



Software-Defined Storage Extending the Power of Your Datacenter

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Software defined: executing at business speed

Drive acceleration of business outcomes on key drivers

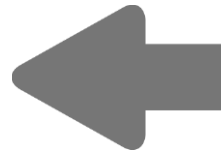
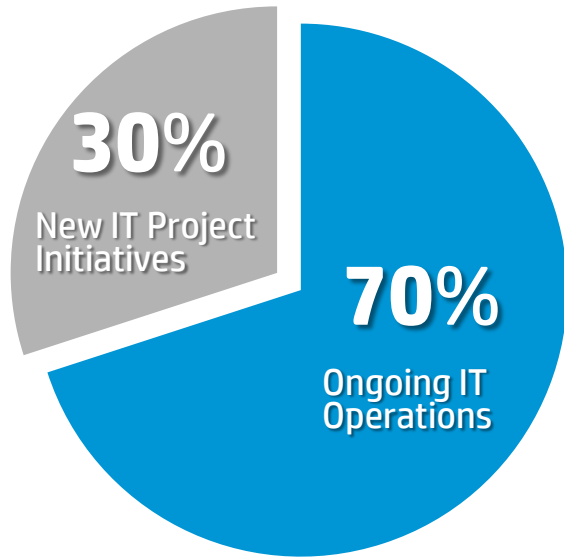


- **Speed**
Accelerate time to service creation and service deployment
- **Alignment**
Close user expectation and business alignment **gaps**
- **Cost**
Optimize your tech, your processes and your workforce
- **Agility**
Measurably improve business outcomes to weather coming business and technology storms

Your team is running as hard as they can... but they are not running at **business speed**



Still too many resources devoted to keeping the lights on, holding you back



Creating a **time** problem

- **Time**-to-respond
- **Time**-to-stability
- **Time**-to-innovation

- Reduce spending on legacy systems to allow investment in systems of innovation
- To accelerate, IT needs to work across infrastructure **and** people silos

Source: HP research



Business needs translate into IT priorities

Critical/high IT executive priorities for 2014

1 Improve use of data and analytics to improve business decisions and outcomes	72%	➔	Agility
2 Identify new ways IT can better support business/marketing objectives	66%	➔	Alignment
3 Improve IT project delivery performance	56%	➔	Speed
4 Develop new skills to better support emerging technologies and business innovation	52%	➔	Workforce agility
5 Reorganize or retrain IT to better align with business outcomes and drive innovation	50%	➔	Workforce alignment

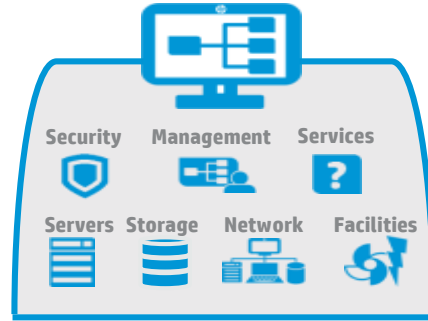
Source: State of the CIO Survey Jan 2014, CIO Magazine (Rank and % of respondents)

Service Driven Infrastructure



Converged Infrastructure

Increase IT agility while reduce cost through **automated data center management** for better business results



Software Defined Data Center

The datacenter resources is **control by upper-level application** systems to align with SLAs and application performance demands.



Converged Cloud

a common architecture spanning traditional IT, private, managed and public clouds. Application service is elastic across all cloud models. **evolves from Builder to Broker**

What is HP Software Defined Data Center?

Extending the benefits of Converged Infrastructure

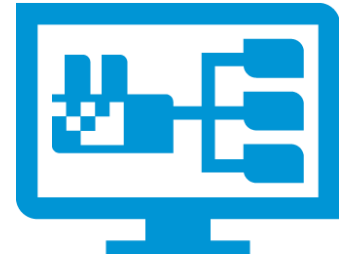
HP Software Defined Data Center:

Integrated control abstraction layer presents converged infrastructure elements as **virtual constructs** within **pools of virtual and physical resources**, allowing dynamic composition into services

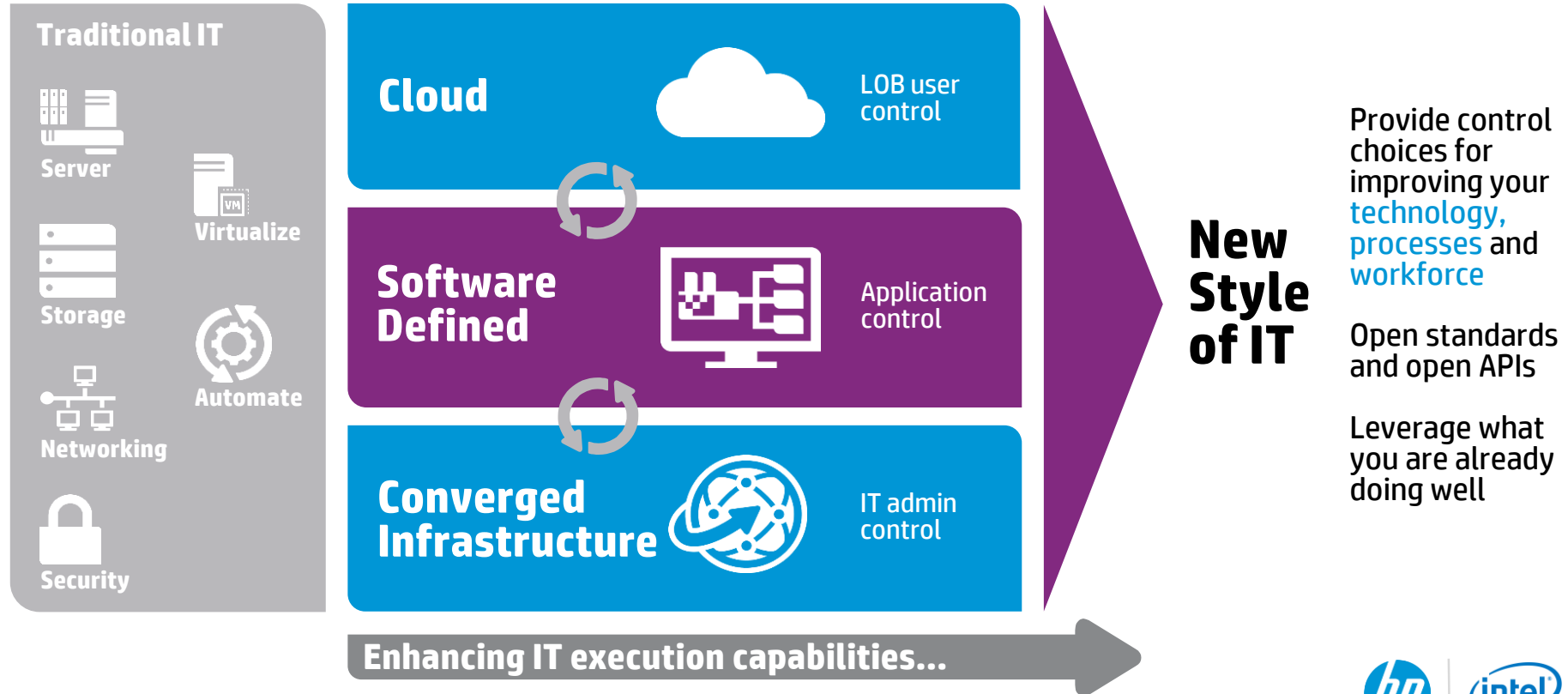
Provides **programmatic control** of data center **applications, functions and resources** through **policy-based orchestration, software control and open, extensible architectures**

Dynamic, efficient control of IT services from an **application, user and admin** perspective

HP Software Defined Data Center



Further acceleration requires **new control options**



HP Software Defined Data Center solutions

Already helping you move toward the future ...

Software Defined Systems



Moonshot



**HP ConvergedSystem 100
for Hosted Desktops**

**HP ConvergedSystem for Virtualization
HP CloudSystem**

Software Defined Storage



HP StoreVirtual VSA

HP 3PAR StoreServ



HP StoreOnce VSA



Software Defined Networking



**Virtual
Application
Networks
SDN Controller**



**50 OpenFlow switches
10 OpenFlow Routers**

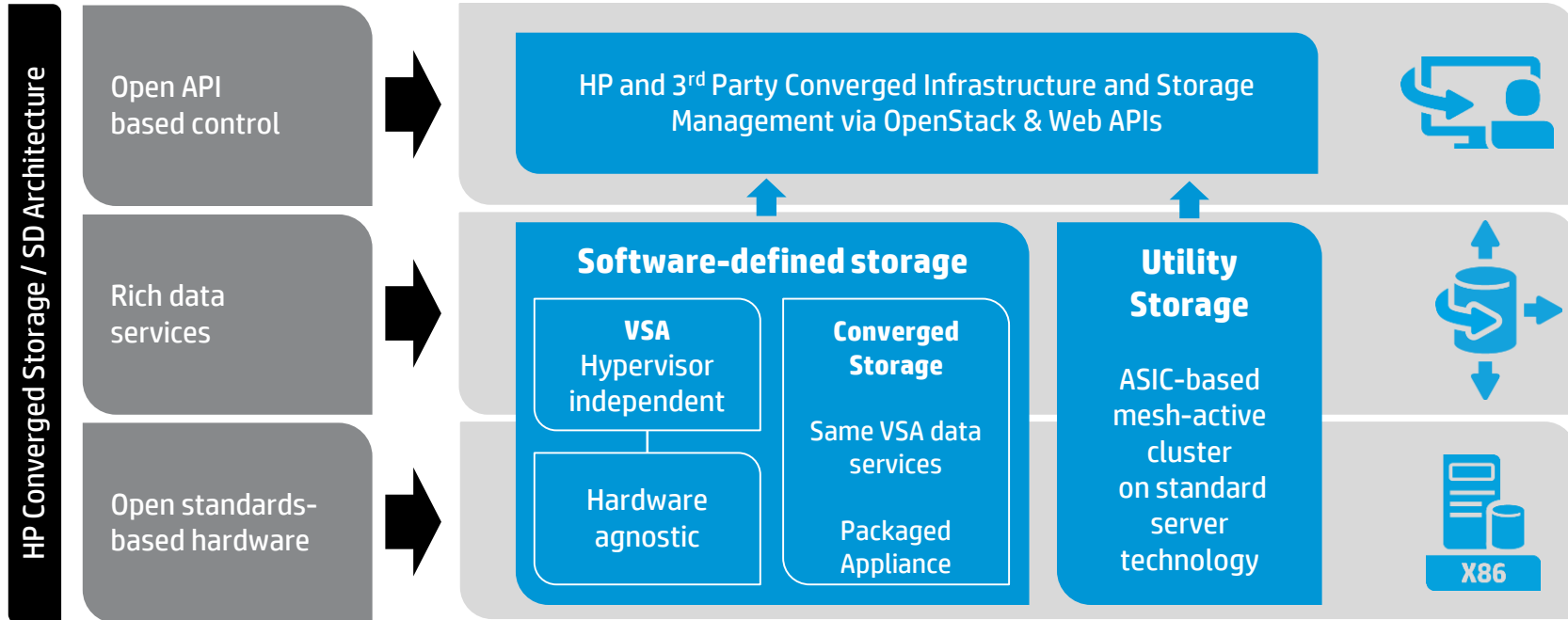
HP definition of Converged Storage from 2011



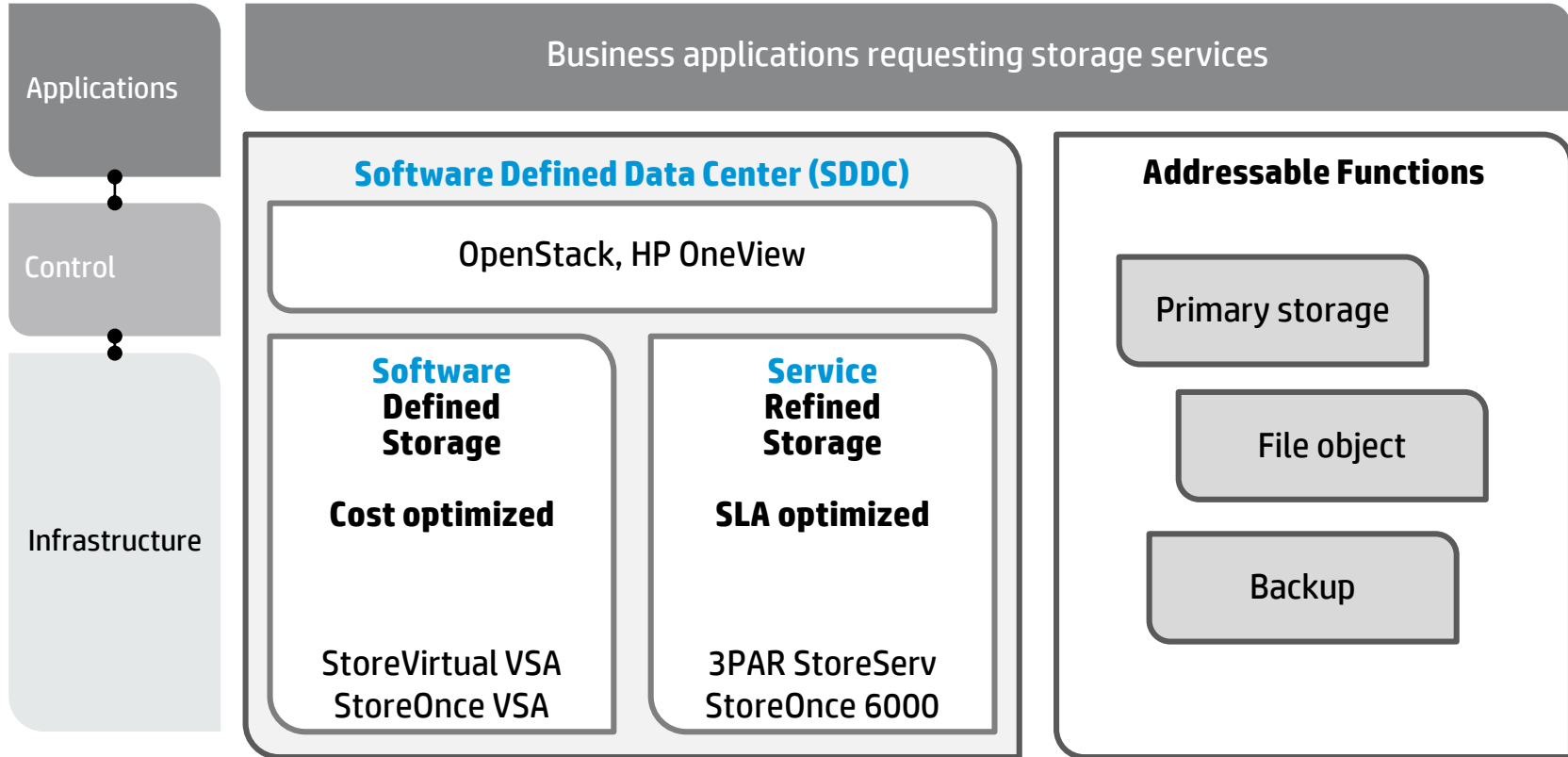
Architecture matters and HP is ahead of the market



HP Converged Storage for the Software-Defined Data Center



Storage in the SDDC has specific design requirements



HP Software-Defined Data Center

monitoring with integrated remote support

Touch Free Monitoring

- Simplified configuration - auto SNMP trap registration

Agent-less

- Agent-less approach to configuration and monitoring

Alert Filtering

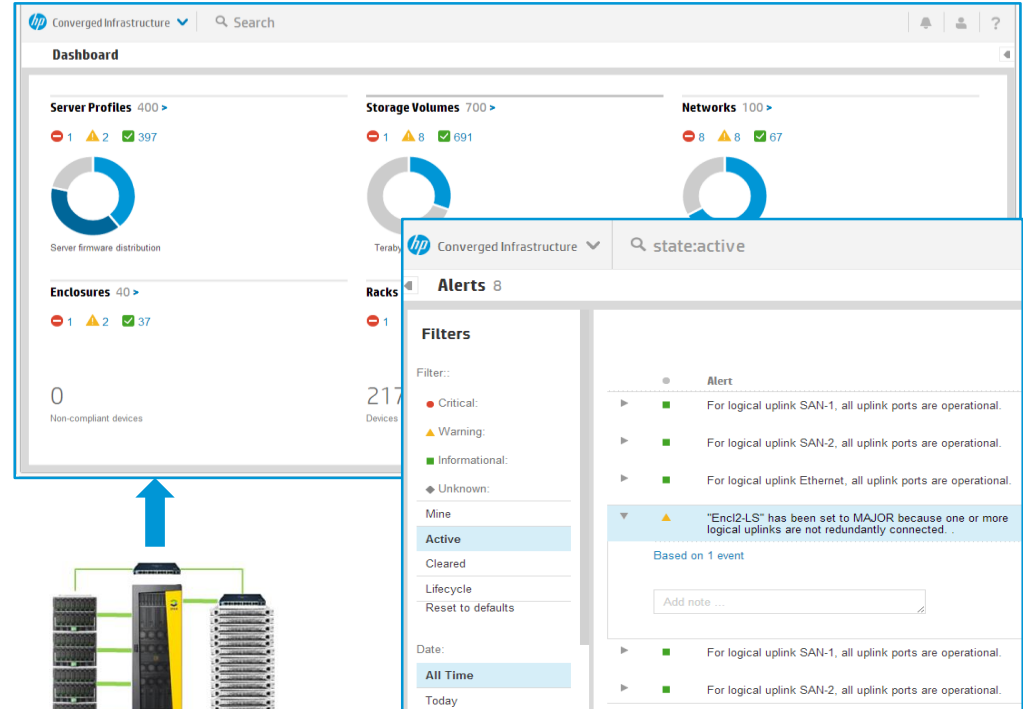
- View all alerts by severity or by resource

Notifications

- Email notifications or trap forwarding to enterprise monitoring consoles

Integrated Remote Support

- Integrated remote support, warranty and closed-loop repair process with HP support



We're extending the lead across HP Converged Storage

Delivering in 2013 HP Converged Storage VSA Strategy



**LeftHand
VSA
Market Intro**



**HP StoreVirtual
VSA**
HP expands
capabilities



HP StoreOnce VSA
Federated deduplication
from VM to Scale-Out

Winning with Convergence

- 700,000 ProLiant's per year are deployed for virtualization
- HP will ship a StoreVirtual VSA trial with every entry and mid-class server

Affordable HA and DR for small or remote sites

HP StoreVirtual VSA

**Turn servers into fully featured,
highly available arrays**

Support any server certified for VMware vSphere or qualified for Microsoft Hyper-V

Convert existing direct-attached storage into highly available StoreVirtual Storage

Repurpose existing SAN hardware

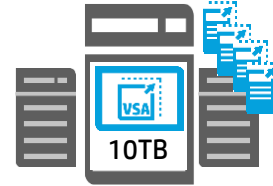
Provide option to grow into Converged Storage Appliances

**VSA can turn *every* server into a
Converged Infrastructure!**



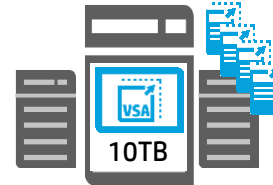
Server 1

StoreVirtual VSA / App VMs



Server 2

StoreVirtual VSA / App VMs



Shared Storage
Cluster for H/A

HP StoreOnce VSA for Enterprise ROBO

Affordable Backup and Recovery for remote sites

StoreOnce VSA Backup to the Primary Data Center

Utilize Catalyst to replicate over WAN

Data is backed up to StoreOnce VSA on the application servers

- Replicate data to central data center for disaster recovery solution
- Local copy of data in StoreOnce VSA means fast recovery when required

StoreOnce Enterprise Manager reports:

Capacity Utilization

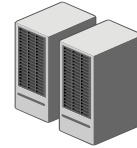
Deduplication Ratios

Trend Analysis

HP StoreOnce can centrally manage backup for *every remote office!*

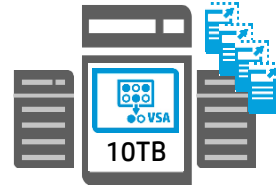


Primary Data Center



StoreOnce Appliance

ROBO StoreOnce VSA / App VMs



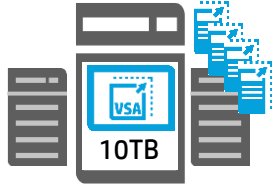
Backup
Typical 20:1 Dedupe Ratio!

HP Software-Defined Storage – Realizing Hidden Value

Remote Office / Branch Office

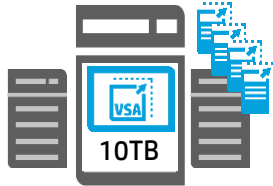
Server 1

StoreVirtual VSA / App VMs



Server 2

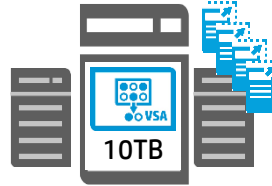
StoreVirtual VSA / App VMs



Shared Storage Cluster for H/A

Server 3

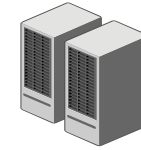
StoreOnce VSA / App VMs



Backup to StoreOnce VSA

VMware environment only

Service Provider / Data Center



OR



StoreOnce Appliance

StoreOnce VSA

DR/Backup
Typical 20:1 Dedupe Ratio!

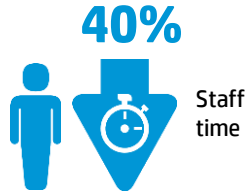


Real ROI with HP software-defined infrastructure

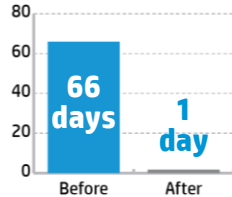
Case study: global financial services institution

IT acceleration and optimization

Reduction in staff time for build and maintenance

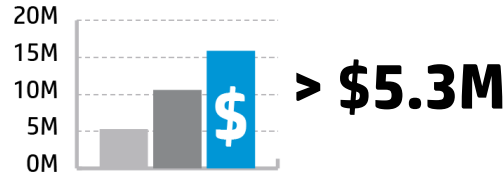


Reduction in technology rollout times



Millions of dollars in savings

Annual benefits

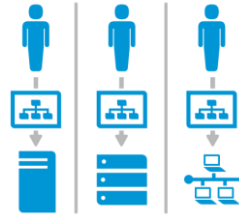


Five-year ROI

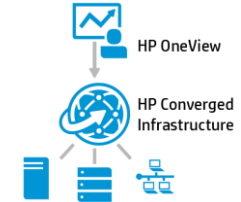


Organizational transformation

Before HP SDI



After HP SDI



“HP OneView helped us to reduce a technology rollout from 66 days to one day.
It’s the breakthrough we’ve been looking for.”



Gone beyond the decimal system

Focus on the "1" in "IT"



Thank you

