Let’s Join Forces

Workload Optimized Portfolio
Robert Stroomberg, Sales and Business Development Manager EMEA, Hewlett-Packard Company

[Image of people high-fiving]
Megatrends are disrupting the IT industry

Emerging and existing competitors

Advancing technologies

Service providers must transform

Changing consumption models

Escalating demands

By 2020:

- 30 billion devices
- 40 trillion GB data
- 10 million mobile apps
- ...for 8 billion people

Cloud
Security
Mobility
Big data

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New business opportunities are emerging

By 2018, service providers will own a quarter of all IT assets installed in the data centers of organizations.¹

Within 5 years, few organizations will manage their own infrastructure, turning instead to service providers for new services.
Cloud Price War

- AWS has cut its price 44 times in the last 6 years and dropped prices 8% from Oct. 2013 to Dec. 2014
- Average monthly cost / GB RAM from October 2013 to December 2014:
Business outcomes service providers desire

- Reduce costs
- Operational efficiency and scale
- Drive growth
- Consistent customer SLAs
- Time to market for new services
- Flexibility
Imperatives to meet customer demand

Simplify....
infrastructure & management

Automate...
to drive efficiency

Innovate...
to differentiate and monetize
HP Value Proposition for Service Providers

Empowering service providers to build a stronger business

Create differentiated services  Increase speed & agility  Grow your business

HP’s service provider experience provides:

**Workload optimized portfolio**
Hyper efficiency and innovation with SP Ready solutions

**Flexible business models**
- Pay as you grow financing
- Tailored support and services

**Valued partnership**
- Deep technical expertise
- Joint GTM
HP SP Ready Solution Readiness requirements

• Scale and Multi-tenancy
  – Ability to scale to support multiple end customers
  – End customer isolation (either infrastructure or software)

• Monitoring and Management
  – Administrative interface for provisioning new services
  – Ability to link into a Cloud Service aggregation portal or platform
  – Automation/Orchestration for provisioning/monitoring
  – End-to-End Service Lifecycle Management

• Billing integration interface or billing automation

• Availability, security and disaster recovery
  – Ensure service can sustain or recover from a failure through automation
  – Ensure appropriate security through isolation

• Price competitive

Note external dependencies
• 3rd party ISV
• Certification and support implications
• Implementation support
• Billing engine support
How we do it

HP Business Units
Alliances
Initiatives
3rd Party

SP Solution Portfolio

Select
• Prioritize
• Evaluate
• Get BU buy-in

Create
• Define requirements
• Find best solution
• Calculate
... ...

Communicate
• Publish
• Training
• Adapt

MSPs
System Integrators
Cloud SPs
HP Service Provider ready solutions

**SaaS**
- Application Security Testing (Fortify on demand)
- Enterprise File and Sync Services (software defined storage + ISV)
- Workspace-as-a-Service (HP moonshot / Citrix)
- Compliant Archiving (HP Storage + iTernity / KPMG)

**PaaS**
- Progres Rollbase (Progres / HP Helion Openstack)

**IaaS**
- Virtual Compute (HP CloudSystem / 3PAR)
- Backup Infrastructure (HP StoreOnce / HP FCS)
- Software Defined Storage (Scality or Helion Content Depot)
- Distributed Cloud Networking (HP Networking)
- Helion OpenStack Accelerators (HP Helion Openstack)

**Today**

**Upcoming**
- Testing (HP Loadrunner)
- Cloud Migration (HP / 3rd party)
- Analytics-as-a-Service (HP / 3rd party)
- More 3rd party ISV Platforms
- HP Helion Developer Platform (HP Helion / Cloud Foundry)
- Hybrid AWS (HP Eucalyptus)
- Backup-as-a-Service for SMB
- Metal-as-a-Service (HP Moonshot and Openstack)
- Recovery as a Service (HP / Geminaire)
- Analytics Infrastructure (Vertica/Autonomy)
- Helion Openstack – Odin/Parallels Connector

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Software Defined is key in the data center

**Rapid**
Development and delivery of apps and services

**Hyperconnected**
Services to customers, partners, and data

**Insights**
To generate real-time insights from data

**Always secure**
And proactive in the face of threats, failure, and risk

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**Software Defined Storage**

- **File-Based Applications**
- **Object-Based Applications**
- **VM-Based Applications**

**Software Defined Networking**

**Virtualized Compute**

**DC Operations**
- Dashboard
- Authentication
- Security
- Orchestration
- Discovery
- Analytics
- Metering

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**Speed**

**Simplicity**

**Efficiency**
Data growth and IT complexity soaring

A new approach for speed, agility, and security needed

Data explosion

- Brontobyte: $10^{27}$
- Zettabyte: $10^{24}$
- Petabyte: $10^{18}$
- Gigabyte: $10^{10}$
- Terabyte: $10^{12}$
- Exabyte: $10^{16}$
- Yottabyte: $10^{24}$
- Geopbyte: $10^{30}$

IT complexity

- 2005
- 2010
- 2015
- 2020
- 2025

How fast is your data growing?

1. HP internal research

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**Future Storage Landscape**

- **SAN** $2/GB
- **NAS** $1/GB
- **Object** $0.7/GB
- **Tape** $0.1/GB

- **Flash 3PAR**
- **Scality or Helion Content Depot on HP Proliant**
- **SSD to Cloud HDD**

**Terabytes**

**Bandwidth**

**I/O**

**Exabytes**

30% CAGR software market reaching $5B+ by 2020

**HW+SW acquisition costs**
Software-defined storage – example based on Scality

Scality RING is a software-defined storage platform, deployed on industry-standard hardware, …

… with a rich set of protocols and interfaces, …

… intelligent data protection mechanisms and geo-distributed architectures

Apps

FILE-BASED APPLICATIONS

OBJECT-BASED APPLICATIONS

VM-BASED APPLICATIONS

Linear performance scaling

PARALLEL, HIGH PERFORMANCE ACCESS TO DATA

Scality RING
Software Defined Storage

Proliant Servers

Limitless infrastructure scaling

SCALITY RING SOFTWARE

RING Management • Security

Replication • Erasure Coding • Geo-Redundancy

Distributed DB • Object Storage • Self-Healing

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## Solutioning focused on price competitiveness

Example of SP ready Software defined storage solution (Scality)

<table>
<thead>
<tr>
<th>Solution</th>
<th>Total Cost</th>
<th>Cost/GB/Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 PB Solution</td>
<td>k€979</td>
<td>€0.027</td>
</tr>
<tr>
<td>20 PB Solution</td>
<td>k€13,120</td>
<td>€0.018</td>
</tr>
</tbody>
</table>

### Competitive comparison to public cloud

<table>
<thead>
<tr>
<th>Cloud Provider</th>
<th>Pricing Details</th>
<th>See</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Google Cloud Storage</strong></td>
<td>€0.0204/GB/month</td>
<td><a href="https://developers.google.com/storage/pricing">https://developers.google.com/storage/pricing</a></td>
</tr>
</tbody>
</table>

* 36 months – fully loaded cost (FTE, power/cooling, HW/SW, Installation and Support

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Including 20% Buffer and SLA of up to 12 nines !!
Choice and Value-Add from HP

Backup aaS  Archive aaS  Storage aaS  Analytics aaS  Web aaS

Email  Chat  Collaboration  Photo Sharing

File Sync (Dropbox)  File Archive  Social Media

nPVR  VOD  Video Archive

ISV partner portfolio

ctera  storegate.se  Gladinet  SME  ftopia

iTernity  KPMG

+ 50 more and growing

HP Software Defined Storage Solution

SCALITY

HP Helion Content Depot

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**Compliant Archiving**

**What is it?**
- Compliant protection for application data (ECM, ERP, Mail, PACS etc.)
- Retention Management and WORM (Write Once Read Many)
- KPMG- and SEC17a4-certified
- Software defined storage for archiving
- Certified for more than 80 major ISVs (OpenText, Autonomy, Symantec Enterprise Vault, AGFA, GE)

**Availability**

GA: Today

**Solution Components**
- iTernity iCAS Software
- HP Software defined storage solutions e.g. Helion Content Depot, Scality

**Why is it beneficial for SPs?**
- Based on industry standards
- Hardware independent – enables flexibility
- Transferable license – no recurring license costs
- Easy to install as VM (VMWare, Hyper-V etc.)
- Easy and cost efficient archive migrations
- Lower archive TCO
- Perfect replacement for archive appliances like NetApp Snaplock, EMC-Centera, Hitachi HCP, optical jukeboxes etc.
Virtual Compute aaS – Overview

What is it?
- Advanced Cloud Solution offering VM Services to multiple tenants without the complexity
- Rapid design and deploy VMs based on industry’s most complete, open, and integrated solution
- Including fast and efficient design and implementation services

Why is it beneficial for SPs?
- Accelerate time to revenue with advanced IaaS services
- Ensure profitable Business €10 vs €47 (AWS)
- Improve operational efficiency with pre-engineered orchestration
- Open and heterogeneous architecture
  - KVM included - supporting VMware and other Hypervisors
  - Future ready - based on HP Helion Openstack
  - Includes proven and scalable Storage and Network Technology
  - Ready for OSS & BSS integration
  - Pre-integrated & Modular, based on ConvergedSystems bundles
- Available in OPEX or CAPEX models from HP

Availability
GA: Today

Solution Components
- HP CloudSystem 8
  - Built on enterprise-grade OpenStack® technology
- HP ConvergedSystem 700x
  - HP 3PAR 7200, HPN ToR Switches
- Packaged Design and Implementation Services
  - Optional
- HP Cloud Service Automation
- HP Operations Orchestration
HP Virtual Compute Solution
Example for 1000VMs/36 Months/40TB Storage

**Total Solution = 430k€**
+ complementary software (CSA/00) = 557k€

€11/VM/Month*

**Margin € € €**

**Market Prices**

AWS Medium
2 vCPU 4 GB RAM

Virtual machine
€ 0.05 / hour
€ 36 / month
€ 438 / year

To be added:
• Block storage
• Data transfer
• Bandwidth
• Support
+30–40%

~ €50/Month

*excluding Power and Cooling and FTE cost*
Solutions and Services for Helion OpenStack

Offerings

- Preconfigured starter kits based on Helion OpenStack Reference Architecture
- Simple starting point for Sandbox and Production environments
- Price competitive against Public Cloud Service Providers
- Ideal for SPs who are ready to start with OpenStack
- Easy to add capacity
- Advisory, Design and Education Services
- Openstack Beta Program for Lighthouse customers

Support you in the speedy development of a set of services ready for customer adoption and enabling you to leverage across a heterogeneous environment.
goes Helion Openstack

- German mass hoster / managed services company (12’500 servers)
- Open source and Openstack are strategic for Infrastructure services

Why Openstack?
- All relevant Tools Out Of The Box
- Amazon compatible (REST) API
- Biggest open source community

Why HP Helion Openstack?
- Biggest contributor to Openstack
- Huge practical experience with real Openstack deployments
- Professional support services

New IaaS Offering for SMB market
- HP Helion Openstack V1.1
- CEPH for Storage services
- Parallels Automation Integration using HP connector
- HP Proliant Gen9 servers and HP Networking

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# Moonshot – broad x-industry use cases

New functionality and cartridges enable new business potential

<table>
<thead>
<tr>
<th>Web</th>
<th>Workplace-as-a-Service</th>
<th>Video / Media</th>
<th>Big Data / Analytics</th>
<th>Telco / NFV</th>
</tr>
</thead>
</table>
| Web Caching  
HP ProLiant m400 | Application Delivery  
HP ProLiant m710 | Video Transcoding  
HP ProLiant m710 | Real-time data processing  
HP ProLiant m800 | Telco Development Platform  
HP ProLiant m800 |
| Web infrastructure in a Box  
HP ProLiant m300 | Hosted Desktops  
HP ProLiant m700 | | | |
| Web Hosting  
HP ProLiant m350 | | | | |

## Moonshot supporting features

- **High Speed Networking**
- **Moonshot Management Software**
- **Built-in and external storage support**
The majority of our customers are using virtual machines to save costs. Now it is time to virtualize the network.
Networks operating at the speed of business

No software-defined networking, no cloud

- **OPEX optimization**: 50%\(^1\) of network operations reduction
- **Business agility**: Months to minutes\(^2\)
- **Lower TCO**: Significance reduction in complexity\(^3\)

\(^1\) Nuage Business Case.
\(^2\) HP Internal calculations.
\(^3\) 4:1 reduction in design and operational complexity.
The Solution: HP Distributed Cloud Networking (DCN)

**What is it?**
- **Software Define Networking**: Network automation and virtualization
- Proven technology
- Fundamental to implement Cloud
- An overlay network running across multiple datacenters

**Why is it beneficial for SPs?**
- Rapid provisioning, running and testing of business applications
- Enabling the customers of service providers to move from building clouds to simplified usability
- Automate provisioning and de-provisioning freeing up admin/config “human middleware
- Reliable, dynamic, resilient, and open architecture for smooth carrier transition to a fully automated multi-data centers
- A consistent user experience from private, public and across multiple data centers
- Increased business agility, networks are no longer static
- Reduced TCO
- Lower OPEX

**Availability**
GA: Today

**Solution Components**
1. HP DCN Director
2. HP DCN Controllers
3. HP DCN Virtual Switch/Router
Progress Pacific – Application PaaS

What is it?

- **Application Platform as a Service – aPaaS**: High-productivity, cloud-based application development platform for data-driven business applications (e.g. CRM, ERP, etc.) and deploy them on any cloud or device.
- **Targets both SP (for hosting the platform) & Enterprises (for internal development)**
- Proven with over 1,500 ISV, 100,000s developers, over 4M end users
- **Modulus: DevOps platform** for fastest growing developer community on Node.JS & MongoDB

Availability

GA: **Today**

Solution Components

- **HP CloudSystem 8 Foundation**
- **HP ConvergedSystem 700x (512VM or more)**
- **HP Cloud Service Automation 4.1**
- **HP Operations Orchestration 10.01**
- **Progress RollBase PaaS Sw license**

Why is it beneficial for SPs?

- Drive **new IaaS & SaaS revenue**
- Drive **higher margin PaaS services**
- **Diversify** their offering portfolio attracting ISV who want to go cloud with reduced risk
- Diversify SP’s offering from **AWS, Google, MS Azure, SFDC**
- Collaboration with Progress who will bring ISV who then bring their SMB customers to be hosted @ SP
Empowering service provider partners to offer differentiated and market leading services to build a stronger business.

Leverage the full HP portfolio (plus 3rd party components if need) to build SP ready solutions based on HP validated and tested reference architectures.

Leverage the HP Partner Program such as Partner ONE for Service Provider (P1SP) or Helion Network to drive joint go-to-market activities and demand.
Thank you