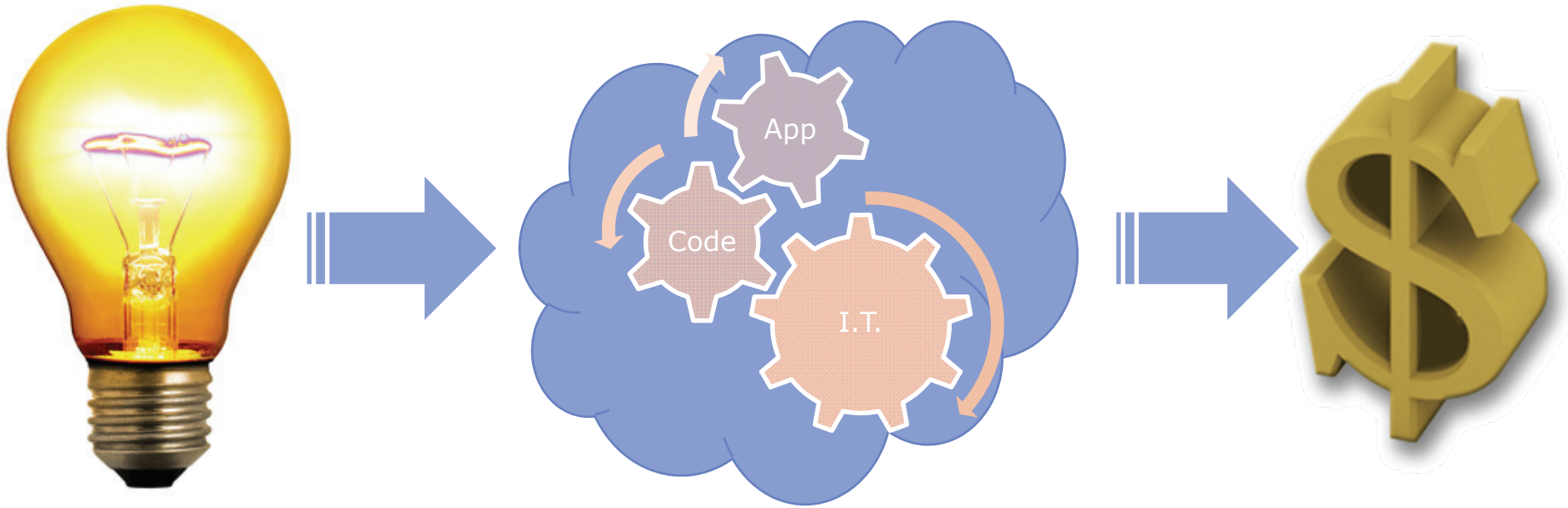


Evaluator Group



CLOUD COMPUTING

Provider's Idea of Cloud Storage



Consumer's Idea of Cloud Storage

- Automated IT
- Flexible Business
- Low Cost of Operations
- Reduced Risk
- Data is always available



Some Recent Cloud Failures

- An “A” company had an 8+ hour outage
- An “N” company had 50% of customer data unavailable – for months
- Other related problems
 - Apple Mobile Me – days (months?) of issues
 - Google’s Gmail – down for hours multiple times
- All result in less than 3 - 9’s availability

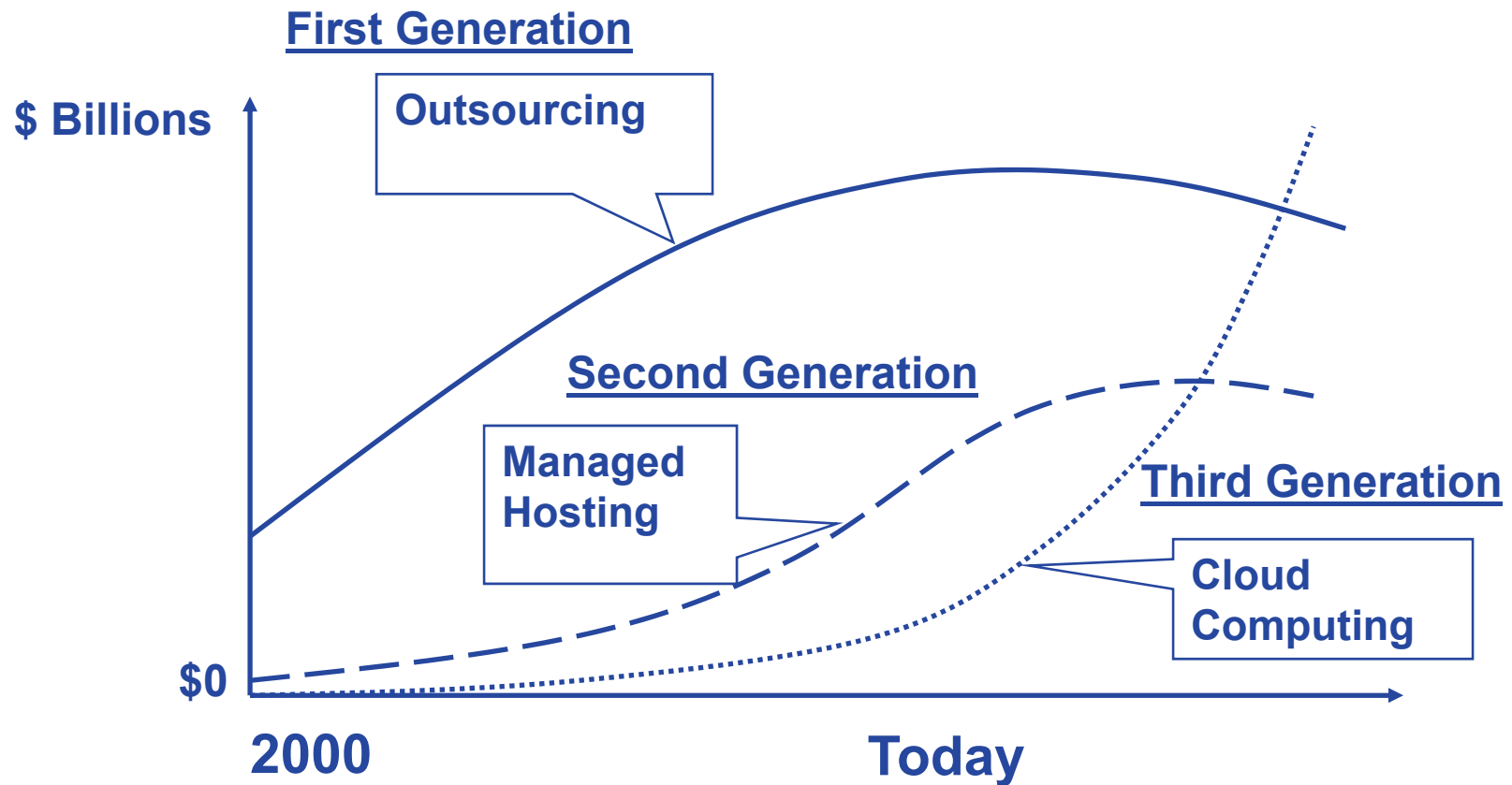
A Brief History of Cloud Computing

HOW WE GOT HERE

Haven't We Been Here?

- New terms introduced to maintain hype
 - Outsourced / Managed Service provider
 - Storage Service Provider (Circa 2000)
 - Storage on Demand (Circa 2001)
 - Grid Computing (Circa 2003)
 - Cloud Storage / Computing (Circa 2008)
- What is the Goal?
 - Storage as a Service

Service Delivery Models



What Were the Roadblocks?

- Consumer Acceptance
- Cost
- Technology Immaturity
 - Virtualization
 - Security
 - Management
 - Multi Tenancy

CLOUD STORAGE MARKET

Who's Likely To Use Cloud Storage?

- The same groups who used SSP's
 - Generically, xSP's – Service providers
 - Consumers seeking lower cost and higher flexibility
- The Good News
 - There are a lot more "Services" to provide
 - Consumers are much more open to the idea
 - Most understand the risks

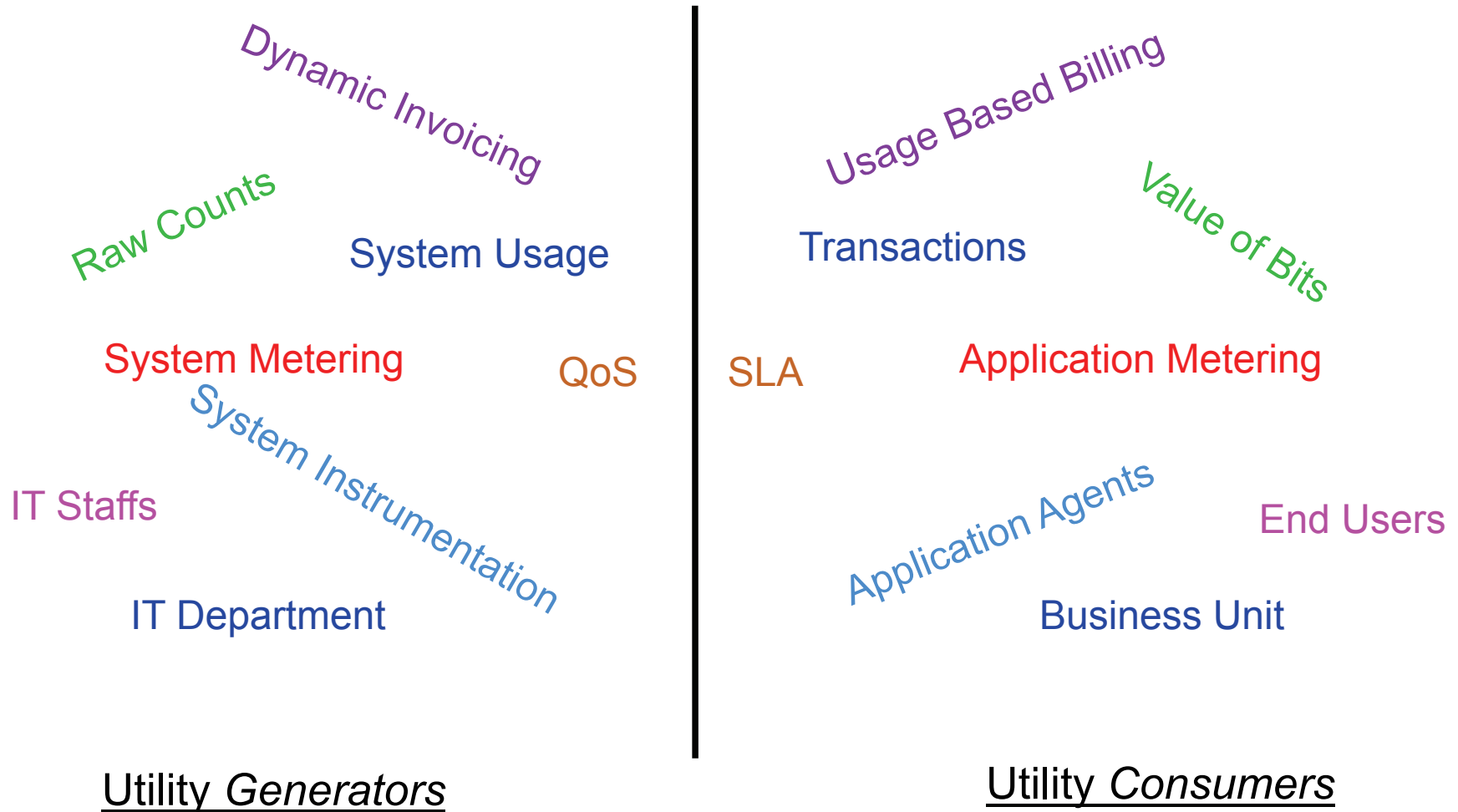
Deployment Models

- Build it yourself
 - Hw: NEC Hydrastor, EMC Atmos, HP ExDS9100, Sun 7000, IBM XIV, etc.
 - Sw: CleverSafe, ParaScale, etc.
- Buy Solutions
 - =/ (Few Examples Today)
- Subscribe to a Storage Service Provider
 - Amazon, Nirvanix, Flexiscale, Ctera, others

What are the elements of Storage as a Service?

- **Optimized Technology**
 - Multiple Components
- **Billable**
 - Tied to Contract
- **Flexible**
 - Subscription

Producers & Consumer - Connected



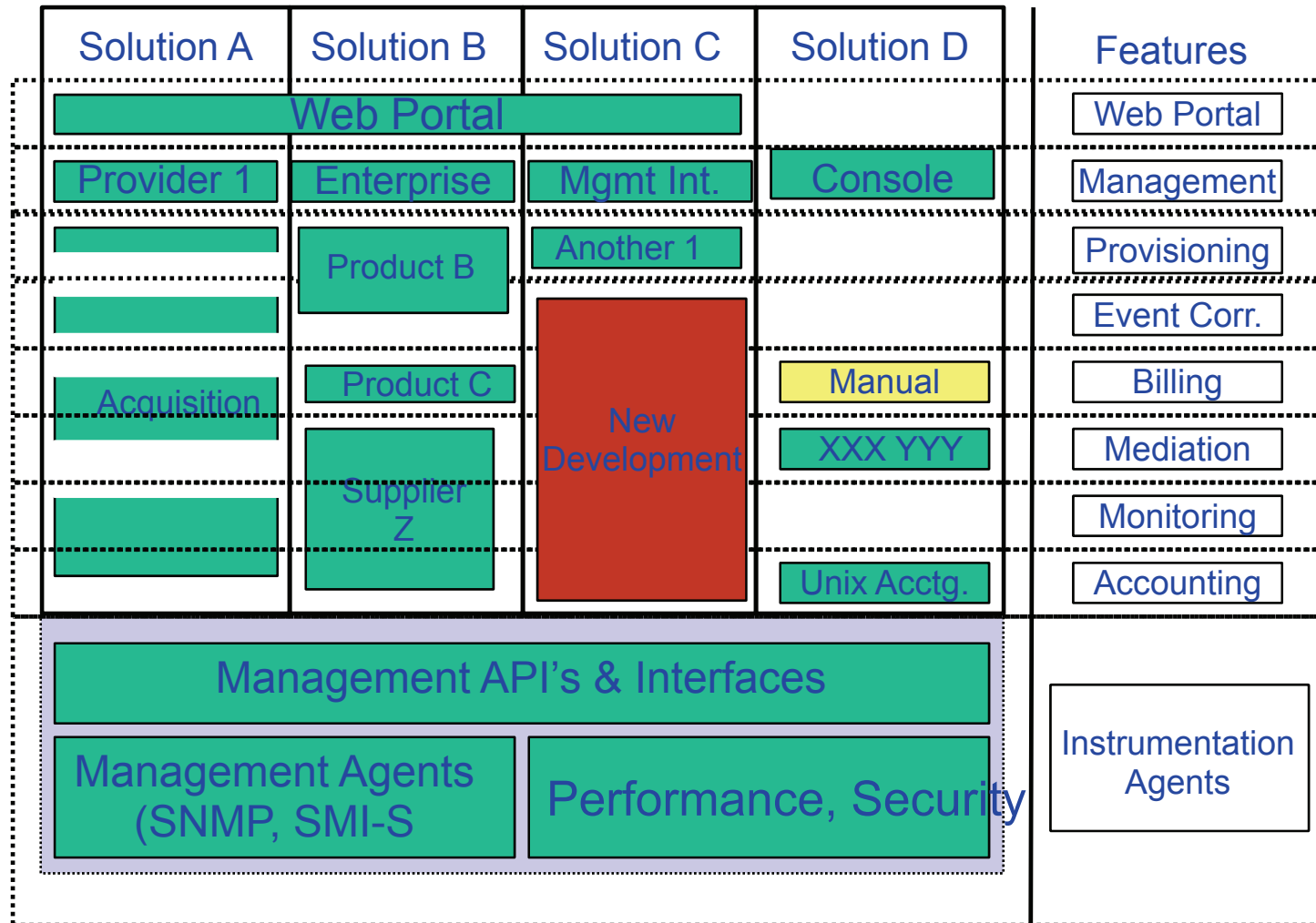
Technology Tenets of Cloud

- Flexible = Virtualization
- Secure = Encryption / Key Mgmt.
- Controlled = Management
- Cost Effective = Optimized SLA's
- Billable = Metering

Underlying Components of Cloud

- Virtualized Components
 - Compute, Storage, Network
- Secure, Authenticated Access
 - Certificates, encryption, key management
- Service Delivery Infrastructure
 - Metering Monitoring & Billing
 - Ability to measure use of resources
 - Remote monitoring and management
 - Chargeback or billing for commercial grids
 - Standards

Technology Solution Stacks

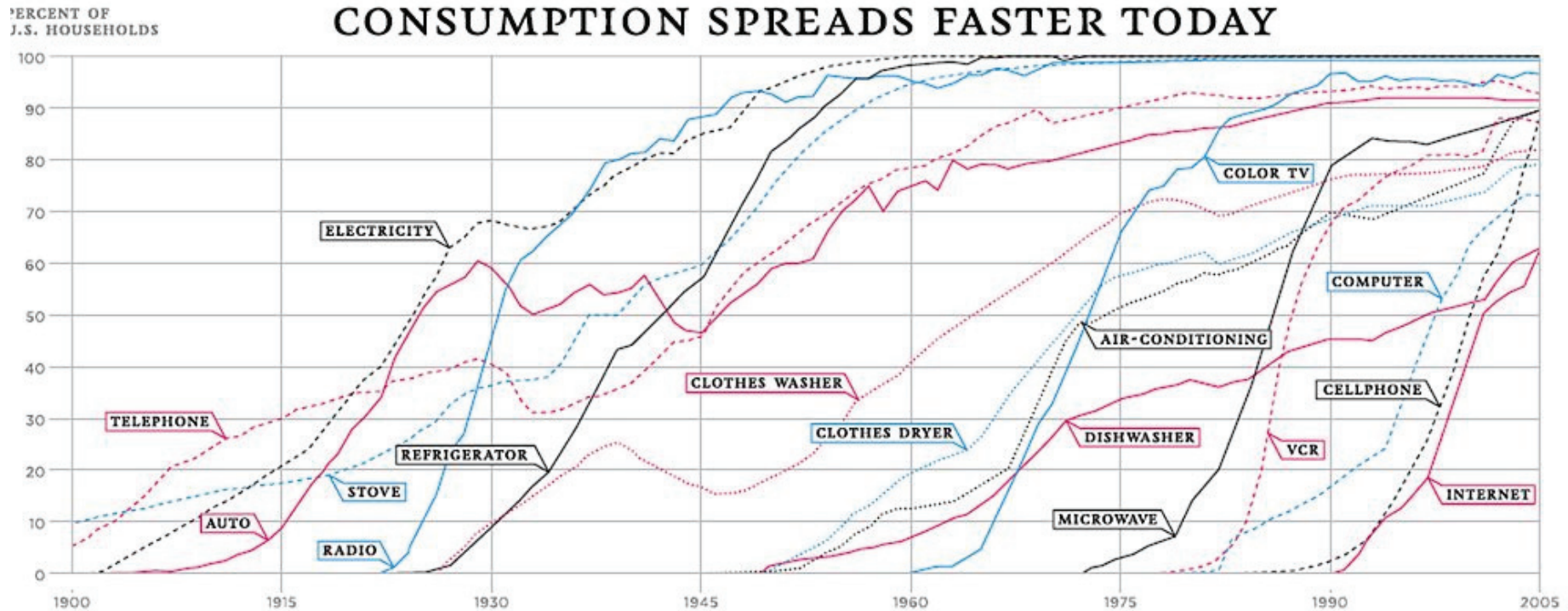


Where is the Business Today?

1. Online backup
 - Over 60% of Storage
2. Storage for Service providers
 - Over 30% of Total
3. Storage Services for Consumers
 - Remaining <10%



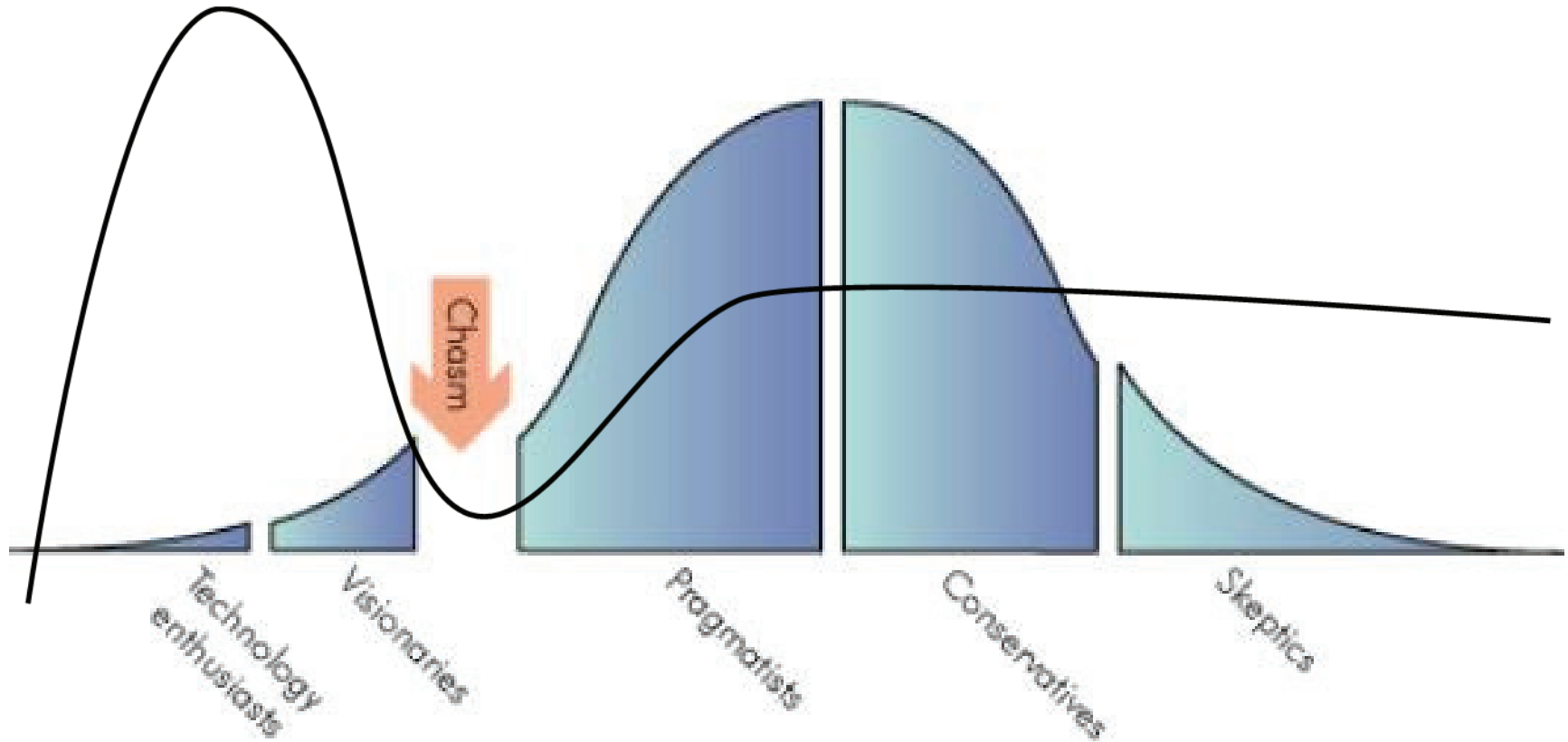
Technology Adoption Rates



Demand for Cloud

- Is Cloud Storage New Spending, or a Reallocation of Storage Spending?
 - Providers would like to think “Yes”
 - Consumers would like to think “No”
- The Answer
 - New Businesses = Maybe
 - Otherwise = Probably a reallocation

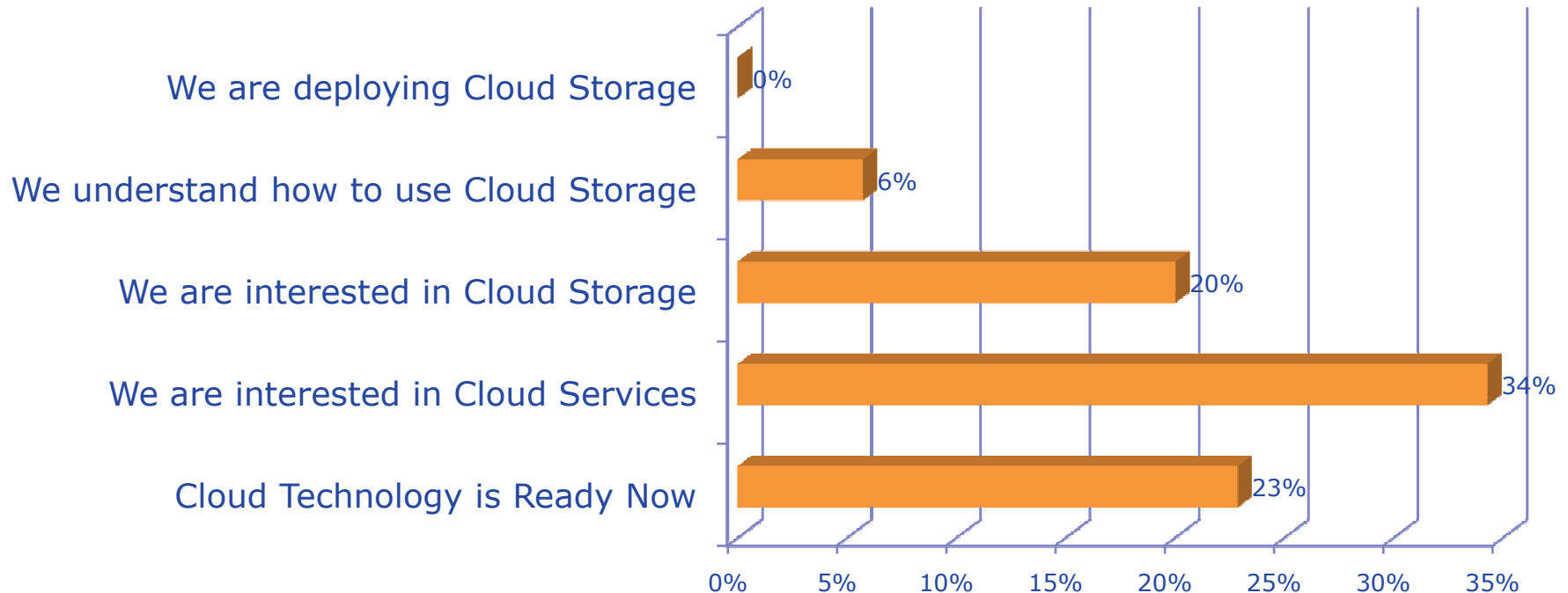
Cloud Computing - Where Are We?



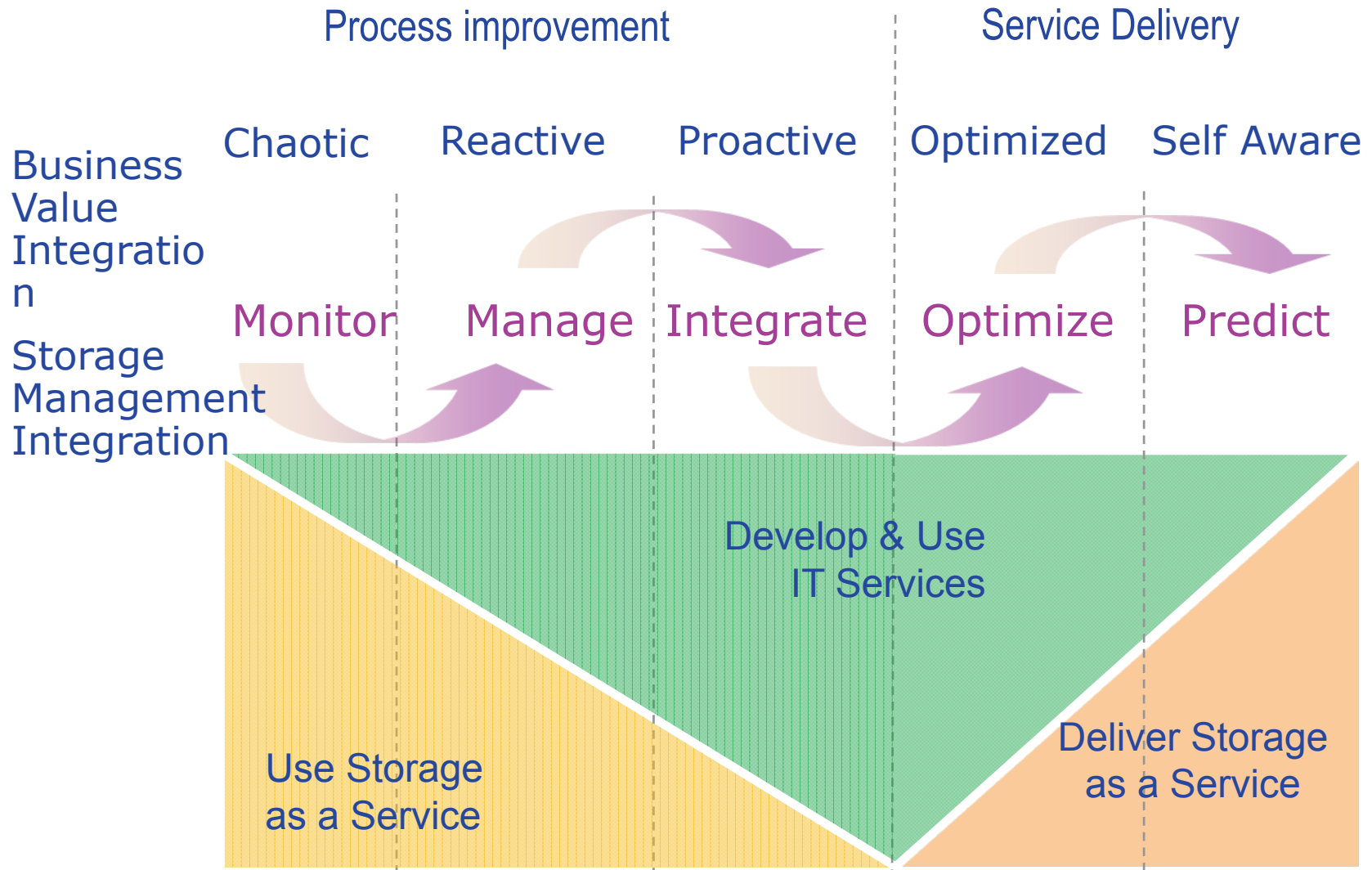
Rogers Diffusion of Technology – w/ Moore's Chasm

IT Consumer Interest

Cloud Computing Readiness

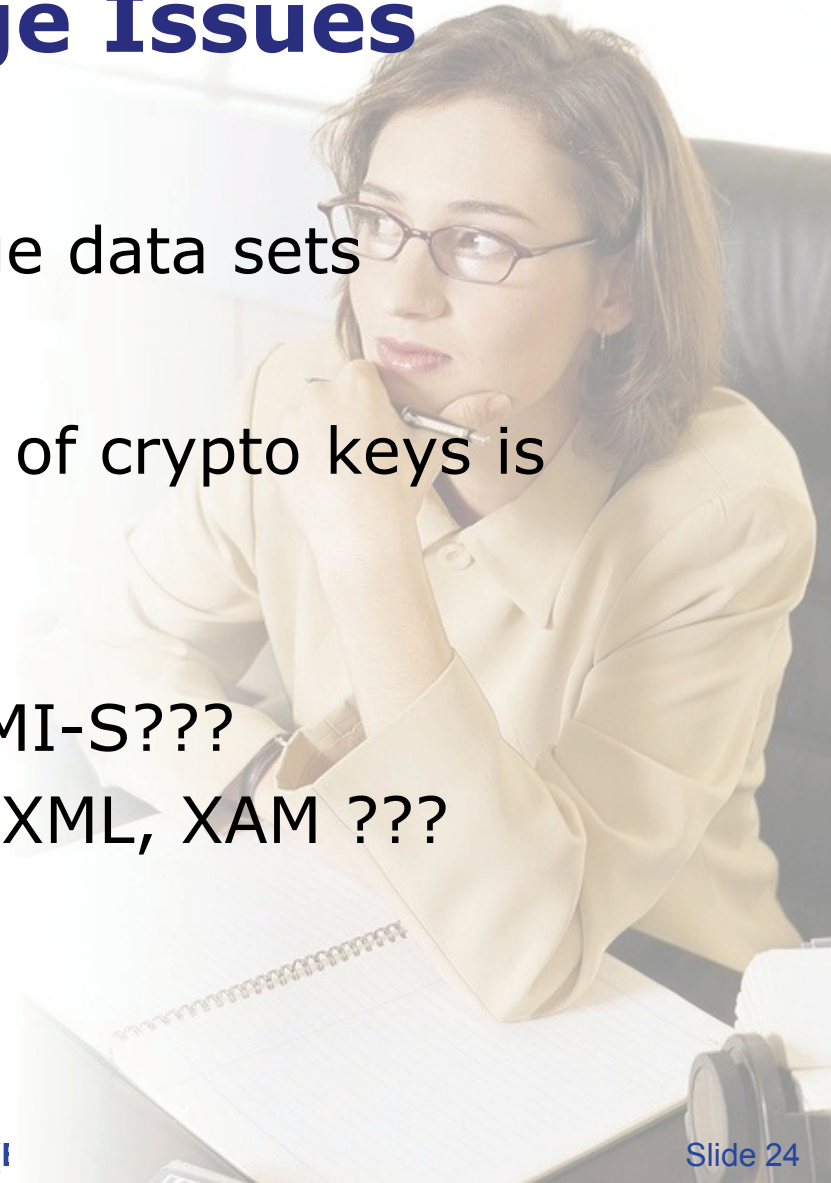


IT Maturity & Investment Model



Cloud Storage Issues

- Bandwidth
 - Imposes burden on large data sets
- Security
 - Long term preservation of crypto keys is critical
- Lack of Standards
 - Management: SNMP, SMI-S???
 - Data: NFS, CIFS, OSD, XML, XAM ???



RECOMMENDATIONS

Supplier - Vendor Recommendation

- Know your role in the overall value chain
- Articulate your advantages
- Help provide integration and flexible components for multiple solution stacks
- Know where to compete with providers and where to partner



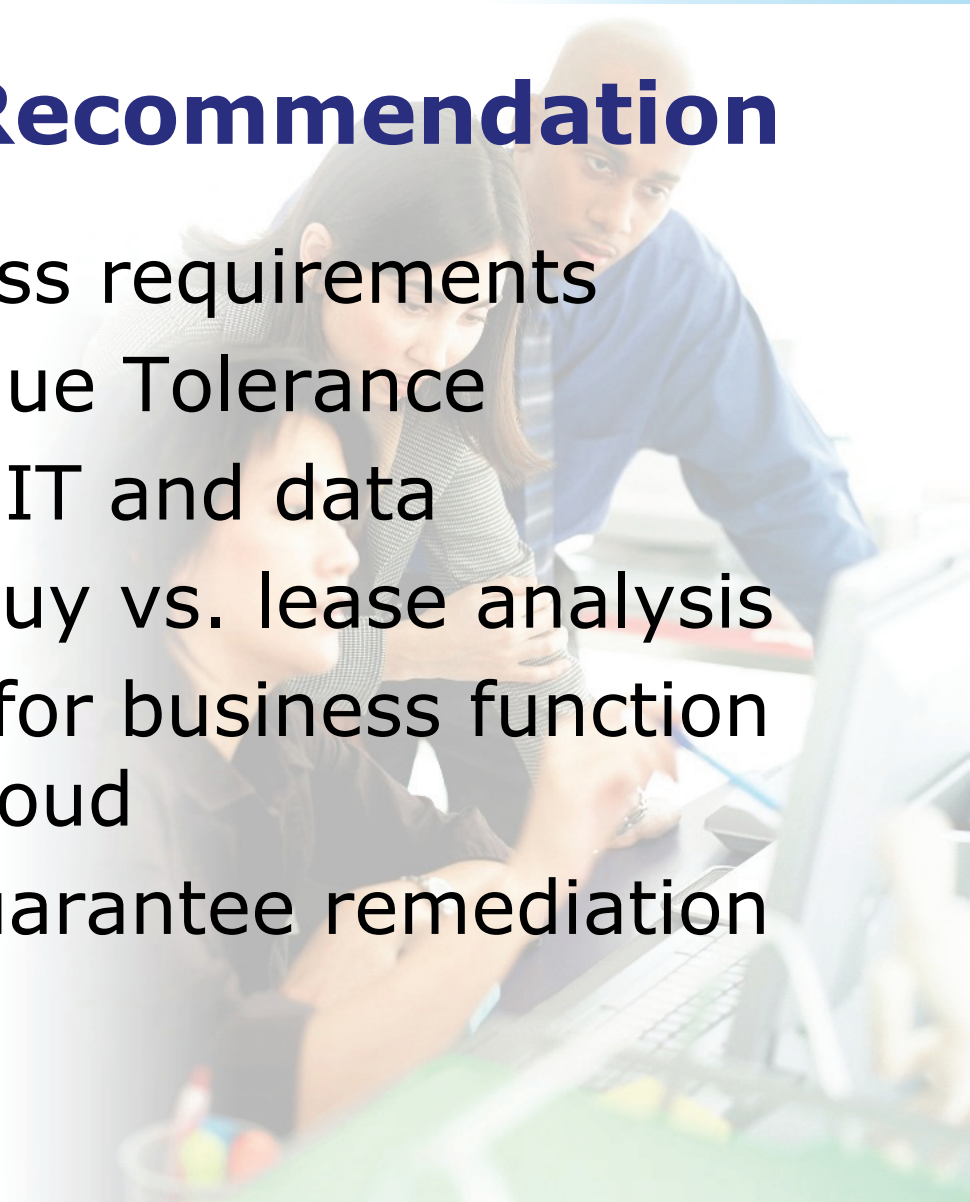
Service Provider Recommendation

- Learn from Other Service Providers
 - Telco's, etc.
- Leverage Brand Recognition
- Articulate your Value
- Create Value Through Integration



IT Consumer Recommendation

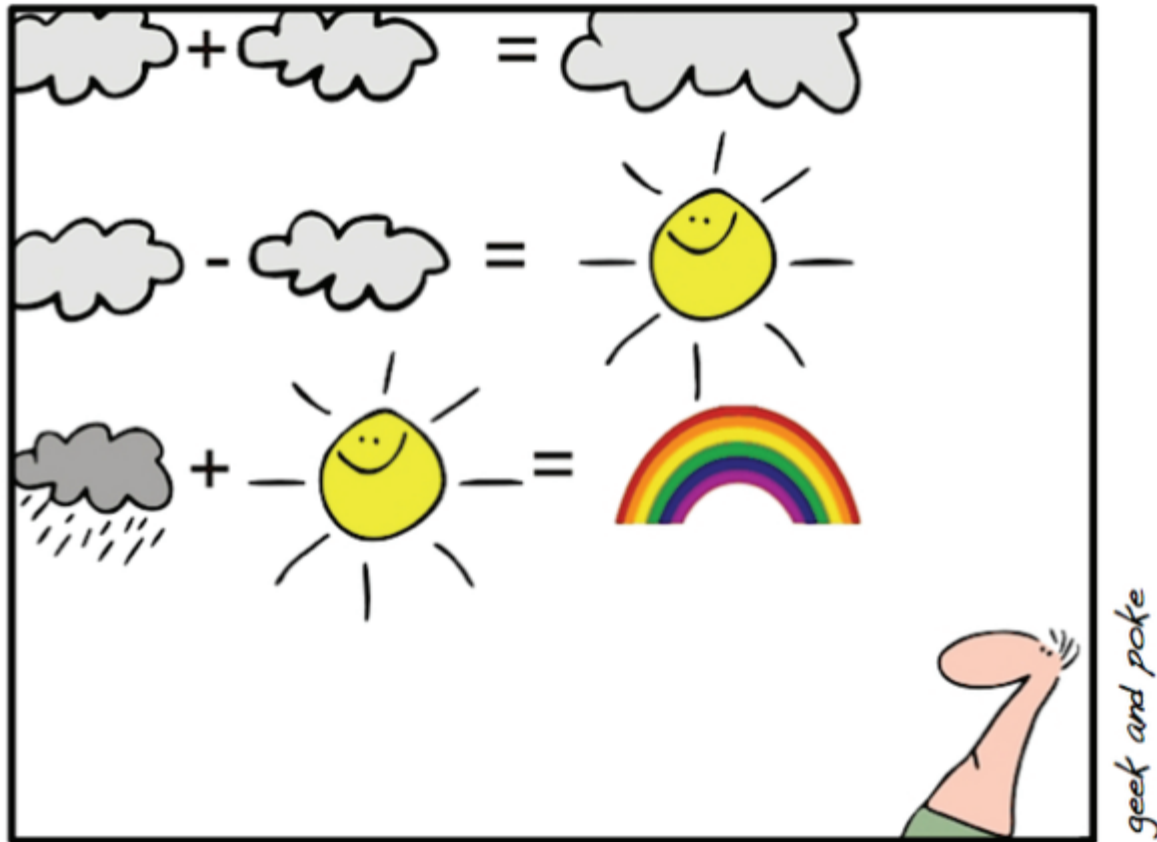
- Understand Business requirements
- Establish Risk / Value Tolerance
- Establish value for IT and data
- Perform build vs. buy vs. lease analysis
- Have specific plan for business function to move into the cloud
- Understand SLA guarantee remediation



Deriving \$ from the Cloud

- Revenue depends upon Adoption
- Adoption depends upon Acceptance
- Acceptance depends upon proven results
- Proven results depends upon delivered solutions
- Solutions depend upon Integration
- => Integrated proven solutions = \$\$\$

Cloud Computing Simplified



***SIMPLY EXPLAINED - PART 17:
CLOUD COMPUTING***

More Information

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