VALUE PROPOSITION AND USE CASES OF CLOUD SERVICES

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MODULE OBJECTIVE

- Understand value propositions of cloud services.
- Understand challenges for cloud adoption.
- Understand use cases of public and private cloud services.
- Understand different options for cloud migration.

VALUE PROPOSITION AND CHALLENGES OF CLOUD SERVICES

BENEFITS AND CHALLENGES OF CLOUD SERVICES

Survey Sample: 539 Global Business Executives

Most successful areas of business improvement as a result of cloud implementation

Improve business performance

Improve levels of service automation

Reduce costs

68% Better integrate systems

68% Introduce new features/functions

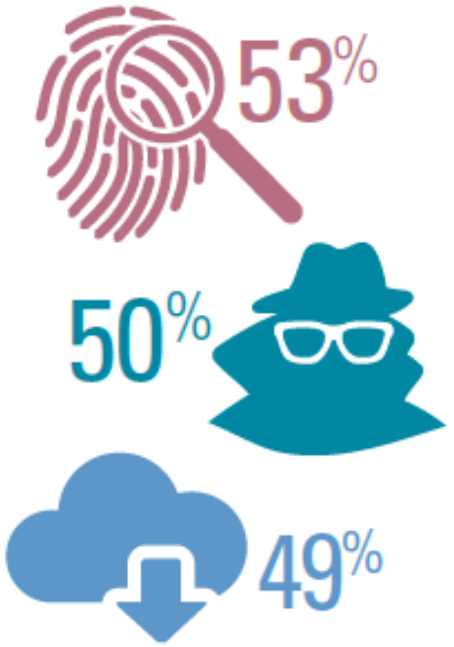
67% Enhance ability to interact with constituents

67% Rapidly deploy new solutions

66% Replace legacy systems

Source: 2014 KPMG Cloud Survey Report

Most challenging areas when adopting cloud



Data loss and privacy risks

Risk of intellectual property theft

Impact on IT organization

48% Measuring on ROI

48% High cost of implementation

46% Legal and regulatory compliance

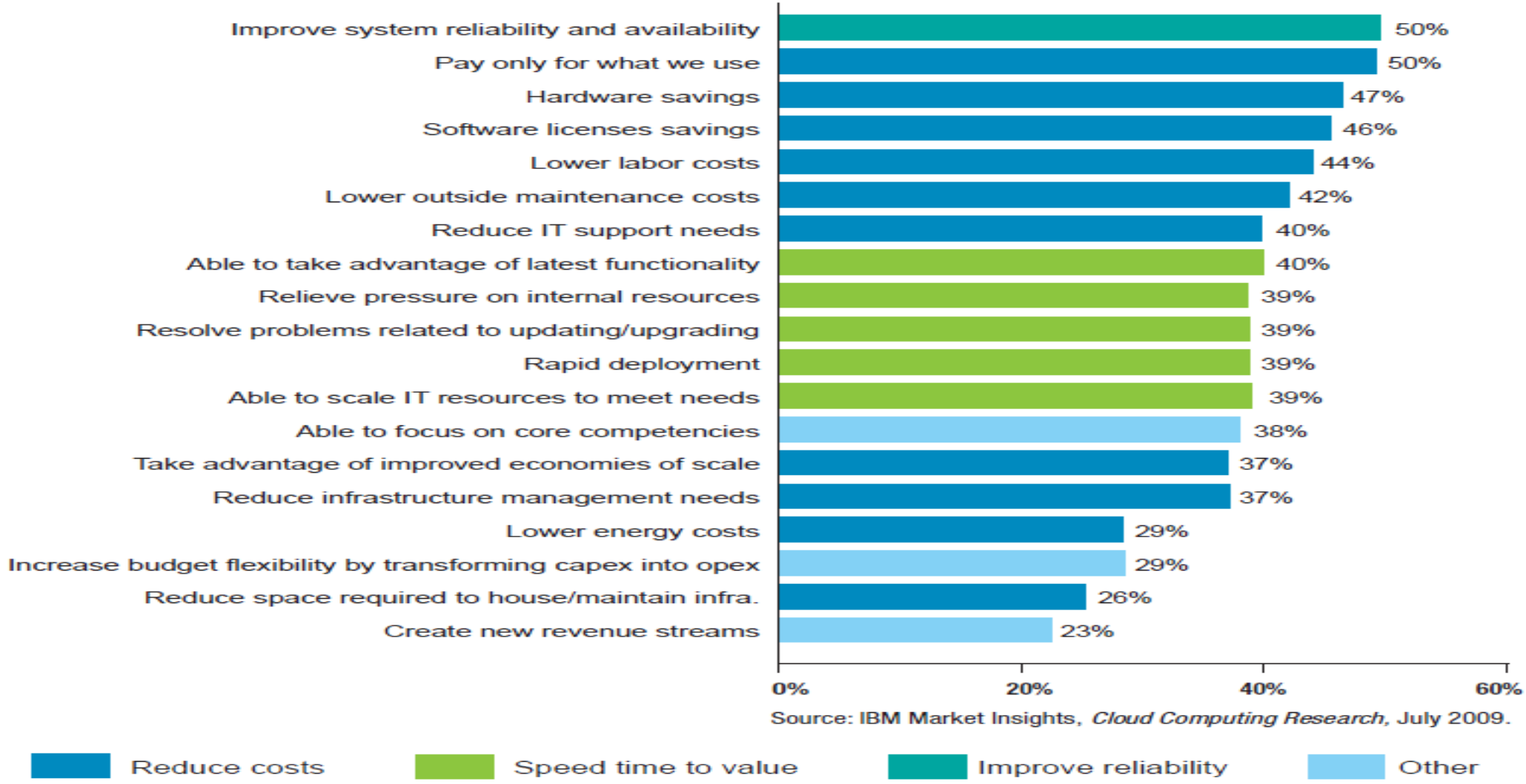
46% Integration with existing architecture

46% Lack of clarity of total cost of ownership

Source: 2014 KPMG Cloud Survey Report

KPMG, Cloud Survey Report, 2014.

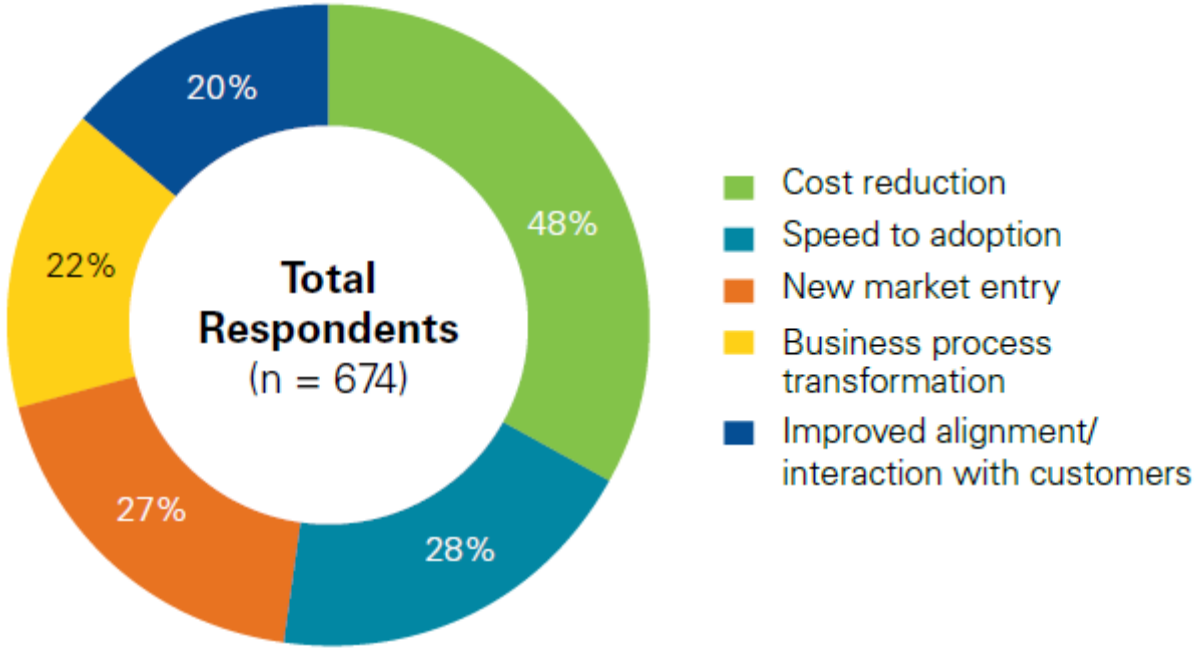
OBJECTIVES OF CLOUD ADOPTION - YESTERDAY



OBJECTIVES OF CLOUD ADOPTION - TODAY

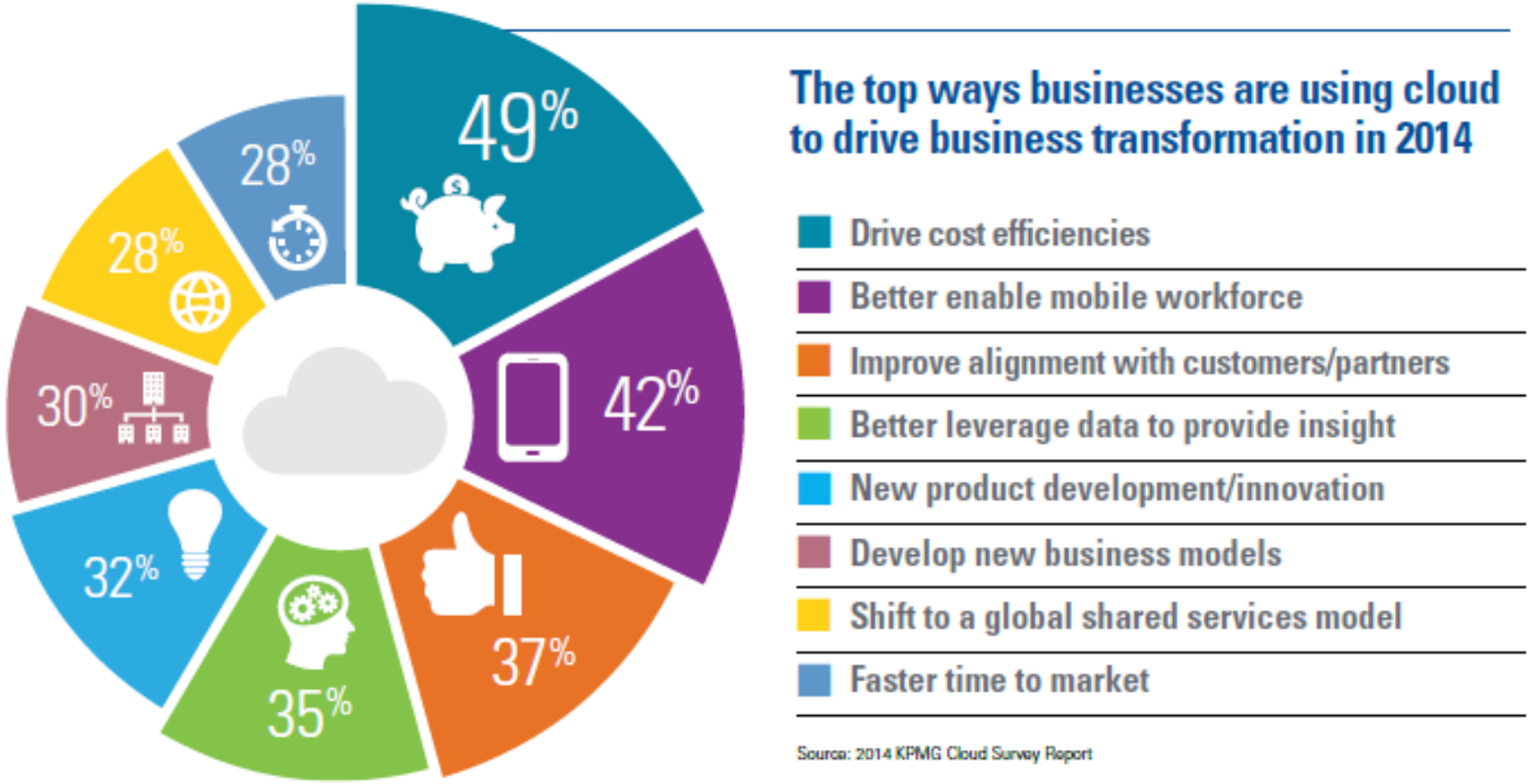
- Reduction in TCO
- Fast time to acquiring IT and application
- Creating new market based on the convergence of mobile, social, big data and IoT
- Process reengineering using SaaS for significant business transformation
- Improved interaction with customers
- World-class infrastructure and applications
- Little upfront CapEx and flexible pricing
- Scalability and elasticity
- No need for system administrative staff

Survey Sample: 674 Global Business Executives



KPMG, The Cloud Takes Shape-Global Cloud Survey, 2013.

OBJECTIVES OF CLOUD ADOPTION - TODAY



KPMG, Cloud Survey Report, 2014.

- Emerson – a heating, ventilation, air conditioning and refrigeration manufacturer – uses big data on the cloud to benefit its supermarket customers.
- Utilizing mobile technologies, machines collect advanced diagnostic data from its motors, compressors and control systems, and store that data on the cloud.
- Emerson uses the data to remotely measure if a system is leaking refrigerant and running below performance specifications. In many cases, the technology can also provide remote maintenance and repairs.
- They allow supermarkets to cut maintenance costs by a third and energy costs by more than 10 percent.
- Emerson is now launching residential systems that can send data through the cloud – from a person's home to the company's service center – to likewise reduce energy and maintenance costs.

CLOUD-BASED BUSINESS TRANSFORMATION—COST EFFICIENCY

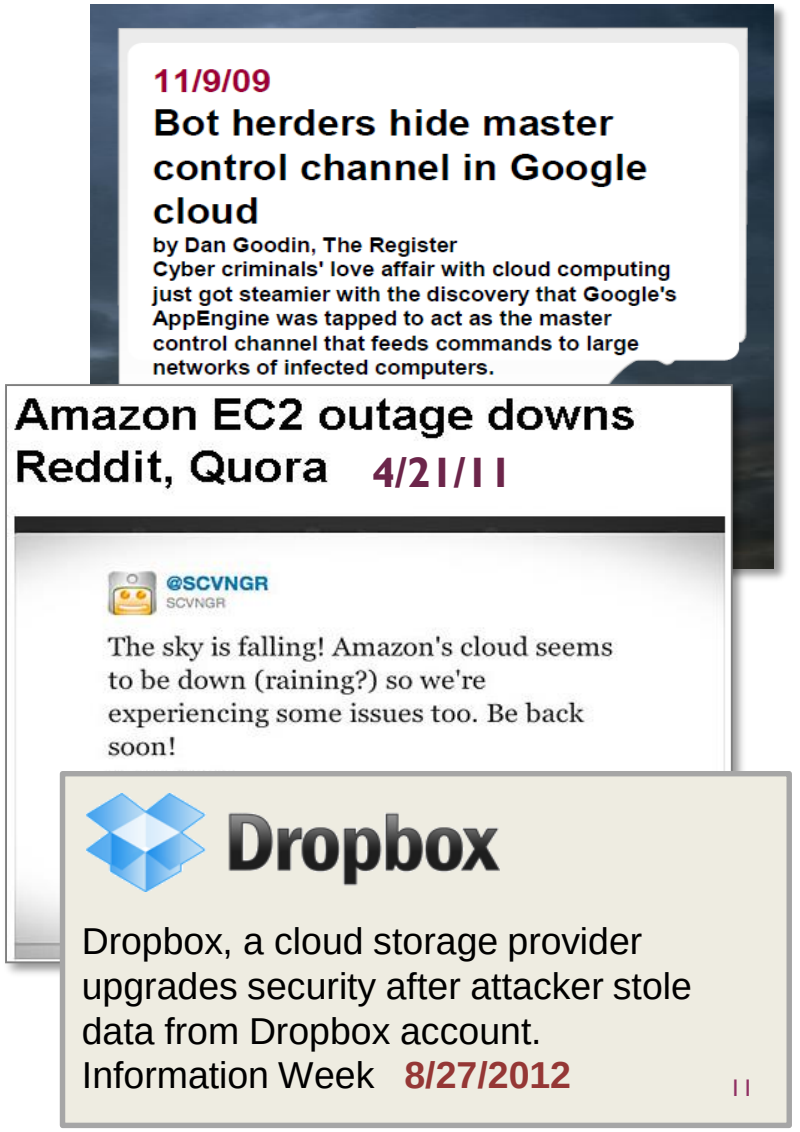
Emerson Climate Technologies

- AT&T Toggle is a BYOD solution that helps maintain end user personal privacy while enabling organizational control of enterprise applications in a highly secure workspace on employee-owned devices.
- With a focus on security and split billing, this global solution enables organizations to manage mobile devices, content, application, and wireless expenses for different types of employees.
- AT&T Toggle is a cloud-based solution for most Android and iOS devices.

- Verizon Virtual Visits provides an easy, convenient and cost-effective way for patients to be seen remotely by a clinician for a cold, flu, sore throat or other simple, acute condition via video on their smartphone, tablet or computer.
- Verizon's new solution is built to provide an enterprise-class platform for health systems, health plans and employers to meet the needs of their specific patient or member population base, helping to reduce visits to the emergency room for non-urgent care – estimated to run $4.4 billion this year alone.
- Verizon Virtual Visits also enables patients, who may not otherwise have convenient and timely access to care, see a clinician. Recent studies show that as many as 62 million Americans have difficulty accessing primary and preventative care, with 27 days as the average time for a new patient to schedule an appointment.

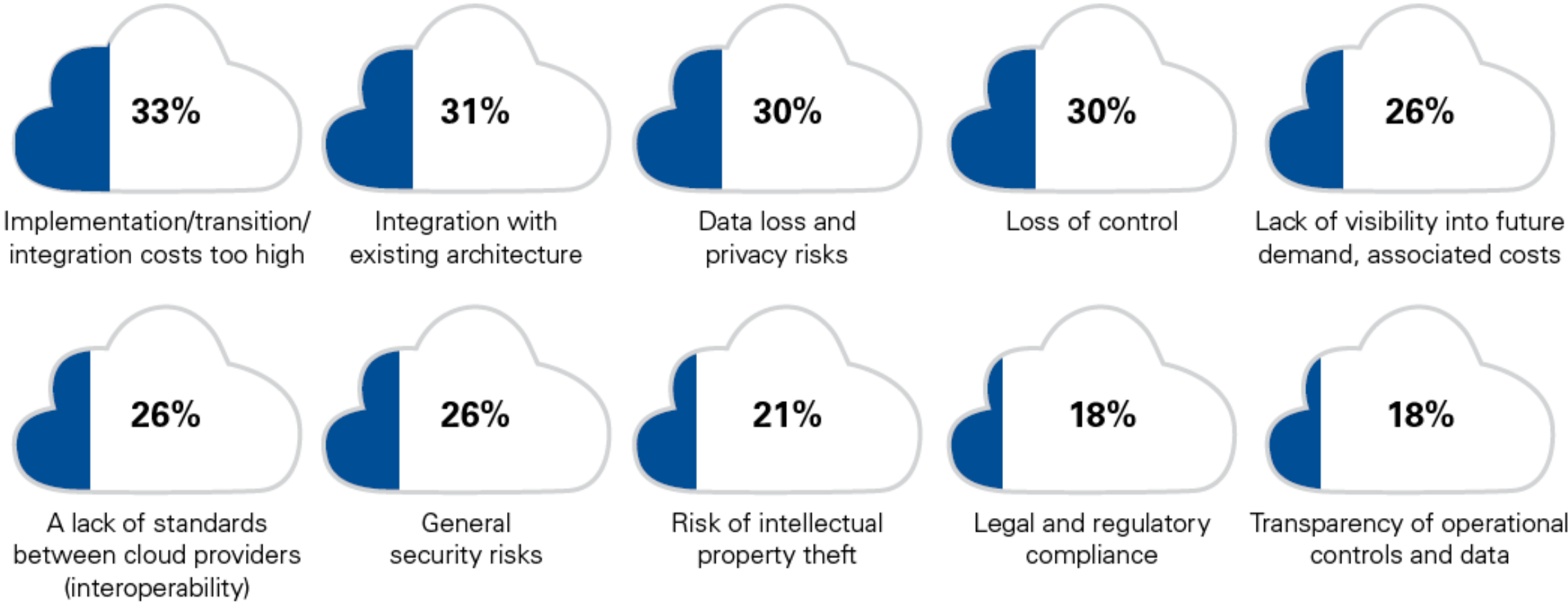
CHALLENGES TO CLOUD ADOPTION

- Breach of data confidentiality, malicious data tampering, malware, insider threat, encryption and key management
- Enterprise data stored externally in multiple unspecified locations
- Often sourced from other unnamed secondary providers
- Using systems that often contain data from multiple customers
- Exposure to electronic legal discovery or surveillance
- Violation of regulations and compliance requirements (especially on privacy)
- Power outage, hardware failure and misconfiguration, and software errors
- Data loss and corruption
- Vendor's capability for service assurance
- Misinterpretation of service contract and SLA
- Lack of portability and interoperability
- Difficulty in integration with on-premise systems
- Identity and access management
- Incident response, notification and remediation
- Business continuity and disaster recovery



CHALLENGES TO CLOUD ADOPTION

Total respondents (n = 674)



Source: KPMG International's Global cloud survey: the implementation challenge, 2013.

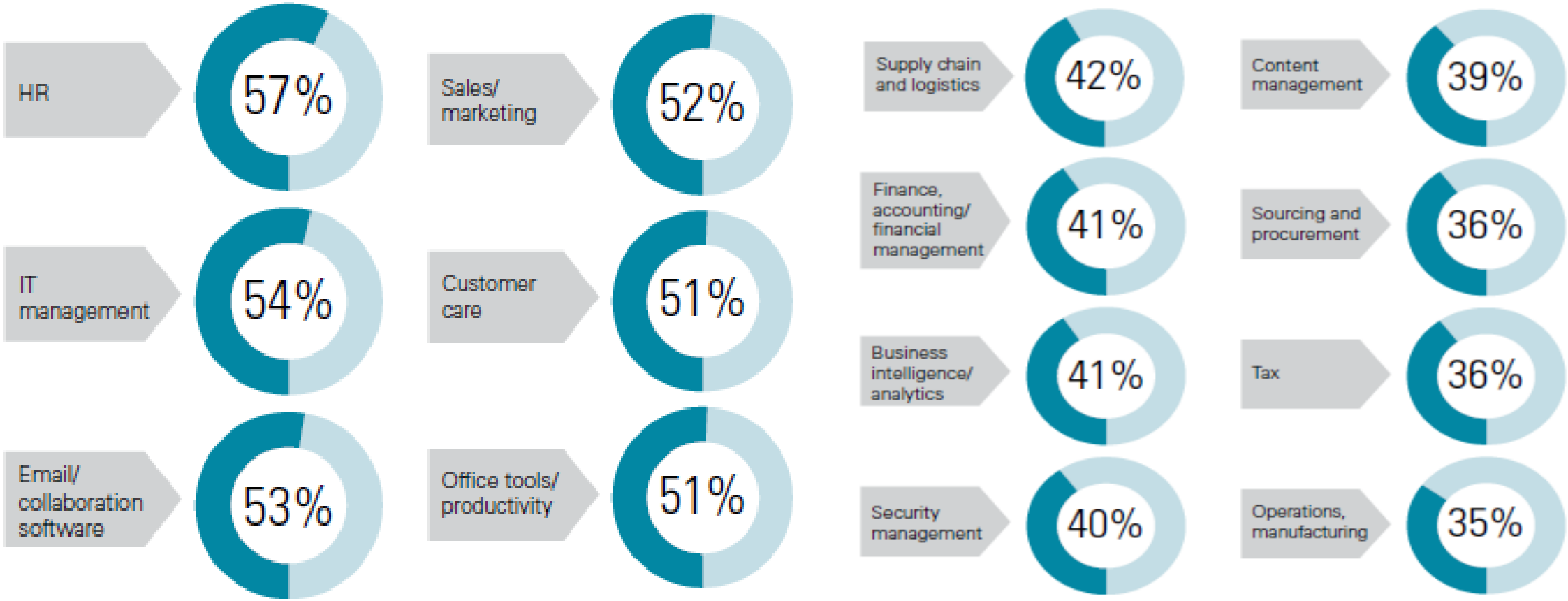
CHALLENGES TO CLOUD COMPUTING

- Despite three days of outage of Amazon EC2 in April 2011 Netflix was unaffected.
- Google's Gmail service was available for 99.984% of 2010 (for all but 7 minutes of each month). The Radicati Group estimates that this is approximately 32 times more reliable than the average corporate e-mail system.
- The only way to have 100% computer security is to have zero computers. Cloud computing vendors are better able to control security—constantly monitor the threat landscape, buy and build the best technologies to protect devices, networks and data, and hire and retain top security specialists—than all but the very largest and most security-conscious organizations.
- In 2011, Vivek Kundra, CIO of the U.S. government, announced a strategy calling for $20B, or 1/4 of all federal IT spending, to move into cloud despite the government's many regulatory requirements.
- As the cloud grows and mature, cloud vendors will continue to innovate their products and services to address risks and concerns of enterprises regarding cloud services.

USE CASES OF CLOUD SERVICES

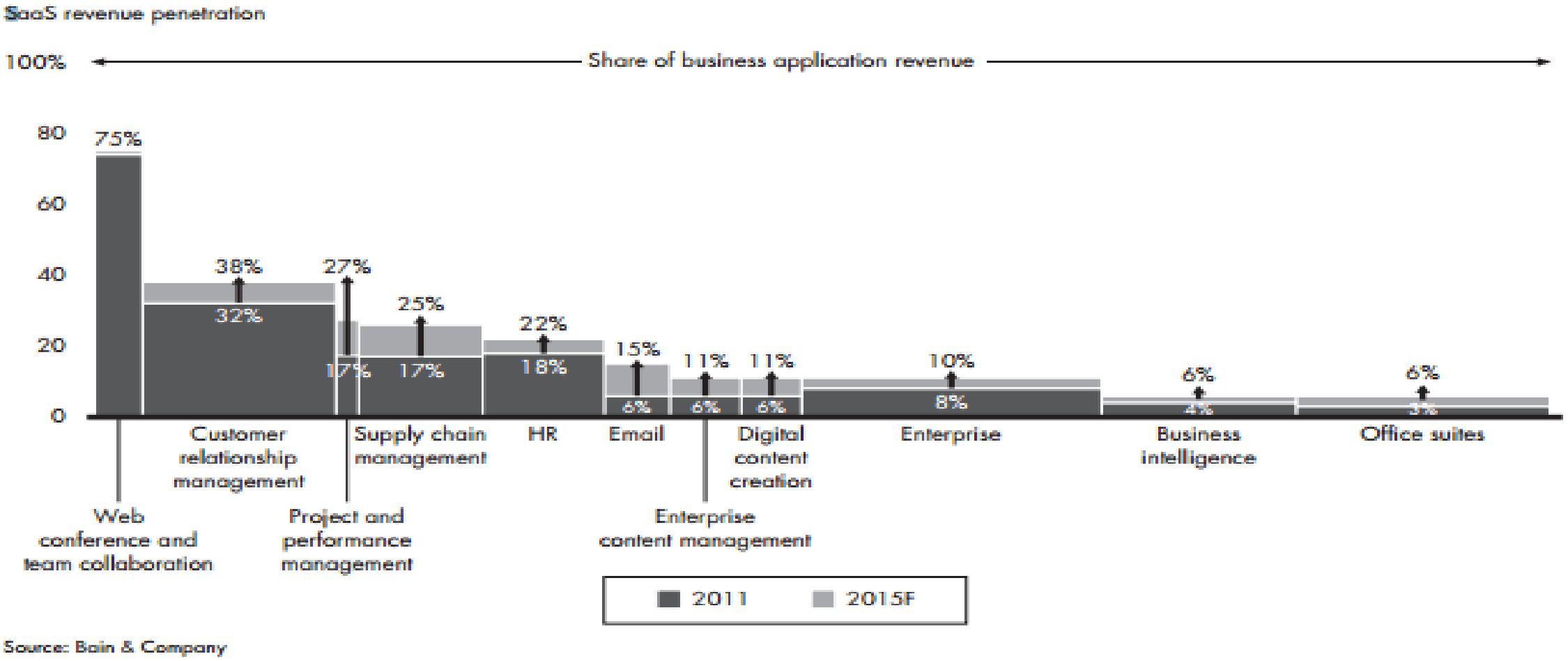
ENTERPRISE USE OF CLOUD SERVICES

In which functional areas of your business are you using cloud services today?



KPMG, The Cloud Takes Shape-Global Cloud Survey, 2013.

ENTERPRISE USE OF CLOUD SERVICES



Source: Bain & Company

Ravi Vijayaraghavan, The Cloud Reshapes the Business of Software, Bain & Company, 2013.

PUBLIC SAAS

Small and medium companies getting affordable high-quality software as SaaS.

HydroFlask

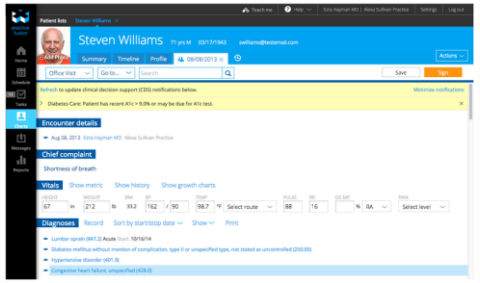
HydroFlask, a startup company selling innovative thermos products, adopted NetSuite, a cloud-based ERP suite to better manage financials, inventory, warehousing, logistics, marketing and sales.

AMP

American Municipal Power. a nonprofit organization in wholesale power supply for municipals, adopted SuccessFactors, a cloud-based HR system, to revamp its workforce development and succession planning, performance management and compensation.

PUBLIC SAAS

Small and medium companies getting affordable high-quality software as SaaS.



Practice Fusion

Practice Fusion, a SaaS startup founded in 2005 to provide a free web-based EHR;
Over 100,000 active medical professionals using the EHR and 81,000,000 patient records in 2014

Poscore

Poscore, a small facility management consulting company in the Netherlands, adopted social collaboration SaaS to enable its mobile consultants to access and exchange knowledge and contents in real-time.

PUBLIC SAAS

Companies pursuing SaaS-enabled business transformations.

Balfour Beatty

Balfour Beatty, a global contractor, turned to Box, a cloud-based file sharing and content management provider, to enable design and construction professionals on job sites overseas to instantly access blueprints, cost estimates, etc.

CSC

CSC, an IT consulting firm turned to Jive, a maker of cloud-based social collaboration software, to improve the way knowledge is captured and shared among its 90,000 employees. During the first 20 weeks, 25K people registered, creating over 2K groups and logging 150K activities per month.

PUBLIC SAAS

Companies using SaaS to run B2C e-commerce.

Xiwang

Xiwang Foodstuffs, a Chinese food-processing company that supplies sugars, cornstarch and other grain-related products to food manufacturers, is using cloud-based CRM to support its expansion into the consumer market without large upfront investments.

Burberry

Burberry, a fashion apparel manufacturer, is breaking new ground in social CRM. The brand has 10+ million Facebook followers and uses Salesforce.com technology to power Burberry World where visitors can engage, entertain, and interact, as well as conduct online shopping.

PUBLIC SAAS

Companies using SaaS to support market expansion of their businesses.

Brady Corp.

Brady Corporation, a $1.3 billion manufacturer that has acquired 30 companies in recent years, found it took too long to replace, integrate and standardize systems with server-based software. Brady turned to CRM, human resources and collaboration software services to help it assimilate its acquisitions at the necessary speed.

MOTECH Auto

MOTECH Automotive, a chain of automotive service centers in the Philippines, has used cloud services to help open two new physical branches. The company can now set up a new center in only a few weeks, instead of the months needed previously.

PUBLIC PAAS

Companies migrating or rebuilding legacy application using public PaaS and let them hosted by PaaS providers.

Japan Post

Japan Post, the world's largest financial institution, developed a custom, on-demand application for CRM in 2007. HitachiSoft developed the application within 3 months using Salesforce.com platform. More than 45,000 users have been subscribed to the Force.com platform.

eBay

The value of goods sold on eBay was nearly $60 billion in 2009. eBay, with massive infrastructure to support the sales volume, is always looking for ways to drive IT efficiencies and service improvements. eBay and Microsoft worked with Avanade and Accenture to transport eBay's iPad marketplace onto Windows Azure platform hosted on the public cloud.

PUBLIC PAAS

Companies developing SaaS using public PaaS and let them hosted by PaaS providers.

SuccessFactors

A leading SaaS company that provides business execution capabilities for over 3,500 organizations with around 15 million employees, SuccessFactors selected Cloud Foundry as the platform to empower its customers to build and extend custom applications around SuccessFactors.

Banjo

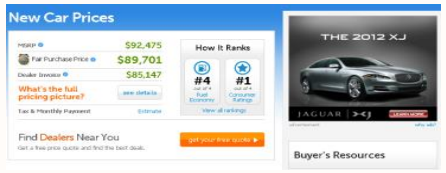
Banjo is a social discovery app that pulls every geo-enabled post from several social networks' APIs into the "Social Verse" that can tell you within seconds everything people are saying about an event or location. Banjo was built on Heroku, a cloud application platform for building and deploying web apps.

PUBLIC IAAS

Companies developing new applications on or moving existing apps to public IaaS to avoid owning and managing infrastructure

IMVU

IMVU was founded in April 2004. It leveraged cloud services to develop and run its social network site. It could develop the first version in 6 months. It now has the world's largest virtual goods catalog of 100M+ items created by 50M+ members.

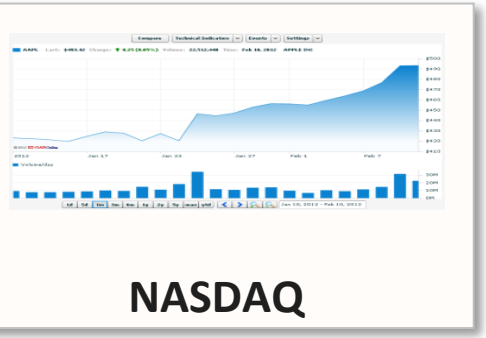


Kelly Blue Book

Kelly Blue Book, a publisher of automobile price information to car buyers, found it took 6 weeks to put servers in place to handle extra traffic on its Web site and decided to host it on the cloud.

PUBLIC IAAS

Companies using clouds to store and analyze extreme amounts of many different kinds of data including Web log, social network and machine-generated data.



NASDAQ

NASDAQ, a pioneer in using the cloud (AWS S3) to store market data, is launching a new "Data-on-Demand" service that will provide investors with quick access to historical data on stocks and funds, and allow clients to test their trading strategies.

3M

3M created a Web-based application that gives designers the ability to invoke complex algorithms to analyze the effectiveness of a design, based on how the human eye will respond. By hosting its application in Microsoft® data centers, 3M has made an innovative service available to a global audience, while minimizing its investment in hardware infrastructure and ongoing administration.

PRIVATE SAAS

Different departments and partners of a large corporation sharing common business services delivered as SaaS.

COSCO

China Ocean Shipping Company (COSCO), world's second largest ocean shipping company, is trying to make its transportation, shipping, order, billing and payment management systems available as SaaS (as SOA services) from its private cloud to its employees, customers, subsidiaries and distributors. For instance, it uses Singapore-based UFIDA's HR solution in SOA to provide private SaaS for HR management.

Papa Murphy's PIZZA

Join the TAKE 'N' BAKE Revolution

Papa Murphy's

Papa Murphy's Pizza, fifth largest pizza chain in the U.S., using the Force.com PaaS, developed and deployed a highly customized solution that allows it to track and manage franchisor information from initial inquiries to contract signing, through site construction and on an ongoing basis for store operations.

PRIVATE SAAS

Different departments and partners of a large corporation sharing common business services delivered as SaaS.

Bechtel

Bechtel uses its private cloud to establish common processes, apps and work flows for partners, employees and contractors working on projects. Bechtel's new strategy applies the SaaS computing model internally to provide IT services to 30,000 users, including 20,000 employees and 10,000 subcontractors and other business partners.

Mayo Clinic

Hospitals such as Mayo Clinic, New York-Presbyterian Hospital, Kaiser Permanente have developed a cloud-based medical information platform that provides patient data to both physicians and patients.

PRIVATE SAAS

Companies embedding cloud-enabled services inside mobile devices such as smart phones and automobiles

Ford

Ford is developing automotive embedded software that generates data on the car's location, speed, braking and windshield wiper use. The cloud software then correlates those data with live information from the Web about traffic congestion and weather, and sends brief messages about road conditions via Twitter to motorists.

Ideeli

Ideeli, an e-commerce business, launched cloud-based mobile commerce (m-commerce) that enables clients to be engaged in social marketing and real-time transactions using mobile devices.

PRIVATE PAAS

IT savvy companies developing SaaS based on its own private PaaS

Powered by intel Cloud Technology

Intel

With the use of private PaaS, Intel developers are in control from development to deployment—exponentially reducing time to production, optimizing the use of resources, and encouraging the development of cloud-aware applications.

Netflix

Netflix uses Amazon for what it does best—provide scale and power—but layers its own its own key technologies in the form of "thin" PaaS atop those Amazon services. However, Netflix would like its own PaaS to get thinner over time as Amazon moves up the stack.

PRIVATE IAAS

Large companies transforming data centers to private IaaS reducing energy consumption, carbon footprint, capacity expansion costs and maintenance costs.

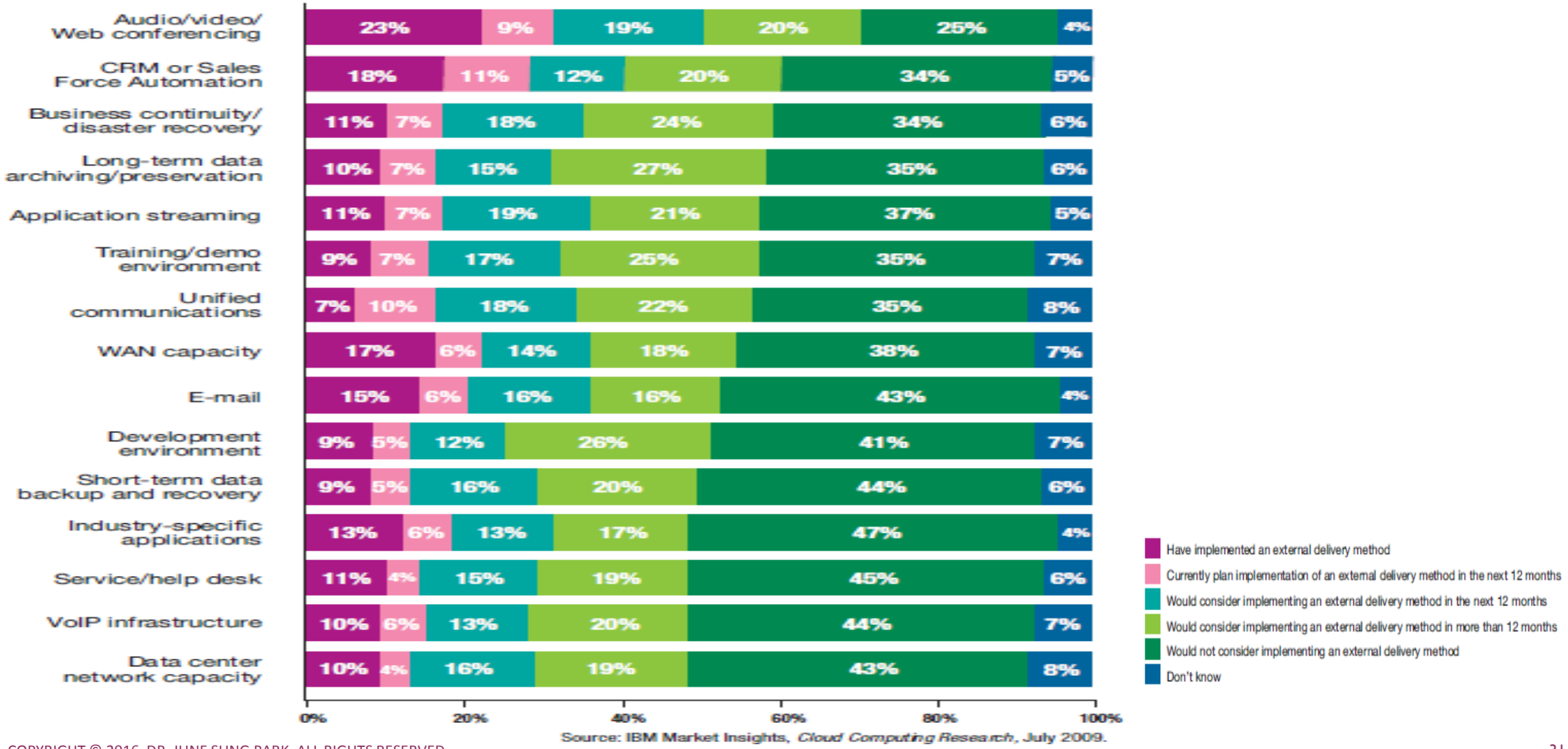
U.S. DoD

US Department of Defense reduced the number of data centers it operates from 194 to 14 when its cloud computing platform went into effect and expects the move to save hundreds of millions of dollars.

Future Group

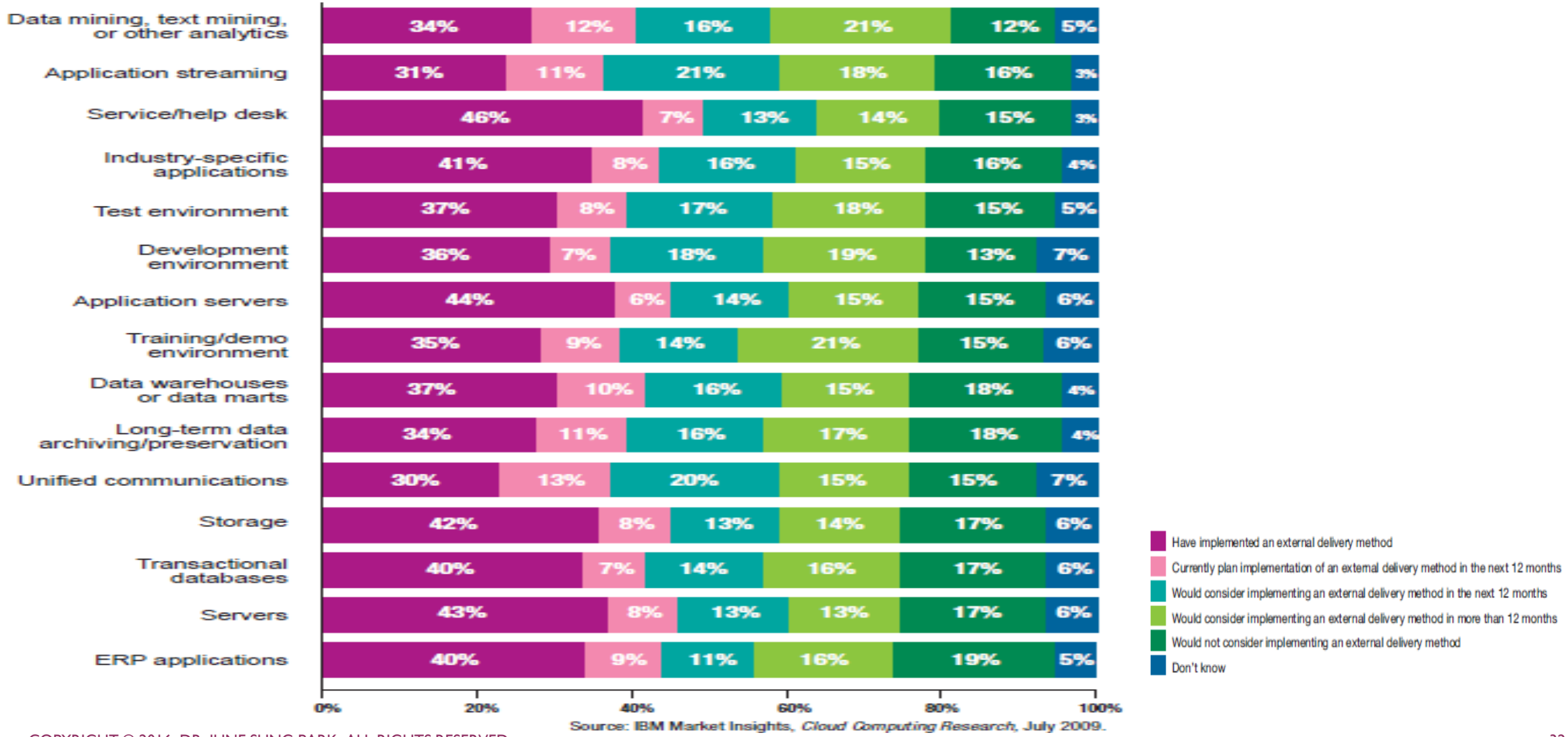
Future Group, India's largest retailer, use private clouds to support data warehousing and analytics for customer loyalty program.

PUBLIC CLOUD ADOPTION



Source: IBM Market Insights, *Cloud Computing Research*, July 2009.

PRIVATE CLOUD CONSTRUCTION



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CLOUD ADOPTION OPTIONS

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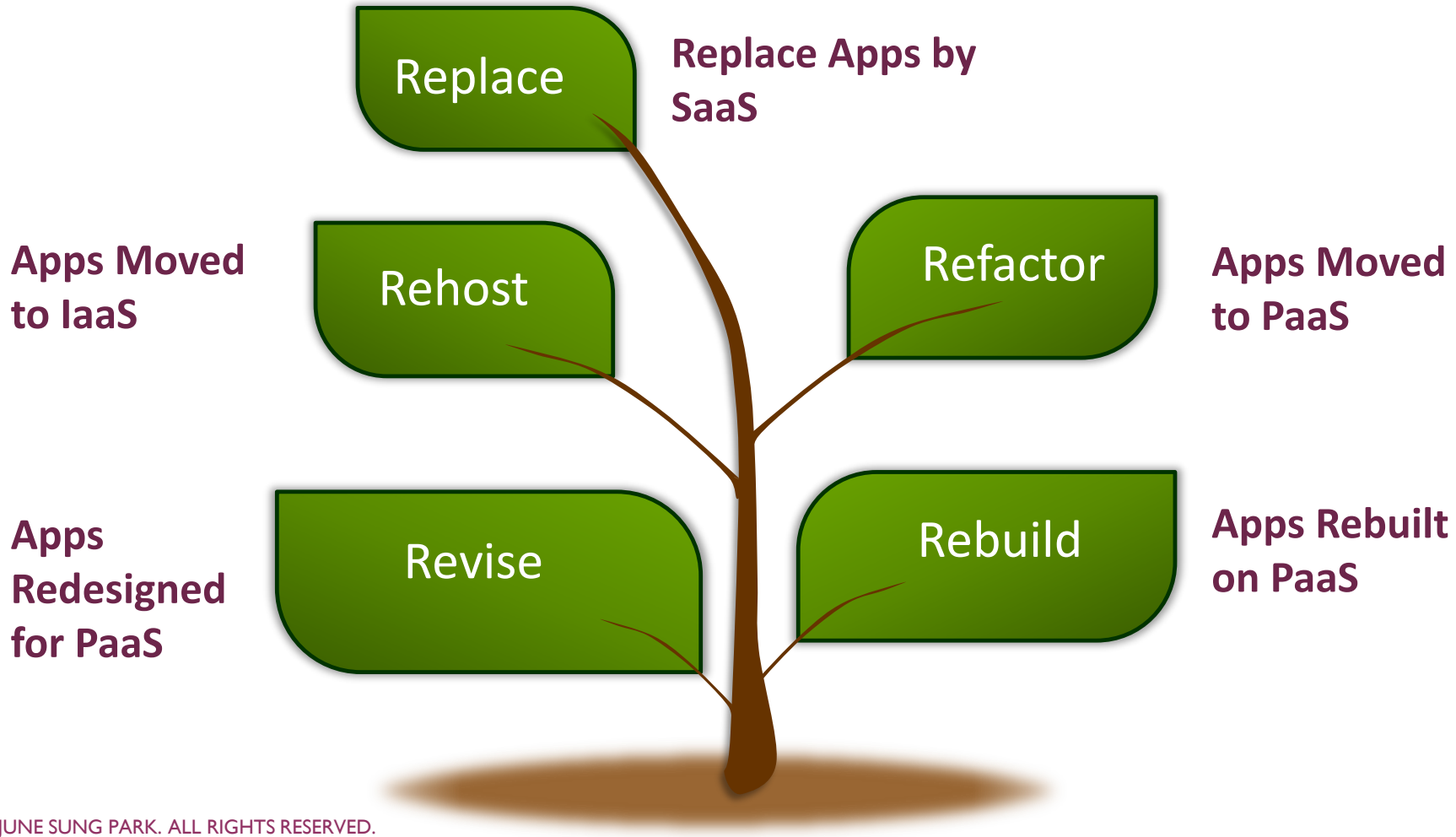


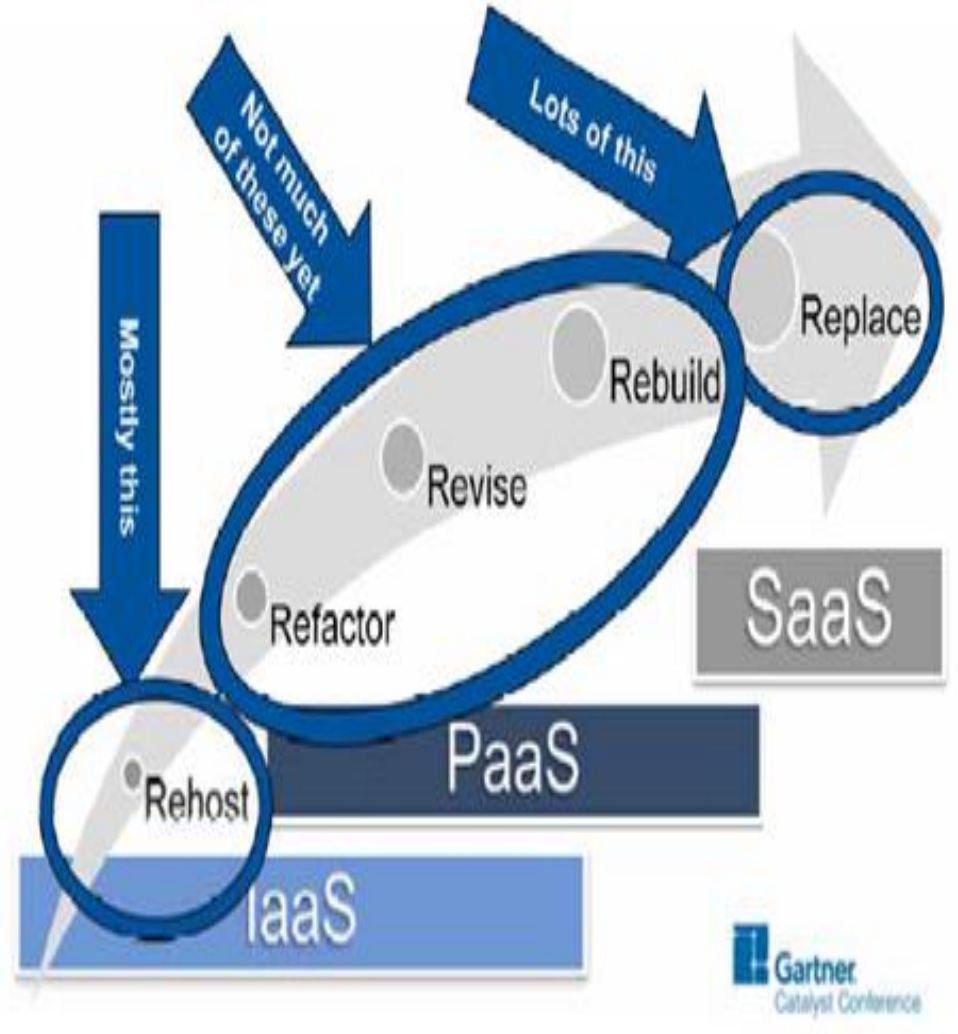
CLOUD ADOPTION OPTIONS

Rehost

- Redeployment of the application to a different hardware environment (VM and OS) and changing the application's infrastructure configuration (e.g., moving J2EE apps to EC2 Linux instances from AWS).
- Can work with systems where code modifications are impossible (e.g., COTS, code that cannot be rebuilt).

Replace

- Replace an existing application by SaaS and migrate data to the SaaS environment (e.g., adopting Salesforce SalesCloud for SFA or WorkDay for HR process).
- Users access SaaS via a user-centric interface, such as a Web browser or a mobile device.



CLOUD ADOPTION OPTIONS

Refactor

- Running your applications (usually Web applications) on the cloud provider's cloud-enabling frameworks and management tools (e.g., moving .NET apps to Azure platform).
- Necessary changes vary from none to widespread code changes to invoke new APIs.

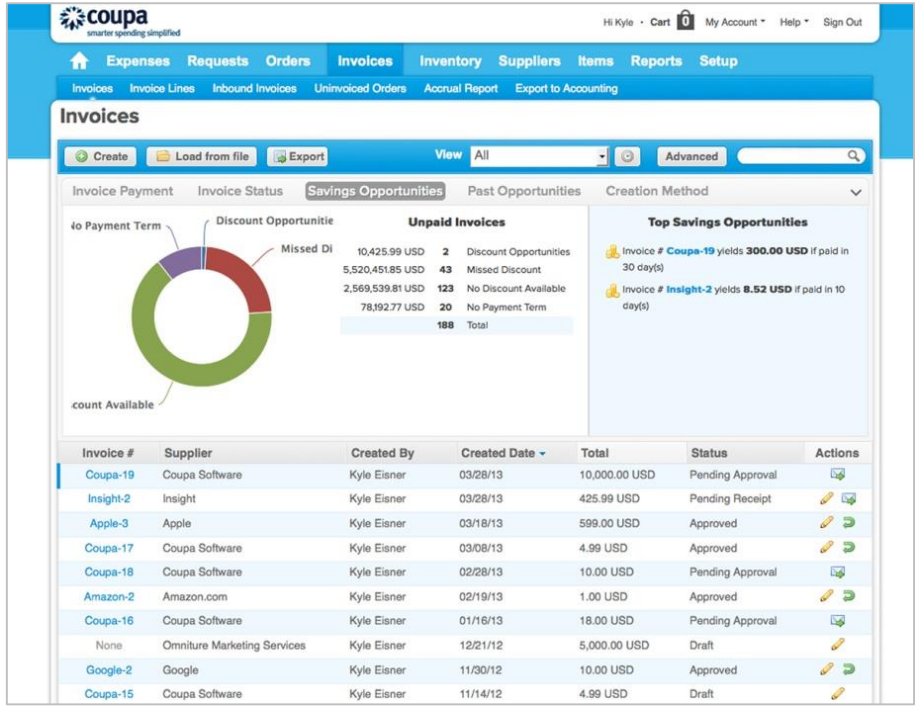
Rebuild

- Rebuild your solution on a provider's application platform while discarding code for an existing application (e.g., building a Force.com application for order management).
- Developer productivity is improved with tools that allow application templates and data models to be customized, metadata-driven engines, and communities that supply prebuilt components.

Revise

- Modifying the existing codebase to support legacy modernization requirements, then use rehost or refactor options to deploy to the cloud (e.g., redesigning a monolithic Java app into service-oriented architecture and then deploying on Rackspace Cloud Servers).

- Adidas Latin America decided to implement cloud-based procurement software to improve internal compliance and consolidate spending management.
- It decided on Coupa for its multinational support, total cost of ownership, integration with the ERP system, and capacity for customization.
- It adopted an 80-20 attitude: "You will never cover all the cases you need to handle in one system; Address the most common processes and keep it simple."
- It opted to add Coupa's business intelligence tool, the Spend Optimizer, so employees can see on their own how much they're spending and on what.

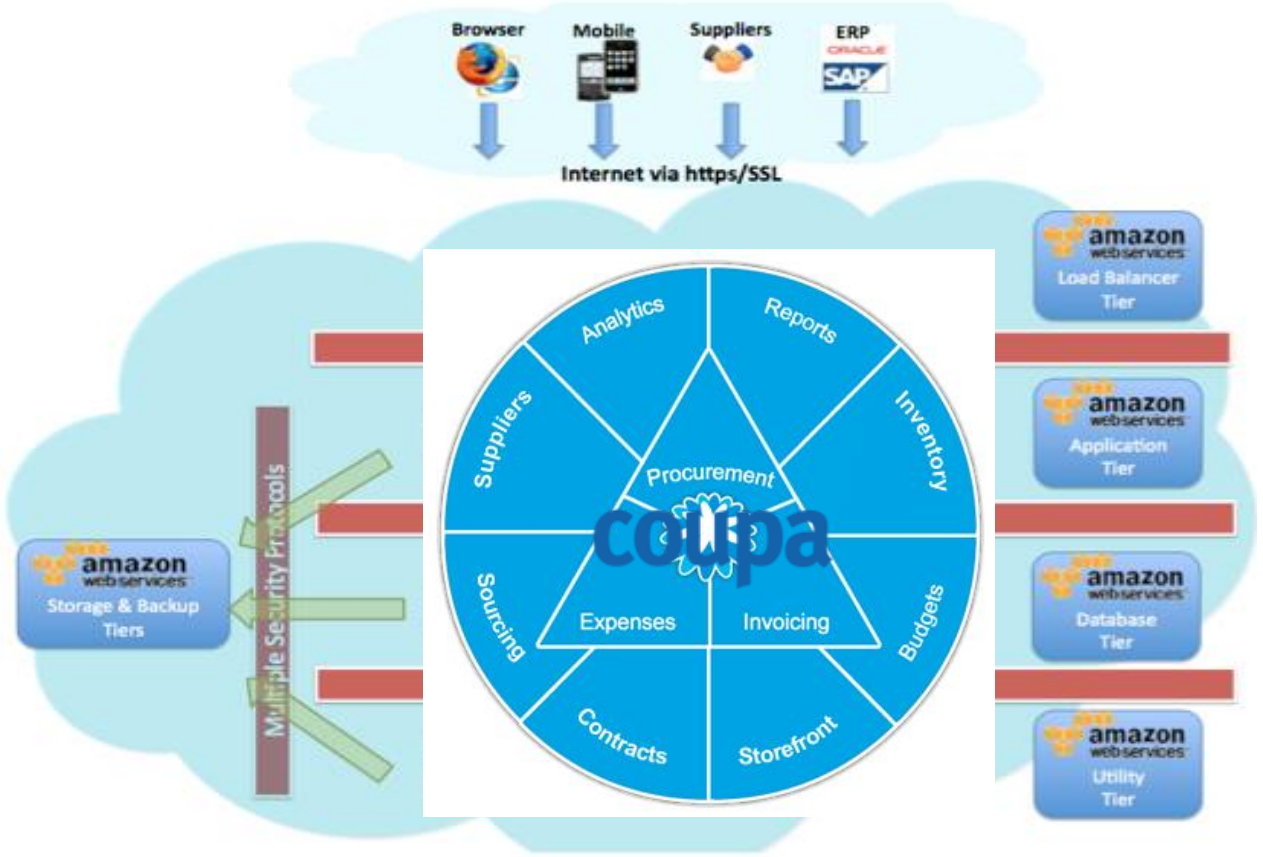


adidas

PUBLIC SAAS ADOPTION

Adidas

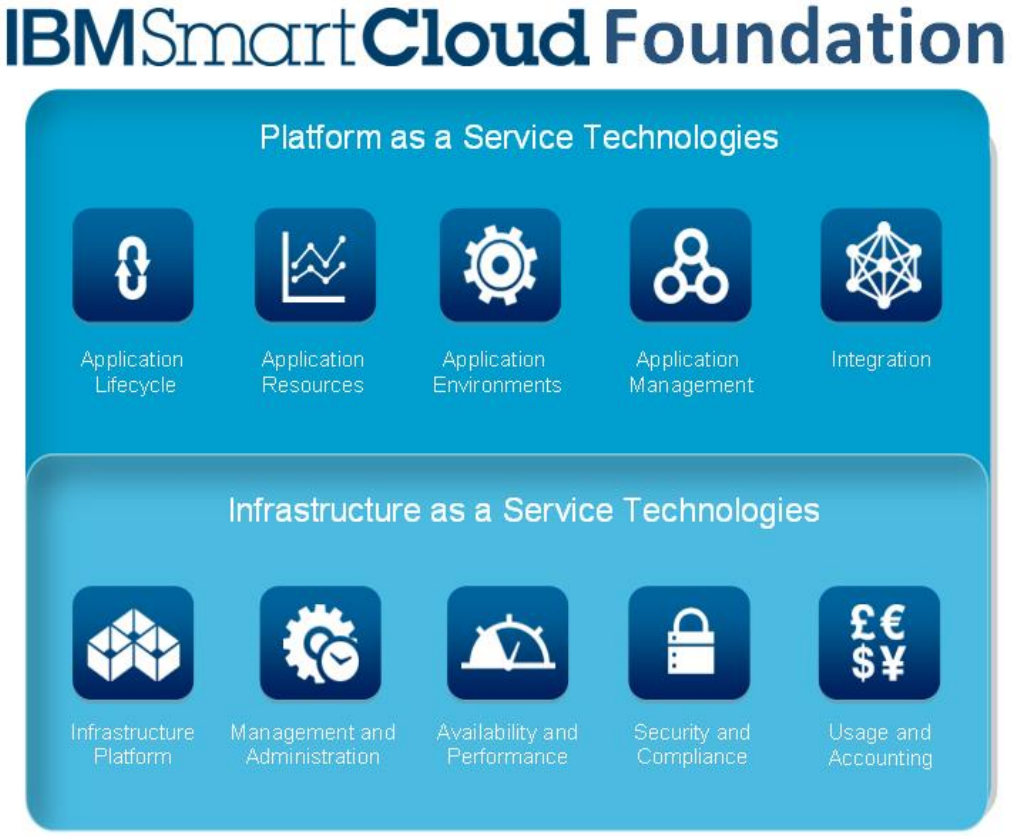
- It shifted the ownership and workload from finance to the people actually doing the procurement.
- It centralized its spending management using Coupa and consolidate its business with its vendors, leading to lower costs.
- Its complex account structure required a difficult integration between Coupa and SAP.
- Change management was the biggest challenge: They had to get the buy-in of the full organization, from the warehouses to marketing to HR to IT.
- Coupa is currently used by Toyota, Coca Cola, McDonald, Salesforce.com, Pandora, Catholic Health Services, Cable & Wireless, etc.



PUBLIC SAAS ADOPTION

Adidas

- CLD Partners is professional IT services company developing custom software for customers leveraging cloud platforms.
- With PaaS, CLD can now establish new development and test environments, and authorize users in seconds—all from a single, unified console.
- CLD uses IBM SmartCloud Application Services. Working through a unified dashboard, CLD could access various development tools including IBM Rational® Team Concert™, IBM Rational Requirements Composer and IBM Rational Quality Manager software.
- CLD works continuously to harvest best practices and expertise as repeatable patterns to be leveraged across the cloud platform, speeding time-to-value for future projects.
- CLD envisions an environment where developers work side-by-side with customers, using simple browser-based tools to model and demonstrate product features and ultimately turn them into fully functioning software.



PUBLIC PAAS ADOPTION

CLD Partners

	Question?	A	B	C	D
1	Which of the following represents the evolution of World Wide Web since 1990?	Web site -> e-business -> Web services -> cloud computing	Web site -> Web services -> e-business-> cloud computing	Web site -> e-business -> cloud computing -> Web services	Web site -> cloud computing -> e-business-> Web services
2	Which of the following is not a characteristic of cloud computing?	elastic provisioning	pay-per-use	customized service contract	virtualized infrastructure
3	Google provides as service offerings:	SaaS and PaaS	PaaS and IaaS	SaaS and IaaS	SaaS, PaaS and IaaS
4	Amazon provides:	SaaS and PaaS	PaaS and IaaS	SaaS and IaaS	SaaS, PaaS and IaaS
5	Which of the following is not currently best supported by cloud computing?	one-time need for significant computing capaci ty	discrete business services accessed via SOA interface	mission-critical enterprise applications with relatively static workload	startup companies requiring scalable infrastructure
6	What is not an advantage of private cloud compared with public cloud?	more secure	more control	more learning	more economies of scale

QUIZ

	Question?	A	B	C	D
7	eBay moved .NET applications to Azure platform to start offering cloud services. Which of the following approaches to public cloud service adoption has been applied in this case?	refactor	revise	rebuild	replace
8	Japan Post, the world's largest financial institution, developed a custom, on-demand application for CRM in 2007. HitachiSoft developed the application within 3 months using Force.com. Which of the following use cases of cloud computing does this example represent?	Infrastructure transformation to private IaaS	substituting software license by public SaaS	building private SaaS using public PaaS	moving existing application to public IaaS

QUIZ