

The Cloud-Computing Scenario

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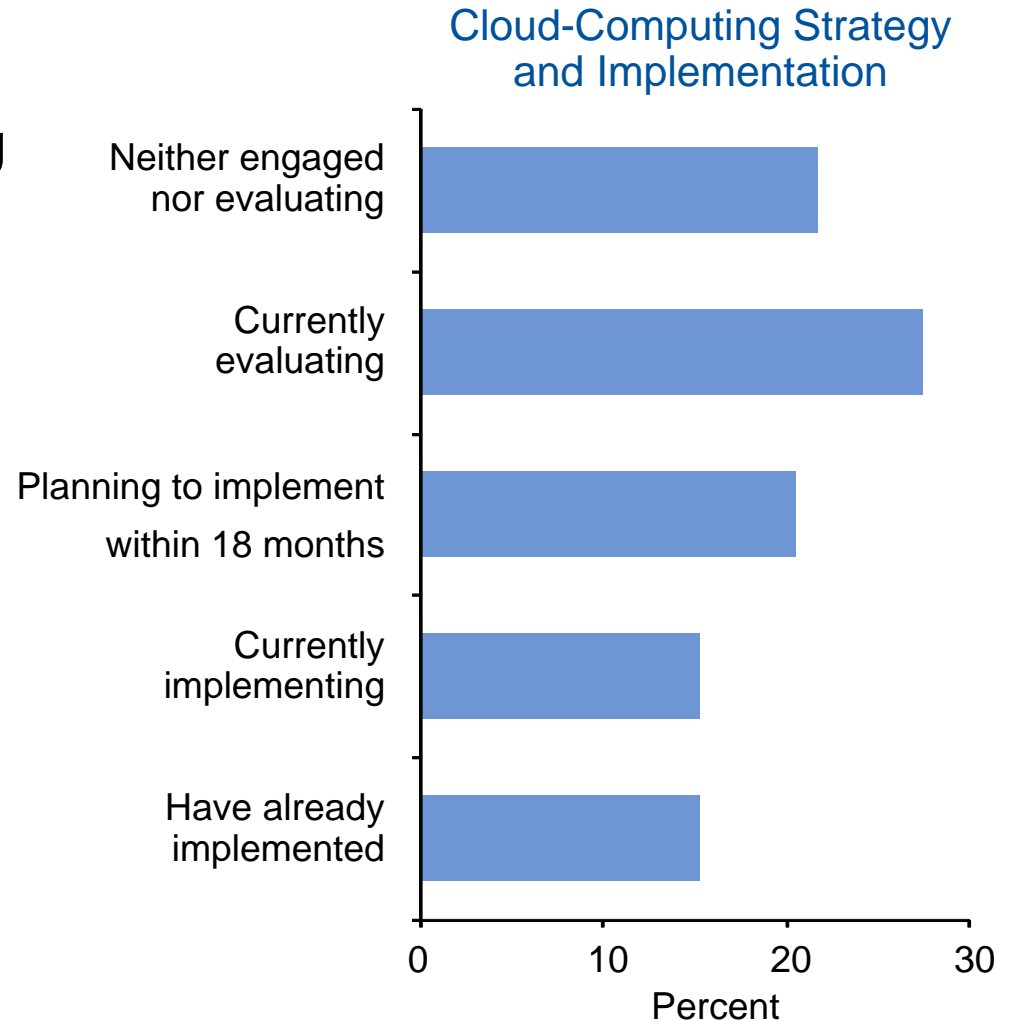
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Potential Cloud Benefits: Why Are People Doing This?

- **A shift from "capacity" on demand to "capability" on demand**
 - Decreased time to acquiring a capability due to "low barriers to entry"
 - More effective agility and use of resources
 - Increased operational efficiency/sharing through outsourcing (i.e., someone else does the work better)
 - More options through more service providers
- **Reduced cost of computing resources**
 - Clear line of sight to costs of computing resources
 - Reduced power, cooling and space requirements costs
 - Increased flexibility of expenditures through operating expenses, rather than capital expenses
 - More finely targeted use of resources by paying only for what is needed
- **A shift from technology use to "value" consumption**
 - Consumers pay for what they want to do, rather than for pieces of technology
 - Results evaluated based on outcomes

Cloud Risks: 70% of Companies With Over 1,000 Employees Have Not Yet Started a Cloud Initiative — What Holds Them Back?

- Security: Can you trust it?
- Lack of compliance reporting and auditing
- Ensuring quality and predictability of service and service remediation
- Delivering and verifying reduced cost over on-premises computing (business case costs and benefits)
- Remediation of failures
- Align business need with actual cloud reality



Key Issues

1. How will cloud computing be defined and evolve?
2. How will cloud computing affect the strategy and direction of IT and business?
3. What vendors, markets and industries will be transformed by the cloud-computing phenomenon?

Gartner's Definition of Cloud Computing and the Critical Attributes of Cloud Services

Gartner defines cloud computing as "a style of computing where scalable and elastic IT-related capabilities are provided 'as a service' to customers using Internet technologies".

Five attributes that support outcomes

1 Service-Based	Consumer concerns are abstracted from provider concerns through service interfaces.
2 Scalable and Elastic	Services scale on-demand to add or remove resources as needed.
3 Shared	Services share a pool of resources to build economies of scale.
4 Metered by Use	Services are tracked with usage metrics to enable multiple payment models.
5 Internet Technologies	Services are delivered through use of Internet identifiers, formats and protocols.

Cloud Computing: From Public to Private and Back

Through 2012, IT organizations will spend more money on private cloud-computing investments than on offerings from public cloud providers.

Choose public if ...

- There is a cost benefit.
- Service-level guarantees and security meet all requirements.
- All legal/data ownership and compliance requirements are met.
- Failure remediation/disaster recovery (including provider failure) is proven.

Leverage Communities
in Between

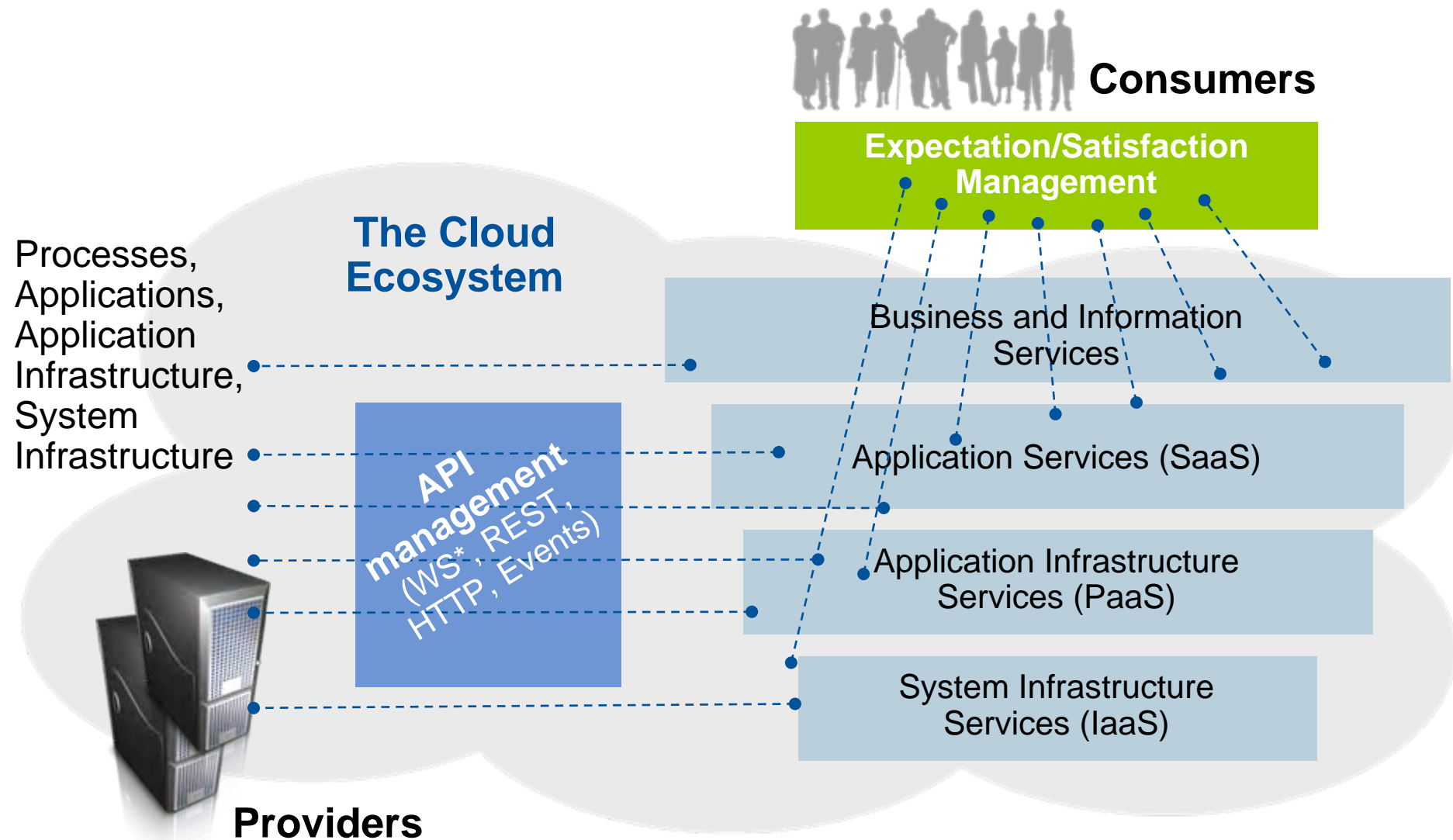
Build private when ...

- Public cloud fails to meet needs.



Each service will have a different road map for the future **Gartner**

Layers of a Cloud Ecosystem: The Value Is in Delivery "as a service"

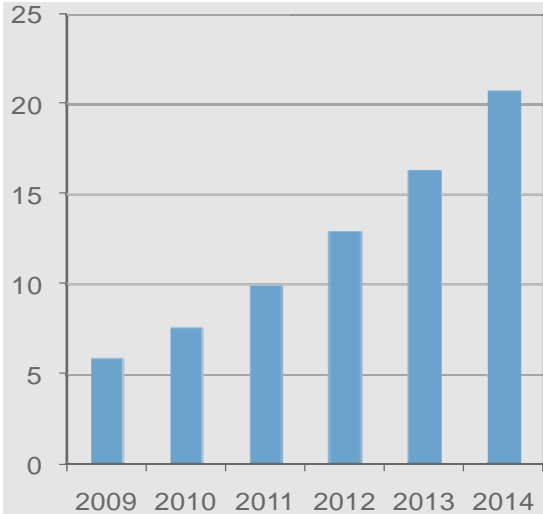


Cloud Services Market Growth

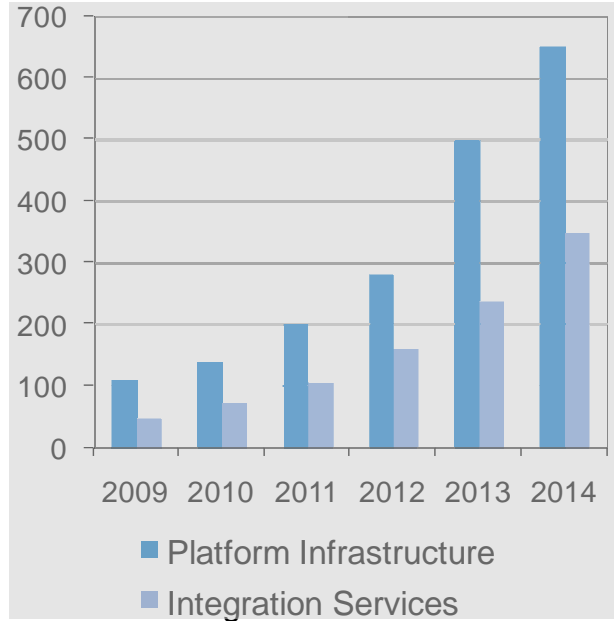
- The worldwide market for cloud services was worth \$58.6 billion in 2009.
- **By 2014, the market will be worth \$148.8 billion.**
- Gartner has revised its five-year forecast growth rate from 26.5% to 20.5%. This downward revision, however, simply reflects the law of large numbers — that is, as the overall market grows, growth rates naturally diminish.
- **Over the course of the next five years, enterprises will spend \$112 billion cumulatively on software as a service, platform as a service and infrastructure as a service combined.**
- North America is the largest country/regional market, representing 60% of the worldwide figure in 2009. During the next five years, North America will continue to be — by some distance — the largest market.
- There continues to be great diversity of activity, maturity and growth among the many different elements of the overall cloud services marketplace.

Cloud Markets Are Growing With Adoption

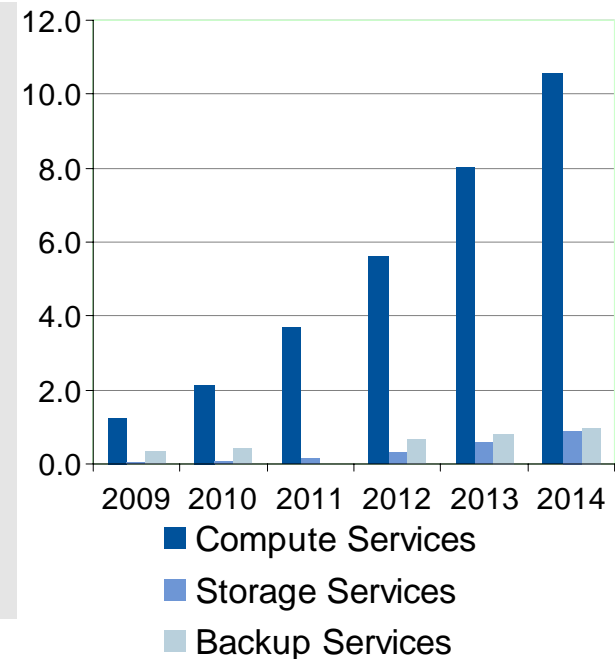
\$bn SaaS



\$mn PaaS



\$bn IaaS



- SaaS becoming more mainstream
- Slightly slower IT spending ahead
- Multithousand seat deals are increasingly common

- Platform infrastructure high profile, low revenue
- Salesforce.com, VMware and Microsoft adding credibility
- Integration as a service (brokerage) growing

- Fastest growing
- 2013 market \$8 billion (up from \$6.8 billion) and 2014 market to be worth \$10 billion.

Can Your IT Organization Handle a Business "Fly-By" to the Cloud?

- Can't wait for IT
- Looks easy
- Rapid "time to capability"
- Transparency of pricing
- Visibility to value
- Operational budget

**Business
Unit**



**83%
Looking
at SaaS**

- Potential for shelfware as a service
- Possible governance issues of application portfolio
- Release management dictated by the provider
- Security concerns
- Longer-term TCO uncertainties
- OP2OD (on-premises to on-demand) integration

"IT? Umm ... no!"

As IT organization - Face A New Money Reality to Keep Your Users

Disconnect Price From Cost

- Customers pay for parts
- Customers trained to care about technology
- Budget recycling
- Customers stop IT from making sensible decisions



Reconnect Price To Value

- Customers pay for what they need to do
- Customers trained to evaluate prices in terms of outcomes
- Providers are free to spend whatever makes sense
- Providers balance the "margin" between price and cost



And ... Three Styles of Security for Public/Private Cloud Can Affect Your Safety

Security "Pressure"

	Low	Medium	High
Public Cloud	<ul style="list-style-type: none"> • Cloud provider security • SAS 70 sufficient? 	<ul style="list-style-type: none"> • Brokered in cloud • Custom or industry assessment 	<ul style="list-style-type: none"> • Outside the cloud • No trust of the cloud
Private Cloud	<ul style="list-style-type: none"> • Security built into VM is used • Accept vendor security claims 	<ul style="list-style-type: none"> • Third-party security on VM is used • Certification/ accreditation of system 	<ul style="list-style-type: none"> • Security is performed outside the VM • Security product certification

Trust of the Cloud

- Security assessment difficulties
- Adequate information is hard to obtain.
- Data compromise risk
- Encryption is a partial solution to privacy issues.
- Data loss risk
- How do you back up a cloud service?
- Vendor viability and data portability concerns
- Open-cloud portability standards still immature.
- Growing potential for "cloud hacking"
- Can a highly distributed and virtualized environment be secure?

What Are the Rights and Responsibilities of Cloud Service Consumers? Assess Your Rights and Responsibilities in the Cloud

1. The right to retain ownership, use and control of one's own data
2. The right to service-level agreements that address liabilities, remediation and business outcomes
3. The right to notification and choice about changes that affect the service consumer's business processes
4. The right to understand the technical limitations or requirements of the service upfront
5. The right to understand the legal requirements of jurisdictions in which the provider operates
6. The right to know what security processes the provider follows
7. The responsibility to understand and adhere to software license requirements



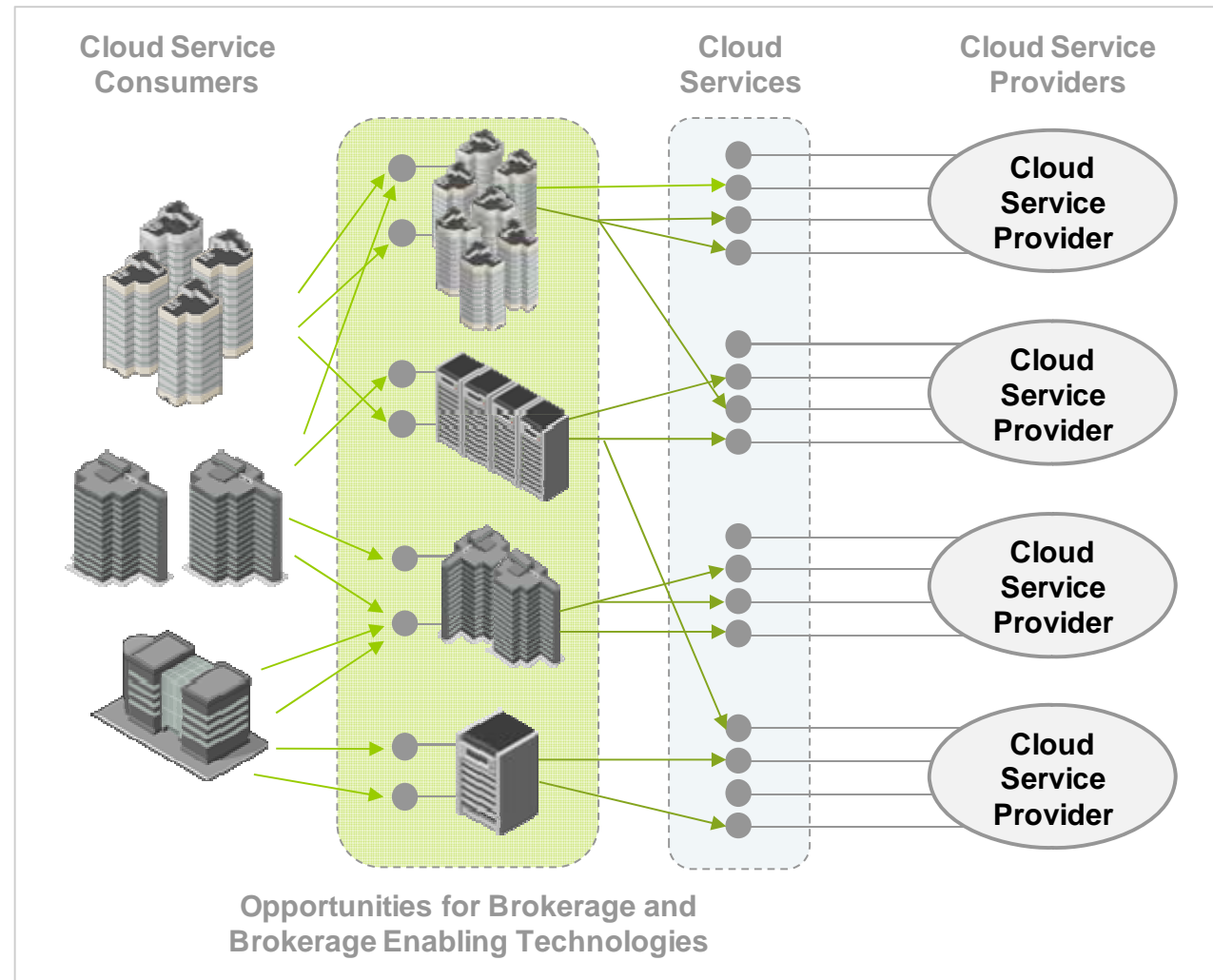
The New Vendor Reality: A Risky Transition

- Manage the shift from product to service
- Risky proposition – giving away your customers
- Discover new pricing models
- Cannibalizing on-premises products
- New powerhouse vendors
- Will the business models work?

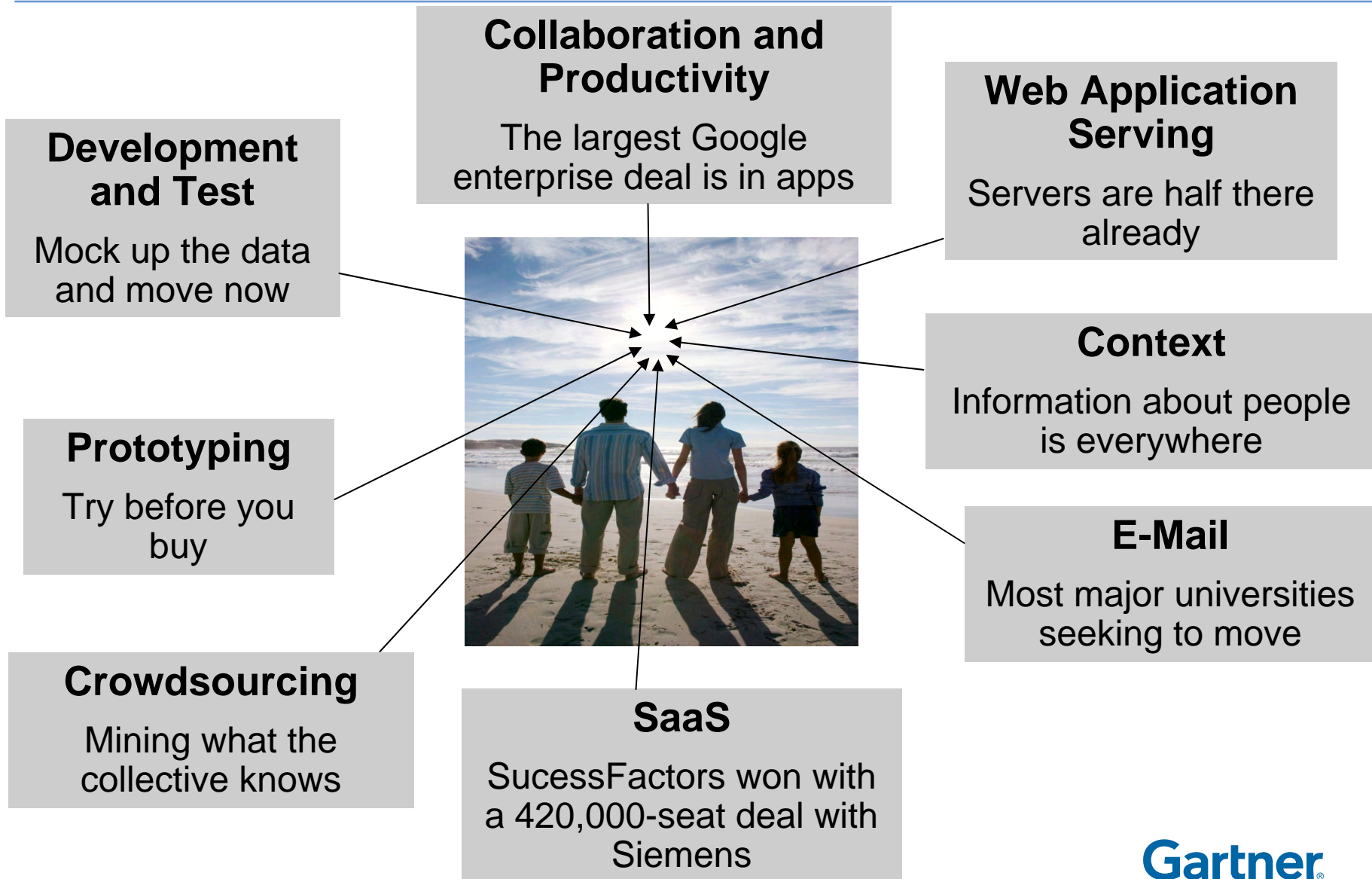
Select vendors that demonstrate a grasp of the new reality.

Cloud Services Brokerages: A Multiplicative Growth Effect

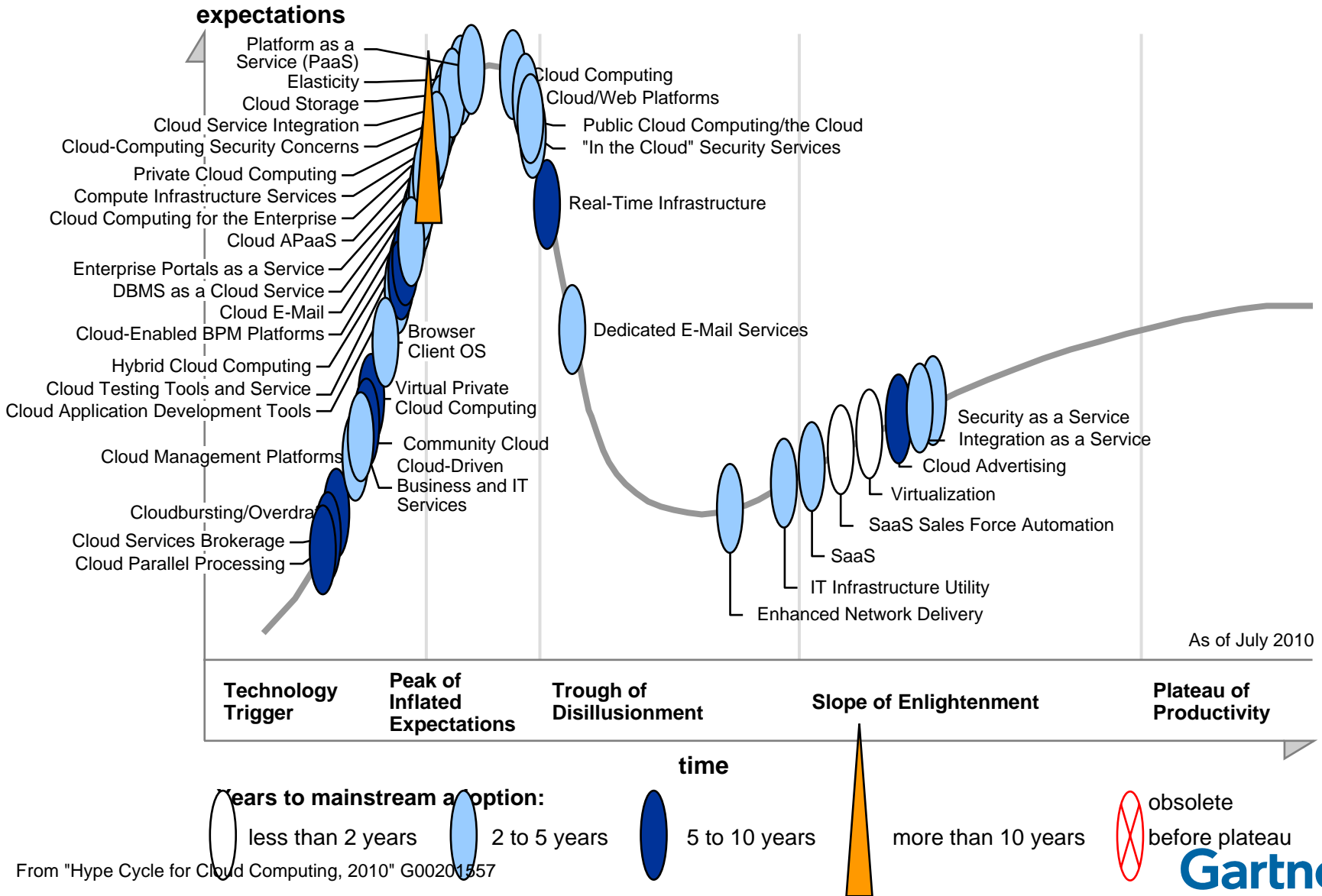
- Potentially every service, every consumer, and every combination of services may need brokerage
- Enabling technologies as arms dealers
- Game changes for system integrators as they move to cloud services to get:
 - Greater degree of leverage
 - Economies of scale
 - Size of market opportunity
 - Distinguish between one-off value-add from leveraged multiple customer engagements



What Are People Doing in the Cloud?



Hype Cycle for Cloud Computing, 2010



Recommendations

- ✓ Get cloud on your agenda – what does cloud mean in your strategy, sourcing, EA, governance, business relationship, etc.?
- ✓ Establish a set of value propositions for adopting cloud computing
- ✓ Ensure that the public cloud can't meet your needs before building a private cloud.
- ✓ Work with your users to understand their needs for SaaS.
- ✓ Establish and demand rights as consumers of cloud services.
- ✓ Watch trends / experiences gained in your industry

Recommended Reading

- **Key Issues for Cloud Computing, 2010**
David Mitchell Smith, David Cearley, Daryl Plummer (G00175264)
- **Key Issues for Web and Cloud Application Development, 2010**
Eric Knipp (G00174971)
- **Key Issues for Software as a Service, 2010**
Robert DeSisto, Ben Pring, Brian Prentice (G00174548)
- **Application Infrastructure for Cloud Computing: A Growing Market, 2010**
Yefim Natis (G00175138)
- **CFO Advisory: Cloud Computing; Business Enablement**
David Mitchell Smith (G00175913)
- **Know Your Rights in IT Maintenance and Cloud Computing**
David Cappuccio, Daryl Plummer (G00201001)