The Cloud:

building castles
in the air

Compliance with data protection regulations is key to the widespread adoption of Cloud services. Third-country law enforcement presents a risk to Cloud service providers who must give access to user data, which may potentially be at odds with local data protection requirements. As data protection enforcement is determined on a jurisdiction-by-jurisdiction basis, players need to make sure the local legal regime provides the necessary protection. This is particularly important when data is stored across many countries as it is likely to add to the complexity of contracts and compliance requirements.

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Cloud services, with their promise of always-on, cheaper, more flexible and highly standardised ICT services, will have a profound impact on emerging markets over the next five years.

Rapidly growing demand for new ICT capacity, combined with the under-development of current ICT infrastructure, will drive dramatic cloud service adoption across the emerging markets. While cloud is revolutionising IT service delivery in developed markets, emerging markets expect to bypass traditional IT infrastructure by adopting straight-to-cloud strategies and accessing world-class ICT services on a level playing field with their developed market counterparts.

Initial TMT revenue growth will come from Infrastructure as a Service (IaaS), but as broadband infrastructure improves, the Software as a Service (SaaS) market will increase significantly.

Achieving this growth will require a supportive policy and regulatory context, but also significant TMT player solutions, contract and execution innovation to address local market complexities.

Introduction

The rise of enterprise cloud ICT services in mature markets over the last decade has been a game-changer for technology providers as well as enterprises. Cloud services, which foster the transformation of the Internet from a content delivery platform to a software and service delivery platform, are now set to do the same for emerging markets.

The first iteration of cloud ICT has been in IaaS: the virtualisation, consolidation, and centralisation of servers and IT operating systems in data centres. This has enabled organisations in emerging markets to access a range of on-demand ICT in cloud hubs like Hong Kong, Johannesburg, Rio and Singapore, provided they have good network access.

Platform as a Service (PaaS) adds a new layer of software services on top of IaaS to make it easier for enterprises and web players to develop and/or run applications. As local content development communities grow, demand for PaaS in emerging markets will accelerate. SaaS – best exemplified by Salesforce.com's delivery of customer relationship management software via the cloud – combines the delivery of application functionality via a web browser with data access, encryption, transmission and storage services.

The innate characteristics of IaaS, PaaS and SaaS make these services highly attractive in an emerging market context. They do not require ownership or management of hardware or software, other than the access device. They offer standardised, always-on services from centralised large data centres that employ virtualisation and automated system management technologies to deliver significant economies of scale and consequently lower costs. They also enable vendors to centrally evolve the service and upgrade all users based on customer feedback, as well as actual user behaviour data.

Cloud services open opportunities for telco networks, together with IT systems integrators and software vendors, to provide the full range of infrastructure, middleware platforms and software applications that are required for on-demand cloud ICT services. Enterprises in turn are able to take advantage of best practice technologies previously unavailable to them and capitalise on local or regional vertical developments, for example media technologies in South Africa or social network applications development in Turkey.

Market size and growth

Cloud ICT services spend by enterprises in emerging markets was $2.2bn in 2012, and is set to grow to $10.4bn by 2017. This will represent a significant transformation in the way companies buy and use ICT in these regions, with much of this comprising new revenue streams, rather than cannibalising existing spend.
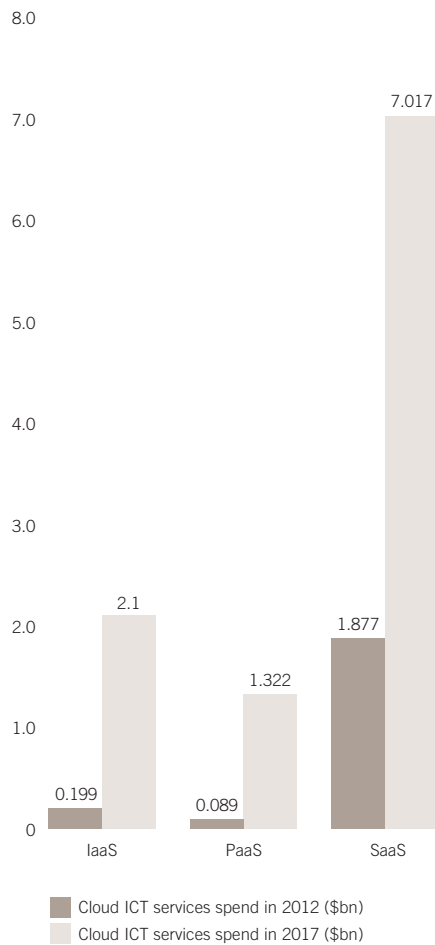
Both telco and IT service providers are well positioned to tap into this market. To do so, they need to ensure they identify and address the requirements of new business customers looking for ICT services – many for the first time.

Cloud ICT will be supplementary to existing "legacy" enterprise IT and communications services, as the migration to cloud ICT services requires a strategic rethink and

Figure 6: Cloud ICT services spend in emerging markets: TMT market growth forecast

Legend:
- Cloud ICT services spend in 2012 ($bn)
- Cloud ICT services spend in 2017 ($bn)

Category	2012 ($bn)	2017 ($bn)
IaaS	0.199	2.1
PaaS	0.089	1.322
SaaS	1.877	7.017

adoption of different approaches in procurement, operations and user management for enterprises. This is a major reason why enterprises will move their budgets into cloud ICT, and in the meantime adopt cloud ICT services on an ad hoc basis where there is a business case.

In the near future, cloud ICT will become a set of managed services. Above all, businesses want standardisation in order to simplify operations and manage costs. For emerging enterprises and multinational companies building supply chains into adjacent and developed markets, this is best done in a managed services arrangement. Nonetheless, the rates of growth in cloud ICT in emerging regions will far outstrip those for existing managed services. The compound annual growth rate (CAGR) for emerging markets for Cloud ICT between 2012 and 2017 will be 37%, compared with typically single-digit CAGR for established managed network and IT services. ▶

Country focus:
South Africa

Reaching for the Clouds
Despite being behind the curve in cloud adoption in a global context, South Africa represents one of the biggest market opportunities for cloud ICT providers in the Middle East and Africa regions. Software as a Service (SaaS) is the biggest cloud ICT segment in South Africa today. Enterprise spend in customer data analytics (i.e. "Big Data") has passed the early-adopter phase among large Internet and media companies in South Africa, and in 2013 it will enter the early-adopter phase for mainstream enterprises.

The CIOs of large enterprises require more bandwidth, but they are already looking to extend cloud ICT into business intelligence and knowledge management, which therefore means significant opportunities for services providers.

Sectors such as mining and banking are fast moving to enterprise resource planning in the cloud, to support operations management in adjacent markets in Asia and Latin America, as well as to voice-over IP. SMEs have crossed the chasm with public SaaS cloud adoption, and will continue to lead migration into the cloud at SaaS and Platform as a Service (PaaS) levels. As a CEO of a start-up company in South Africa told us: "The cloud enables us to get operational quickly and cost-effectively without incurring significant capex or operational expenses. Pay-as-you-grow is the way to go."

Enterprise CIOs are mostly still exploring hosting and/or Infrastructure as a Service, but cloud ICT service providers need to provision PaaS and Unified Communications as a Service for these growth industries.

One reason for South Africa's slow adoption of Cloud ICT Services to date is the generally poor level of cloud provision in the public sector, which

has not updated its Information Society Programme, that set out the country's ICT strategy. However, this is changing, and there are some world-class exemplars in government departments that could help to inspire demand for cloud services. South Africa Revenue Services (SARS), which encourages online filing of tax returns, has automated the assessment of citizens' returns and responds to users within a few hours with the amount owed by the citizen or the state. Completing a tax return takes less than 15 minutes. The service is also usable on mobile devices. As a result, SARS receives more than 90% of its returns electronically.

South Africa has the potential to be a top-five cloud ICT emerging market with a CAGR of 35%. This will take the cloud ICT market to at least $215m by 2017, with the healthy economic backdrop providing support to enterprise IT budget growth and cloud adoption. There are risks, however. While South African legislation with respect to data location, backup requirements and archiving is favourable, the Protection of Personal Information (POPI) bill, requiring information belonging to an individual to be encrypted and confined within the borders of South Africa, could hamper the strategies of global players and increase costs by requiring them to invest in local data centres.

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$10.4bn

Enterprise adoption
of cloud ICT services
will create a market
worth $10.4bn to TMT
players by 2017.

Table 4:
Risk forecast for foreign investors – The Cloud: top five emerging markets

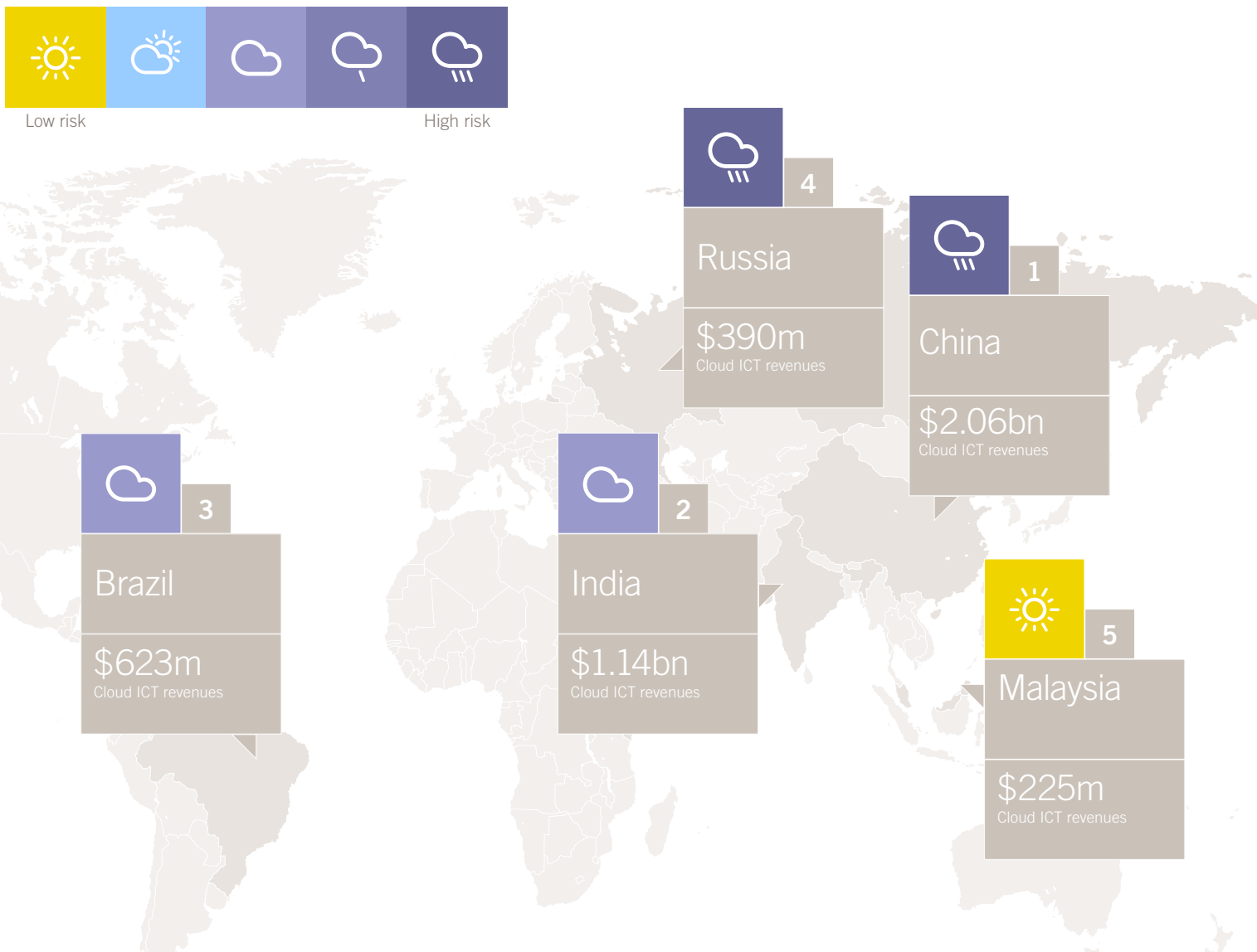| Market	Key risks	Risk outline	Risk forecast
China	Infrastructure Regulation Censorship	Infrastructure: Under-investment in required technology infrastructure, adherence to home-grown technical standards and incentives that favour local firms may isolate China's cloud providers. Regulation: Investment rules limit foreign owner participation in infrastructure. Censorship: Censorship and interception fears are likely to impact cloud adoption.	High risk
India	Infrastructure Regulation	Infrastructure: Low internet adoption and unreliable supply of power and other utilities are likely to delay adoption of cloud services. Regulation: Uncertainty on mobile licensing, where 2G licenses have been cancelled and 3G license coverage rights are poorly defined, is acting as a brake on investment.	Medium risk
Brazil	Connectivity Regulation	Connectivity: Network provisioning times are slowly improving, thanks to licensing of foreign telcos and IT providers, but local partners are in short supply. Regulation: The regulatory environment for cloud is not defined in detail outside VoIP services, and net neutrality rules should be clarified.	Medium risk
Russia	Operational Risks Interoperability	Operational Risks: Concerns remain about security of infrastructure and assets, with perceived risks of interception and government intervention. Interoperability: The restriction of LTE licences to local operators is likely to delay innovation and prevent the roll-out of a national LTE plan.	High risk
Malaysia	Piracy Connectivity	Piracy: Intellectual property rights protection. Connectivity: Weak international connectivity may hamper Malaysia's ambitions to provide international cloud services.	Low risk

Source: Ovum/Linklaters.

Cloud services will enable technology vendors like Amazon, Google, IBM and Unisys to quickly reach potential customers in emerging markets with services that offer simplicity and lower cost. However, data governance is a universal concern, with data sovereignty becoming a significant issue in many countries, which threatens to hamper the adoption of global solutions. In this context, local telco-based data management and security services can be positioned as a strong solution to protect revenues and grow new ones.

Currently, more than 90% of cloud ICT spend is on SaaS by companies taking advantage of public cloud service offers that mainly use the Internet to allow multiple customers to access a common resource and establish new channels for their customers such as social media marketing. Public IaaS resources that can host IT operating systems are currently limited mainly to "test and development" applications, but as private secure IaaS offers mature, these will be used more to host whole IT production systems for business operations.

By 2017, SaaS will have been reduced proportionately to two-thirds of cloud ICT by spending volumes, as vendor offers in IaaS and PaaS mature, service providers develop end-to-end service level agreements, and enterprises adopt a more hybrid approach, incorporating more private cloud as well as public cloud provisioning in their overall ICT strategies.

The Cloud: top five emerging markets

Source: Ovum/Linklaters. All figures projected for 2017.

Low risk   High risk

4 Russia $390m Cloud ICT revenues

1 China $2.06bn Cloud ICT revenues

3 Brazil $623m Cloud ICT revenues

2 India $1.14bn Cloud ICT revenues

5 Malaysia $225m Cloud ICT revenues

During this phase, telcos and their partners in IT software and systems design and integration are in a stronger position to demonstrate the effectiveness of their combination of network service delivery, hosting and data management, together with account support and professional services. This ecosystem approach will enable vendors to drive the greater innovation in solutions, delivery and pricing that will be required to profitably meet the cloud service needs of smaller enterprises sitting below the tier of large established national champions and large government departments.

Economic growth will be the key driver behind enterprise activity and the geographic scope of demand for cloud service delivery. In this context, China and India will be joined by Indonesia, Malaysia and Thailand (Emerging Asia) as increasingly important markets for global and regional enterprises and multinational companies.

Ovum's recent CIO research[1] shows that CIOs in multinational companies expect to be increasing their ICT spending fastest in Asia-Pacific and Latin America over the next two years, followed by the Middle East. More than 50% of multinational CIOs say they will give priority to cloud ICT investments in Asia-Pacific throughout 2013–15.

Africa is fast becoming a market where main buyers of ICT reside and therefore the communications and IT requirements are the greatest. This is particularly true of South African and West African-based companies requiring connectivity across sub-Saharan Africa. South Africa houses 70% of Africa's major companies. At the same time, VPN connections in Africa are increasingly important parts of multinational companies' global networks. We're now seeing as many as 68% of IP VPN endpoints in Africa being provisioned as satellite markets for European companies. It is not unusual for an enterprise to want to network 20 countries in Africa today, or 30–40 countries across MEA.

To address such a diverse context, global vendors and service providers need to have a product roll-out plan and a services organisation that can support locally emergent business customers as well as existing western business customers expanding into emerging markets. This will require accelerating recruitment of skilled local staff in sales and marketing, as well as service centres at regional and national levels. ■

[1] Ovum CIO 2012 Study based on interviews with CIOs from 120 multinational corporations.

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Go-to-market strategies: the only way is up

Service providers have made a series of investments in new infrastructures which represent the first stage in the development of future cloud ICT services. But the development of cloud ICT will depend even more on how well telcos and technology vendors can help develop the service offers that enterprises will require. To grow the market, meet enterprise business requirements and build a successful revenue model, TMT players will need to address five key strategic priorities:

1. Make infrastructure investments with future cloud ICT services in mind: Cloud services can only work with robust data network connectivity in place. Global telcos including BT, France Telecom and Vodafone have announced regional investments for Africa and the Middle East, Latin America, and Asia-Pacific. These have included MPLS (multiprotocol label switching) network and Ethernet access, data and services centres, as well as local IP technology and professional services. These networks can be leveraged into cloud ICT services. Therefore while connectivity is still the main priority, both service providers and users need to think ahead to cloud ICT services, including multichannel contact centre solutions and virtual data centre requirements.

2. Develop new types of contracts: Cloud services offer the prospect that enterprises can pay only for the ICT they consume, under a set-period agreement. Services providers are offering pay-as-you-go contracts, but these might not guarantee income from new capital investments in data centres or service centres. Some service providers are testing the market with contracts that commit the customer to use their services but still benefit from usage-based rates. For example, T-Systems has signed a 21-year contract with a health management agency operating in southeast Asia.

New types of contracts will also need to include the required provisions to address cross-border data flows – cloud systems disperse data and compromise governance, the number one concern for CIOs and TMT players alike. Successful service providers will offer contracts that acknowledge national sovereignty requirements affecting a cloud operation, as well as provision options to meet them.

3. Implement robust service level agreements: Cloud ecosystems do not easily permit full management controls, making service levels harder to guarantee. Private cloud systems are more secure, but the successful telco will negotiate with public cloud vendors to improve SLAs across the cloud. Emerging multinational companies like Brazil's Vale (mining) and China's Ping An (insurance) are already major buyers of the new telecoms and IT services. These customers will often go to their local supplier first, but will also need global service support, network performance, account management and product expertise that few local providers can offer.

37%

The CAGR for emerging markets cloud ICT between 2012 and 2017 will be 37%.

Emerging operators need to move quickly towards processes for consistent service delivery excellence – an area where developed market players have much to offer. Some local players can deliver great network quality, some can deliver value for money, but none is consistent across all the criteria. Nevertheless, there are a number of success stories. Tata Communications was a stand-out among the emerging markets operators in a recent multinational company study by Ovum, with good ratings across key performance criteria. Other regional providers like Telstra and SingTel also score well in enterprise sourcing experience.

4. Partner with regional players: There's an outstanding opportunity for regional operators in emerging markets to take advantage of the services being demanded by new regional companies and large enterprises. Five years ago there were no more than 10 major network operators that were players in regional-to-global services. Today there are 20 operators that can claim a credible offer, with half of new entrants coming from the emerging markets themselves. Within five years this number will double, as more emerging market operators build multinational and cloud ICT service capability including service providers like Citic Telecom CPC in China, Embratel in Brazil, and Telkom SA.

Regional telcos in emerging markets already have cloud ICT systems of their own, and established B2B telco providers should consider partnering with them, as well as following their examples for establishing cloud ICT sources in-region. Telstra, for example, has developed its network computing service (NCS) and network applications service (NAS) with Accenture and Microsoft over five years.

5. Develop a software and technology roadmap: If they are to develop a full cloud ICT offer, TMT service providers need to have a roadmap to develop true SaaS. This will require agreements with vendors like Oracle and SAP for applications, database management interface, dedicated security, applications management and modernisation, and systems integration. Service providers that partner with these and other vendors like Cisco and Microsoft in the US and T-systems in Europe are extending these arrangements to MEA and Asia-Pac. They also need to combine their services with vendors investing directly in their own regional or municipal cloud data centres, as Microsoft has done recently in Shanghai. For example, NTT Communications has acquired global systems integrator Dimension Data so that it can support Cisco and other cloud ICT from Dimension Data's service centres worldwide. The key strategic position of the telco puts them in an excellent position to manage the commercial and technical partnerships needed for sustained development of cloud ICT revenues. Telco operators may be working in a complex stakeholder environment, but their longevity and track record in serving enterprises with network services gives them the trust of the CIO – the trump card they need to win against SaaS players, many of which are new entrants in this market. ■

There are many territories where it is extremely difficult for service providers to invest due to lack of infrastructure, geographic or political challenges, local competition, complex infra-structure planning and licence regulations. But key investments in fixed and mobile broadband, VPN and subsea cables are generating hotspots which are leading to further investment in territories from Asia-Pacific (cloud services centres) to sub-Saharan Africa (ICT operations centres, multimedia contact centres). Where infrastructure starts, investment follows, and we expect to see more specialist investment clusters as emerging markets develop their cloud ICT services strategies.

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