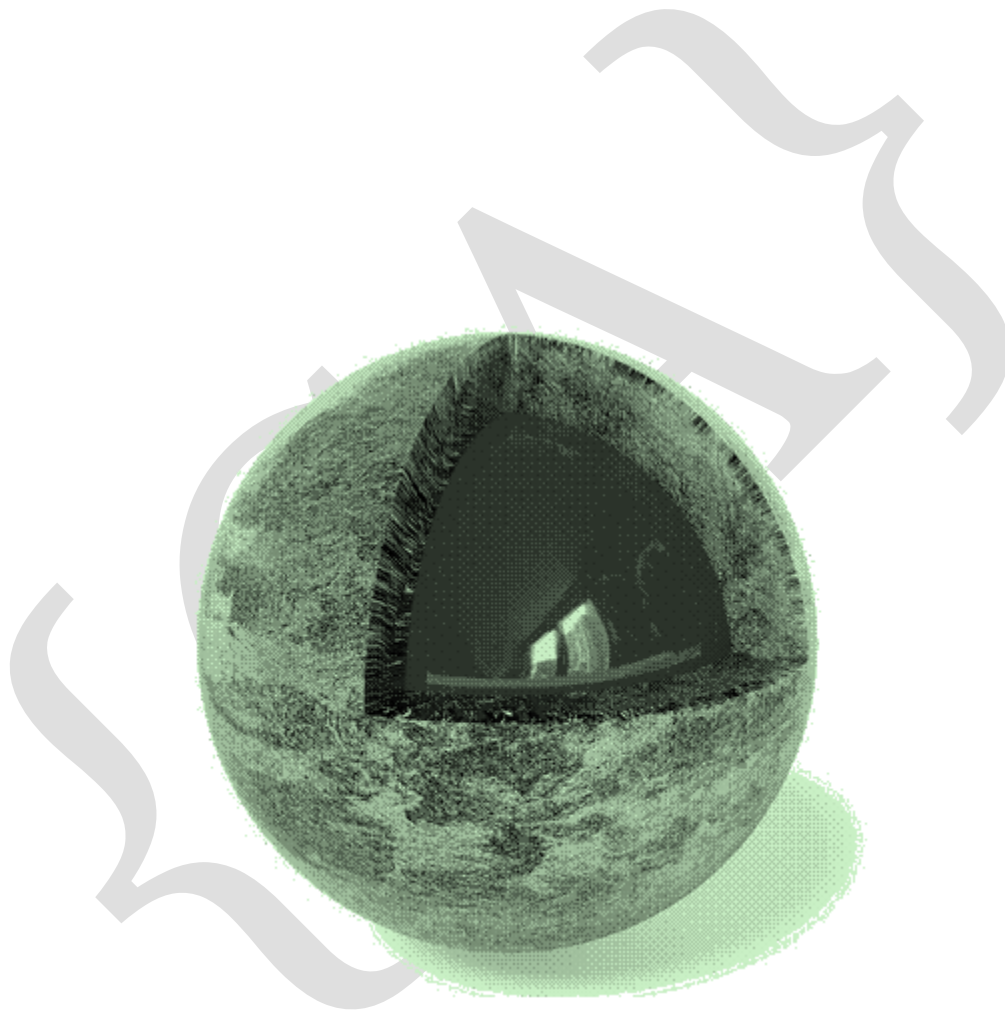


2015

# SDN - NFV in Wireless Networks

Market report



9/1/2015

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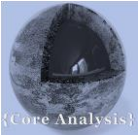
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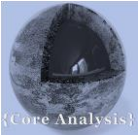
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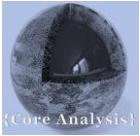
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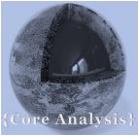
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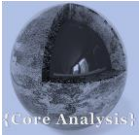
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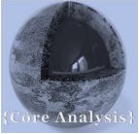
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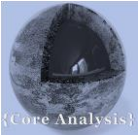
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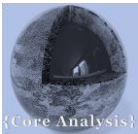


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### About this report

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## SDN-NFV in Wireless Networks 2015/16 for Customer

### About {Core Analysis}



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Patrick Lopez has 18 years of international progressive experience in product and technology introduction in the United States, Canada, Switzerland, Ireland and France.

Founder and CEO of [{Core Analysis}](#), he provides advisory services to technology vendors, board of directors, carriers and venture capital firms on mobile networks, video and cloud technologies. As an analyst, he presents at influential industry forums and conferences and publish an acclaimed blog, industry articles and reports. In 2015, he is chairman / speaker at [ITU Telecom World](#), [LTE world summit](#), [NFV World Congress](#), [Broadband world forum](#) and [SDN / NFV world summit](#)....

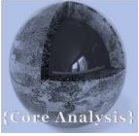
{Core Analysis} was [exclusive advisor to Opera Software](#) in its acquisition of Skyfire for \$155 millions.

{Core Analysis} was exclusive advisor to a european company in their investment round / sale to NTT Docomo.

{Core Analysis} is strategy advisor for mobile video and SDN/NFV to Deutsche Telekom group.

Patrick has collaborated to various industry reports including Deutsche Bank, JP Morgan, Morgan Stanley Credit Suisse First Boston, IDC, Frost & Sullivan, Yankee group, Ovum, Informa... and has written several articles in collaboration with The Wall Street Journal, TMCNet, Wireless Week, RCR Wireless News, CNN and CNBC Europe.

Patrick holds a MBA in Corporate Management and Bachelor Degree in Marketing Strategy.



# SDN-NFV in Wireless Networks 2015/16 for Customer

## Executive Summary

2015 has been the year that SDN NFV efforts “got real” in telco networks. Past the first two years of enthusiasm that were marked by unrealistic vendors’ announcements and a flurry of participation in standards, open source and proof of concept projects. These efforts certainly put the technology on the map and have set operators and vendors priorities towards the exploration of the maturity, promises and limits of the technology.

One of the main problems with a revolutionary approach such SDN and/or NFV implementation is that it suggests a complete network overhaul to deliver its full benefits. In all likelihood, no network operator is able to operate fully these kind of changes in less than a 10 years' timescale, so what to do first?

The choice is difficult, since there are a few use cases that have seemed easy enough to roll out but deliver little short term benefits (vCPE, some routing and switching functions...); while the projects that should deliver the highest savings, the meaty ones, seem quite far from maturity (EPC, IMS, c-RAN...) in a multi-vendor elastic environment.

The problem is particularly difficult to solve because most of the value associated with virtualization of mobile networks in the short term is supposedly tied to capex and opex savings. The business case for saving based on new infrastructure introduction is difficult to make without compelling new revenues streams financing the architectural upgrade.

Islands of SDN or NFV implementations in a sea of legacy network elements is not going to generate much saving. It could arguably generate new revenue streams if these were used to launch new services, but today’s focus has been so far to emulate and translate physical function and networks into virtualized ones, with little effort in term of new service creation.

As a result, the business case to deploy SDN or NFV in a commercial network today is negative and likely to stay so for the next few years unless innovative services are launched. I expect the momentum to continue, though, since it will have to work and to deliver the expected savings for network operators to stand a chance to stay in business.

The other side of this coin is the service offering. While flexibility, time to market and capacity to launch new services are always quoted as some of the benefits of network virtualization, it seems that many operators have given up on innovation and service creation. The examples of new services are few and far between and I would hope that these would be the object of more focused efforts.



## SDN-NFV in Wireless Networks 2015/16 for Customer

OTT services explosion, combined with the progressive opacity of the traffic due to encryption conspire to make network planning extremely difficult. Peak traffic are unpredictable and increasing in frequency and magnitude, which makes the rationale for network capacity purchase based on dedicated appliances untenable from an economic standpoint.

Revenue stagnation is a given, with little in the way of new streams from new services such as VoLTE or M2M for a few years.

Cloud technology seems to be the key to the new OTT providers' agility, but its implementation supposes a complete organization, structural and process upheaval that network operators are hesitating to implement without a firm business case.

SDN remains a reliable, mature technology for enterprise and IT cloud management and traffic switching but requires important efforts to adapt to telecommunication networks, mindsets and regulatory frameworks.

NFV is emerging as a key potential effect multiplier but, without a viable service orchestration framework is becoming a collection of large proprietary frameworks from legacy telecom equipment manufacturers or an endless suite of isolated virtual network functions with little coherent cohabitation model for a harmonious service delivery.

All is not lost though, with an ecosystem that is moving faster than any initiative in the telecom standards world, it feels that the vendors, operators can find the right recipe within a few iterations, unleashing a flexible, scalable elastic environment for the cost-effective creation and management of tomorrow's services.

There is certainly a race between the likes of AT&T, Telefonica, Deutsche Telekom on the service provider side and Affirmed Networks, ALU, Ericsson, Huawei and HP as some of the leading vendors to deliver on the promises of SDN and NFV in telco networks.

This report provides a review of the main trends that are pushing network operators to move towards simplified cost effective network architecture and the vendors' strategies and roadmaps to address this disruption in their traditional architecture and revenue model.