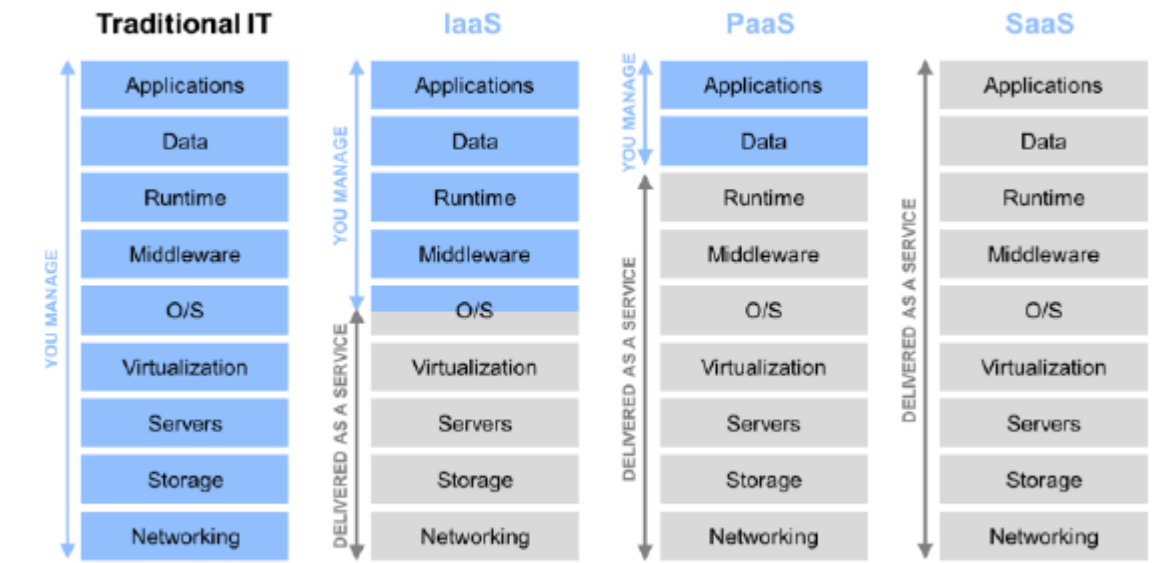
Cloud Economics

- Variabilidad del Tráfico -

http://news.microsoft.com/download/archived/presskits/cloud/docs/The-Economics-of-the-Cloud.pdf

Plataformas Cloud

FIG. 17: CAPTURING CLOUD BENEFITS



Source: Microsoft.

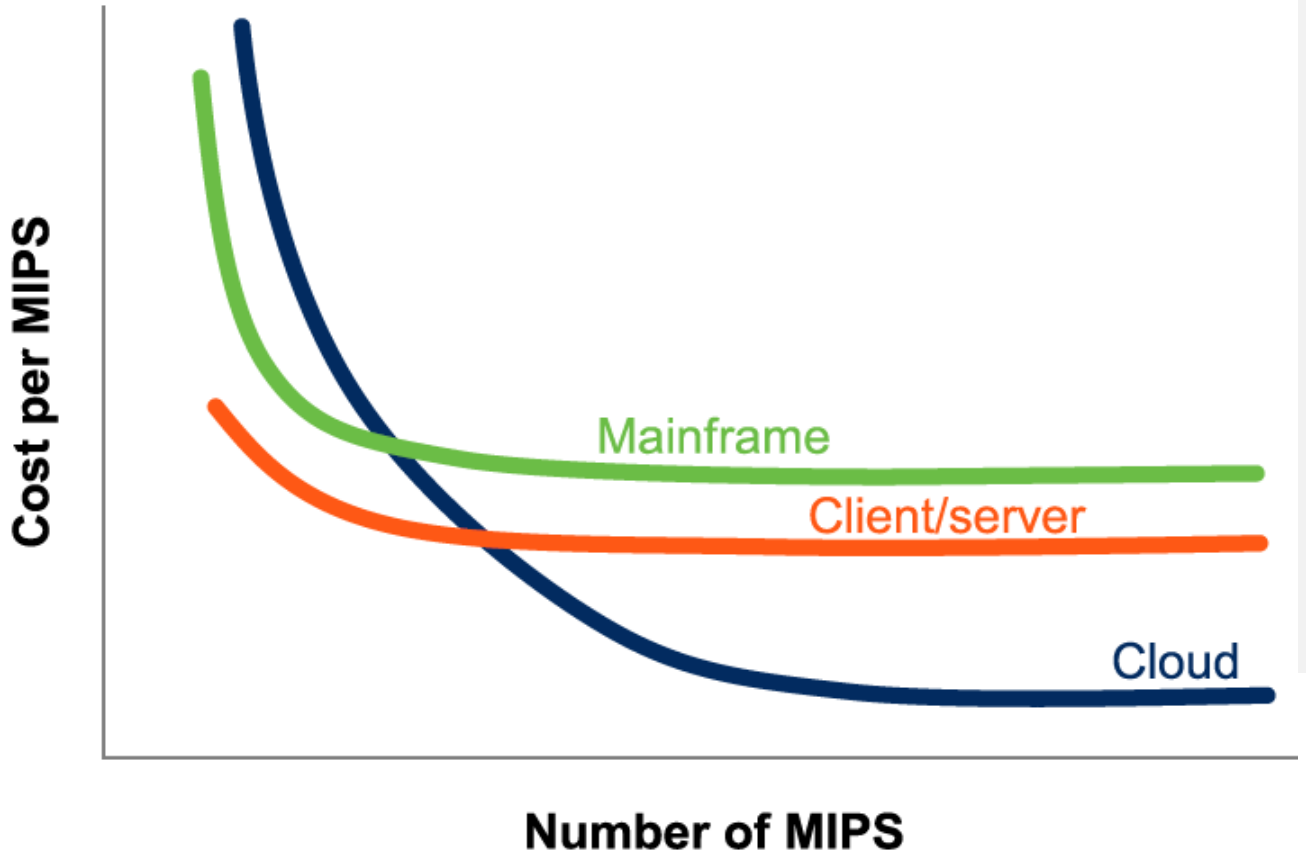
Evolución del Cloud

FIG. 2: CLOUD OPPORTUNITY

	Technology	Economic	Business Model
Mainframe 	Centralized compute and storage Thin clients	Optimized for efficiency because of the high cost	High up-front costs for hardware and software
Client/ Server 	PCs and servers for distributed compute, storage, and so on	Optimized for agility because of the low cost	Perpetual license for OS and application software
Cloud 	Large DCs, ability to scale, commodity hardware, devices	Efficiency and agility an order of magnitude better	Ability to pay as you go, and only for what you use

Source: Microsoft.

FIG. 4: ECONOMIES OF SCALE (ILLUSTRATIVE)



Source: Microsoft.

Virtualización → economía de escala

Gran inversión en infraestructura Cloud

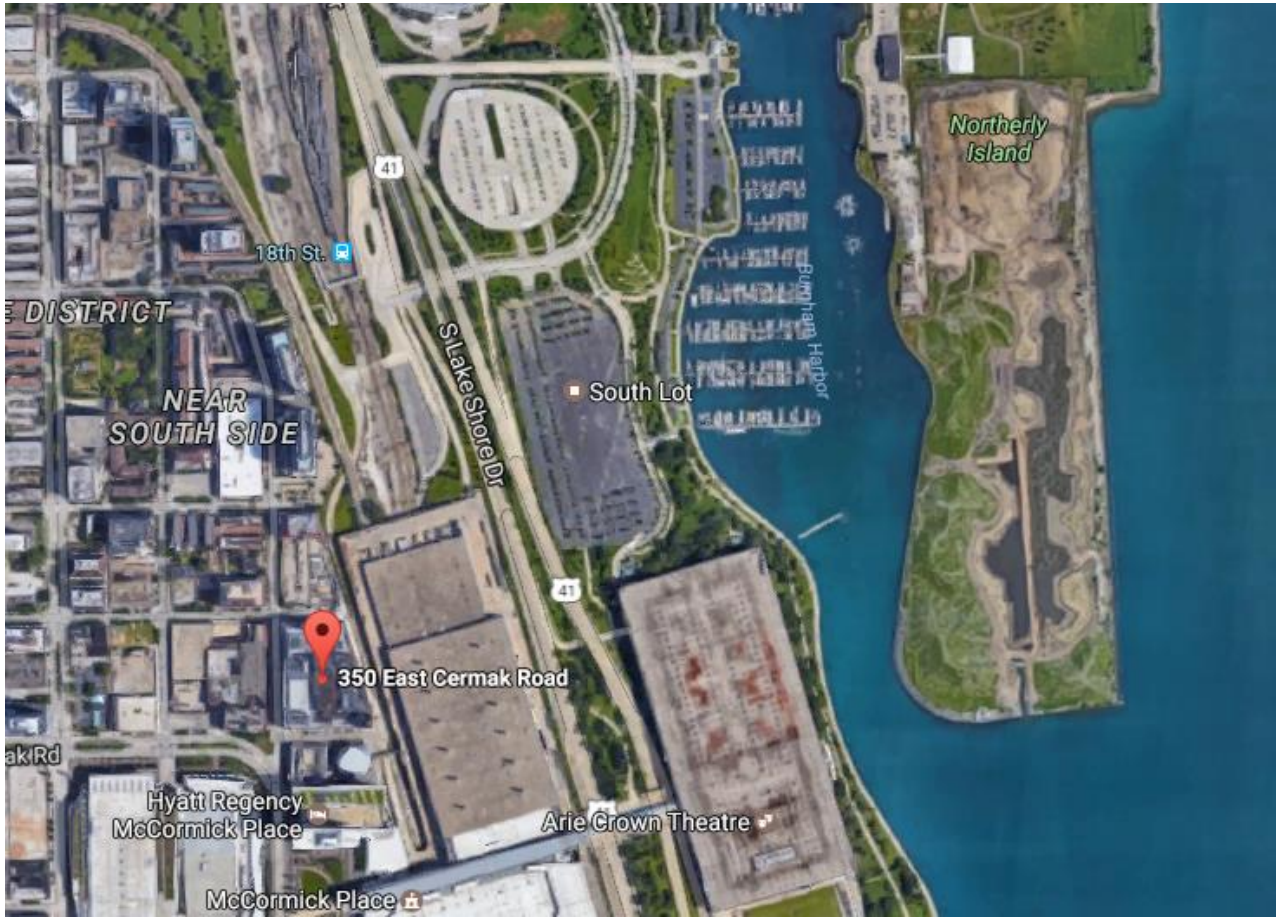
FIG. 5: RECENT LARGE DATA-CENTER PROJECTS

Company	Location	Cost ($ in millions)	Size (in sq. feet)
Internet Villages JUL 2009	Annandale, Scotland	1,600	3,000,000
National Security Admin. JUL 2009	Camp Williams, Utah	2,000	1,000,000
Lockerbie Data Centers DEC 2009	Lockerbie, Scotland	1,500	N/A
Microsoft SEP 2009	Chicago, Illinois	500	700,000
I/O Data Centers JUN 2009	Phoenix, Arizona	N/A	538,000
Apple MAY 2009	Maiden, North Carolina	1,000	500,000
Microsoft JUN 2010	Dublin, Ireland	500	N/A
U.S. Social Security Admin. FEB 2009	Baltimore, Maryland	400	N/A
Facebook FEB 2010	Prineville, Oregon	N/A	307,000
Next Generation Data MAR 2010	Cardiff, Wales	301	N/A

Sources: Press releases.

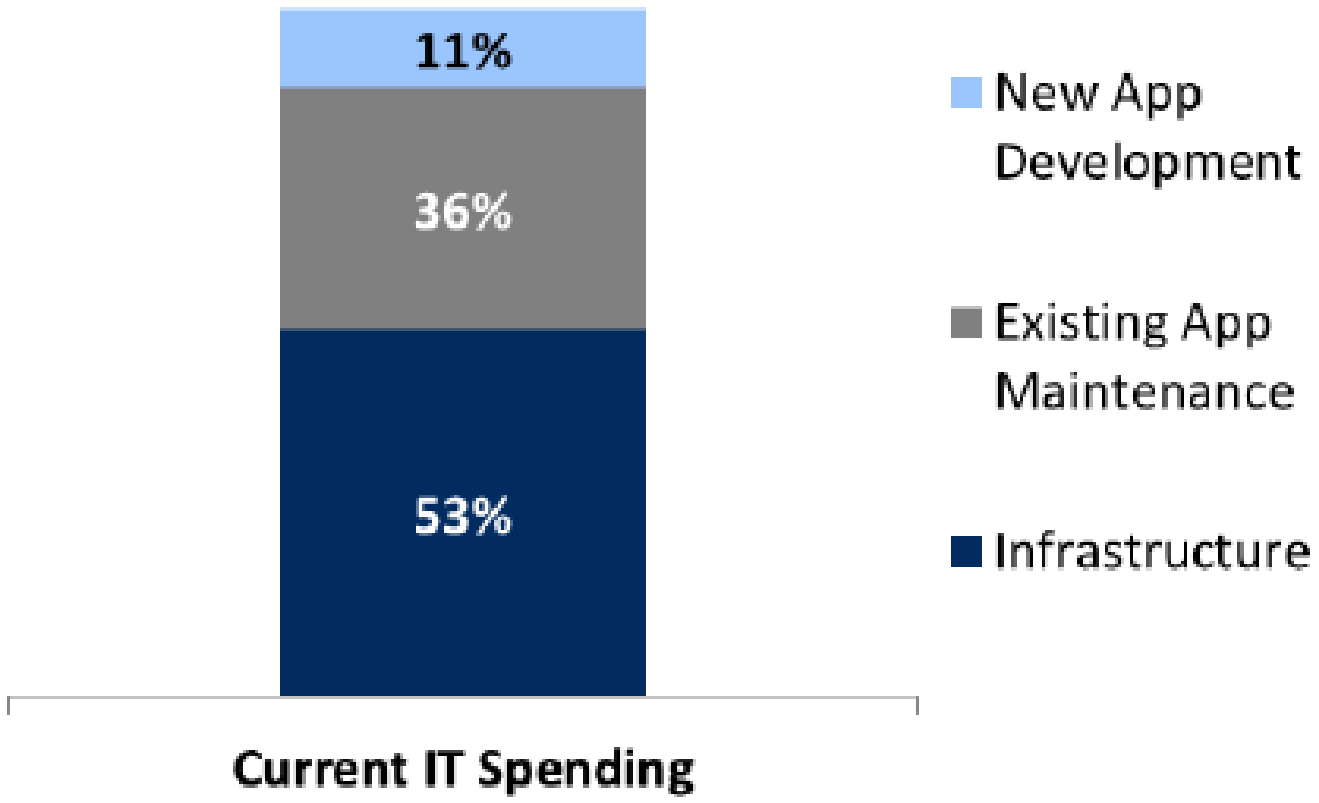
Datacenters

- 10. The SuperNAP, Las Vegas (Switch Communications)
- 9A and 9B. Microsoft Data Centers in Quincy Washington and San Antonio
- 8. CH1, Elk Grove Village, Ill. (DuPont Fabros)
- 7. Phoenix ONE, Phoenix (i/o Data Centers)
- 6. Microsoft Dublin (Microsoft)
- 5. Container Data Center, Chicago (Microsoft)
- 4. NGD Europe, Newport Wales (Next Generation Data)
- 3. The NAP of the Americas, Miami (Terremark)
- 2. Metro Technology Center, Atlanta (Quality Technology)
- 1. 350 East Cermak / Lakeside Technology Center (Digital Realty) 1.1 mil sq. feet.



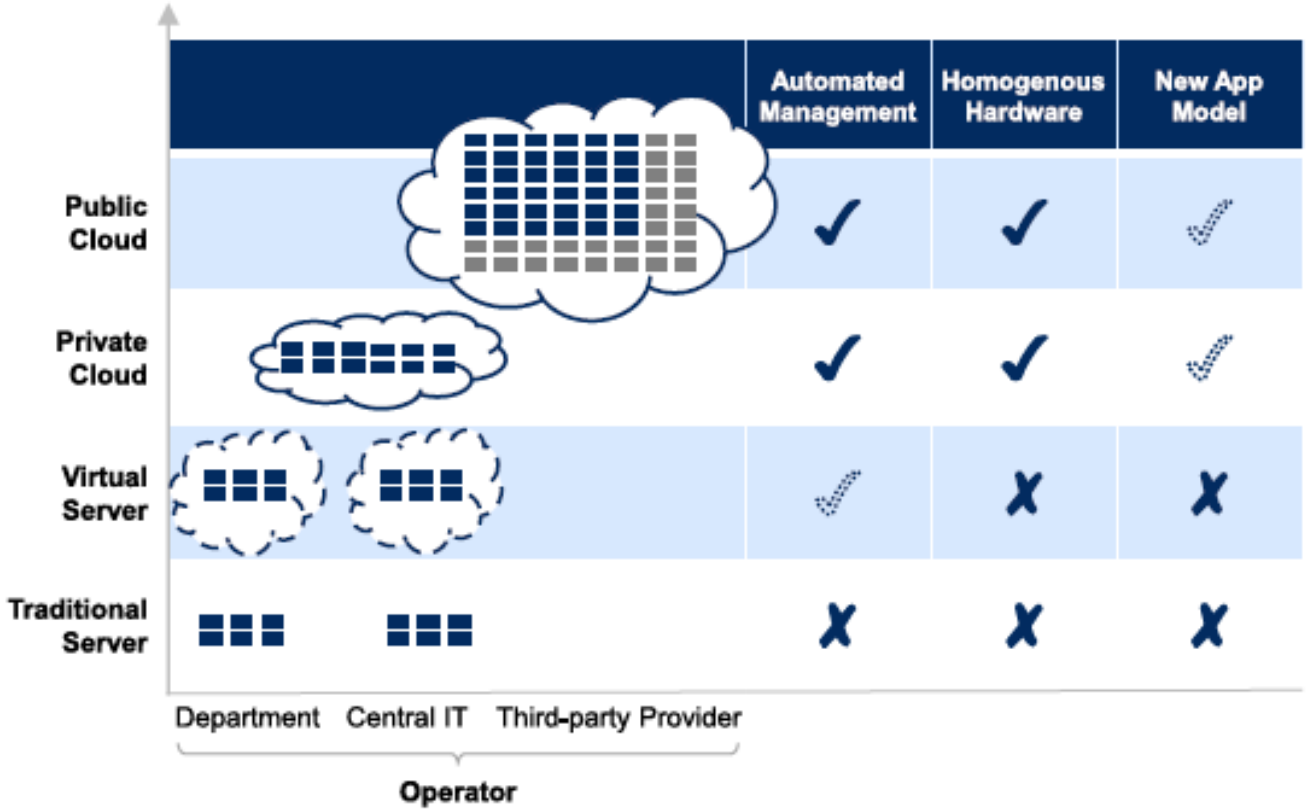
Zapatero a tus zapatos…

FIG. 16: IT SPENDING BREAKDOWN



Source: Microsoft.

FIG. 20: COMPARING VIRTUALIZATION, PRIVATE CLOUD, AND PUBLIC CLOUD

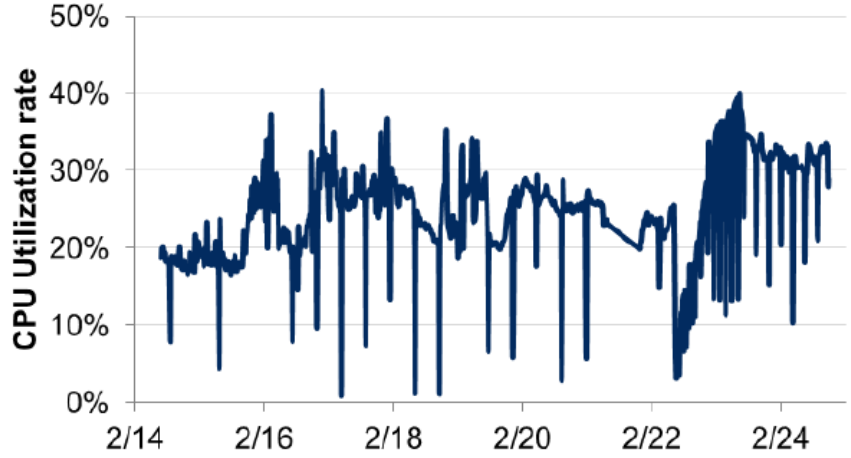


Source: Microsoft. Shaded checks indicate an optional characteristic.

Potencial de la nube pública

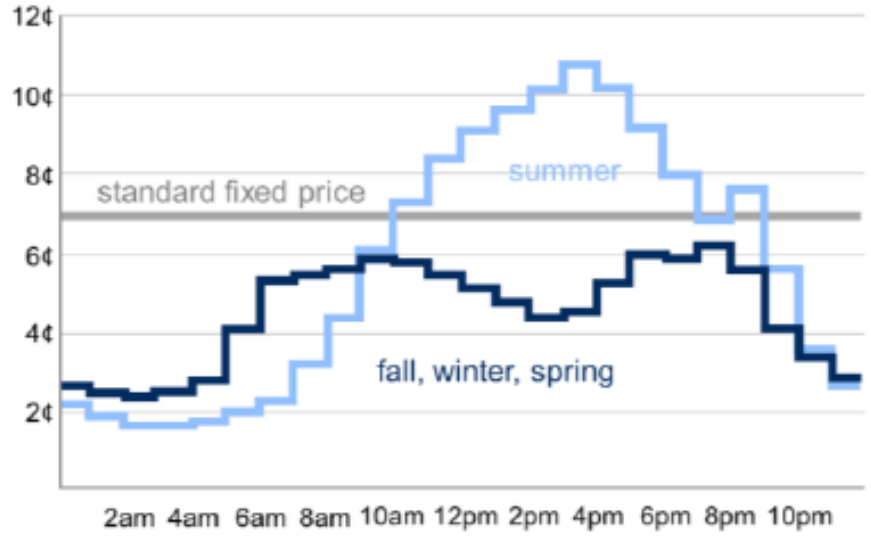
Variabilidad del tráfico por tiempo

FIG. 6: RANDOM VARIABILITY (EXCHANGE SERVER)



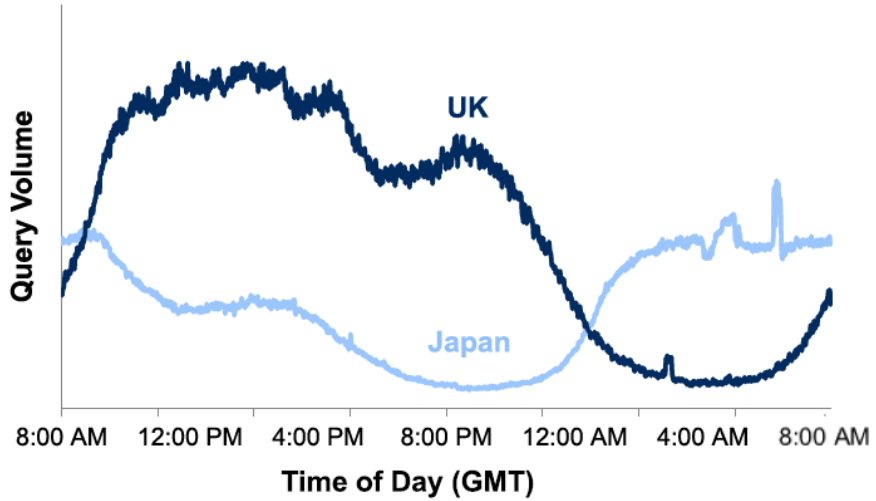
Source: Microsoft.

FIG. 13: VARIABLE PRICING IN ELECTRICITY



Source: Ameren Illinois Utilities.

FIG. 7: TIME-OF-DAY PATTERNS FOR SEARCH



Source: Bing Search volume over 24-hour period.

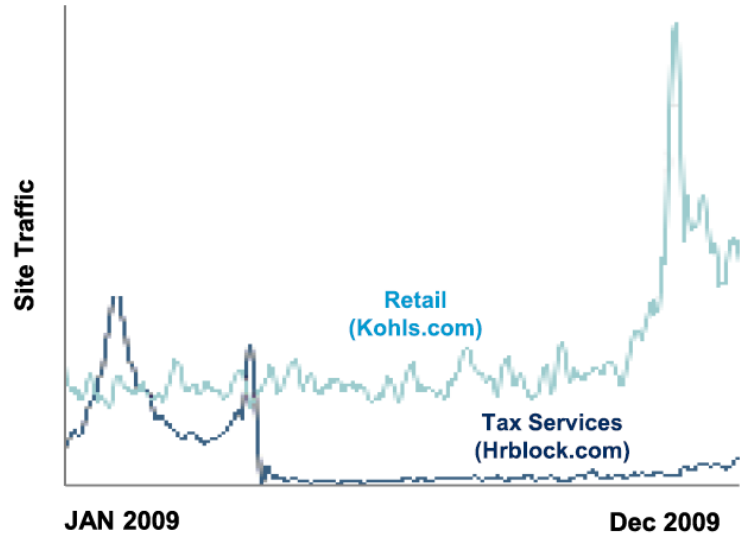
Variabilidad del tráfico por sector

FIG. 12: INDUSTRY VARIABILITY

Company	Peak Traffic/ Average Traffic
Tax Services	10x
General Retail	4x
Sports (NFL)	2.5x
Travel (airlines, hotels)	1.5x
News	1.5x – 2.0x

Source: Microsoft, Alexa Internet, Inc.

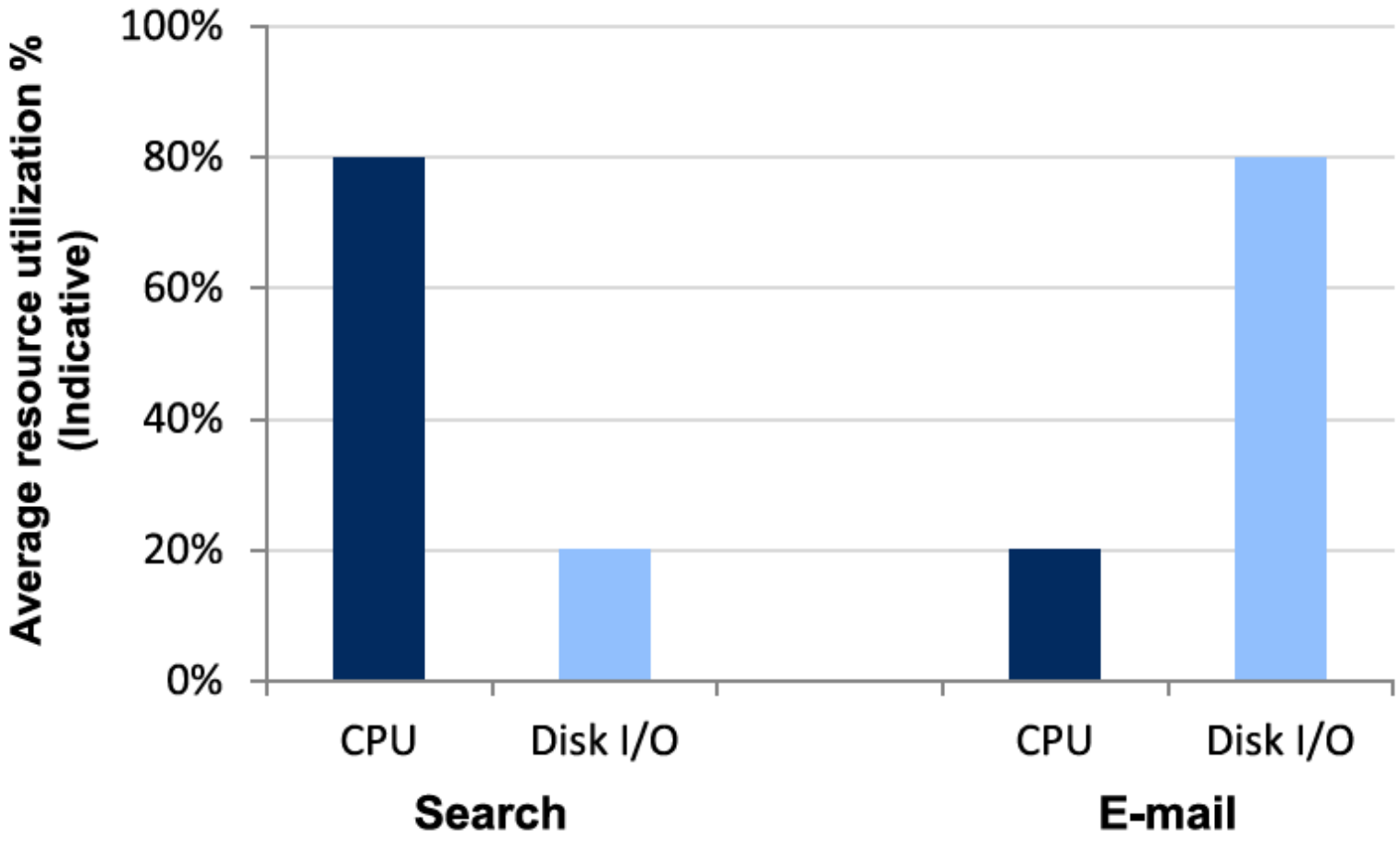
FIG. 8: INDUSTRY-SPECIFIC VARIABILITY



Source: Alexa Internet.

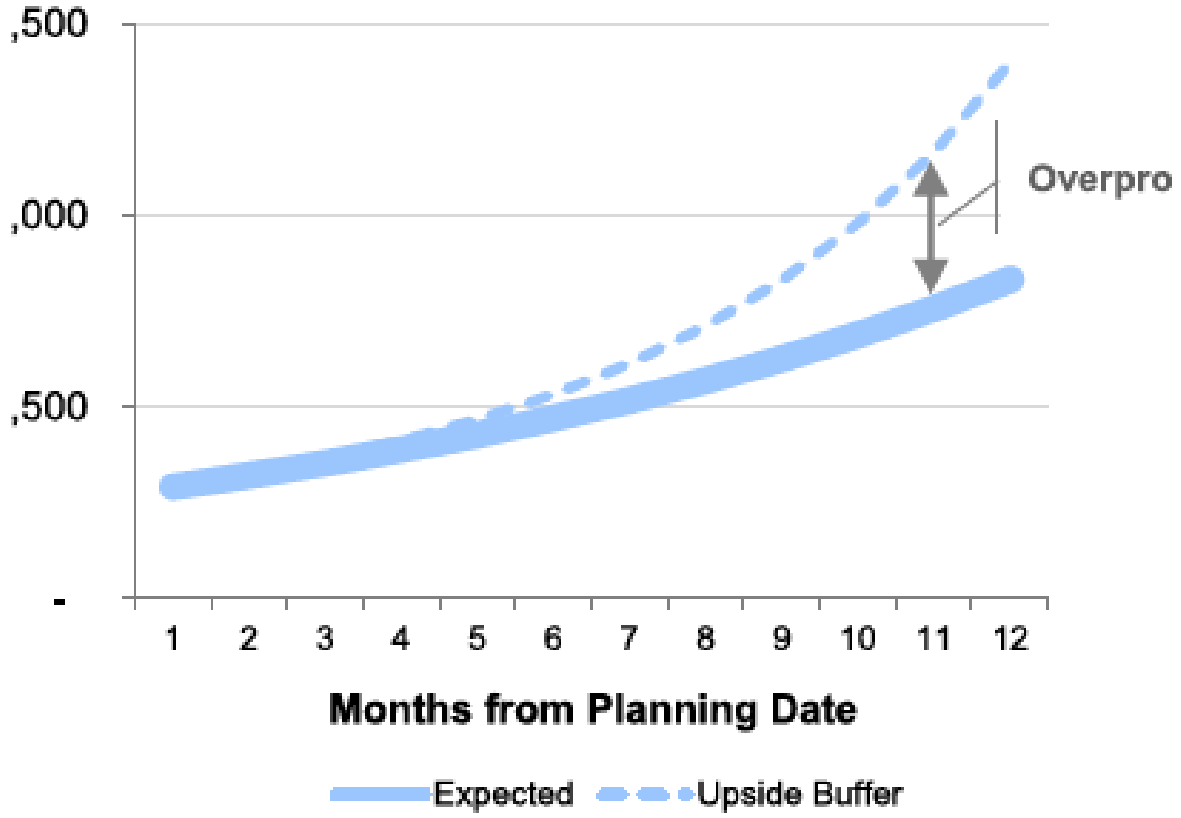
Variabilidad del tráfico por consumo de recursos

FIG. 9: MULTIRESOURCE VARIABILITY (ILLUSTRATIVE)



Source: Microsoft.

IG.10: UNCERTAIN GROWTH PATTERNS

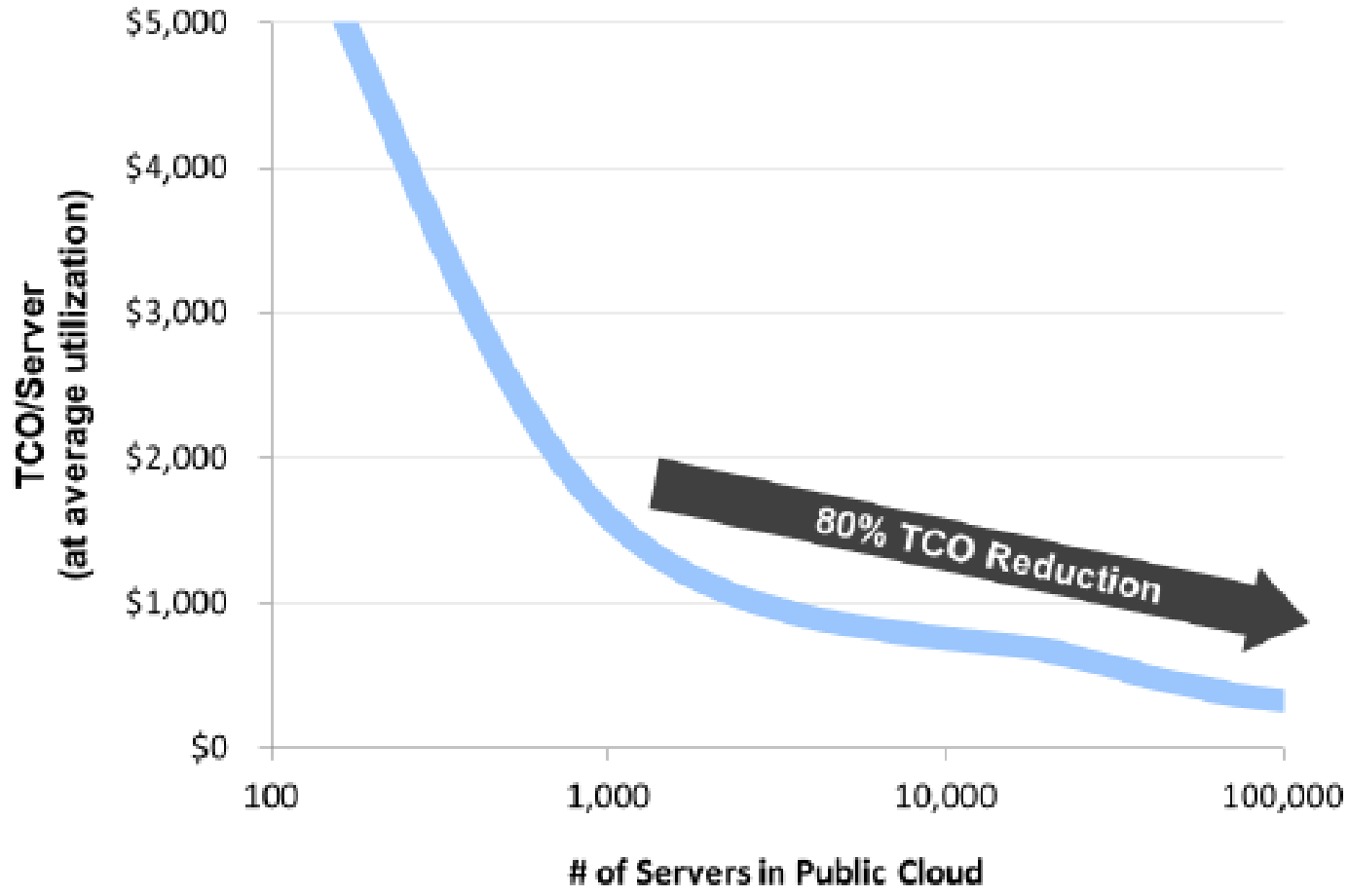


ource: *Microsoft.*

Dificultad del aprovisionamiento

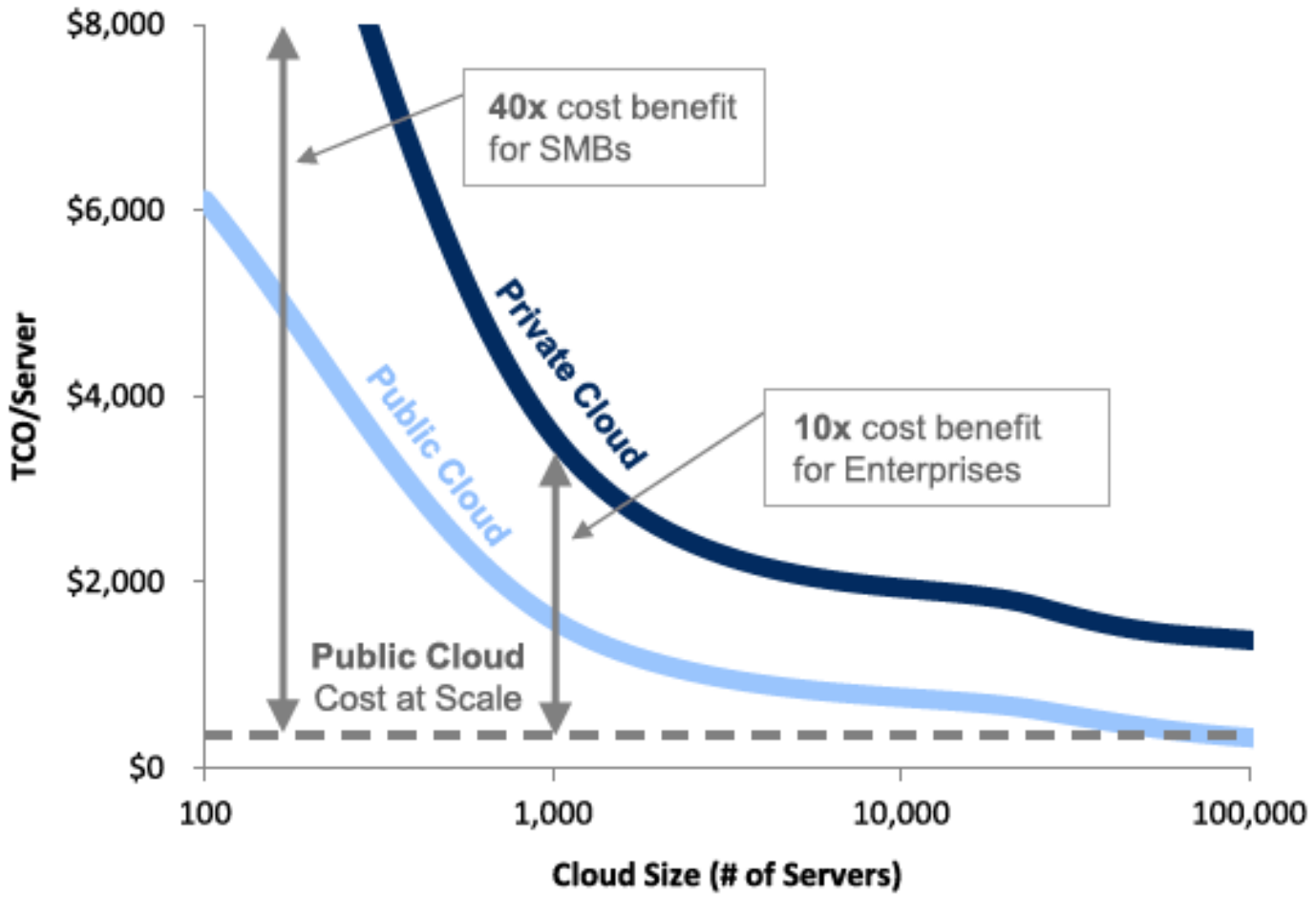
Economía de escala en proveedores Cloud

FIG. 15: ECONOMIES OF SCALE IN THE CLOUD



Source: Microsoft.

FIG. 22: COST BENEFIT OF PUBLIC CLOUD

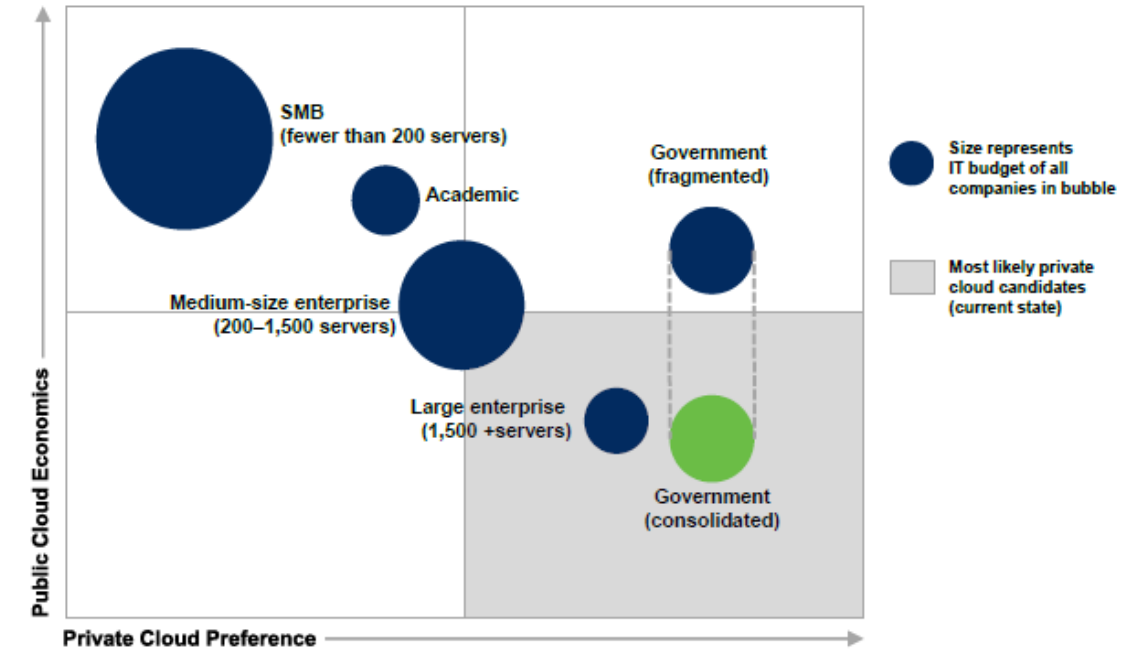


Source: Microsoft.

Proveedores Cloud vs PYMEs vs Grandes Empresas

Movimiento a la nube pública

FIGURE 23: COST AND BENEFITS OF PRIVATE CLOUDS



Source: Microsoft

AND PRIVATE CLOUD