



Hewlett Packard
Enterprise

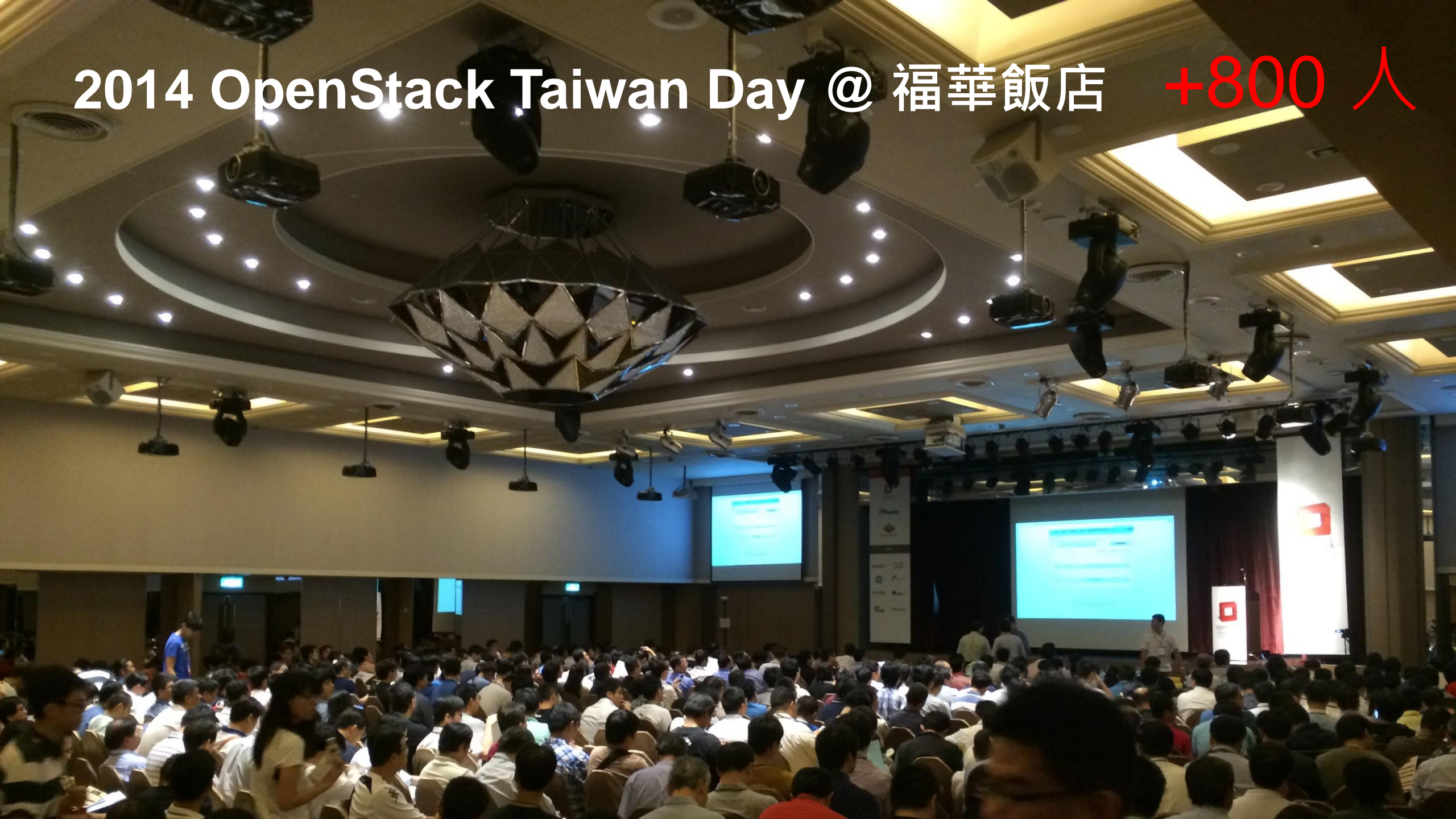
OpenStack 導入- 360度全方位經驗分享

Hewlett Packard Enterprise (HPE)
Hybrid IT & Helion Cloud
資深雲端架構技術經理
曹建國 Terence Tsao

2016.07.12



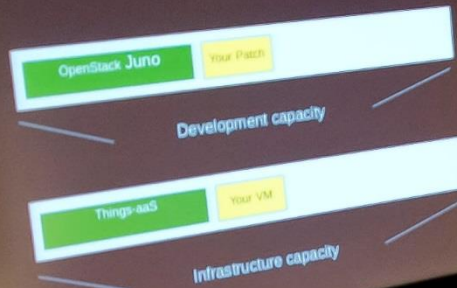
2014 OpenStack Taiwan Day @ 福華飯店 +800 人



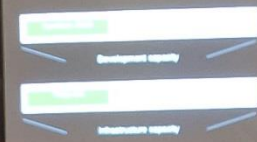
2015 OpenStack Taiwan Day @ TICC

+1200 人

Open Source & Cloud Both Do this!



Open Source & Cloud Both Do this!



2015 OpenStack Summit @ TOKYO

+5000 人



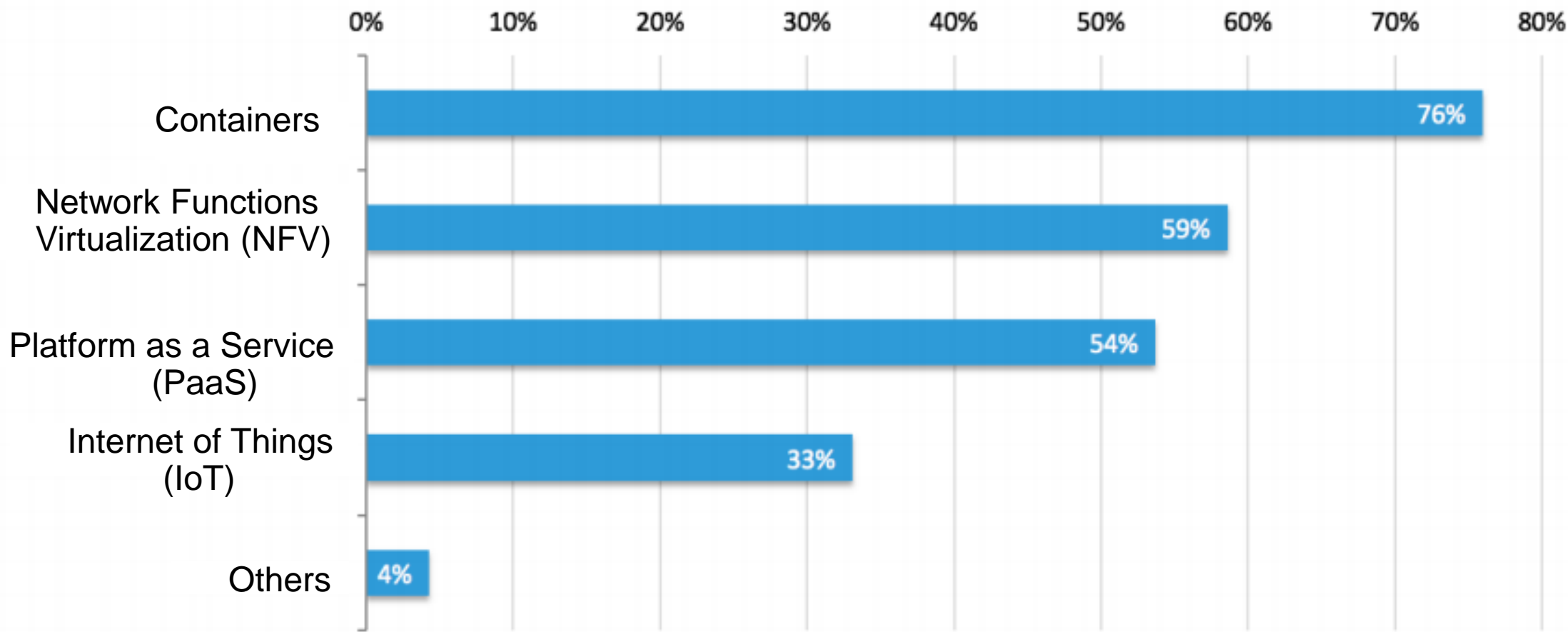


企業對OpenStack的疑問

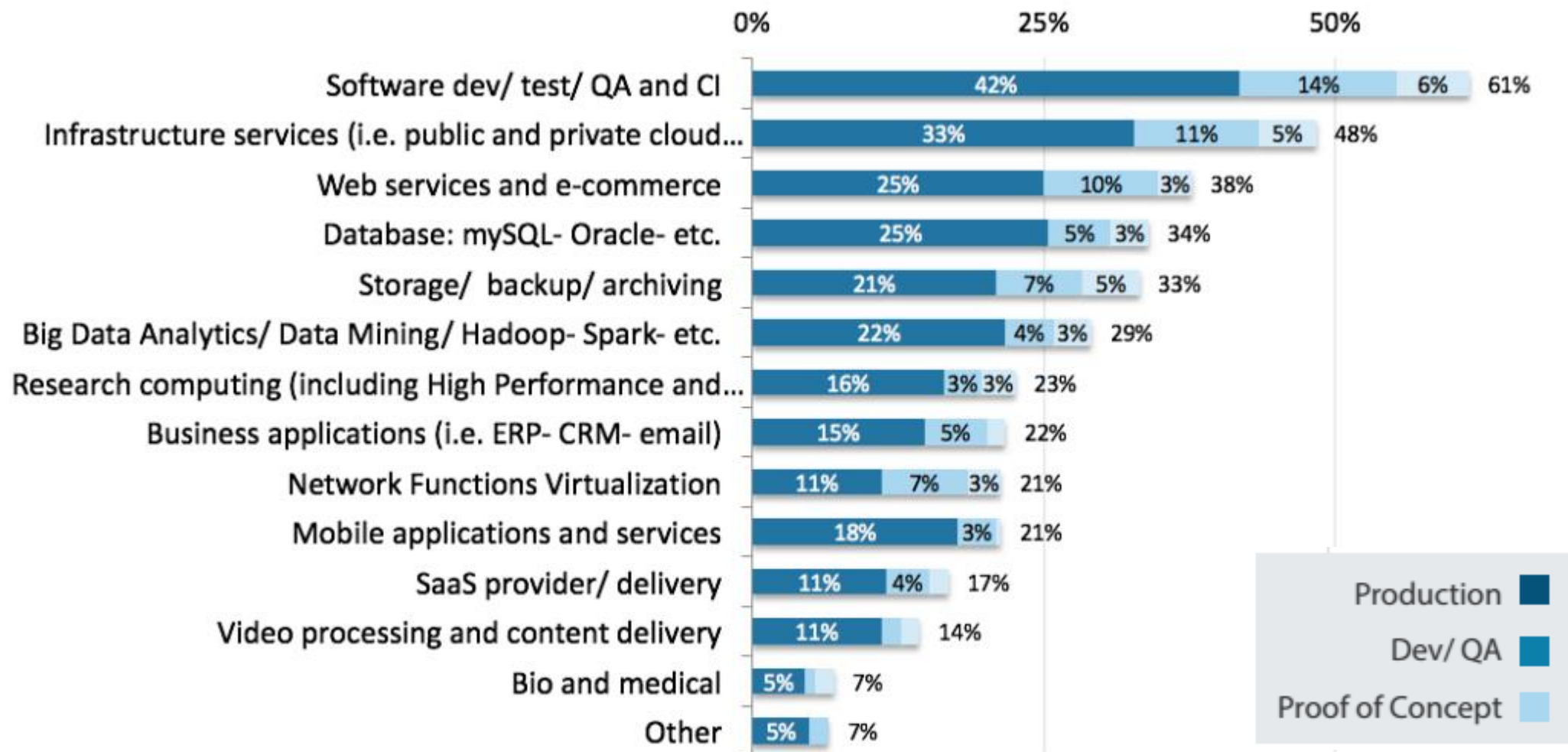
1. 可以省多少錢？
2. 是不是不用錢？
3. 可以不要用VMware 和Hyper-V 嗎？
4. 我的應用程式就雲端化了？
5. 是不是什麼 Server, Storage , Network switch 都可以拿來用
6. 我家工程師不熟Linux KVM
7. 是不是要會Python ？
8. 需要多少IT人力投入才夠？
9. 到底可以有什麼應用？ IoT , NFV , Container , SDN



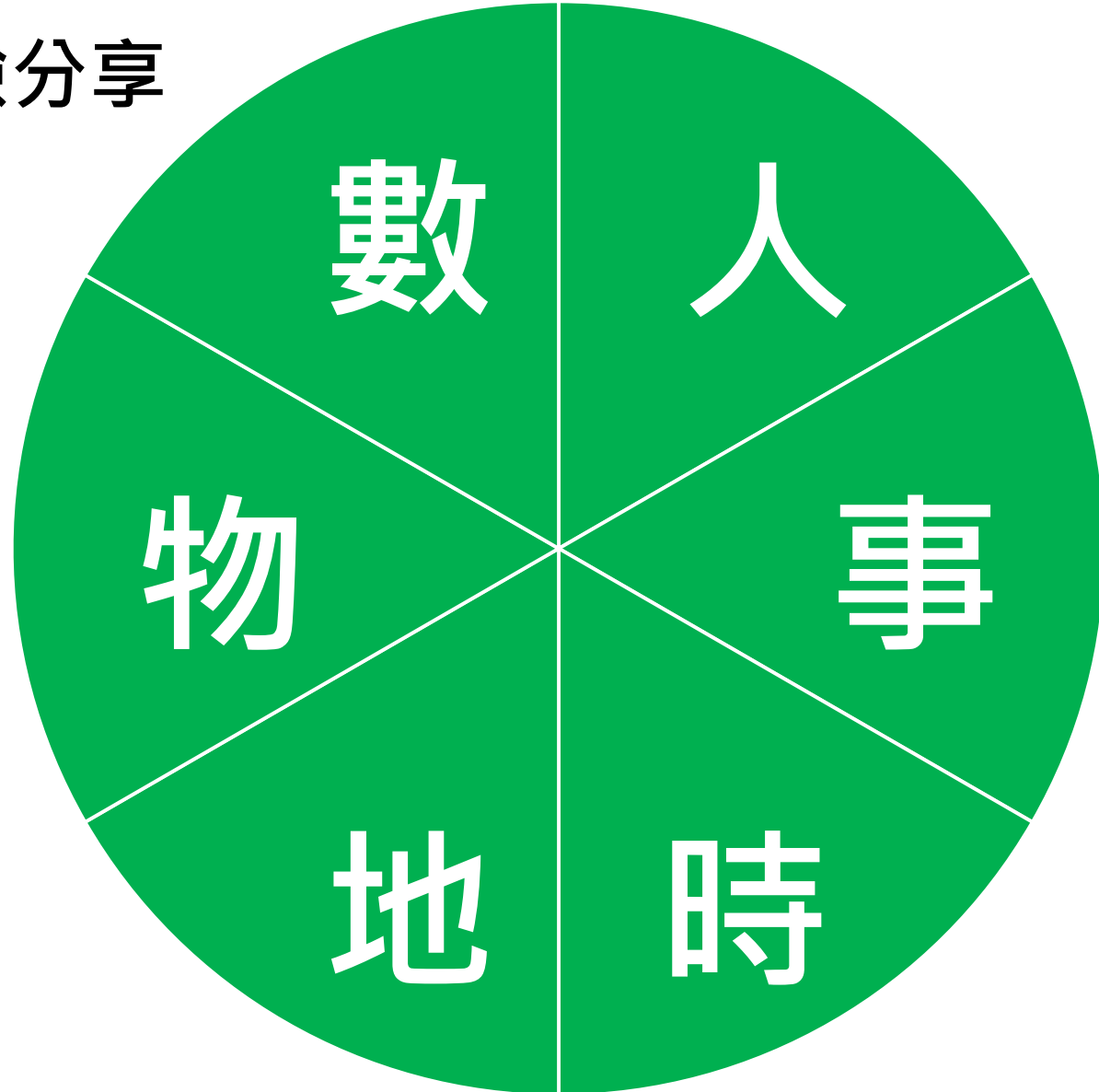
除了VM外，大家對OpenStack 還有哪些期待及關注？



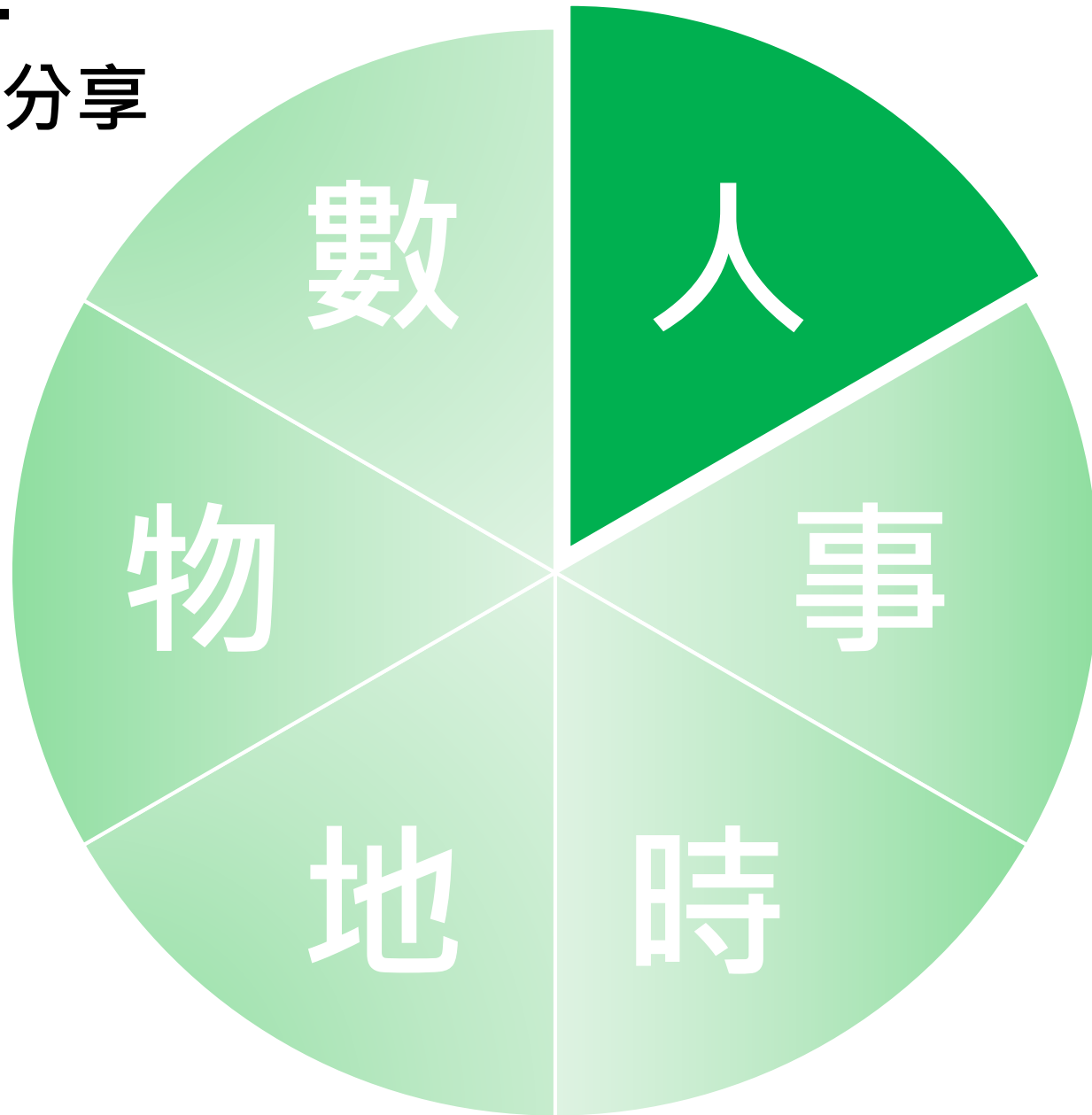
大家都在OpenStack上做些什麼？



OpenStack 導入- 360度全方位經驗分享



OpenStack 導入- 360度全方位經驗分享



人 - People

你可以這麼開始：

1. Top to Down 搞定老闆
2. New IT Skillset – one team for all 專業技能的延伸
3. Culture 企業文化
4. Stakeholder 利害關係人
5. DIY OR Partners 找誰進來做
6. Project Manager is MUST.

實際狀況有可能是：

CIO agree , IT not.

Traditional IT 不贊同 , no dedicate stuffs cover this topic

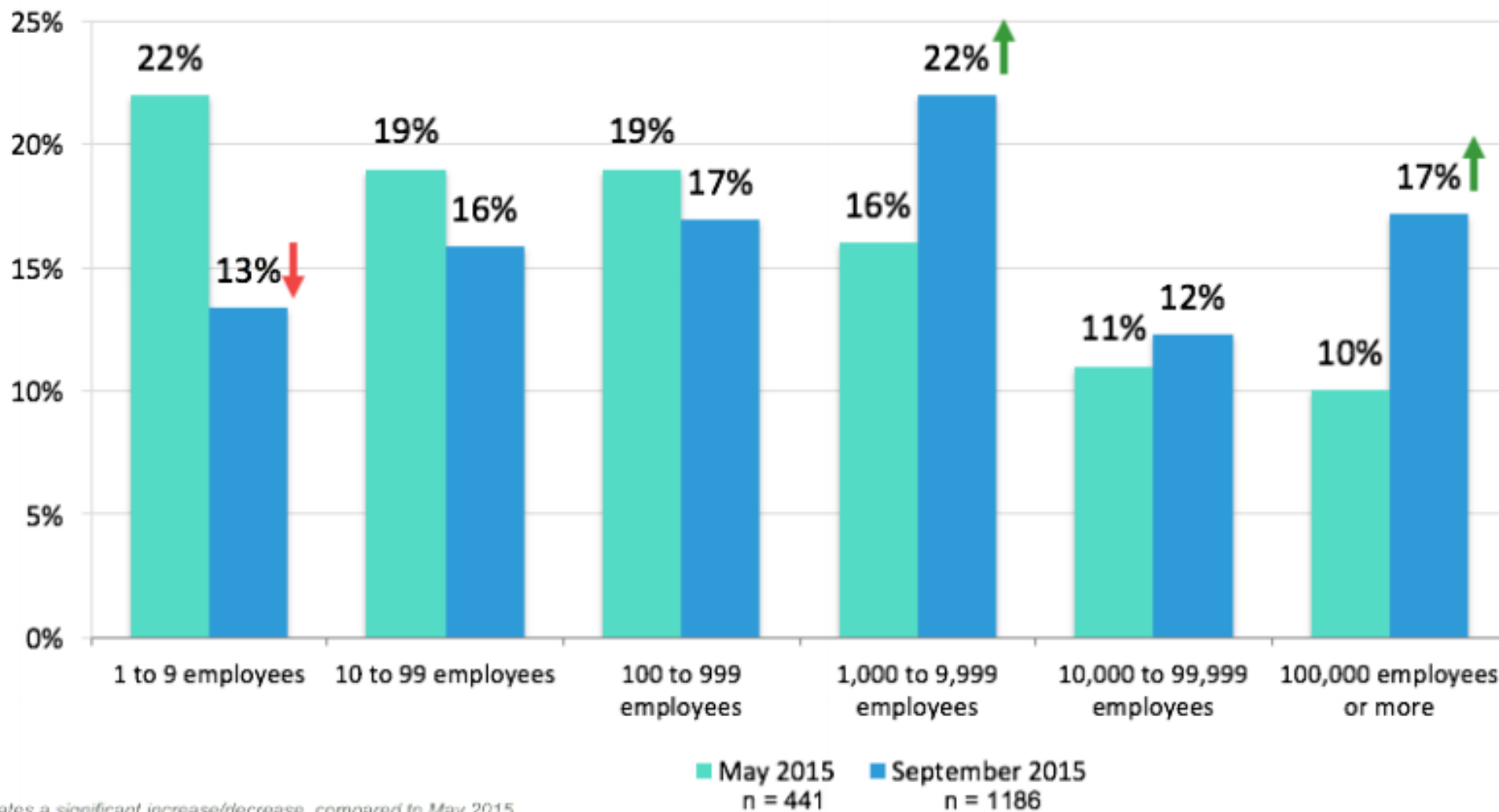
Company scope

DIY failed

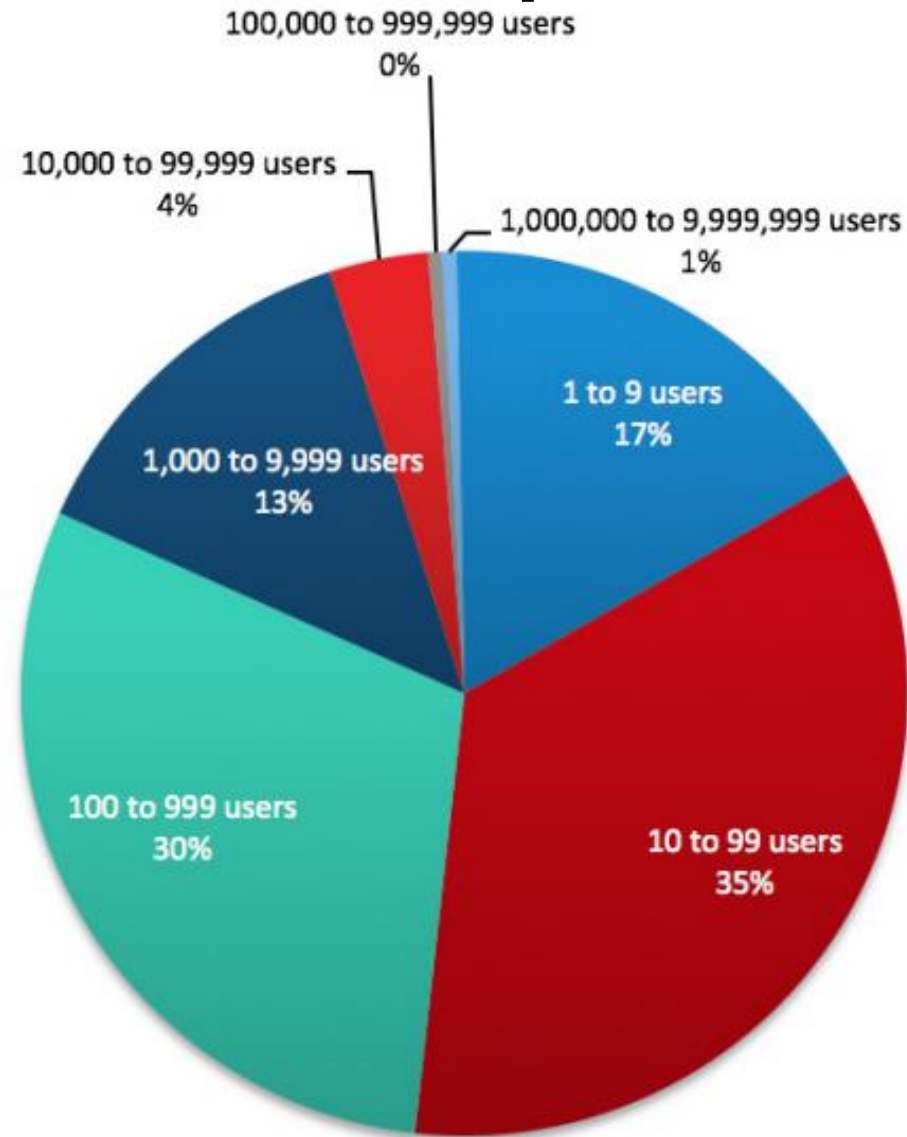
Do not trust Open Source



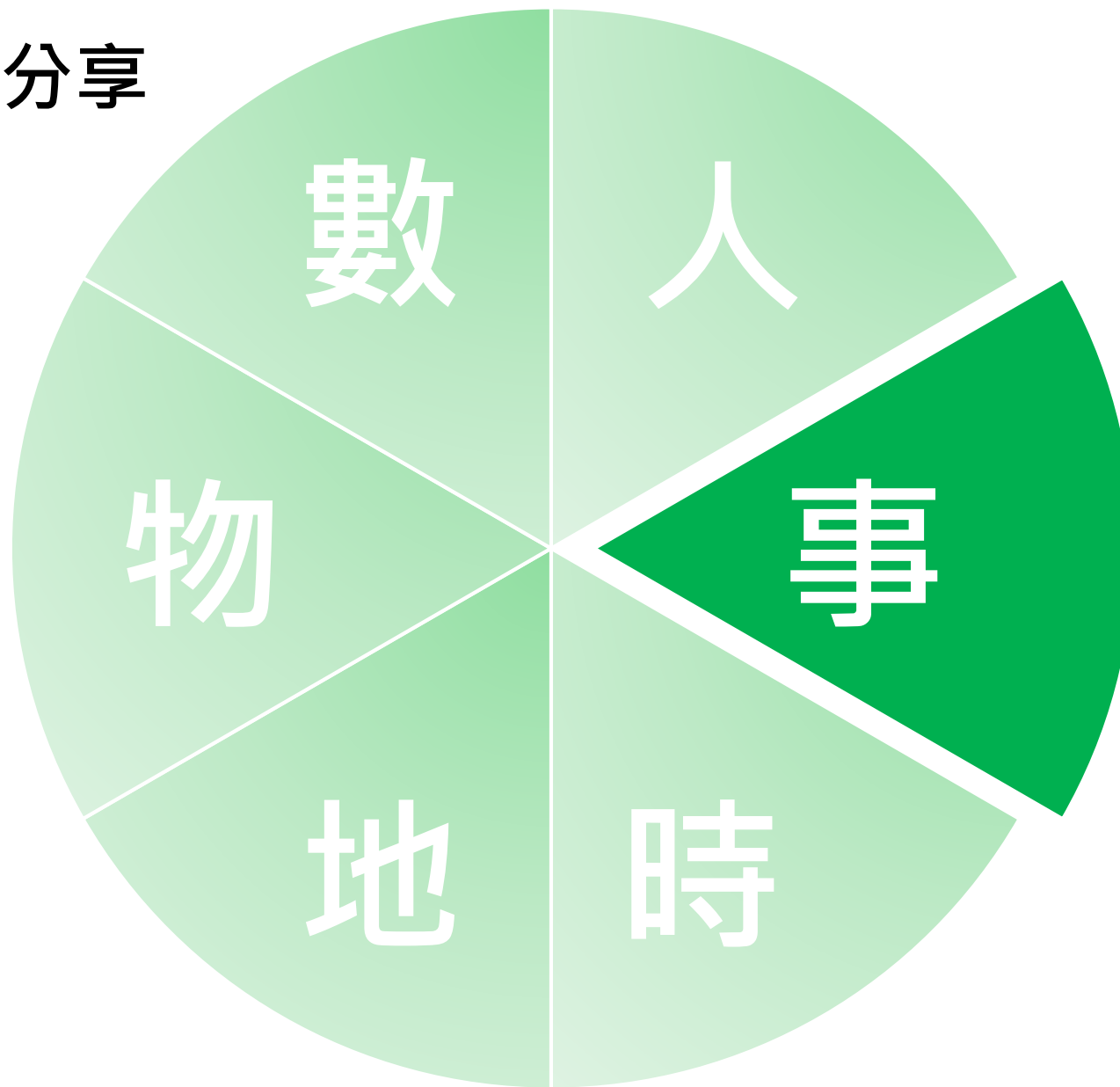
使用OpenStack有組織規模的限制？



我們該準備多少人力來導入OpenStack



OpenStack 導入- 360度全方位經驗分享



事 - Target

事半功倍 vs. 事倍功半，魔鬼藏在細節裡：

1. 事前準備、規劃內容
2. 功能要求：明確要達到的目標，如 IaaS ,PaaS , HA , Auto scaling , Monitor , DR, Backup , Networking isolate 、Multi tenant
3. 預期效益：成本、時間、新的商業模式
4. 驗收標準

實際狀況有可能是：

- Requirements are changed all the time.
- It's "OPEN SOURCE", anything is possible
- “想要”跟“需要”的拉鋸
- NOT Just RFP (程咬金)



為何企業選用OpenStack ？

TOP BUSINESS DRIVERS

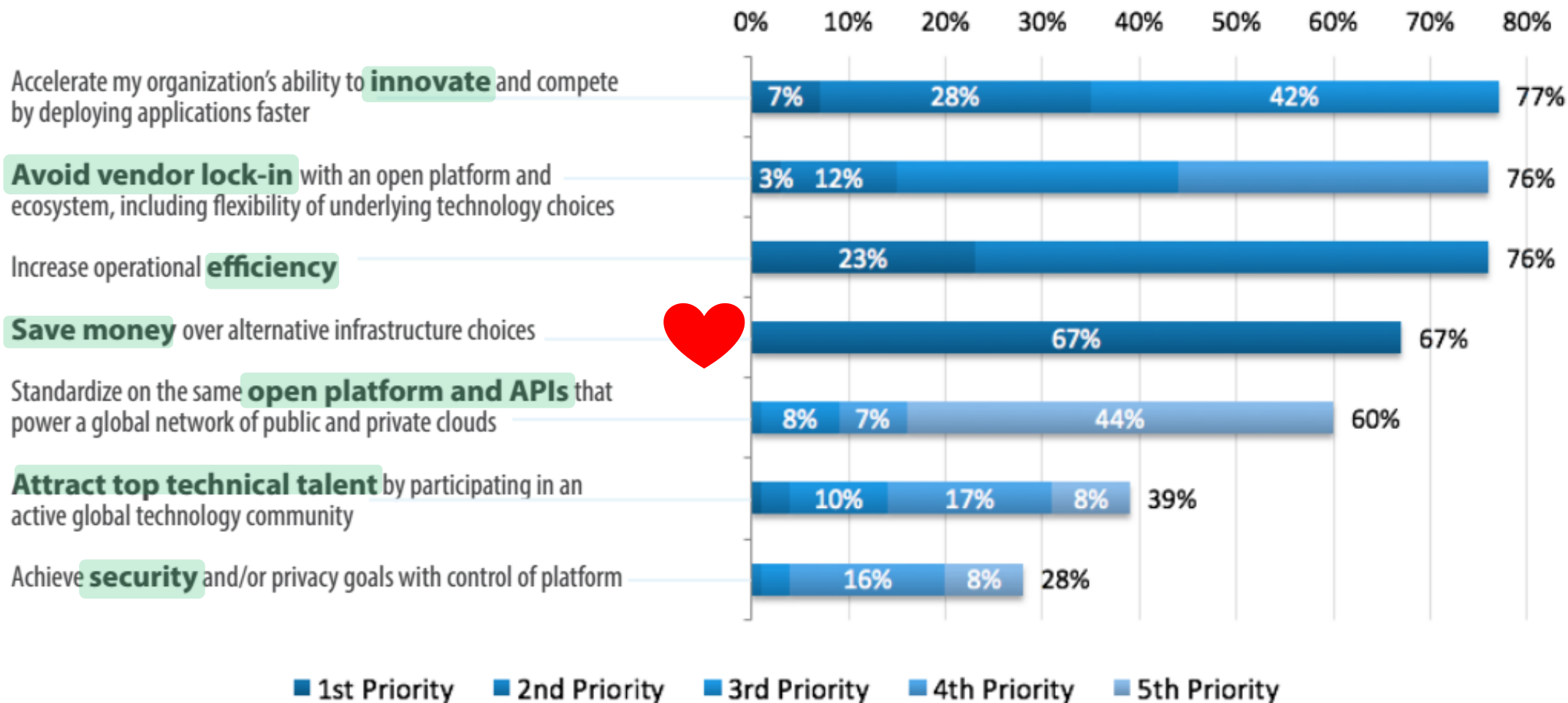
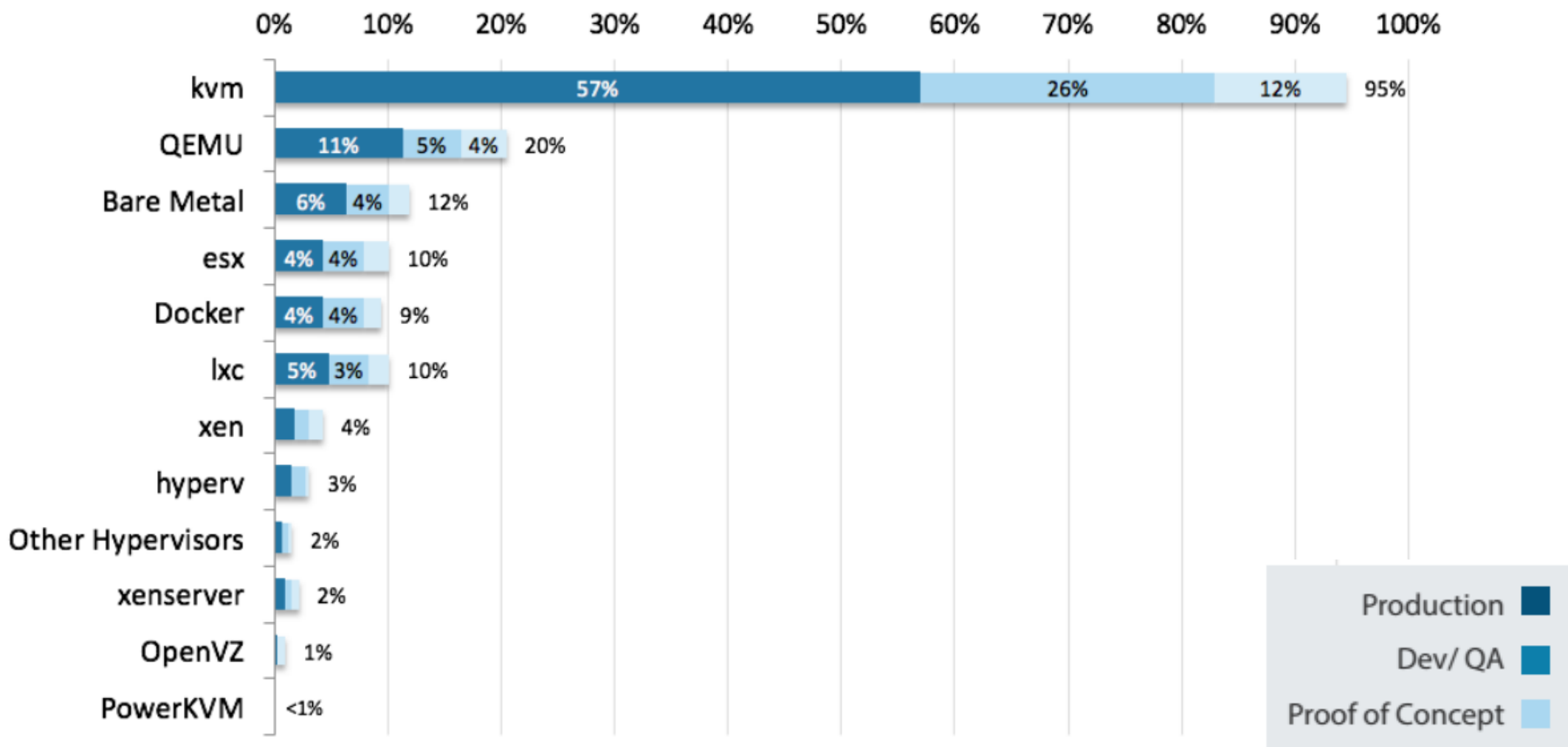
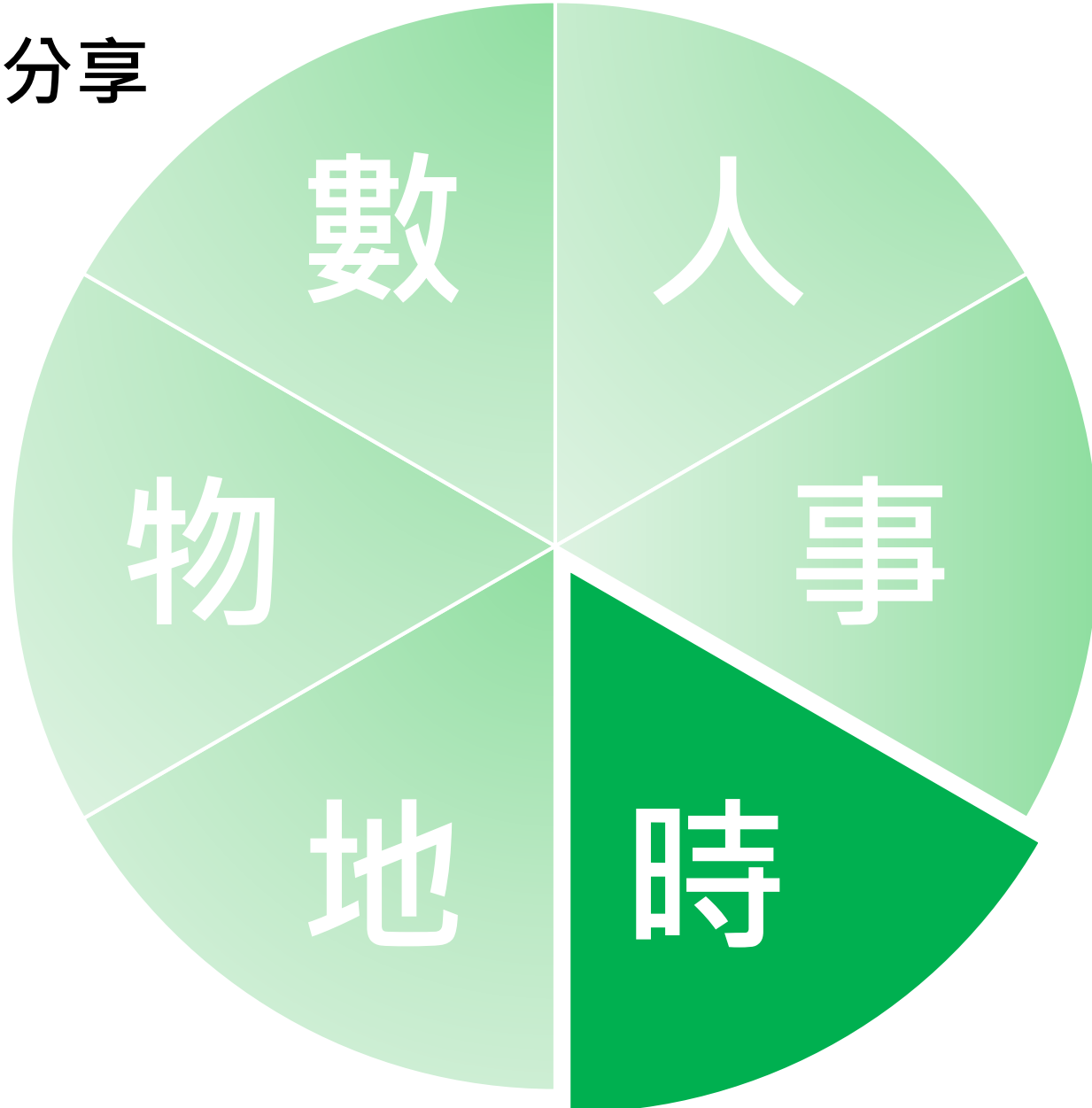


Figure 2.1 n=953

OpenStack 用的最多的 hypervisors



OpenStack 導入- 360度全方位經驗分享



時 - Scheduling

照表操課，如期上線：

1. 稱職的PM是必要, 導入期程的安排
2. 人員教育訓練
3. 人員銜接
4. OpenStack 的公轉與自轉

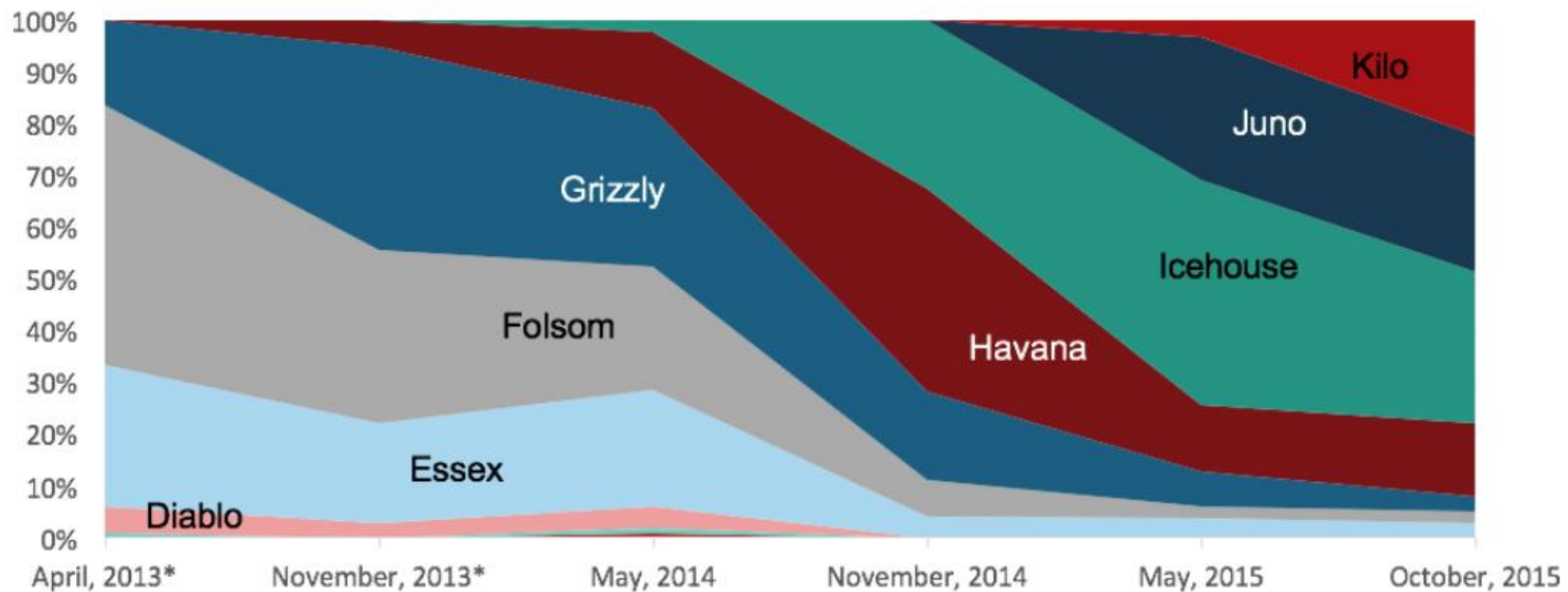
實際狀況有可能是：

1. 計劃有時是趕不上變化的
2. 4 weeks prepare + 4 weeks deployment + 2 weeks training + more weeks
3. 長江後浪推前浪
4. Lift time service



OpenStack各版本使用的趨勢

PRODUCTION DEPLOYMENTS, BY RELEASE, OVER TIME



OpenStack 導入- 360度全方位經驗分享



地 – Localize

導入必需因地制宜，減少水土不服的症狀

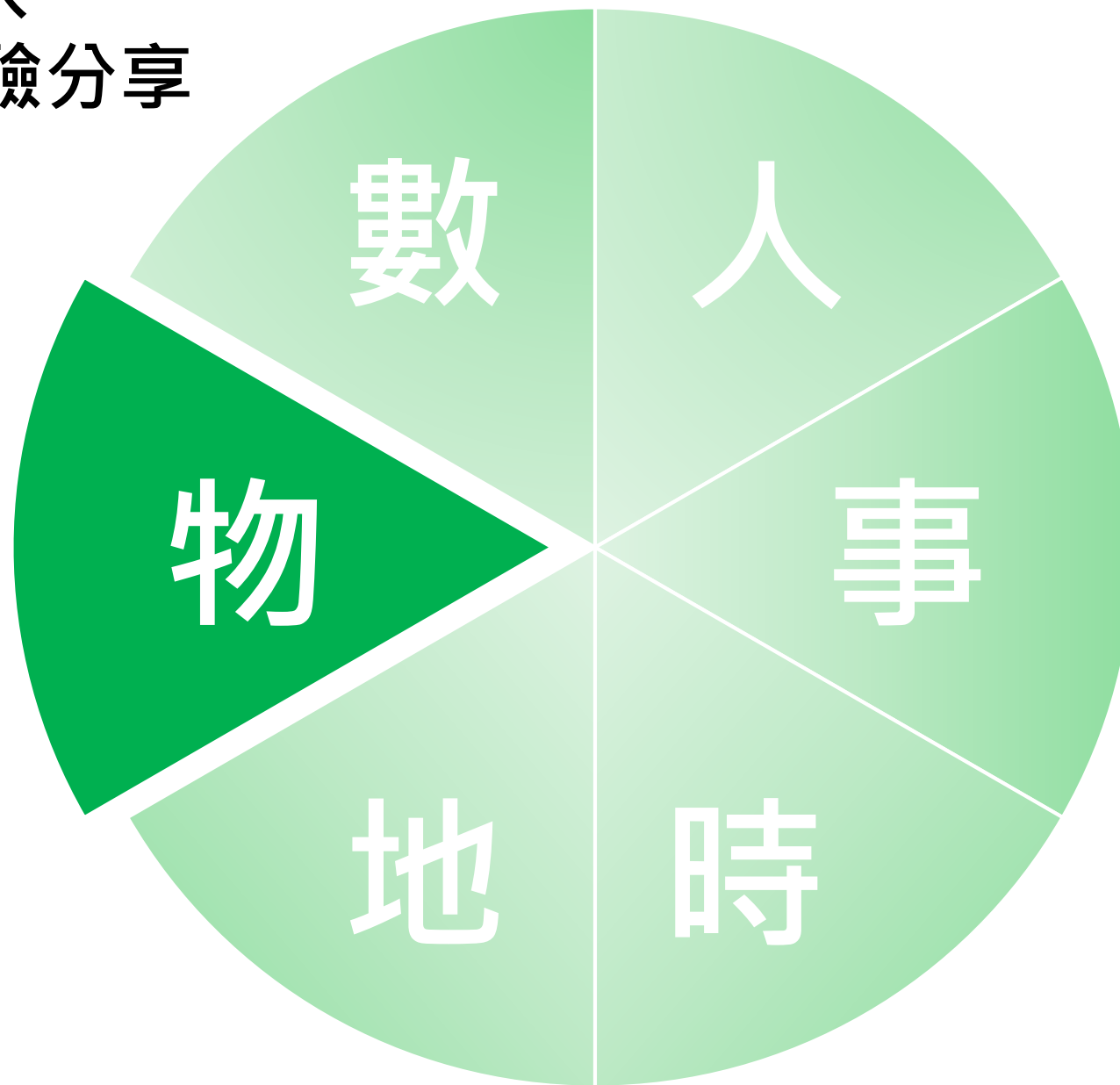
1. ECO-System
2. 當地市場的成熟度
3. 外部條件的配合
4. Business model
5. 機房網路的調整
6. 現有VM Host網路組態

實際狀況有可能是：

1. Lack of local partner resource
2. Customization is required



OpenStack 導入- 360度全方位經驗分享



物 - Object

評估現有資源、充份利用閒置設備

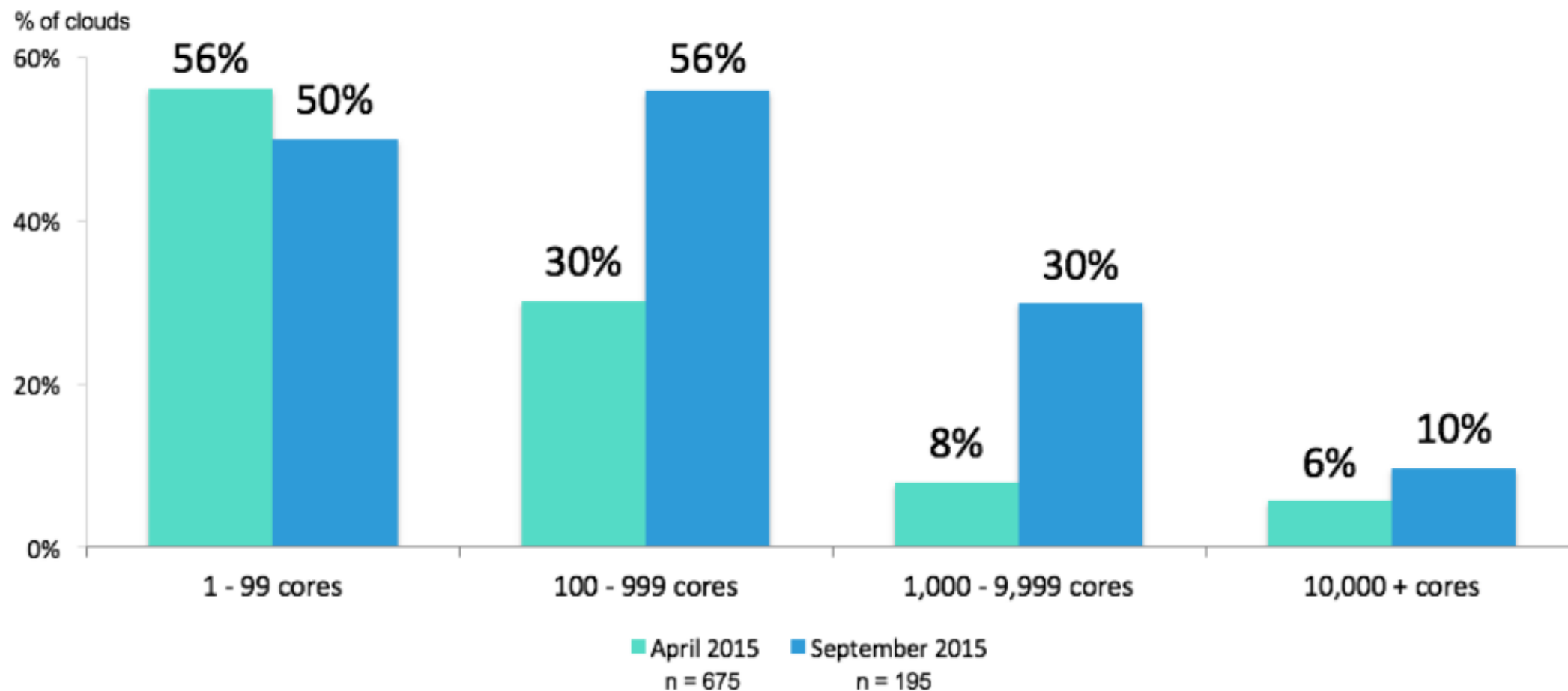
1. 需要哪些設備？Server , Storage, Networking , Software
2. 新購或延用，該如何評估所需資源？ Compute , Swift , Cinder....
3. 廠商綁定
4. 是否有附加價值的產出
5. 到底要選擇哪一家
6. 到底要選擇哪一版
7. 到達到HA
8. 要通過經濟部雲平台驗測

實際狀況有可能是：

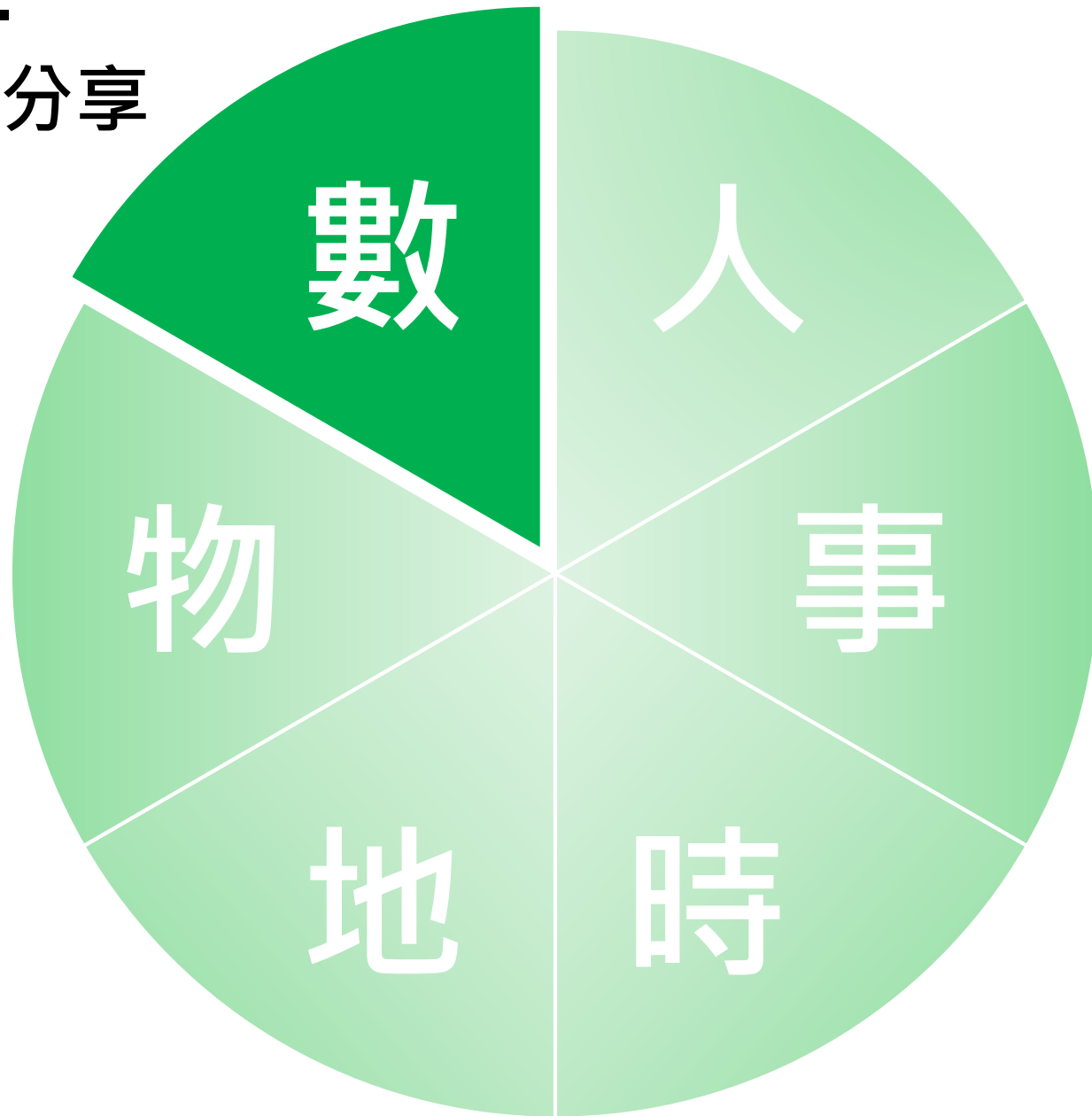
– We are free from vendor lock-in , are you sure ?



目前導入OpenStack平台的運算資源統計



OpenStack 導入- 360度全方位經驗分享



數 – Budget / Performance

如何評估建置的成本及帶來的效益：

- 硬體+軟體+建置服務+售後服務
- OpenStack, Ceph 軟體授權費用算法不同
- 預期成本降低效益
- 預計投入預算

實際狀況有可能是：

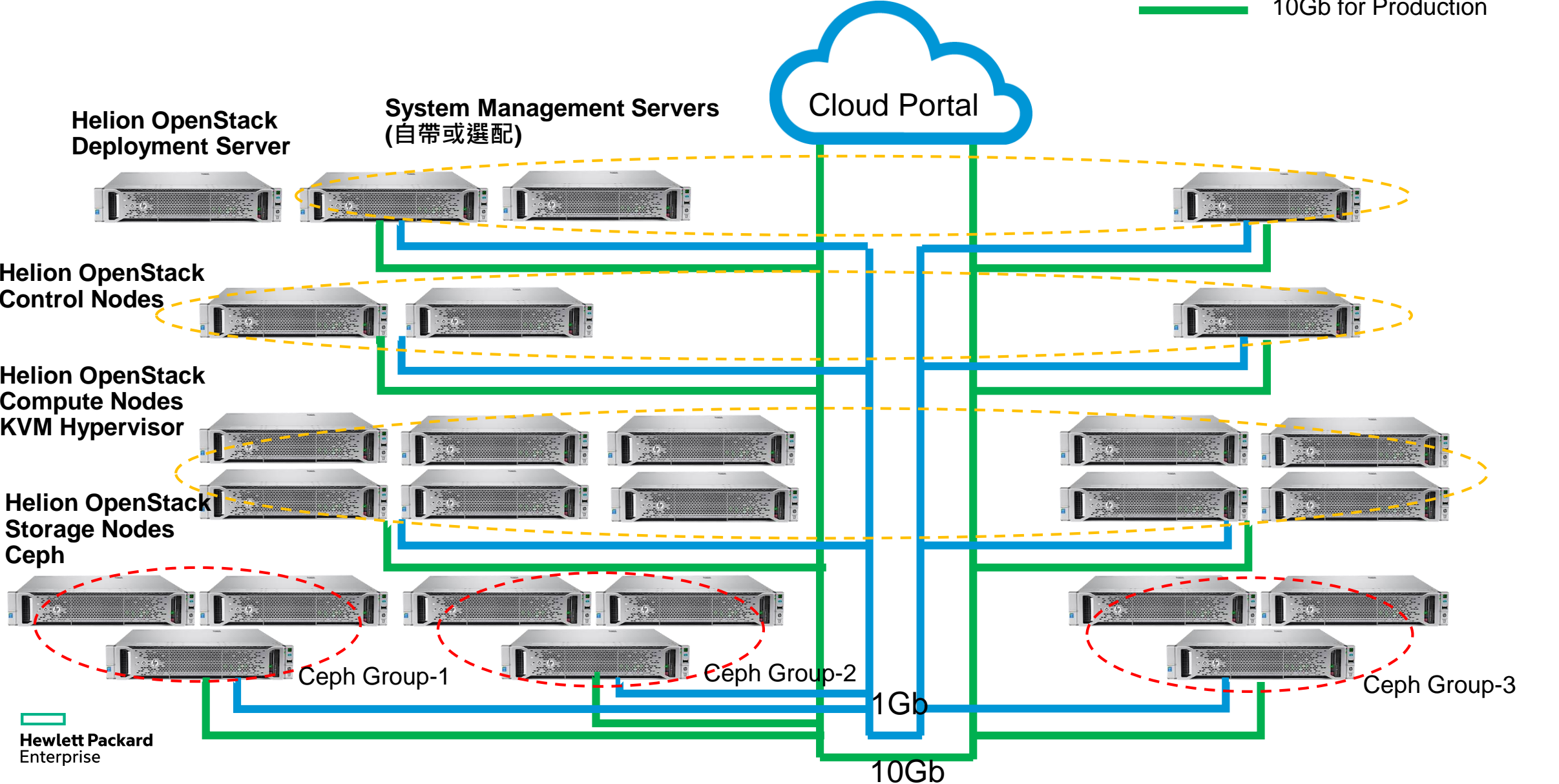
Training cost : develop your own IT resource.

Hypervisor maybe reduce ? ESX CPU cost

HPE Linux KVM is free to use.

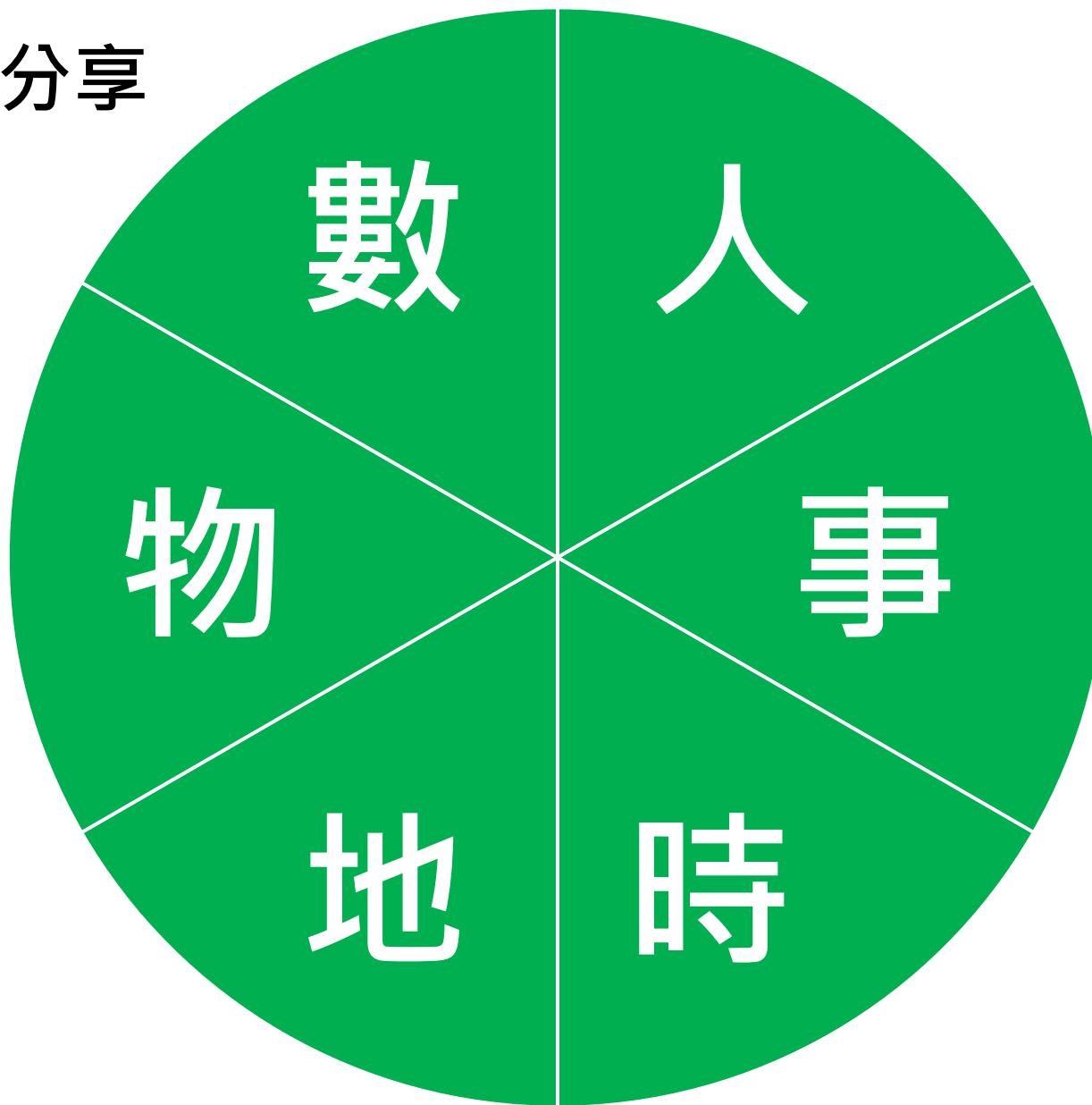


某TW製造業客戶雲端平台Server規劃架構

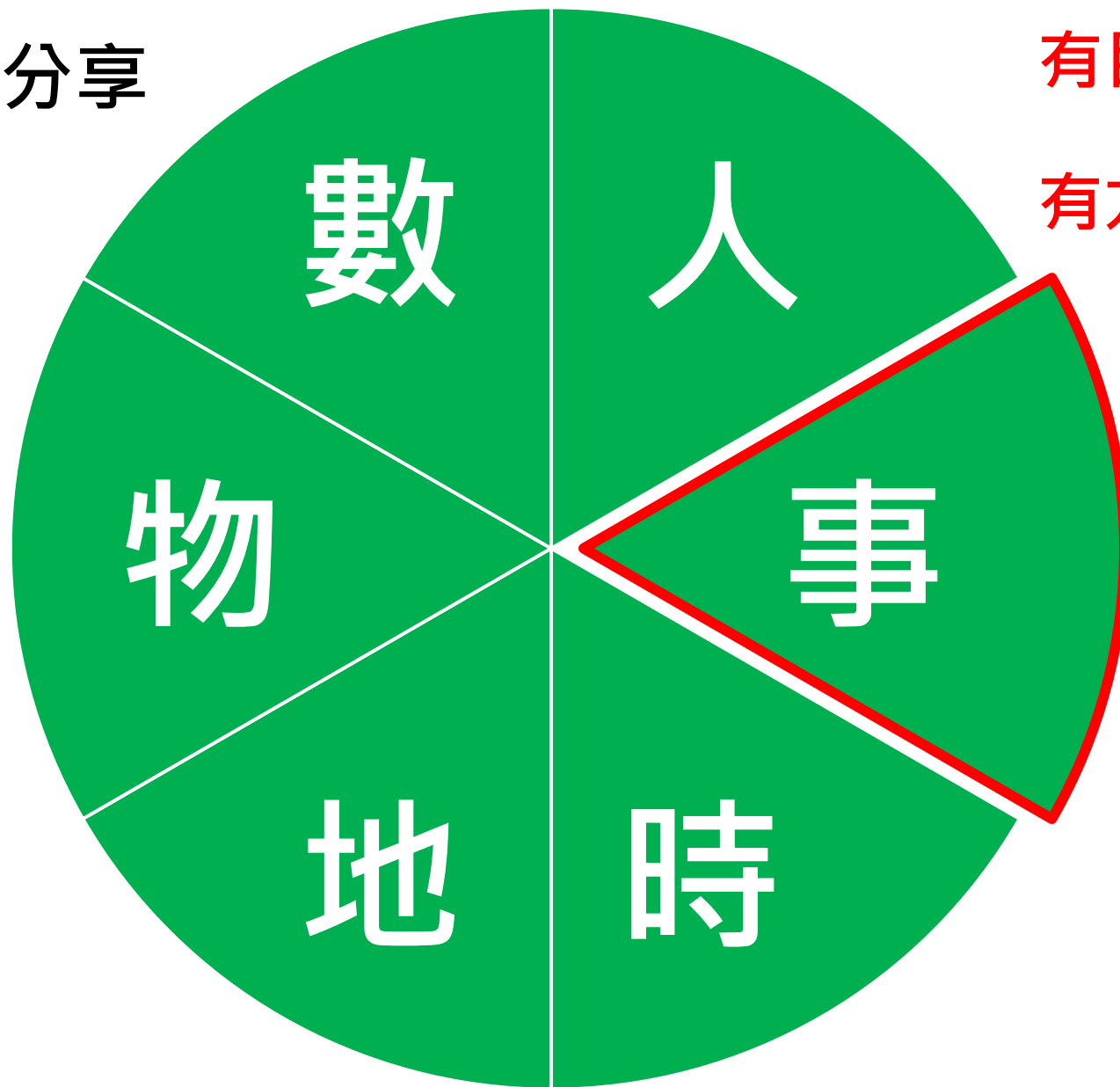


OpenStack 導入- 360度全方位經驗分享

六大主軸何者重要？



OpenStack 導入- 360度全方位經驗分享



有目標才有方向

有方向才有策略

HPE 如何幫助企業導入OpenStack

企業對開源軟體的不信任及不確定因素

← **HPE Helion OpenStack**是重新打包過的商業化開源軟體。

企業對OpenStack平台導入時程的耽憂

← **HPE Helion OpenStack**有成功案例及完整的專案團隊。

OpenStack每半年的改版對企業IT 穩定度帶來的衝擊

← **HPE Helion OpenStack**提供版本昇級的機制。

對企業IT 原有虛擬化架構的影響，能否兼容既有環境

← **HPE Helion OpenStack**支援ESX、Hyper-V、KVM。

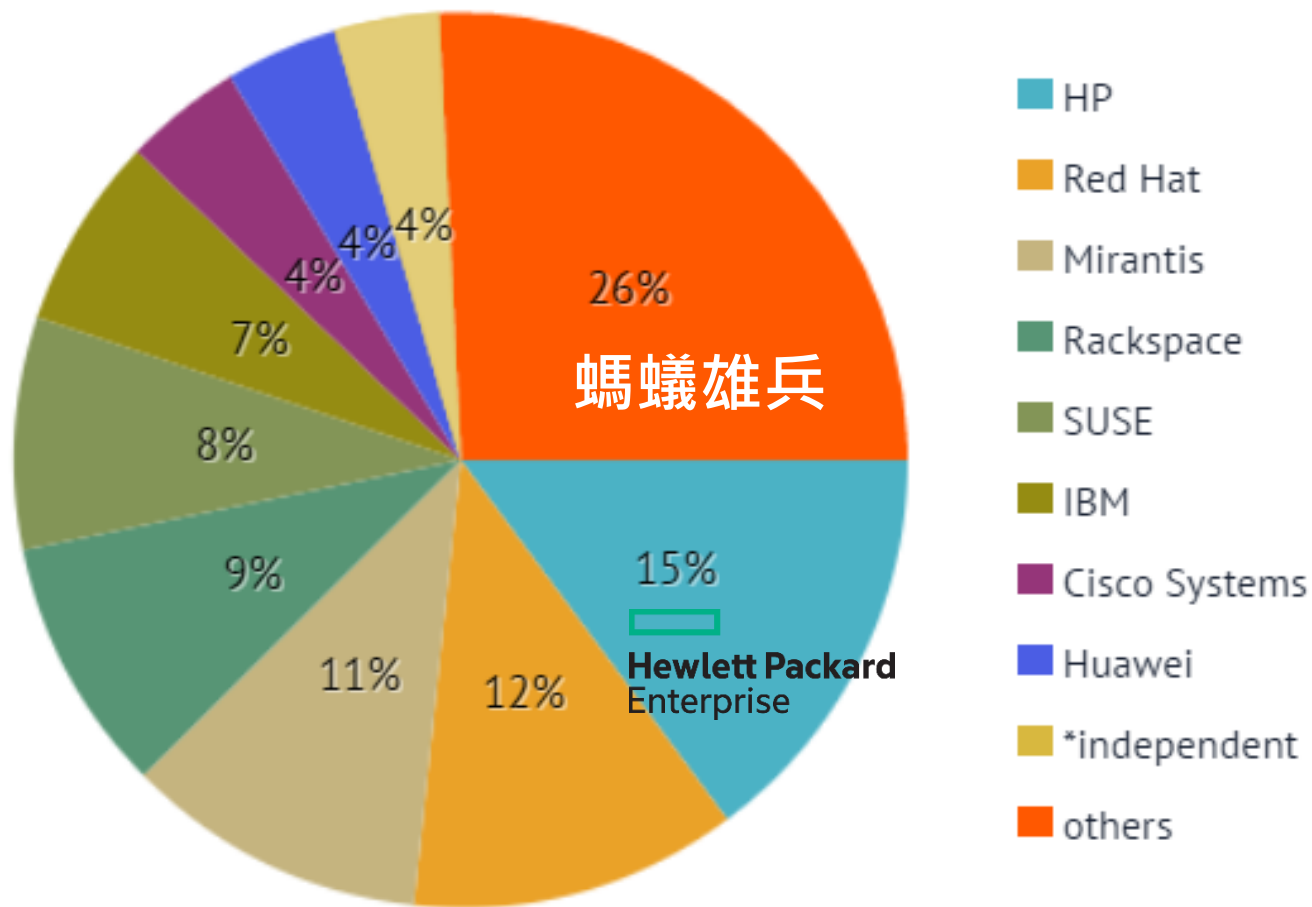
導入OpenStack是否真的能省下ESX license

← **HPE Helion OpenStack**免費提供HPE Linux KVM。



全球大廠在 Liberty 的貢獻

程式碼的撰寫



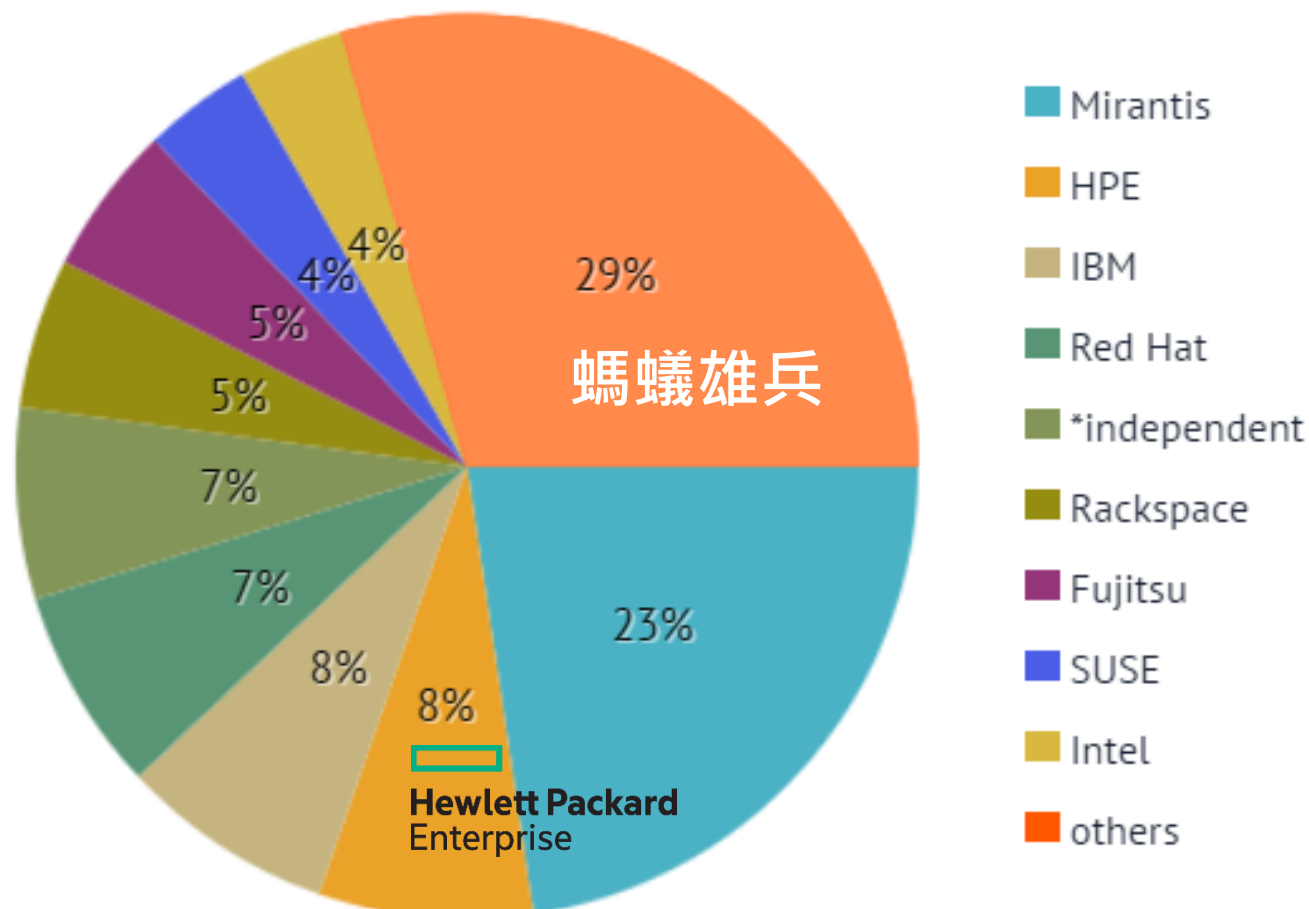
#	Company	Lines of code
1	HPE	609465
2	RedHat	486683
3	Mirantis	447554
4	Rackspace	378401
5	SUSE	344819
6	IBM	285079
7	Cisco	175092
8	Huawei	167661
9	Intel	83386
10	NCE	80789
11	Fujitsu	74773
12	VMware	67720
13	NetApp	53410
14	Tesora	49649
15	Yahoo	42685

Source : <http://stackalytics.com/>

2016.7.12 更新

全球大廠在 Mitaka 的貢獻

程式碼的撰寫



#	Company	Lines of code
1	Mirantis	1376801
2	HPE	467195
3	IBM	465618
4	RedHat	433173
5	Rackspace	327010
6	Fujitsu	325425
7	SUSE	236051
8	Intel	230742
9	Cisco	227748
10	Huawei	192887
11	Objectif Libre	169887
12	NCE	90788
13	VMware	65133
14	ThoughtWorks	64017
15	NetApp	61396

Source : <http://stackalytics.com/>

2016.7.12 更新

HPE Helion Cloud for OpenStack

Helion OpenStack (HOS) :

OpenStack + OpenSource + BareMetal install + HPE Linux KVM

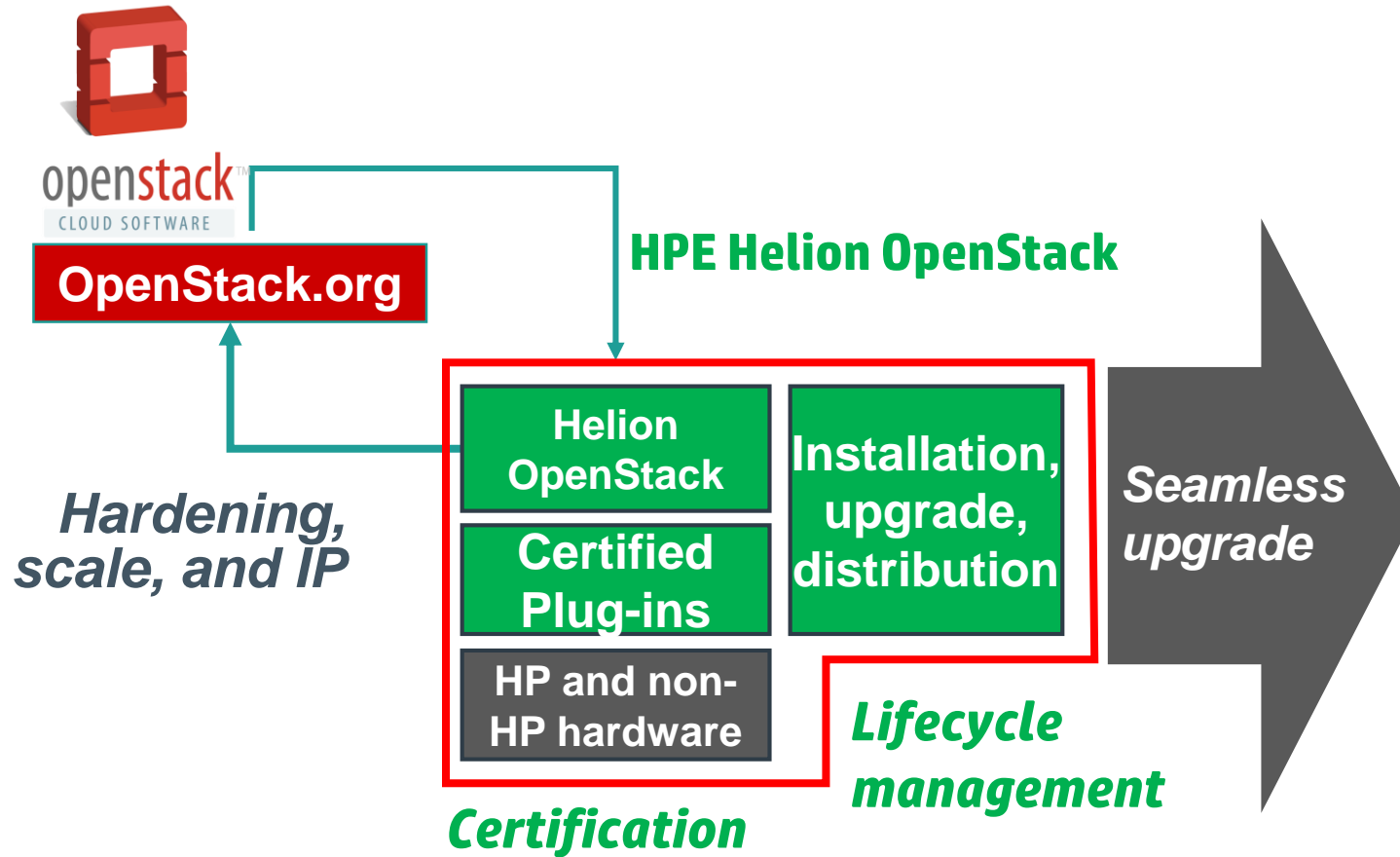
Helion CloudSystem Foundation (CSF) :

Helion OpenStack Appliance + VM installation

Helion CloudSystem Enterprise (CSE) :

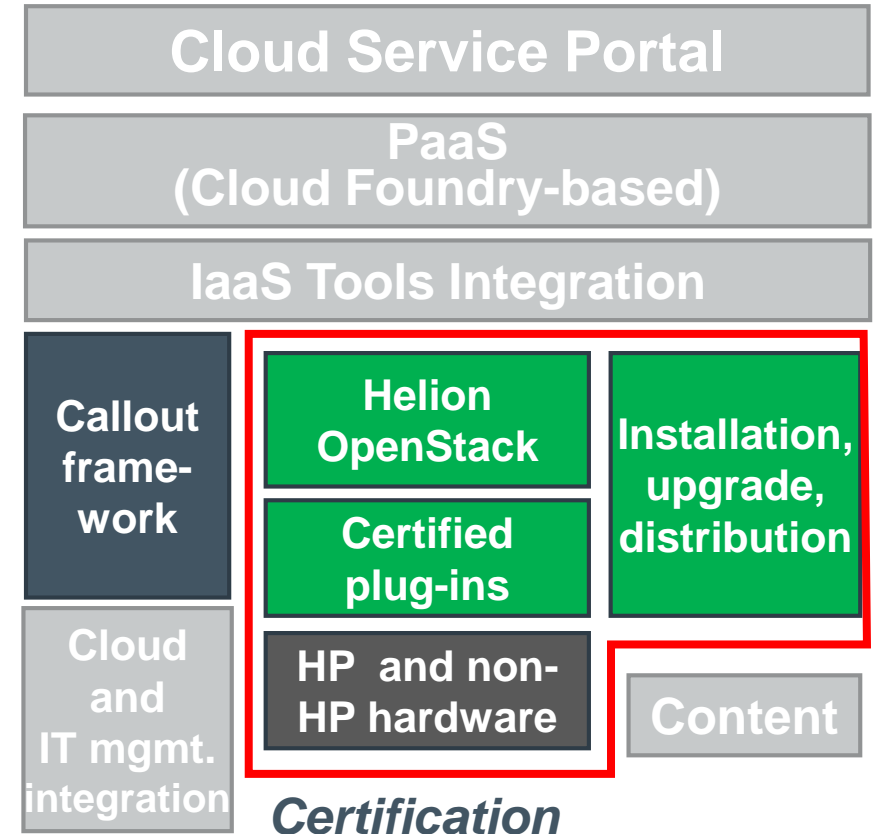
CSF + VM installation + PaaS + Hybrid Cloud Portal + Orchestration flow engine

HPE Helion OpenStack



*Innovation and contributions to OpenStack.org
(blueprints, **hardening, scaling, certification**)*

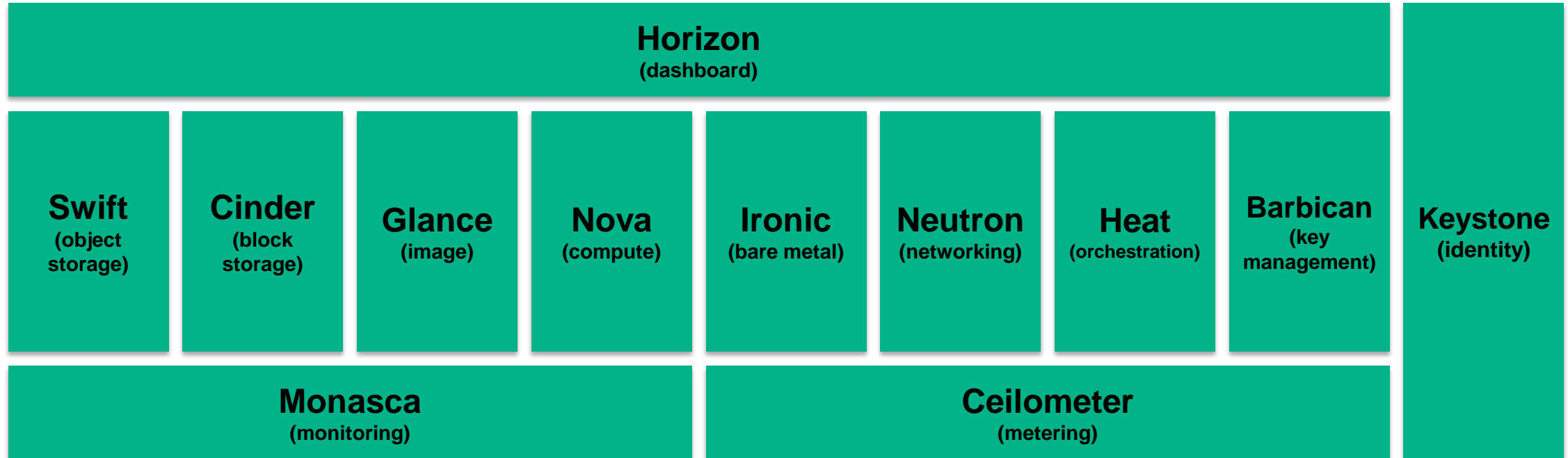
HPE Helion CloudSystem Enterprise



*Innovation and value-add for enterprises
(**lifecycle management, integration, extension, certification**)*

HPE Helion OpenStack 3.0

OpenStack Architecture – Running Environment



Strategic contributions to OpenStack projects

Keystone, Barbican, Nova, Glance, Neutron, Cinder, Swift, Horizon, Monasca, Heat, Ceilometer, Ironic, Freezer, Designate, Octavia

What's new in Helion OpenStack 3.0?

Based on Liberty release of OpenStack

Expanded app support

- Red Hat KVM support (in addition to Linux for **HPE Helion KVM** & ESX)
- Bare metal server provisioning
- Support multi-hypervisor co-existence in a single compute region
- VM live migration enhancements

Manageability

- VM availability and performance monitoring
- Centralized Ops Console to add, remove, maintain compute nodes
- Out-of-the-box **200 compute node** scale (thousands of VMs)
- Metering (showback/chargeback)
- Integration with 3rd party billing systems

Enterprise grade

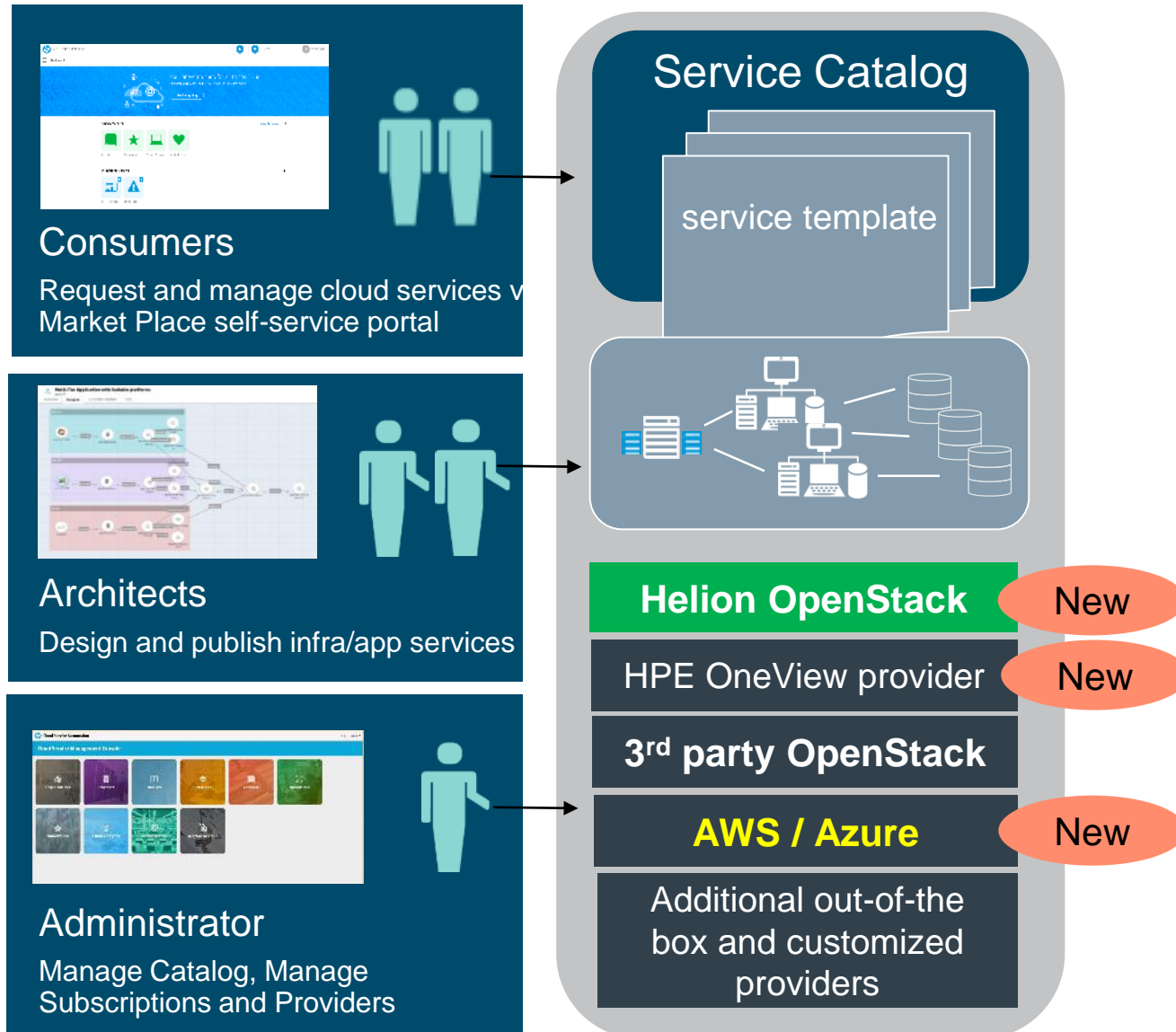
- Networking HA in CVR mode
- Support multiple Swift zones isolating failure boundaries.
- Support for pluggable IPAM integration

Security

- **PCI readiness**
- Data at-rest encryption
- Integration with KMIP compliant devices
- Data in-transit encryption for internal API traffic (external already supported)
- Hardening & Auditing
- Role based access controls and password management enhancements



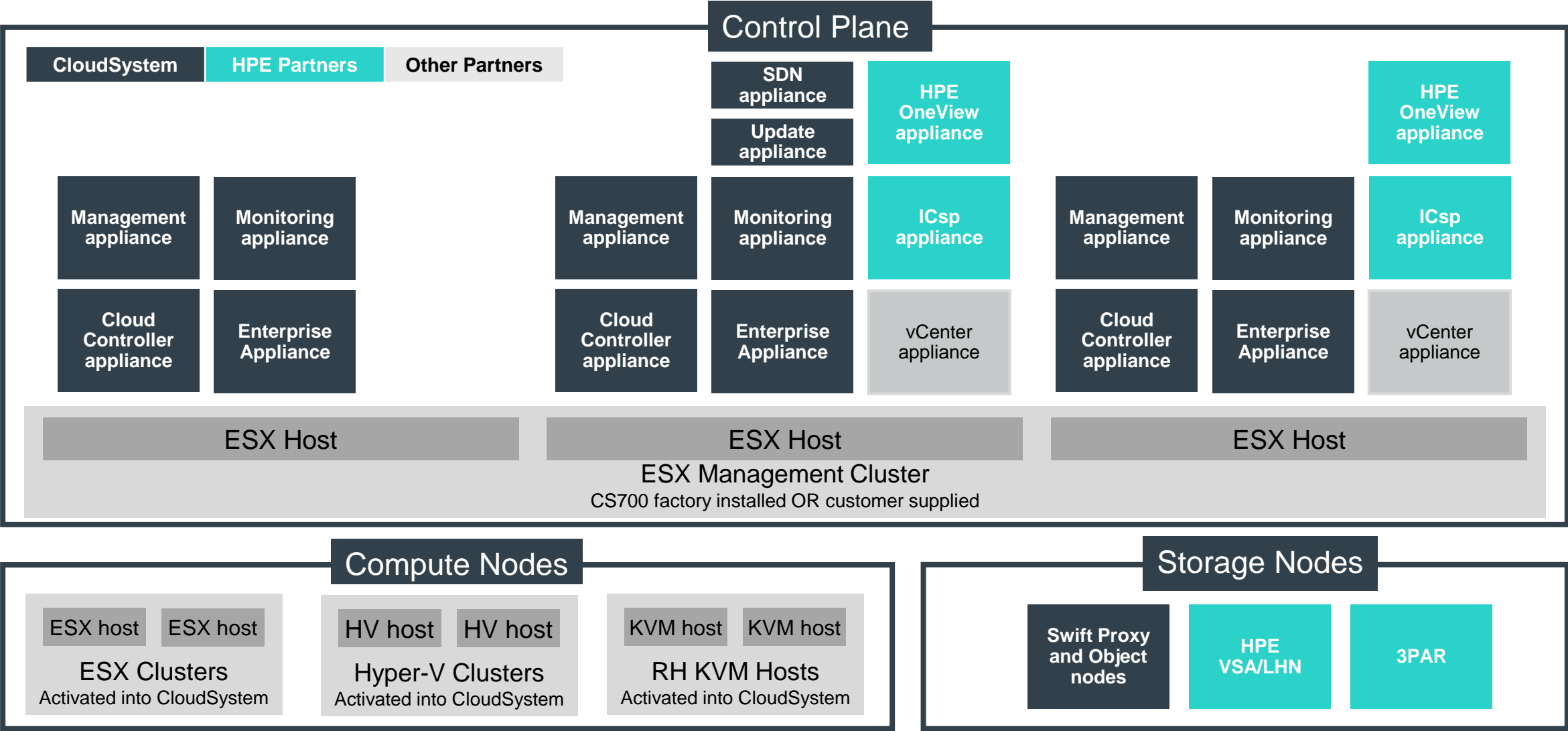
HPE Helion CloudSystem 9.0



- Delivered as virtual appliances on VMware or Red Hat – now with 3 node HA management cluster
- Multi cloud across geos or datacenters **supports multiple OpenStack pools**
- Application services **Chef, Puppet**, Server Automation, and Docker to provision applications via topology designer
- Physical server provisioning via HPE OneView integration
- Portable service design avoids design sprawl allows deployment on different resource pools through late resource binding

Note: HPE Helion CloudSystem Enterprise includes HPE Cloud Service Automation (CSA), HPE Operations Orchestration (OO), HPE Helion CloudSystem Foundation, and HPE Matrix Operating Environment (OE).

HPE Helion CloudSystem 9.0 管理主機佈署架構



OpenStack 可以帶來的好處

Open Cloud solution for easing business growth pains



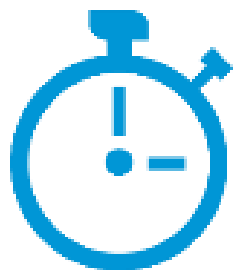
Scalable
方便擴充



Open
開源技術



Cost Down
節省軟體費用



Innovation
加快程式部署



No Vendor Lock-in
避免廠商綁定

OpenStack 導入- 360度全方位經驗分享



Thank You

