



Virtual Application Networks Innovations Advance Software-defined Network Leadership

Simplifying, Scaling and Automating the Network

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Software-defined network drivers and impact

Private cloud is not just about cost reduction. **Agility** will be a key benefit¹

HUMAN
MIDDLEWARE

¹ Gartner G00238288, Five Things That Private Cloud Is Not, 3 August 2012, Thomas J. Bittman

By 2020, **50 billion devices** will be connected to wireless networks²

DEVICE
PROLIFERATION

² Ericsson white paper, "More Than 50 Billion Connected Devices," February 2011

SDN market will grow to **\$2 billion** by 2016 ... driven by the growing need for scalability and network programmability³

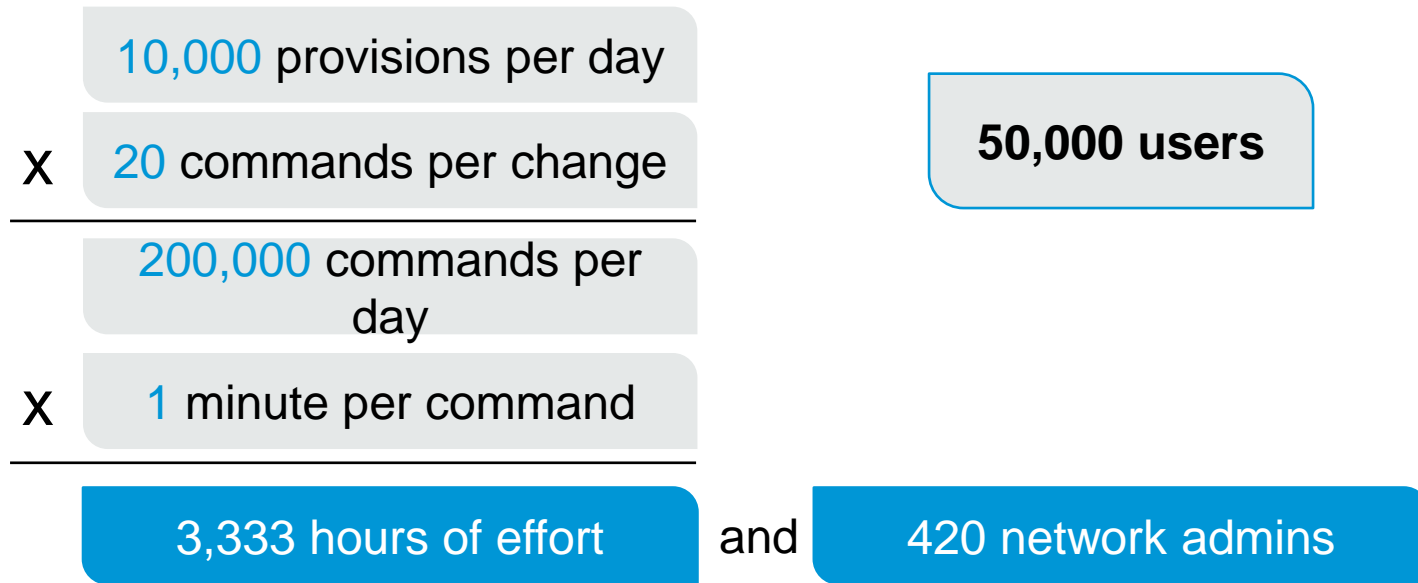
MARKET GROWTH

³ IDC #235074, "Technology Assessment: The Impact of OpenFlow on Data Center Network Architectures" June 2012



Legacy network human middleware can't scale for cloud

Time and resource intensive, not suited for cloud scale



Source: HP



SDN is a networking paradigm shift

Aligns the network with business objectives

Flexibility in network
usage

Rapid application
deployment

Lower operating
complexity, expense



What is software-defined networking?

Definition from the Open Network Foundation

... In the SDN architecture, the control and data planes are decoupled, network intelligence and state are logically centralized and the underlying network infrastructure is abstracted from the applications ...

Source: opennetworking.org



HP commitment to software-defined networks

Software-defined network leadership

Open Network
Foundation

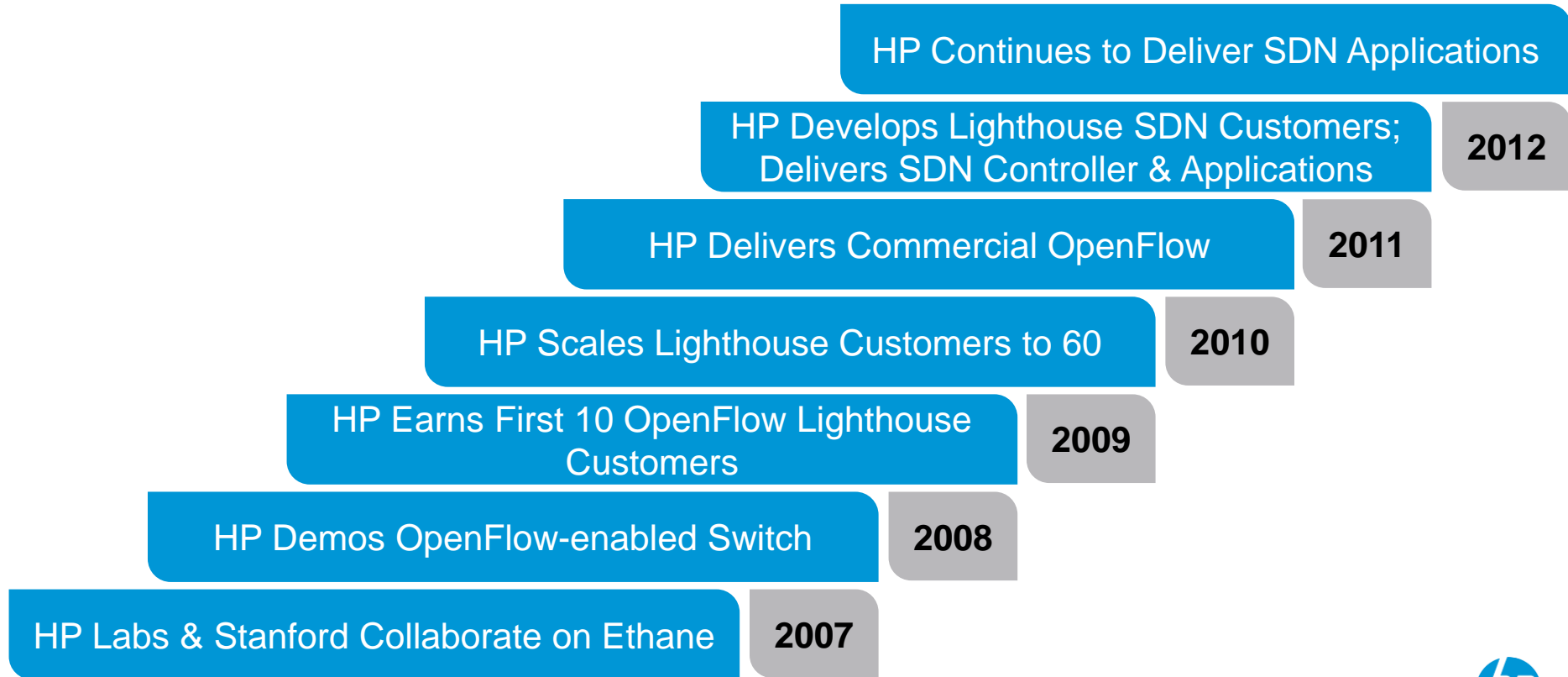
OpenFlow
Leadership

NFV
Leadership

OpenStack
Leadership

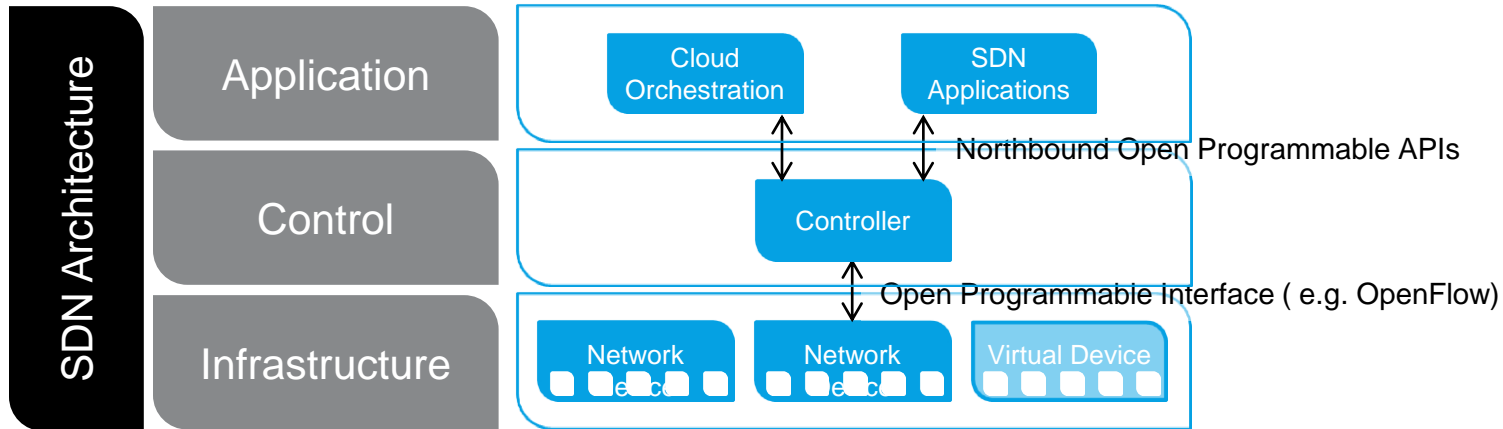


SDN investments leading the industry



Software-defined network products

Aligning to the SDN architecture definition



Debunking some SDN myths

SDN Architecture	Application	Only deliver a network function in software on a VM or only creating an overlay network
	Control	Only offering proprietary programming interfaces to network devices & management
	Infrastructure	The end of hardware innovation



Complete SDN solution enabling agility

Service-centric infrastructure for the data center, campus and branch



SDN Architecture

Application

Virtual Cloud
Networks
App

Sentinel
Security App

Load
Balancing
App

Control



Virtual Application Networks SDN Controller

Infrastructure

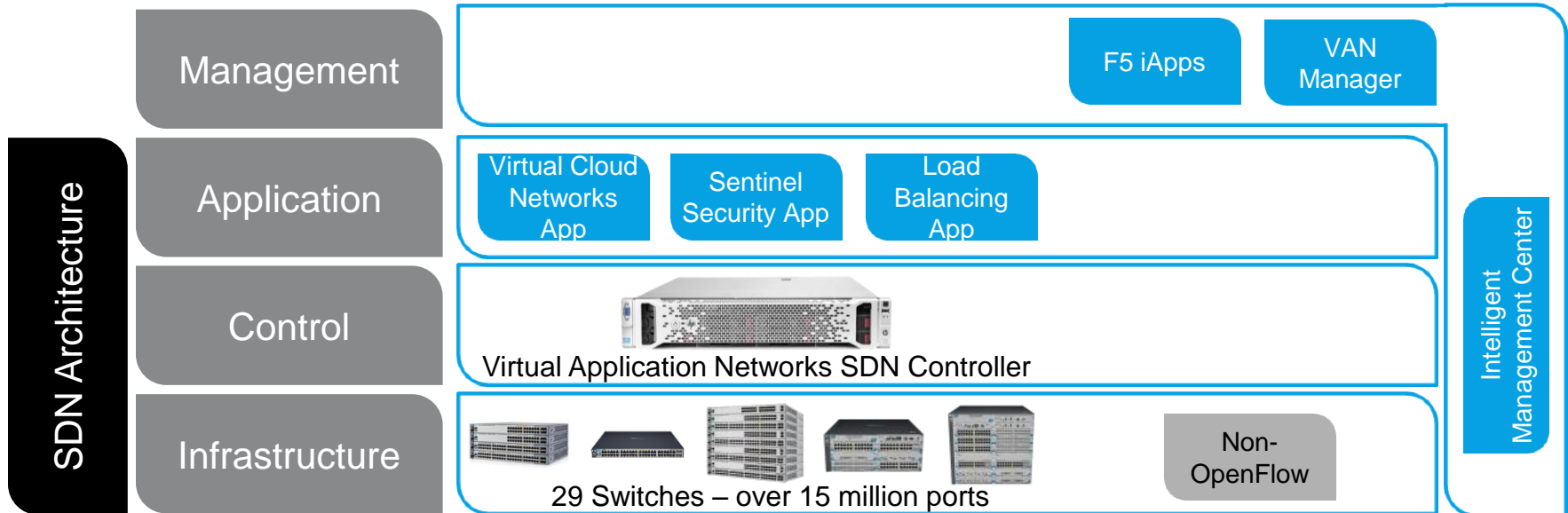


29 Switches – over 15 million ports



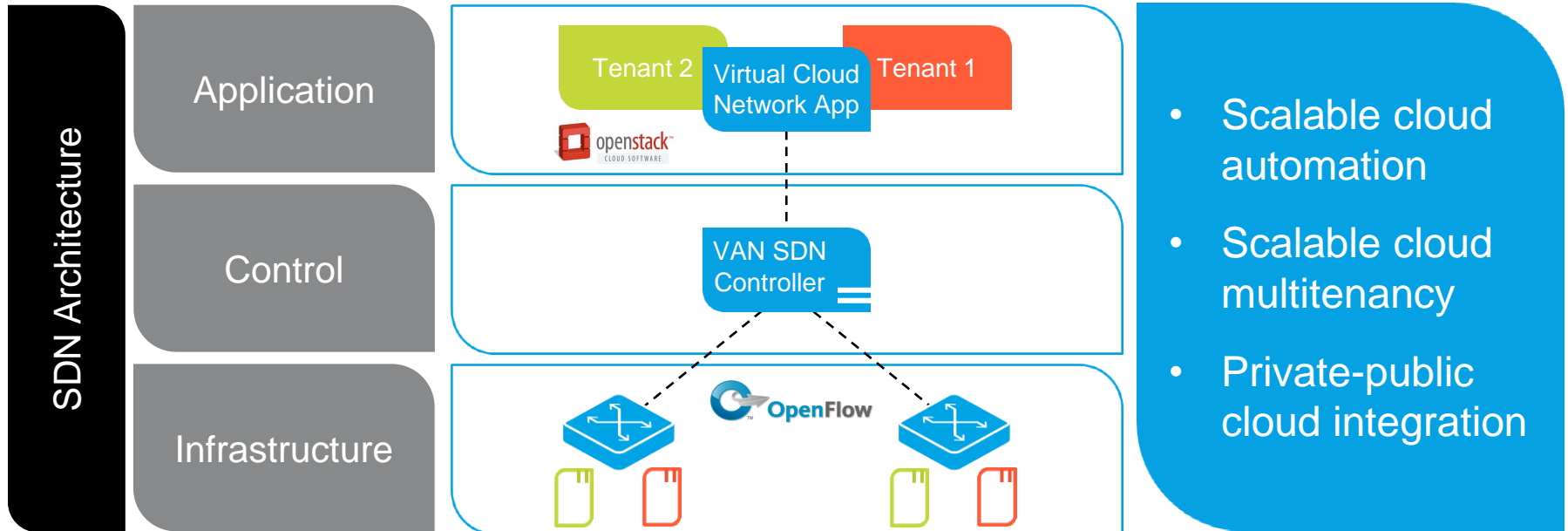
Virtual Application Networks deliver complete agility

service-centric management & orchestration



Virtual Cloud Network application

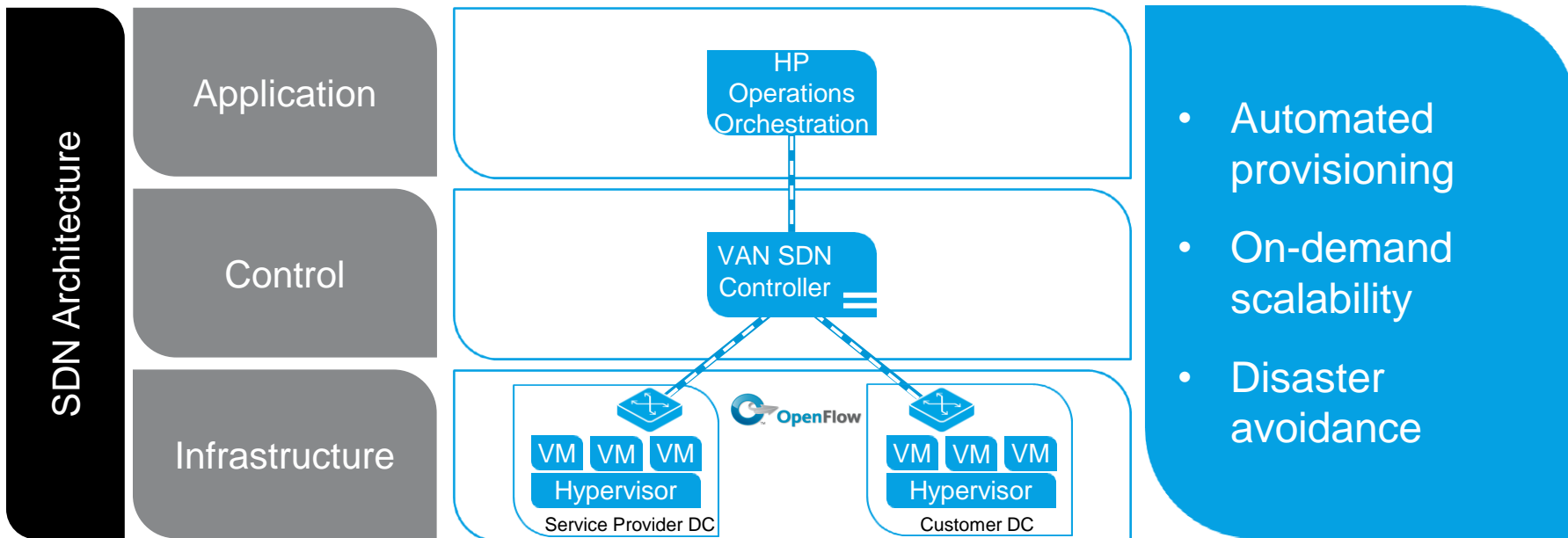
Network virtualization for scalable multitenant data centers



Dynamic WAN bandwidth provisionin



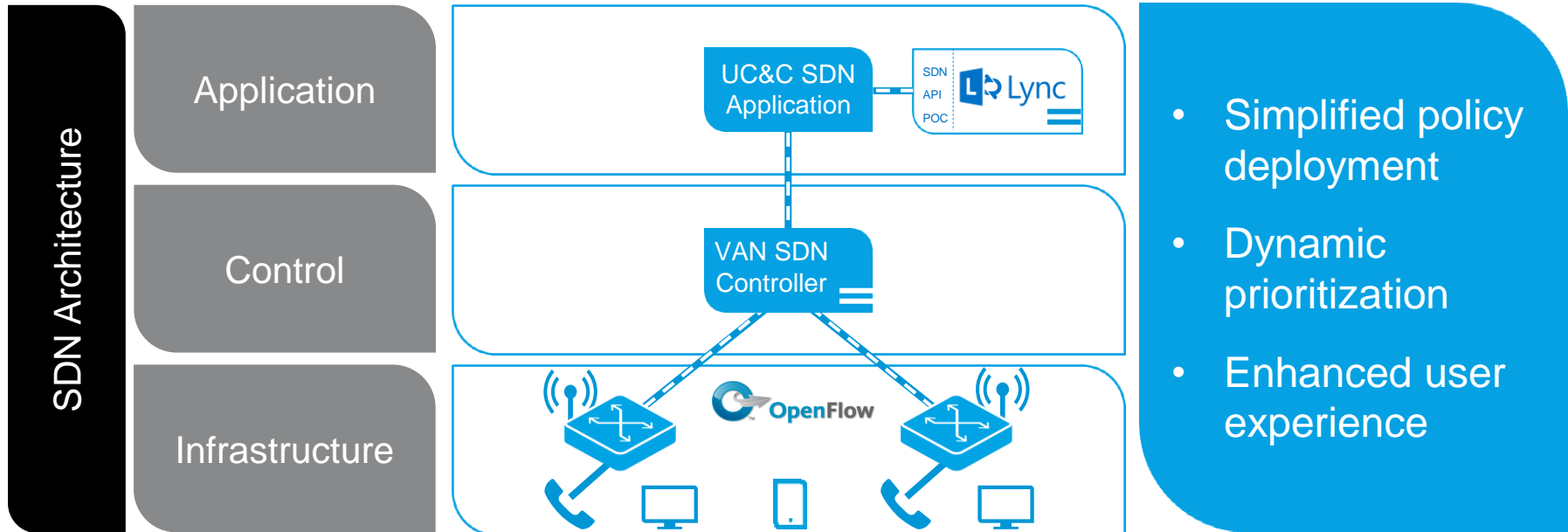
Delivering new revenue opportunities for service provider cloud data centers



UC&C SDN application for Lync New



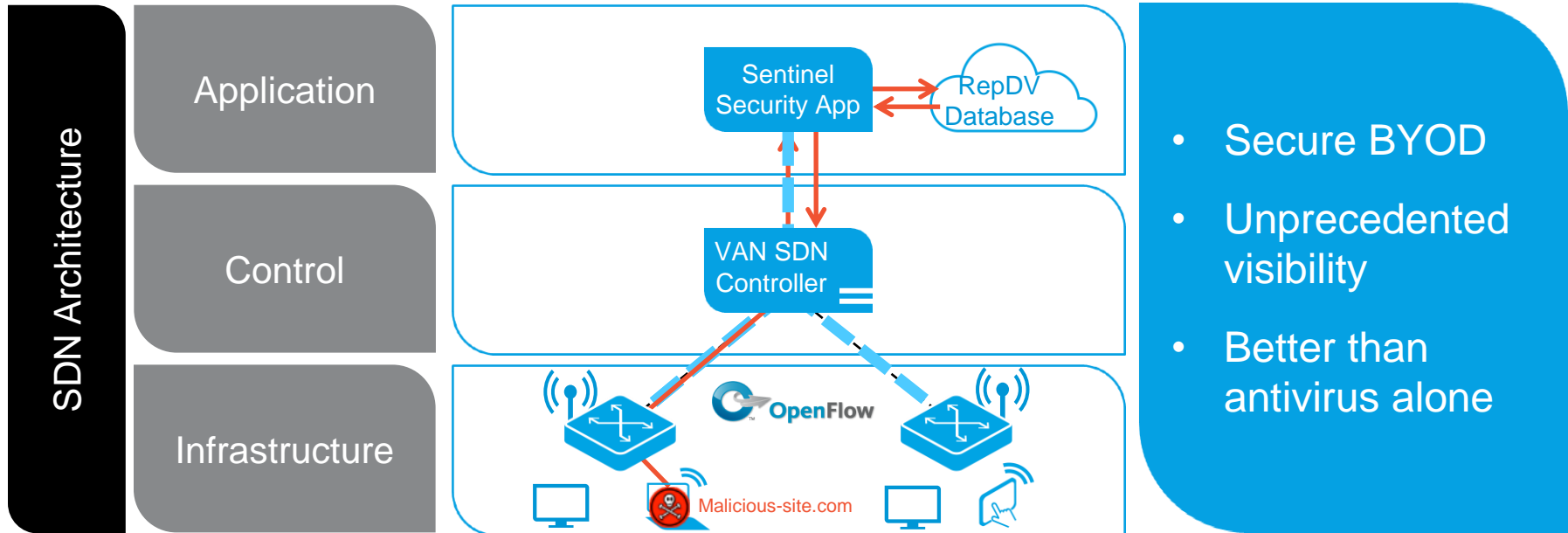
Automating policy for campus enterprise business applications



Sentinel security application TippingPoint An HP Company



Enabling real-time threat detection across enterprise campus networks





BALLARAT
GRAMMAR

HP Sentinel SDN Application

Ballarat Grammar School Deployment



Greg Bell
Head of Technical Services
Sr. Systems Engineer
Ballarat Grammar

About Ballarat Grammar



Environment

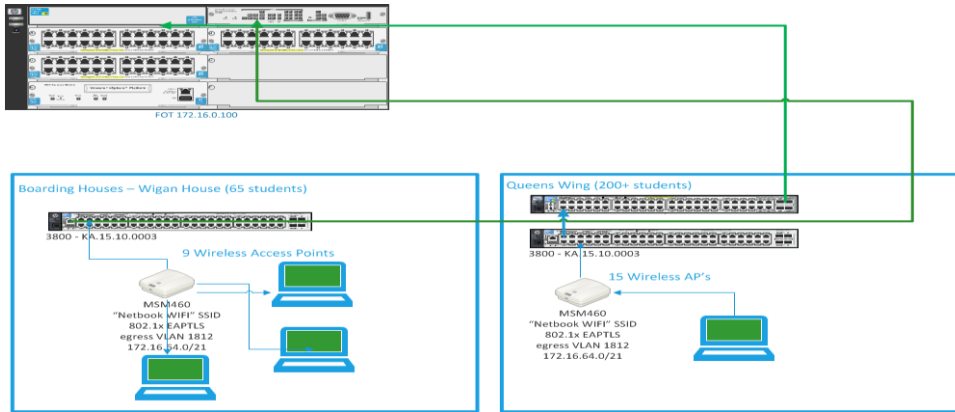
- Large regional school
- Multiple campuses
- Over 1400 students, 200 staff



Challenges

- Mix of managed & BYOD devices
- Lack of visibility & control
- Increasing malware & infections

Sentinel Deployment and Benefits



- Protected investment with free software upgrade to OpenFlow
- Increased visibility to threats
- Enabled more proactive IT response
- Enhanced student productivity with blacklisting
- Exposed need for supplement to antivirus & content filter



BALLARAT
GRAMMAR

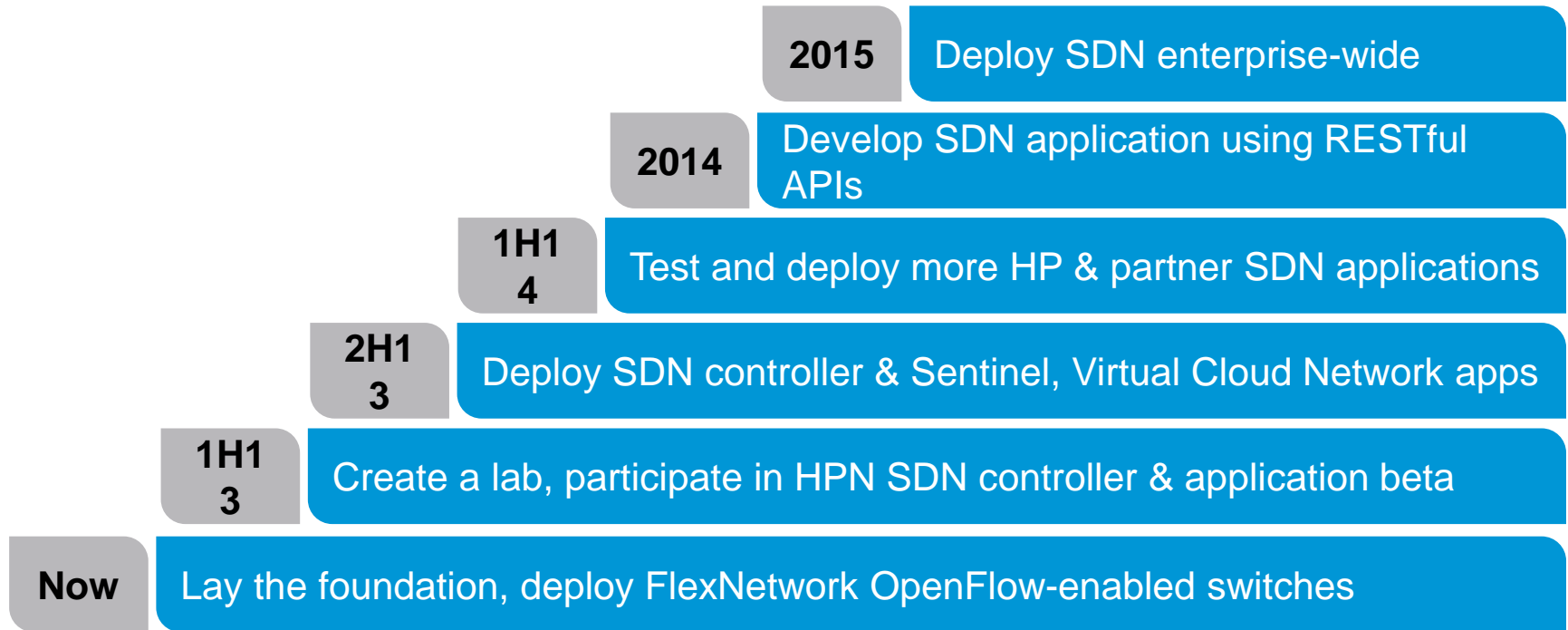
Thank You



BALLARAT AND QUEEN'S ANGLICAN GRAMMAR SCHOOL



How to start your SDN journey



HP Networking – committed to the SDN journey

Simplification

**Established
leadership**

Innovative solutions

Long-term vision



Thank you

