimension Data is the public sector although growth is off a low base**
  - Cloud hosting, multiple virtual servers and remote access of data are considered to be of particular relevance for this sector.

- **Other sectors include manufacturing, government, oil and gas**

Competitive Positioning with respect to Pricing, SLA’s and Service Offering

- **The company provides customised solutions based on individual client requirements, therefore premium pricing method is applied**

- **Dimension Data aims to offers higher value for the price than its competitors**

- **The following factors are included in Dimension Data’s infrastructure based SLA agreements:**
  - System Uptime
  - Effectiveness of operations, which means where Dimension Data can drive down costs over time
  - Infrastructure cost reduction/optimization
  - Innovation

South Africa – Dimension Data

A key success factor is its ability to transition a large number of customers from a physical to a virtualized computing platform.
South Africa – Internet Solutions

IS positions itself as an end-to-end provider of converged services with a “one-stop shop” for desktop services

• Internet Solutions (IS) is an ISP wholly owned by Dimension Data
• The company is regarded as one of the premier ISP’s targeting the South African corporate segment
• IS has been providing co-location and managed hosting services since 1995 and currently runs six data centres throughout South Africa
• The company has experienced declining revenue growth rates from its internet service provider business and has therefore diversified into data centre solutions, cloud computing and voice services in order to offset this
• It has positioned itself as a one-stop shop which delivers managed network services, hosting, hardware, software as a service (SaaS) and security within a complete end-end solution
• With the licensing of additional electronic communication network services in South Africa, IS has built its own MPLS network, and therefore does not rely on third parties to provision its network
  – Internet Solutions has secured additional fibre optic capacity in East Africa to expand services into other geographies
  – In addition, IS has an international network, Defin Connex, which serves as an important key differentiator for the company

IS successfully shifted its strategic focus from traditional internet connectivity into infrastructure development and data centre services to diversify its revenue streams and counter more competitive conditions in the ISP market

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<thead>
<tr>
<th>Key Company Facts</th>
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<tbody>
<tr>
<td><strong>Year of Formation</strong></td>
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<tr>
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<tr>
<td><strong>Listing</strong></td>
</tr>
<tr>
<td><strong>Revenues (US$)</strong></td>
</tr>
<tr>
<td><strong>Contribution of Business Services</strong></td>
</tr>
</tbody>
</table>
| **Profitability Indicator** | EBITDA margin – 21.8%
  Profit margin – 12.2% |
| **Customer Numbers** | Not disclosed |
| **Market Share** | 20% for managed services |
| **Competitive Positioning** | Hosted unified communications, cloud computing, end-to-end converged services and technical support from Dimension data |

Source: Dimension Data Annual Reports, Frost & Sullivan, 2010
The company is based in South Africa with subsidiaries in Kenya, Nigeria, Ghana and Mozambique. With its increasing involvement in fibre optic infrastructure and connectivity businesses, IS is expected to further expand into the east African region. The company is also actively seeking new acquisitions in Angola. In addition, the company’s owned and managed Multi-protocol Label Switching (MPLS) infrastructure extends to London, New York, Germany, Mauritius and Namibia.

IS will continue to make strategic investments on the MPLS core network in developing markets.
### Data Centre
- The hosted data centre solutions include co-location, managed hosting, Infrastructure as a service (IaaS), and security
  - The co-location service consists of pure space rental and provision of power
  - Managed hosting provides monitoring and back up servers, and content rich managed products;
  - IaaS provides infrastructure services on virtualized platforms and software as a service (SaaS) across different products
  - and security services provides virtualized firewalls in the cloud

### IP VPN
- IS’ MPLS VPN network is spread across 13 cities in 6 countries and 3 continents and is targeted at SME customers
- Secure Dial is a solution where authorized personnel can send and retrieve corporate information from anywhere at any time reliably and securely via any access media
- The product offers clients with features of lower costs, traffic prioritization and bandwidth optimization.

### Metro Ethernet
- Neo Metro-E and NeoLink, based on core and local loop networks, offers point-to-point connectivity
- These networks are deployed using carrier class ethernet standards, support high bandwidth, allow for seamless upgrades, and are cheaper than IP-VPN to provide high bandwidth connectivity within a metropolitan area
- NeoLink provides connectivity over long distances, with bandwidth increment of 2mbps, while Neo Metro-E offers bandwidth increment of10mbps, 100Mbps up to 1Gbps

### Unified Comms
- The company’s unified communications is related to its cloud computing business as the focus is on the hosted UC solutions, with VoIS, unified messaging, conferencing and collaboration as key components
- The UC solution offers clients cost savings, improved productivity and high quality of services

### Security
- Outsourced security services are offered as part of the company’s value-added services
- Virtualized firewalls in the cloud, which is effectively the provision of security services within the network
- Other services include managed security, secure VPN services, intruder prevention, anti-virus, disaster recovery hosting - a full suite of off-site security portfolio

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**IS provides a wider range of data and infrastructure services than its competitors, which becomes a key differentiator**
Key Client Sectors

- IS targets the corporate, public, small-and-medium sized enterprises (SMEs), wholesale and reseller sectors
  - The company has a strong focus on the public sector
- Consumers are served through various channel partners and resellers as well as directly
- Corporate customers contribute approximately 50% of its total revenue, public 25%, SMEs 15%, and resellers 10%
- With decreasing bandwidth cost, IS is also geared to meet the demand for e-business solutions of SME’s

Key Projects

- **Divestiture of Internet Bandwidth Resell Business** – IS has gradually shifted away from the internet connectivity business to value-added services such as security, mobility and software and solution offerings
- **Subcontract of Internet bandwidth reseller business**
  In March 2010, IS changed its channel strategy by delegating its reseller business to Interprise to ensure that its reseller partners are still able to continue providing iBurst Wireless Services
  At the same time, IS supported its resellers through providing exchanges as their end-users require POP accounts for email functions

Competitive Positioning with respect to Pricing, SLA’s and Service Offering

- Individual services are priced on a real cost basis
  - As a result prices vary among different solutions
- IS benchmarks its pricing against the European market, and resells Microsoft and Cisco products by adding a margin
- The company pricing is determined by market penetration objectives which has resulted in its prices being extremely competitive particularly for connectivity solutions
- IS offers dedicated hosted SLA with distinguished value-added services
  - SLA’s focus on service delivery, customer support, competitive pricing and IP expertise
Vodacom Business is a relative new-comer to the managed service market

- Vodacom is part of the Vodafone group after Telkom divested itself of its stake in 2009 with part of the equity listed on the JSE
  - The association with Vodafone allows Vodacom to achieve cost savings by leveraging Vodafone’s global procurement processes
- Vodacom’s main strategic focus has been on the South African mobile market, which continues to be the largest contributor to its revenues
  - Vodacom has, however, expanded into other African markets
- Vodacom Business is a recently formed division of Vodacom with the primary objective of delivering end-to-end converged solutions and state of the art data centres
  - The division was formed in part to diversify revenue sources away from the consumer market which had been experiencing declining ARPU’s in all geographic regions over the last two years
  - Gateway Communications, which has an extensive infrastructure footprint in Africa, is an important part of the overall service offering
- Vodacom Business remains primarily a telecommunications operator and approaches managed services by leveraging its well developed telecommunications infrastructure

**Key Company Facts**

| Year of Formation | 1993  
| Vodacom Business: March 2008 |
| Ownership | Public company with substantial ownership by Vodafone |
| Listing | Listed on the JSE |
| Group Revenues (US$) | 7.8 billion  
| Contribution of Business Services | 9.3% of total revenue |
| Profitability Indicator | EBITDA margin – 33.8%  
| Profit margin – 7.2% |
| Customer Numbers | 28.2 million subscribers  
| 60, 800 Corporate clients |
| Market Share | 52.7% for mobile telecoms  
| 20.0% for managed services |
| Competitive Positioning | Largest mobile operator with strong subscriber growth in 2009  
| Tier I ISP, and business solutions provider |

1) Vodacom Business not reported separately

Source: Vodacom Annual Reports, Frost & Sullivan, 2010

- Extensive direct sales divisions in South Africa and Tanzania concentrate on the sale of data products and a broad portfolio of ICT converged services

**Even under tight economic conditions, Vodacom realised positive revenue growth of 5.6% in 2010 from strong data revenue growth of 31.9%**

**New data centre and managed services are expected to drive future revenue growth**
Vodacom has subsidiaries offering mobile and business services in 5 African countries in addition to South Africa: Lesotho, Mozambique, Mauritius, Democratic Republic of Congo (DRC), and Tanzania.

The company’s principal focus is now to build capability and improve execution in existing markets, particularly through business services in Tanzania and Nigeria.

Investments in new markets are likely
  – However, being part of the larger Vodafone group, acquisition strategies are likely to fall within the group’s overall strategic objectives.

Vodacom’s 11 fibre rings covering all of South Africa’s major metropolitan areas were completed in 2010 and 40% of core traffic is now carried on self-provided infrastructure.
  – This improves the current access network that was traditionally through leased copper lines from the incumbent.

Geographic coverage of Vodacom’s network in South Africa is in excess of 95% through 7,817 base stations in South Africa and
  – 2,134 base stations are installed in the international operations.

Major Technologies include GSM, W-CDMA, EDGE, HSPA+, VSAT and LTE.

Network infrastructure upgrades are expected to be the main focus of Vodacom’s capital investments in future.

### Current Vendors

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcatel-Lucent</td>
<td>Microwave technology</td>
</tr>
<tr>
<td>NSN</td>
<td>W-CDMA network equipments</td>
</tr>
<tr>
<td>Huawei</td>
<td>WiMAX Technology</td>
</tr>
<tr>
<td>Telabs</td>
<td>Metro E1</td>
</tr>
<tr>
<td>Presence Technology</td>
<td>Call centre solution suite</td>
</tr>
</tbody>
</table>

*Source: Frost & Sullivan*
Vodacom Business has secured resources from the IT industry to ensure it has the credentials and capabilities to deliver

| Data Centre | • 3 hosted data centres in South Africa offer advanced climate control, parallel redundant UPS systems, advanced fire suppression systems with early sensing devices, and maintenance bypass emergency shutdown systems  
|            | • In 2010, a new 1000m² data centre was opened to support its broadband internet access, MPLS VPN, managed enterprise voice and VoIP gateway services  
|            | • Microsoft hosted, SAP and online data storage services. Hosted in the cloud, Data centre fills up quicker than competitors |
| IP VPN     | • MPLS VPN solution were implemented by Cisco for Vodacom following the trend of GSM and IP network convergence  
|            | • MPLS VPN networks serve clients in 40 countries across sub-Saharan African  
|            | • These services are offered through leveraging the expertise and geographical footprint of Gateway Telecommunications, acquired in 2008 |
| Metro Ethernet | • The Metro Ethernet offering falls under converged services  
|            | • The company recently completed all its planned metro fibre rings in South Africa which has allowed it to offer a complete suite of new offerings including a new Metro-Ethernet product  
|            | • Microwave technology has been deployed to cover urban areas while fibre is more cost effective to cover the rural area |
| Unified Comms | • Vodacom Business offers wireless, fixed and mobile solutions, dedicated internet solutions, national and international VPN solutions, and VOIP and PBX solutions  
|            | • Microsoft’s unified communications suite is used to integrate hosted exchange, VoIP, switch, email and instant messaging  
|            | • Video is expected to drive the growth of the unified communications, accounting for 65% of total network traffic  
|            | • Collaboration and fixed-mobile convergence with single number dialing are also revenue drivers |
| Security   | • Hosted security solutions include perimeter firewall, email security, managed storage area networks and data back-up services  
|            | • Disaster recovery and business continuity service are offered together with data centre solutions  
|            | • Anti-hacker, anti-spam scaleable online data storage, and disk-based recovery functionalities ensure network security |

*Vodacom Business is a newcomer in the enterprise data management market but it is actively seeking new growth opportunities through strategic equity acquisitions*
Key Client Sectors

Vodacom Business’ vision is to be a leading managed hosted service provider for both corporate and SME segments. The financial services and public sectors are key clients who demand in particular data centre and security solutions. Other sectors include hospitality, health care, and value chain solutions. It focuses on Top 500 business customers including Southern Sun, Standard Bank, FNB, JD Group, ABC Bank, PwC, Altech Group, iBurst, ICASA, Road Accident Fund.

Revenue contribution from main sectors are financial services (35%), public sector (30%), manufacturing & distribution (20%), and hospitality and health care (15%).

Competitive Positioning with respect to Pricing, SLA’s and Service Offering

An evaluation of current and future requirements is reviewed to decide the best contract offering. SLA Agreements can be tailored between 2 to 5 years with agreed KPI’s. Quality of services are ensured through an arc hitched network with high availability, full redundancy and monthly traffic report to customers. Vodacom Business focuses on 99.9% uptime for its clients. The company uses an on-demand pricing model. As it increases its market share in future, Vodacom Business is expected to implement cost-plus pricing model by adding aggressive margins to gain more market share.

Key Projects

- **Hosted Contact Centres**
  In July 2010, Vodacom Business, together with Presence Technology, a global software provider of a modular all-in-one Call Centre Solution Suite, and INOVO, a call centre service provider, developed a unique hosted call centre product suite. This hosted call centre service will enable customers to improve service quality and reduce operational costs while hosting call centre applications in the Vodacom Business data centre.

- **Integrated Routers**
  Recently, Vodacom Business partnered with Nology, a local distributor of top-quality security-driven broadband and networking equipment, to deliver integrated routers for its new Business ADSL offerings in South Africa.
South Africa – MTN Business

MTN Business is newly launched and looking for market share through aggressive investments on fibre optic infrastructure

- MTN is one of the largest mobile operators in Africa and continues to look for expansion opportunities
  - In South Africa, the company is the second largest mobile network operator
  - In many regions where it operates it is the market leading mobile network
- MTN looks to leverage its brand equity and international footprint for sustained growth through increased efficiency and simplified centralised management
- Like Vodacom, MTN has traditionally focused on voice subscribers, but has also found ARPU’s to decline across most of the countries in which it operates
- To counter declining voice ARPU’s and maintain revenue growth rates, the company has expanded more aggressively into capturing the business market
  - MTN Business was formed, through the acquisition of Verizon in March 2009 and merged with MTN’s Network Solutions division
- Investments in 3G and fibre infrastructure, and data solutions are made to improve network capacity and quality of data services for corporate customers
  - MTN’s infrastructure and capabilities within the data centre market is a key differentiator
- MTN Business positions itself as a solutions-oriented business to business ISP

MTN Business is a new revenue source meeting increasing corporate demand for cost reduction, requiring higher capacity network infrastructure for data centres, cloud computing and managed services

Key Company Facts

| Year of Formation | 1994
  | MTN Business - September 2009
| Ownership | Public Company
| Listing | Primary listing JSE
| Group Revenues (US$) | 14.9 billion ¹
| Contribution of Business Services | 30.0% of total revenue
| Profitability Indicator | EBITDA margin – 41.2%
  | Profit margin – 13.1%
| Customer Numbers | 17.2 million subscribers
  | 22,400 corporate clients
| Market Share | 32.1% for mobile telecoms (RSA)
  | 4.0% for managed services
| Competitive Positioning | South Africa’s 2nd largest mobile operator with a wide African footprint in 22 countries

¹) MTN Business revenues not reported for 2009

Source: MTN Annual Reports, Frost & Sullivan, 2010

- To date, it has gained 23% market share in the corporate segment to provide data communications and IT services
- At present, MTN Business operates 8 data centres in South Africa, offering corporate customers data storage solutions
- Virtualization and green technologies are seen as key future strategies
South Africa – MTN Business

MTN has extensive network infrastructure that it can offer customers locally and across Africa

**Infrastructure**
- In South Africa, MTN has established 496 2G (GSM, GPRS, EDGE) and 659 3G (HSDPA) base stations. 3G population coverage reach 48% in 2009 whereas 2G coverage is in excess of 95%.
- Across its African operations, it continues the second or third phase of 3G network roll-outs and launched a first phase rollout of WiMAX technologies in December 2009,
  - Network coverage in other African countries tends to focus on high density areas.
- The company continues its fibre deployment for national long-distance networks in South Africa and to service evolving voice and data requirements.
  - The Gauteng North fibre ring was completed in July 2010.

**Current Vendors**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSN, Ericsson, Huawei</td>
<td>Network infrastructure rollout</td>
</tr>
<tr>
<td>Motorola</td>
<td>Enterprise Digital Assistant</td>
</tr>
<tr>
<td>IMImobile</td>
<td>Managed services applications</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan

**Geographic Footprint**

- In addition to South Africa and six Middle East countries, MTN offers mobile voice and data services in 15 African countries.
- MTN Business is currently only present in South Africa, Botswana and Namibia.
  - MTN Business plans to establish commercial data centres in countries where it has mobile networks.
  - Enterprise solutions are also offered in Nigeria.
- MTN is actively seeking value-accretive opportunities in emerging markets to reduce concentration risk and achieve economies of scale.
MTN Business offers solutions that help clients improve service efficiency, security and reduce costs

<table>
<thead>
<tr>
<th>Data Centre</th>
<th>Managed Data Centre services include collocation, managed hosting, shared hosting, backup, monitoring and server virtualization services, which are used to host clients’ websites and applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One special feature is the Server Virtualisation that comprises several software-based servers within a single machine, allowing one physical machine to operate as several different server types simultaneously</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP VPN</th>
<th>VPN Network Solutions are used in the networking of company branches through MPLS technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This allow customers to access one of the largest, most stable and secure VPNs in South Africa</td>
</tr>
<tr>
<td></td>
<td>These solutions offer clients scalability, improved e-business application support and security, and increased productivity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metro Ethernet</th>
<th>For the Metro Ethernet Network Solutions customers have a choice of three connectivity options and multiple sub-rate bandwidth options between 2Mbps and 1Gbps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This solution allows customers to bundle VPN, Internet, hosting, VoIP and mobile access services together into the Metro Ethernet product</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unified Comms</th>
<th>Unified Communications include IP Telephony, messaging and collaboration functions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>These functions are incorporated into mobile fleet management, electronic workflow process, and mobile sales force management applications</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security</th>
<th>Security Solutions include mail and web scanning, network security and BlackBerry services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>These services offer highly secure firewall, anti-spam and anti-virus system security</td>
</tr>
<tr>
<td></td>
<td>They protect company confidential data from network infiltration, electronic fraud, and the risk of lost or stolen devices</td>
</tr>
</tbody>
</table>

As a newcomer in the specialised business services market, MTN Business has successfully leveraged its existing wireless and fixed technologies to offer cost-effective solutions
MTN Business serves a broad range of industry verticals with new and innovative solutions

**Key Client Sectors**
- MTN Business delivers mobile and internet-based data services to corporate, SME, and multinational corporations in the following sectors as well as the public sector
  - MTN Business is very strong in the financial services sector
  - Media sector
  - Health and wellness
  - Mining & Manufacturing
  - Retail & Wholesale
  - Transport & logistics
- Both Gijima and EOH re-sell some of MTN’s services making these systems integrators both partners as well as competitors

**Competitive Positioning with respect to Pricing, SLA’s and Service Offering**
- MTN Business offers the following within its SLA
  - high levels of availability
  - infrastructure
  - support
  - security
  - power
  - cooling features
- SLA’s are dependent on what the customer requires and the higher the requirements, the higher the level of the SLA

**Key Projects**
- **Content Applications**
  In October 2009, MTN Business entered a strategic partnership with India-based software and managed services provider IMImobile to enable MTN to launch globally popular content services through enhanced delivery platforms
- **Enterprise Digital Assistant (EDA)**
  In June 2010, MTN Business launched the Motorola ES400 EDA mobile computer for remote workers
- **Telemedicine Workstations**
  In March 2010, MTN offered real-time healthcare services, through the innovative use of four Telemedicine Workstations, for the Free State Province in South Africa
South Africa – Telkom

Data services, virtual network operation and international expansion are seen as growth areas

- Telkom is South Africa’s fixed line incumbent which had an unchallenged monopoly until the launch of the second national operator Neotel in 2006
- Telkom has experienced significant challenges in its fixed line and data services from the increasing presence of mobile operators in this sector
  - This is reflected in decreasing fixed-line subscribers, attributed to competition from fixed-wireless and mobile technologies
- Operating margins have decreased due to write-downs of recent acquisitions in internet and multimedia services which have not yet generated the expected synergies
  - Telkom’s EBITDA and profit margins were not promising in 2009 and there are questions about the company’s strategic direction, particularly with the launch of Telkom Mobile
  - Telkom has opted to reposition itself as a managed services provider and has sought to extend its presence in Africa
- However, Telkom is actively seeking new revenue sources by launching fixed-wireless and mobile services in the next years to drive its operating profit
  - The aim is to retain its existing corporate base due to its declining fixed-line services in the household segment and its further divestiture of Vodacom
  - Telkom’s focus is on developing new services such as payphones, IT applications and managed services to improve its operating profit margin while defending the profitability of its traditional fixed-line services

Telkom is gaining growth momentum by repositioning itself as a data and wireless service provider while defending traditional fixed-line business

Key Company Facts

<table>
<thead>
<tr>
<th>Year of Formation</th>
<th>1991 in its present form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Public Company with substantial government ownership</td>
</tr>
<tr>
<td>Listing</td>
<td>Listed on the JSE</td>
</tr>
<tr>
<td>Revenues (US$)</td>
<td>5.1 billion</td>
</tr>
<tr>
<td>Contribution of Business Services</td>
<td>26.1% of total revenue</td>
</tr>
<tr>
<td>Profitability Indicator</td>
<td>EBITDA margin – 26.5% Profit margin – 6.1%</td>
</tr>
<tr>
<td>Customer Numbers</td>
<td>4.5 million subscribers 48,000 Corporate clients</td>
</tr>
<tr>
<td>Market Share</td>
<td>9.1% for telecoms 10.0% for managed services</td>
</tr>
<tr>
<td>Competitive Positioning</td>
<td>Data service, network infrastructure connectivity, managed services, wide African presence</td>
</tr>
</tbody>
</table>

Source: Telkom Annual Reports, Frost & Sullivan 2010

- Telkom remains the major data service provider
  - Its competitive position in the data service market and corporate segment has been challenged by mobile operators like Vodacom since 2008
  - Managed data network services represent 10.4% of Telkom’s total data revenue as of March 2010, representing a growth of 15.9% from the previous period
South Africa – Telkom

Telkom has been able to increase its international footprint through acquisition of internet service providers

- Telkom specialises in fixed-line and fixed-wireless technologies, providing voice and data services in South Africa
- Telkom also has subsidiaries offering internet services, like iWay Africa in Kenya, Tanzania, Uganda and Multilinks who operates in Nigeria
- Telkom’s operations extend across over 32 countries in Africa including primary locations and distributorships
  - Its international operations are through its ISP services and it is developing a pan-African city to city backbone and hub to international cable access infrastructure

Infrastructure

- Telkom controls the majority of the fixed line telecommunications network infrastructure in South Africa, including voice network switches, local loops, the SAT-3 undersea cable gateway and VSAT networks
  - This gives Telkom a competitive advantage by being able to offer bandwidth at lower cost than presently
  - This is because the new undersea cables such as SEACOM have not yet been able to reduce the bandwidth cost to a level that is competitive
- With the convergence of fixed and mobile services, Telkom successfully leveraged its ADSL and fibre-optic with EVDO broadband technologies to offer a higher value proposition to its customers
- The backhaul network relies on the company’s existing fixed-line network of IP over ethernet or TDM
- In preparation for the launch of Telkom Mobile 2,000 base stations are under construction in order to offer 2G and 3G mobile services

Current Vendors

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Service Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMC</td>
<td>Data storage</td>
</tr>
<tr>
<td>Cisco</td>
<td>Data Centre Technology</td>
</tr>
<tr>
<td>VM ware</td>
<td>Virtualization solutions</td>
</tr>
</tbody>
</table>

Source: Frost & Sullivan
Telkom’s key offerings to the corporate sector are data centre and cloud computing services with shared virtual hosting offerings

<table>
<thead>
<tr>
<th>Data Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Telkom has 6 data centers in South Africa with a total capacity of 9,700 m² making it one of the largest in South Africa</td>
</tr>
<tr>
<td>• An end-to-end virtualized Data Centre environment releases customers from the physical infrastructure and therefore the constraint of immobility, which helps customer to cut investment and operating costs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP VPN</th>
</tr>
</thead>
<tbody>
<tr>
<td>• MPLS VPN Solutions include IP VPN, global VPN and remote access VPN services</td>
</tr>
<tr>
<td>• Services include reduced cost of ownership, network reporting, network availability, scalability and supply chain automation</td>
</tr>
<tr>
<td>• Telkom provides end-to-end service and maintains the access network, the core network and the routers through proactive network management driven by service level agreements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metro Ethernet</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Telkom MetroLAN over MPLS is a Layer 2 service on the Metro Ethernet Network that provides point-to-point, point-to-multipoint or multipoint-to-multipoint connectivity between customer sites</td>
</tr>
<tr>
<td>• This service is aimed at medium and large, corporate, and global corporations and the governments and offers a network of high bandwidth connections between their multiple branches</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unified Comms</th>
</tr>
</thead>
<tbody>
<tr>
<td>• IP telephony and email solutions are offered by its subsidiary Cybernest</td>
</tr>
<tr>
<td>• Email solutions include archiving, security, shared hosted exchange and dedicated managed exchange services,</td>
</tr>
<tr>
<td>• Telkom has not yet had a full-suite of unified communications but separate component offerings of voice and email solutions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Perimeter protection is offered by Telkom’s subsidiary Cybernest</td>
</tr>
<tr>
<td>• Anti-virus, web filtering, URL filtering allowing controlled access to websites, bandwidth management, intrusion prevention, sever load balance, reporting and monitoring, and demilitarised zones</td>
</tr>
<tr>
<td>• In addition, a disaster recovery service is specifically designed for the data centre operation</td>
</tr>
</tbody>
</table>

Telkom has a strong position in data centre, metro Ethernet and IP VPN offerings due to its well-established network infrastructure in South Africa
South Africa – Telkom

Telkom is in the process of expanding into wireless services while retaining its data services market share

Key Projects
- FIFA Managed Service IT Solution
  In November 2009 Telkom provided the hosted solution to FIFA for the 2010 World Cup, combining telecommunications and IT services. This solution was used by hundreds of media professionals. The solution comprises a fully managed server and security solution tailored to FIFA’s hosting requirements, integrated with a Telkom VPN that provides access to all the different locations required.

Key Client Sectors
- As the incumbent fixed line provider Telkom has a wide customer base across all vertical sectors and enterprise sizes with many customers acquired during the time when the company was a monopoly.
- Telkom has worked to entrench itself within the corporate sector and is also focused on the provision of services to multinationals in Africa.
- Government in South Africa is a key sector for Telkom, in part because the government retains equity in the company.

Competitive Positioning with respect to Pricing, SLA’s and Service Offering
- Corporate services are usually individually determined on the basis of the selected components.
- The company has adopted a premium pricing strategy for managed services to meet specific clients’ requirements.
- Customers are usually billed at a flat monthly rate depending on the SLA chosen.
- Variables that determine price include the number and location of sites, the capacity (bandwidth) required, and guarantees around network availability.
- There are negative perceptions around Telkom’s pricing from consumers for standard telephony services and these extend to an extent to the corporate sector.
Content – Conclusions

- Aims and Objectives
- Project Scope
- Methodology
- Introduction
- Country Assessment
  - Egypt
  - Nigeria
  - South Africa
- Conclusions
- Appendix A
## Conclusions

South Africa currently remains the largest market for managed services

### Egypt
- Egypt has a well performing economy which has escaped the worst of the global recession
- The private sector is dominated by SME’s with several large Egyptian companies but foreign investment is encouraged and several global organisations are using Egypt as the gateway to the Middle East
- The managed services market is in its early stages but an enabling ICT policy environment is likely to have a positive impact on future growth
- Combined revenues for managed services are estimated at less than US$100 million in 2009
- Telecoms companies and their subsidiaries are important players in the enterprise market along with systems integrators

### Nigeria
- As an oil-dependent nation with a reputation for high incidences of corruption, Nigeria’s private sector is not as strong as in South Africa or Egypt
- Managed services are also in their early stages of growth
- No revenue estimate for managed services could be made for Nigeria
- Telecoms companies, such as MTN, with global networks and experience are important players in this market

### South Africa
- South Africa is the most developed country with the largest GDP by some way in Africa
- A sophisticated private sector is starting to embrace managed services which consequently generated revenues in excess of US$ 2 billion in 2009
- Telecommunications are very competitive and telecoms companies have moved into supplying services to the enterprise sector to compensate for declining revenue growth from personal subscribers
- In addition, several large systems integrators are increasingly moving to provide hosted services but lack the infrastructure advantage of telecoms operators
Content – Appendix A

- Aims and Objectives
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- Country Assessment
  - Egypt
  - Nigeria
  - South Africa
- Conclusions

- Appendix A
### Spot Exchange Rates

<table>
<thead>
<tr>
<th>Country</th>
<th>Currency</th>
<th>Abbreviation</th>
<th>Unit / USD</th>
<th>Unit / EUR</th>
<th>Unit / ZAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>Egypt Pounds</td>
<td>EGP</td>
<td>0.174</td>
<td>0.133</td>
<td>1.274</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Naira</td>
<td>NGN</td>
<td>0.0066</td>
<td>0.0050</td>
<td>0.0481</td>
</tr>
<tr>
<td>South Africa</td>
<td>Rand</td>
<td>ZAR</td>
<td>0.136</td>
<td>0.104</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*Note: Spot exchange rates for 30 July 2010*

*Source: www.oanda.com*