



STUDY: 4G + Cloud = Innovation & Profits?

Vendor Report: Cloud Infrastructure & Solutions
for Telecom Operators

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Table of Contents

Questions Addressed in the Study.....	6
Executive Summary	7
Key Findings and Vendor Profile Summary Points.....	11
Alcatel-Lucent.....	11
Ericsson.....	11
Huawei.....	12
Nokia Siemens Networks	12
ZTE	13
Cloudscaling	13
Cisco.....	13
Jamcracker	14
Mavenir	14
Hewlett-Packard.....	15
IBM.....	15
Introduction.....	16
Worldwide 4G Launch Status.....	17
Vendor Profiles: Cloud Solutions for Operators	19
Profile: Alcatel-Lucent.....	19
Telecom Sector Cloud Strategy (and any MNO specific).....	20
Market Outlook/Opportunity.....	20
Go-To-Market, Geographic & Channel Partners.....	21
Products/Solutions.....	21
Technology Partners.....	24
Professional Services (Consulting, Integration, and Managed Services).....	24
Customer Highlights.....	24
Profile: Ericsson.....	26
Telecom Sector Cloud Strategy	26
Market Outlook/Opportunity.....	26
Go-To-Market, Geographic & Channel Partners.....	26
Products/Solutions.....	27
Technology Partners.....	28

Professional Services (Consulting, Integration, and Managed Services).....	29
Customer Highlights.....	29
Profile: Huawei.....	30
Telecom Sector Cloud Strategy	30
Market Outlook/Opportunity.....	30
Go-To-Market, Geographic & Channel Partners.....	31
Products/Solutions.....	31
Technology Partners.....	33
Professional Services (Consulting, Integration, and Managed Services).....	34
Customer Highlights.....	34
Profile: Nokia Siemens Networks	35
Telecom Sector Cloud Strategy	35
Market Outlook/Opportunity.....	35
Go-To-Market, Geographic & Channel Partners.....	35
Products/Solutions.....	36
Technology Partners.....	36
Professional Services (Consulting, Integration, and Managed Services).....	37
Customer Highlights.....	37
Profile: ZTE.....	38
Telecom Sector Cloud Strategy	38
Market Outlook/Opportunity.....	38
Go-To-Market, Geographic & Channel Partners.....	39
Products/Solutions.....	40
Technology Partners.....	41
Professional Services (Consulting, Integration, and Managed Services).....	41
Customer Highlights.....	42
Profile: Cloudscaling	43
Telecom Sector Cloud Strategy	43
Market Outlook/Opportunity.....	43
Go-To-Market, Geographic & Partners.....	43
Products/Solutions.....	43
Technology Partners.....	44
Professional Services (Consulting, Integration, and Managed Services).....	44

Customer Highlights.....	45
Profile: Cisco	46
Telecom Sector Cloud Strategy (and any MNO specific).....	46
Market Outlook/Opportunity.....	46
Go-To-Market, Geographic & Channel Partners.....	46
Products/Solutions.....	47
Professional Services (Consulting, Integration, and Managed Services).....	49
Customer Highlights.....	49
Profile: Jamcracker	50
Telecom Sector Cloud Strategy	50
Market Outlook/Opportunity.....	50
Go-To-Market, Geographic & Channel Partners.....	51
Products/Solutions.....	52
Professional Services (Consulting, Integration, and Managed Services).....	53
Customer Highlights.....	53
Profile: Mavenir	55
Telecom Sector Cloud Strategy	55
Market Outlook/Opportunity.....	55
Go-To-Market, Geographic & Channel Partners.....	55
Products/Solutions.....	55
Professional Services (Consulting, Integration, and Managed Services).....	57
Customer Highlights.....	57
Profile: Hewlett-Packard.....	58
Telecom Sector Cloud Strategy	58
Market Outlook/Opportunity.....	58
Go-To-Market, Geographic & Channel Partners.....	58
Products/Solutions.....	59
Technology Partners.....	60
Professional Services (Consulting, Integration, and Managed Services).....	61
Customer Highlights.....	61
Profile: IBM.....	63
Telecom Sector Cloud Strategy	63
Market Outlook/Opportunity.....	63

Go-To-Market, Geographic & Channel Partners	64
Products/Solutions.....	64
Technology Partners	65
Professional Services (Consulting, Integration, and Managed Services).....	66
Customer Highlights.....	66
ABOUT MARAVEDIS	67
4G market intelligence and advisory services	67
Exposing the reality behind the 4G hype.	67
More than just numbers!	67
Our Services.....	67
Contact Information.....	67

Table of Figures

Figure 1: Status of 4G deployment.....	18
Figure 2: Global LTE Forecast 2010-2016	19
Figure 3: Global 4G Subscriber Forecast.....	19
Figure 4: Alcatel-Lucent Cloud Architecture.....	20
Figure 5: Ericsson's Role in Operator Cloud.....	27
Figure 6: Partner Roles in Cisco's Cloud GTM Strategy	47
Figure 7: Cisco Cloud Builder Partner Program	48
Figure 8: Jamcracker Cloud Services Brokerage Model.....	50
Figure 9: Jamcracker Platform.....	52
Figure 10: HP Cloud Services Enablement Portfolio.....	59
Figure 11: IBM's Public Cloud Market Forecast.....	63

Questions Addressed in the Study

- What are the vendor strategies for offering cloud solutions to telecom operators?
- Are the vendors focused on public, private or hybrid cloud solutions?
- Are vendors focused on the consumer or enterprise cloud services, or both?
- What are the vendor market outlooks for the telecom cloud market?
- In cloud solutions, what are the vendor go-to-market strategies, geographic focus, and channel partner plans?
- What are the range of cloud products and technology offered, and architectural frameworks for telecom operator cloud environments?
- Has the vendor established technology partners for joint cloud solutions?
- What are the vendor professional services strategies, including consulting, integration, and managed services for operator cloud environments?
- What customer success stories do the vendors have with operators?

Executive Summary

The focus of this study is how 4G wireless combined with cloud computing will drive a new wave of innovation and ROI for operator content, services and applications. The study is a result of interviews and online surveys with mobile operators worldwide, and interviews with IT, software and telecom vendors on cloud solutions and capabilities for telecom operators.

The vendor component of the study looked at infrastructure, professional services and enabling technology that IT and telecom vendors are providing to operators to build cloud capabilities.

Collectively, the leading telecom and IT vendors are focused on enabling operator cloud architectures and platforms that are integrated with the network and OSS/BSS systems.

The key question and uncertainty for operators is defining what a carrier-class cloud platform is and what infrastructure and technology is needed to truly enable differentiated cloud services. The wild card in the equation for developing operator cloud technology is in the use of OpenStack, the open source cloud platform that is attracting the attention of many vendors and operators as the foundation for battling Amazon and Google in cloud services.

While the vendors are taking different approaches to enable the operator cloud, the common theme is that the network is essential in enabling carrier-class cloud services to support real-time applications and enterprise cloud services with service level guarantees. Telecom vendors are focused on exposing, or enabling the use of network assets and unique telecom capabilities to allow the operator and its partners to develop more robust and differentiated cloud services to compete against Amazon, Google and other public cloud providers.

While IT vendors IBM and HP have both developed comprehensive cloud architectures and broad portfolios for telecom operators, HP has teamed with Alcatel-Lucent to create a combined IT and network approach. Alcatel-Lucent is distinguishing itself as the first telecom vendor to announce a carrier-class cloud architecture and platform for telecom operators. Ericsson and Nokia Siemens Networks have not yet announced comprehensive cloud strategies and end-to-end platforms for telecom operators.

Chinese vendors Huawei and ZTE have both launched cloud strategies that include devices, connectivity, and cloud services. However, Huawei is primarily focused on enabling enterprise cloud services for operators, while ZTE is more focused on expanding its enterprise business with cloud solutions. Since China will ultimately have the highest demand worldwide for cloud services and data storage, Huawei and ZTE are well positioned to become major cloud players based on their domestic market alone.

Although Cisco is not always top-of-mind in the cloud market, the company is aggressively promoting the role of Cisco networking and technology as the 'essential architecture' for cloud computing. Cisco is a cloud provider with its WebEx services, and is moving into cloud provisioning with its newScale acquisition.

Meanwhile, smaller firms are moving to challenge the incumbent vendors. Cloudscaling, for example, is offering an operator cloud platform that is based on its own commodity server platform and open source cloud software. Cloudscaling, along with partner cloudTP, have implemented KT's (Korea Telecom) cloud platform and program.

Leveraging its distribution partner relationship with IBM, Jamcracker is leading the emerging cloud services brokerage market and leveraging IBM to support its global expansion.

Mavenir is a mobile IMS core systems platform vendor offering cloud-based applications solutions to be implemented prior to a full-scale IMS infrastructure implementation. Mavenir has OEM partner agreements with Ericsson, IBM, and Cisco.

Consistent with Maravedis' operator cloud study *4G + Cloud = Innovation and Profits?* released November 2011, all the vendors believe the operators need help with developing cloud strategies, business models, developer ecosystems and partnerships, so all the vendors are aggressively marketing professional services offerings.

Looking beyond enterprise cloud services, most vendors have future plans to develop specialized cloud solutions for machine-to-machine and vertical sectors. In parallel with operator cloud platforms, telecom vendors are also developing cloud-RAN technology, which includes applying cloud computing principles to the mobile network architecture and equipment.

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