Measuring the Cloud

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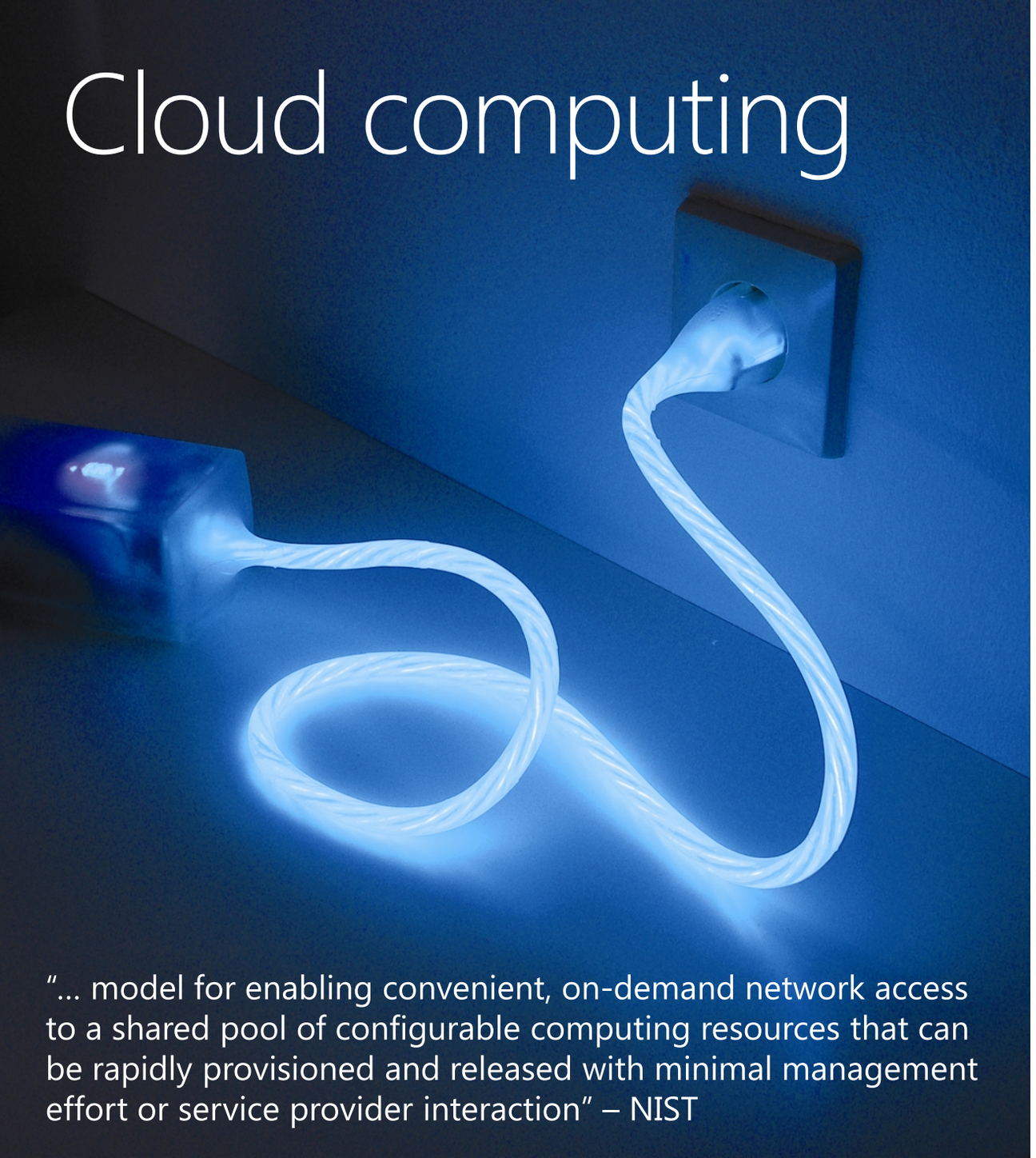
The Cloud Candy Store
Private
Dedicated
Dynamic
Hybrid
IAAS
Outsourced
Virtualized
Public
SAAS
PAAS
Hosted

Cloud computing



"… model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction" – NIST

On demand

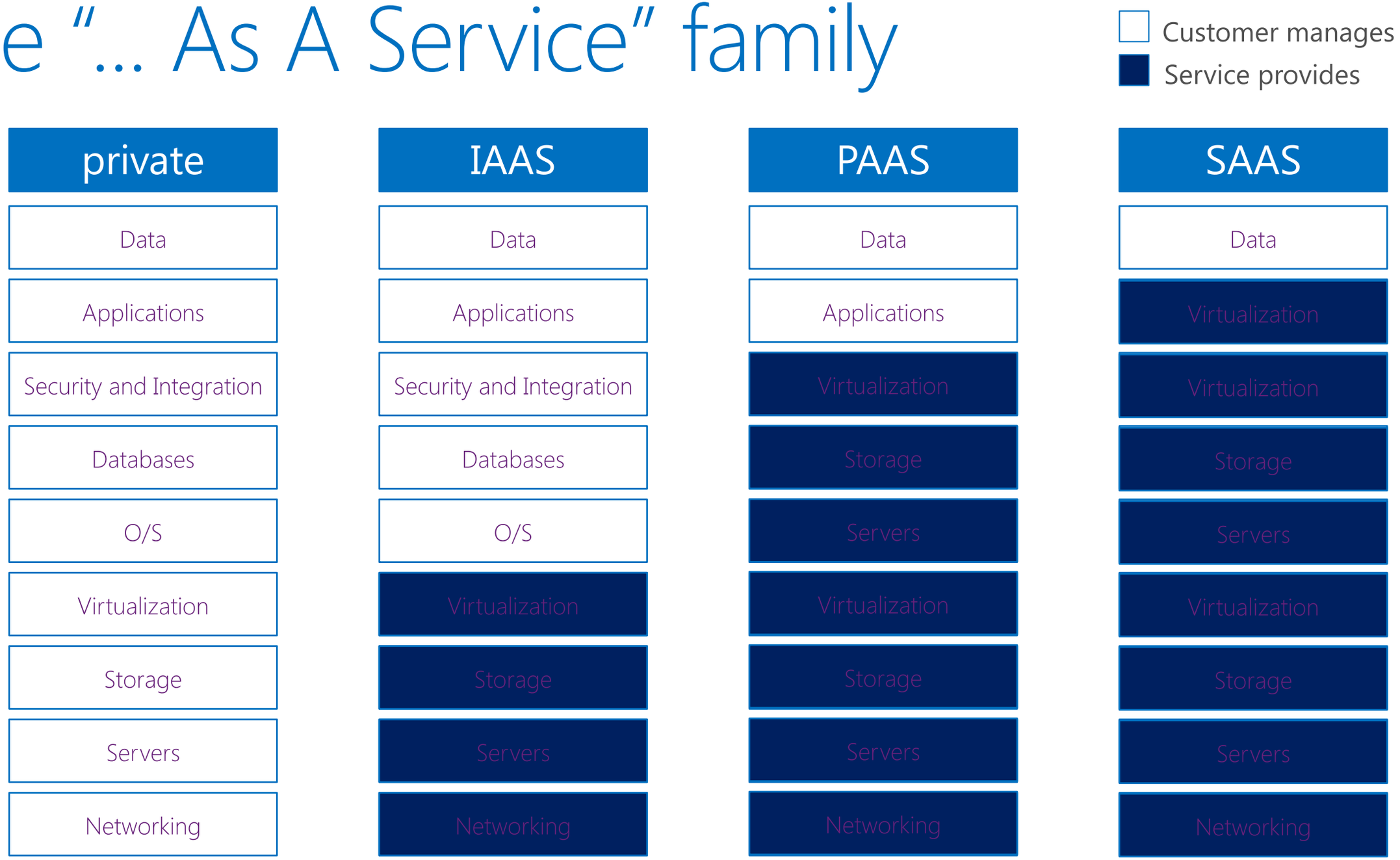
Shared pool of resources

Pay per use

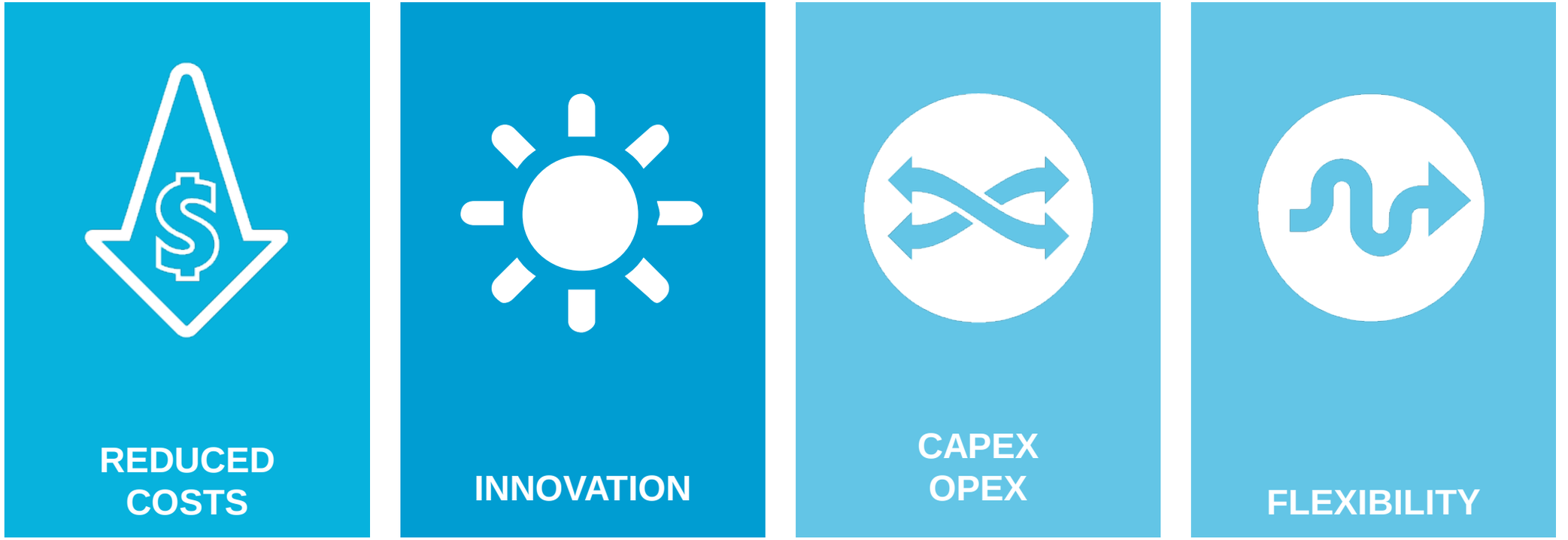
Elastic

Broad access

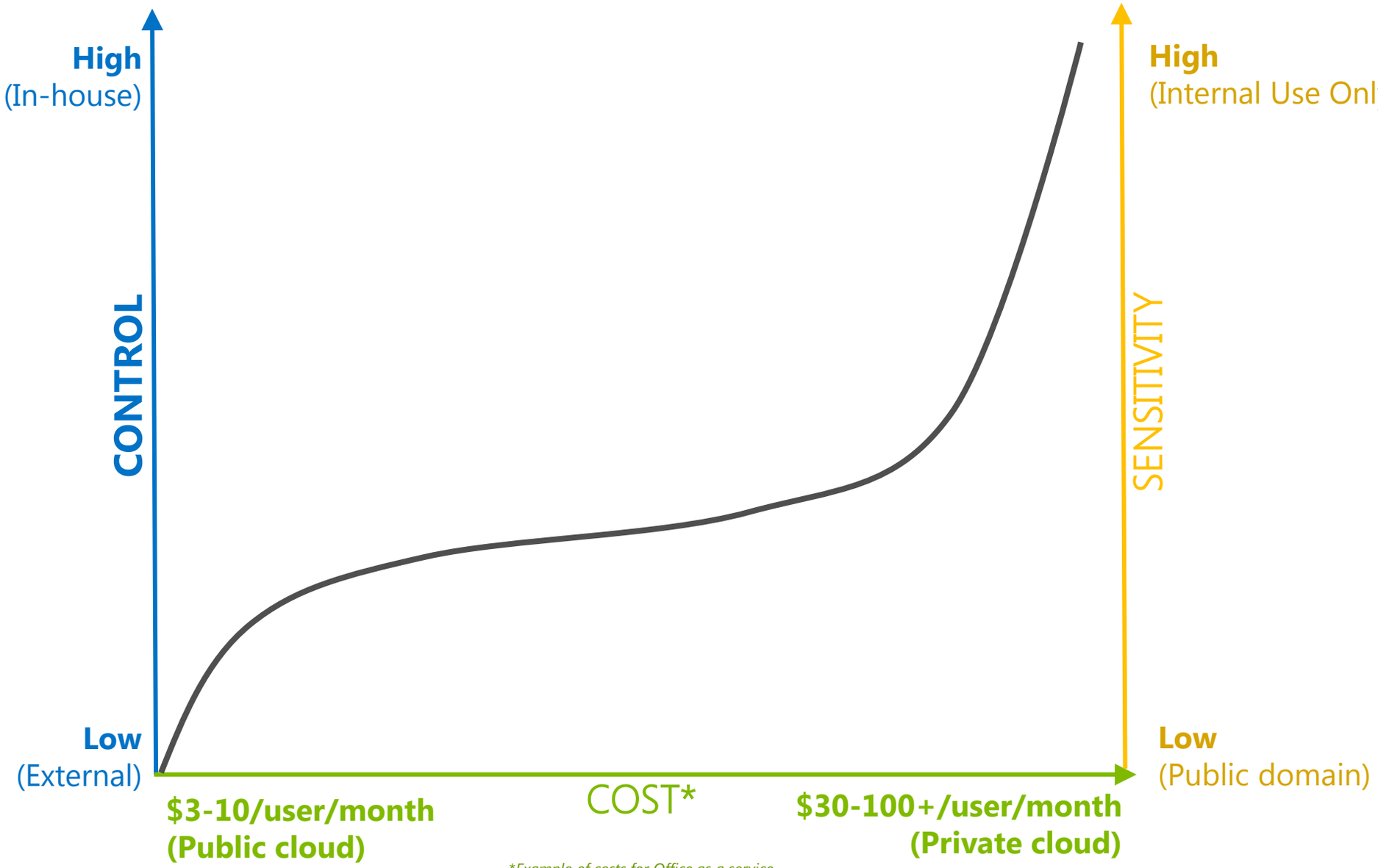
The "… As A Service" family



Benefits of cloud computing



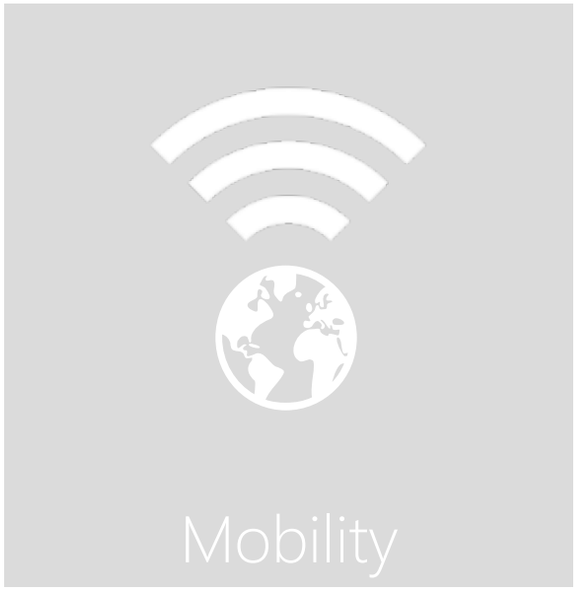
Moving the needle between cost, control & sensitivity



*Example of costs for Office as a service

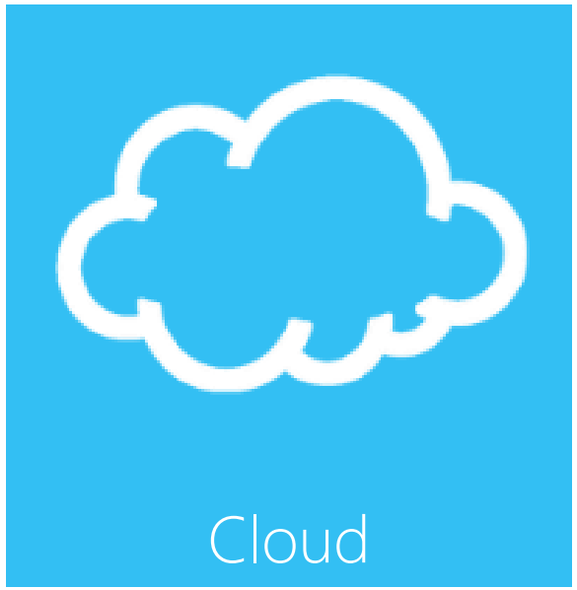
Technology Megatrends

A new era of opportunity as ICT becomes the key enabler for change



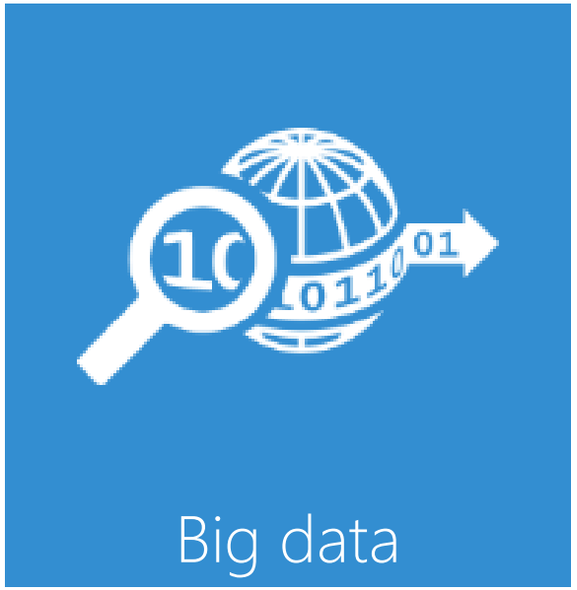
Smartphones and **tablets** put power in the pockets of more than **a billion** global citizens.

Millennials will make up **75%** of the **American workforce** by **2025**



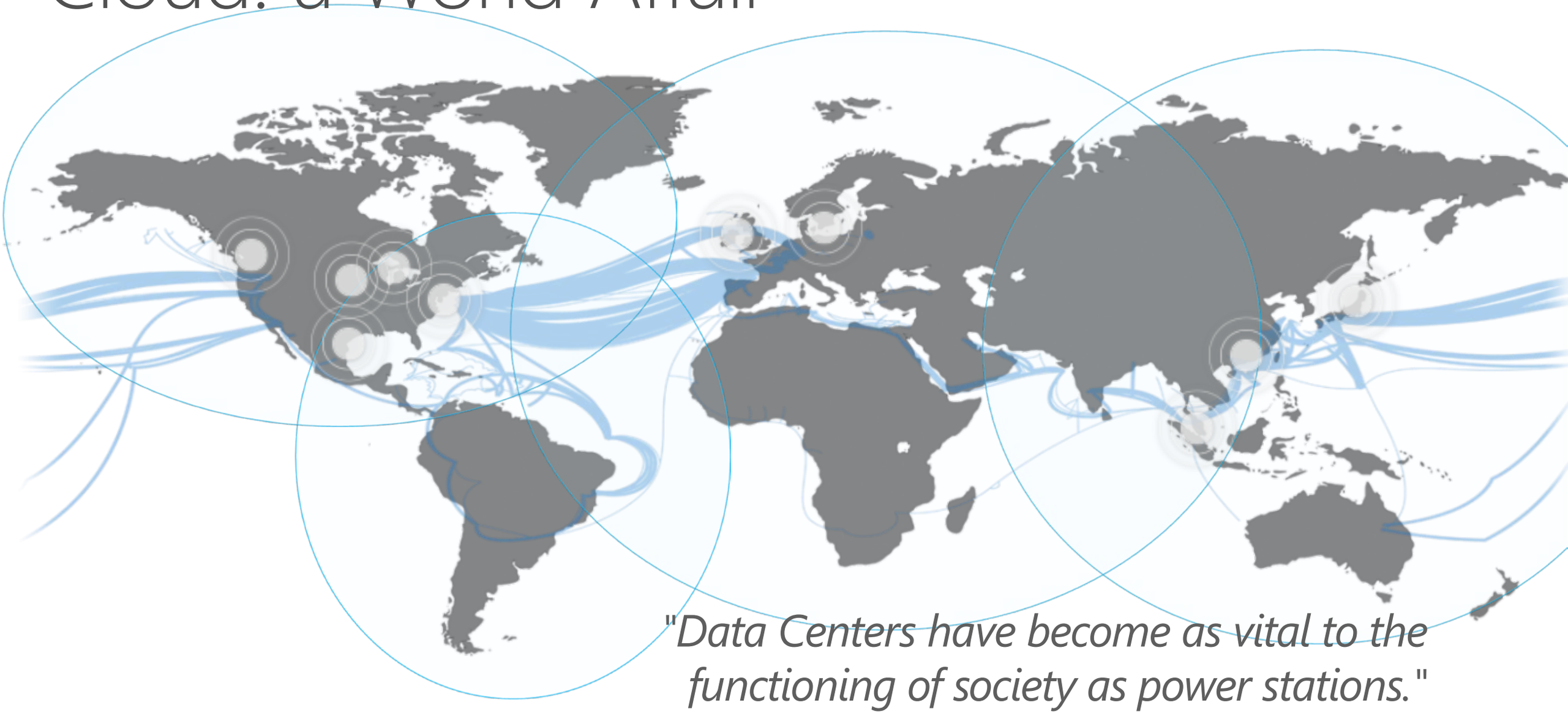
70%

of organizations are either using or investigating **cloud computing solutions**



Digital content will grow to **8ZB by 2015**, an increase of **4x in just 4 years**

Cloud: a World Affair



"Data Centers have become as vital to the functioning of society as power stations."

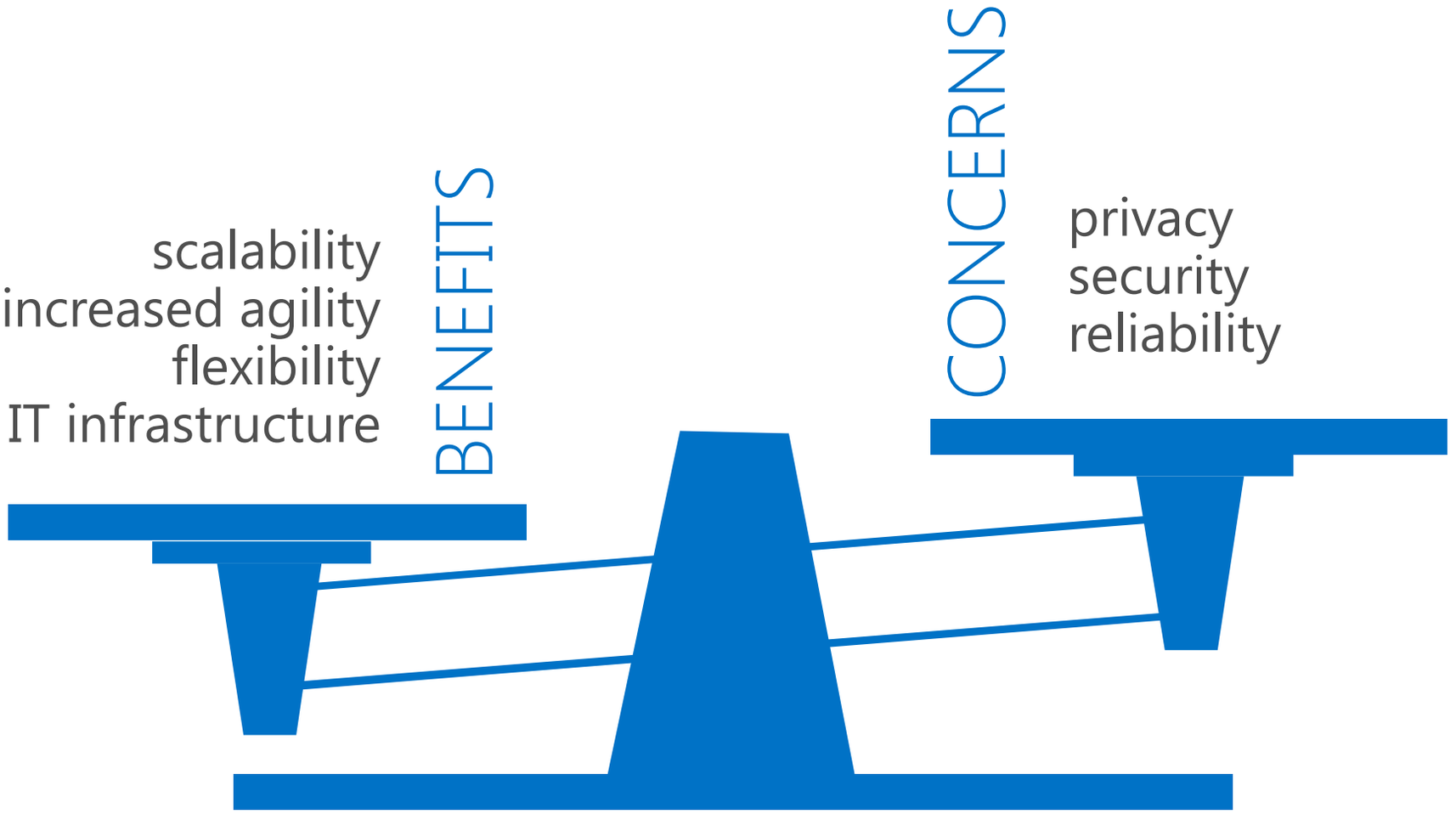
The Economist

Digital: Key trends

- **Value continues to migrate online, and digital data have become more pervasive.** more online transactions create bigger incentives for cybercriminals. Moreover, corporations looking to mine data—for instance, transaction and customer information, results of product launches, and market information—create valuable intellectual property that is in itself an attractive target.
- **Corporations are expected to be more 'open' than ever before.** Increasingly, people working in business units are demanding access to corporate networks through the same mobile devices that they use in their personal lives. While smartphones and tablets increase connectivity, they also present new types of security threats: when hackers "crack" a device, it creates an easy point of entry into corporate networks for malware.
- **Supply chains are increasingly interconnected.** To strengthen ties to customers and optimize supply chains, companies are encouraging vendors and customers to join their networks. However, this engagement makes walling off a company's technology environment all but impossible. Tighter integration with business partners, of course, can deliver clear benefits, but it also means that a company's defense against attacks rests in part on the security policies of partners and customers.
- **Malevolent actors are becoming more sophisticated**. From criminals to Hackers to hobbyists. Hackers provide "cybercrime as a service"—receiving payment for each end user device they infect with malware. As a result, the past five years have seen more complex, targeted attacks. Malware today is much more difficult to trace and often customized to steal data that can be used for financial gain

Source : Meeting the Cybersecurity Challenge, McKinseys
https://www.mckinseyquarterly.com/Business_Technology/Infrastructure/Meeting_the_cybersecurity_challenge_2821

Risks and rewards of cloud adoption



Key customer questions

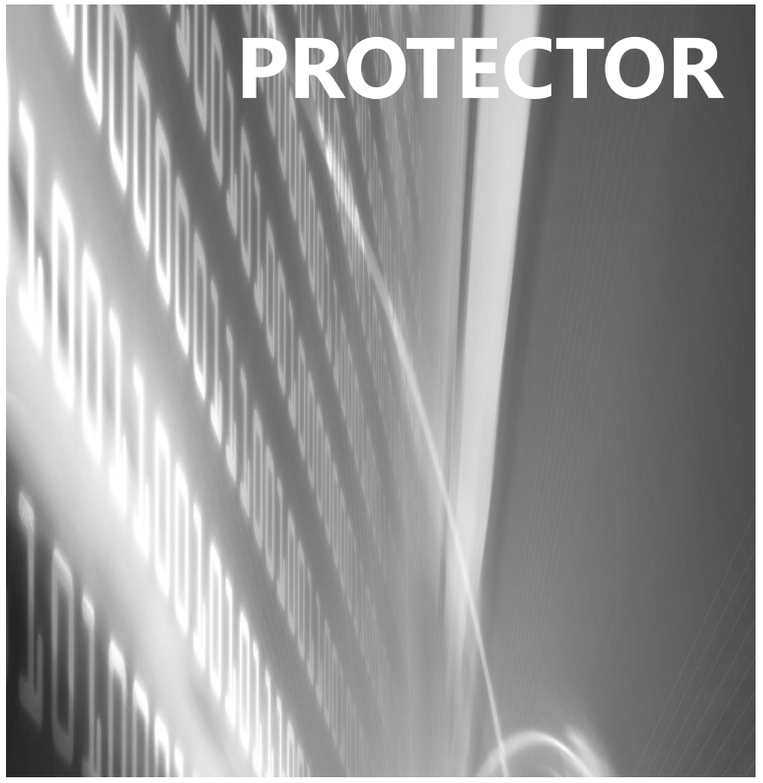
- Who can access my data?
  - Legally or illegally
  - How are disks and server decommissionned ?
- How secure am I in the cloud?
  - Steal or loss of data?
  - Credentials?
- How reliable is the cloud?
  - SLA?
- How can I make sure you do what you say you do?
  - Security breach by audit?

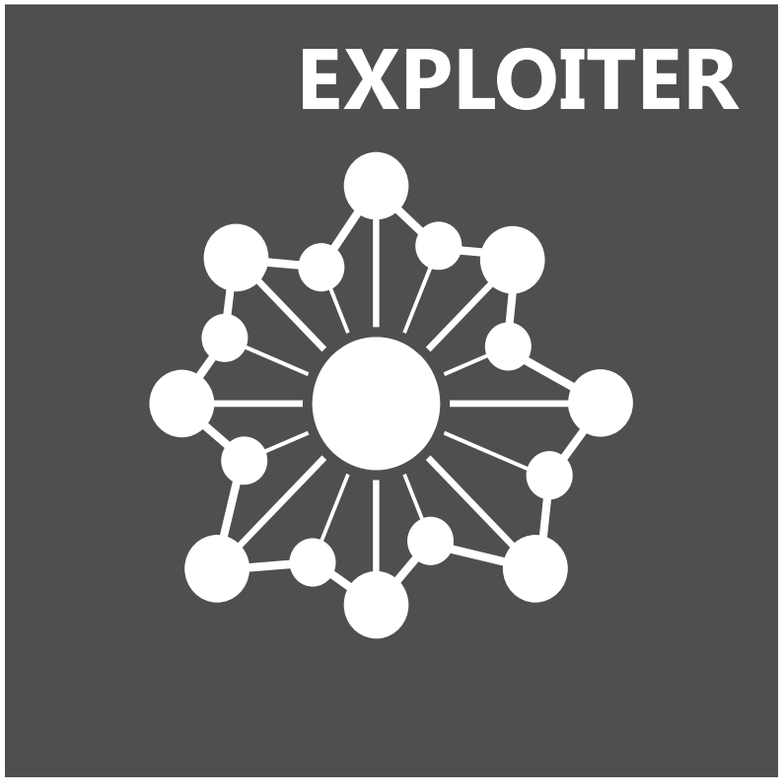
New Data Types

- Cloud service customer data: class of data objects under the control of the cloud service customer that were input to the cloud service or resulted from exercising the capabilities of the cloud service by or on behalf of the cloud service customer on those data objects
- Cloud service provider data: class of data objects, specific to the operation of the cloud service, under the control of the cloud service provider
- Cloud service derived data: class of data objects under cloud service provider control that are derived as a result of interaction with the cloud service by the cloud service customer

Microsoft Confidential

Government Roles in Cyberspace





INVESTMENT IN CYBER OFFENSE

UNINTENDED CONSEQUENCES

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English Site > World > NSA Spying Scandal > SPIEGEL Reveals Cooperation Between NSA and German BND

Indispensible Exchange: Germany Cooperates Closely with NSA

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La France, précieux partenaire de l'espionnage de la NSA

LE MONDE | 29.11.2013 à 13h10 • Mis à jour le 30.11.2013 à 13h34 |

La France au cœur de la surveillance des câbles sous-marins de communication

LE MONDE | 29.11.2013 à 13h12 • Mis à jour le 02.12.2013 à 07h26 |

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Business > Telecommunications industry

BT and Vodafone among telecoms companies passing details to GCHQ

Fears of customer backlash over breach of privacy as firms giv GCHQ unlimited access to their undersea cables

BT, Vodafone Cable, and the American firm Verizon Business – together with four other smaller providers – have given GCHQ secret unlimited access to their network of undersea cables. The cables carry much of the world's phone calls and internet traffic.

codenames for each firm, with BT ("Remedy"), Verizon Business ("Dacron"), and Vodafone Cable ("Gerontic"). The other firms include Global Crossing ("Pinnage"), Level 3 ("Little"), Viatel ("Vitreous") and Interoute ("Streetcar"). The companies refused to comment on any

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News › UK news › GCHQ

Exclusive: NSA pays £100m in secret funding for GCHQ

- Secret payments revealed in leaks by Edward Snowden
- GCHQ expected to 'pull its weight' for Americans
- Weaker regulation of British spies 'a selling point' for NSA

Another pitch to keep the US happy involves reminding Washington that the UK is less regulated than the US. The British agency described this as one of its key "selling points". This was made explicit two years ago when GCHQ set out its priorities for the coming years.

RISK ASSESSMENT / SECURITY & HACKTIVISM

Critical crypto bug leaves Linux, hundreds of apps open to eavesdropping

This GnuTLS bug is worse than the big Apple "goto fail" bug patched last week.

M Technologies

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La justice européenne veut pouvoir écouter les conversations par Internet

Le Monde.fr | 24.02.2009 à 18h56 • Mis à jour le 24.02.2009 à 19h53 |

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RISK ASSESSMENT / SECURITY & HACKTIVIS

Extremely critical crypto flaw in iOS may also affect fully patched Macs

Coding blunder that exposed sensitive data may still be putting users at risk.

Answer elements:

- Who can access my data?
  - Encryption, admin lock box, disk shredding, …
- How secure am I in the cloud?
  - Customer/provider mutual responsibilities
  - Strong identity validation
- How reliable is the cloud?
  - Systemic risks, SLA, …
- How can I make sure you do what you say you do?
  - Inspection rights and 3rd party audits

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