MARAVEDIS
Wireless Market Research & Analysis

# STUDY: 4G + Cloud = Innovation & Profits?

## Vendor Report: Cloud Infrastructure & Solutions for Telecom Operators

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## 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?



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## 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.



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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.



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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. Mavenior 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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**4G market intelligence and advisory services**

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Over the past decade Maravedis has provided clients worldwide with strategic insight to help them achieve key business objectives. We take pride in helping business executives and the investment community make fact-based decisions on technology purchases and business strategy. Our senior technology and market analysts provide global, regional and local expertise on technology, regulation and industry opportunities worldwide.

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**Our Services**

Maravedis helps you move forward with strategic decisions that have a direct impact on your company's revenue. Our extended offering includes syndicated research, consulting and comprehensive services (4GCounts, 4Ggear,ClearSpectrum).

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