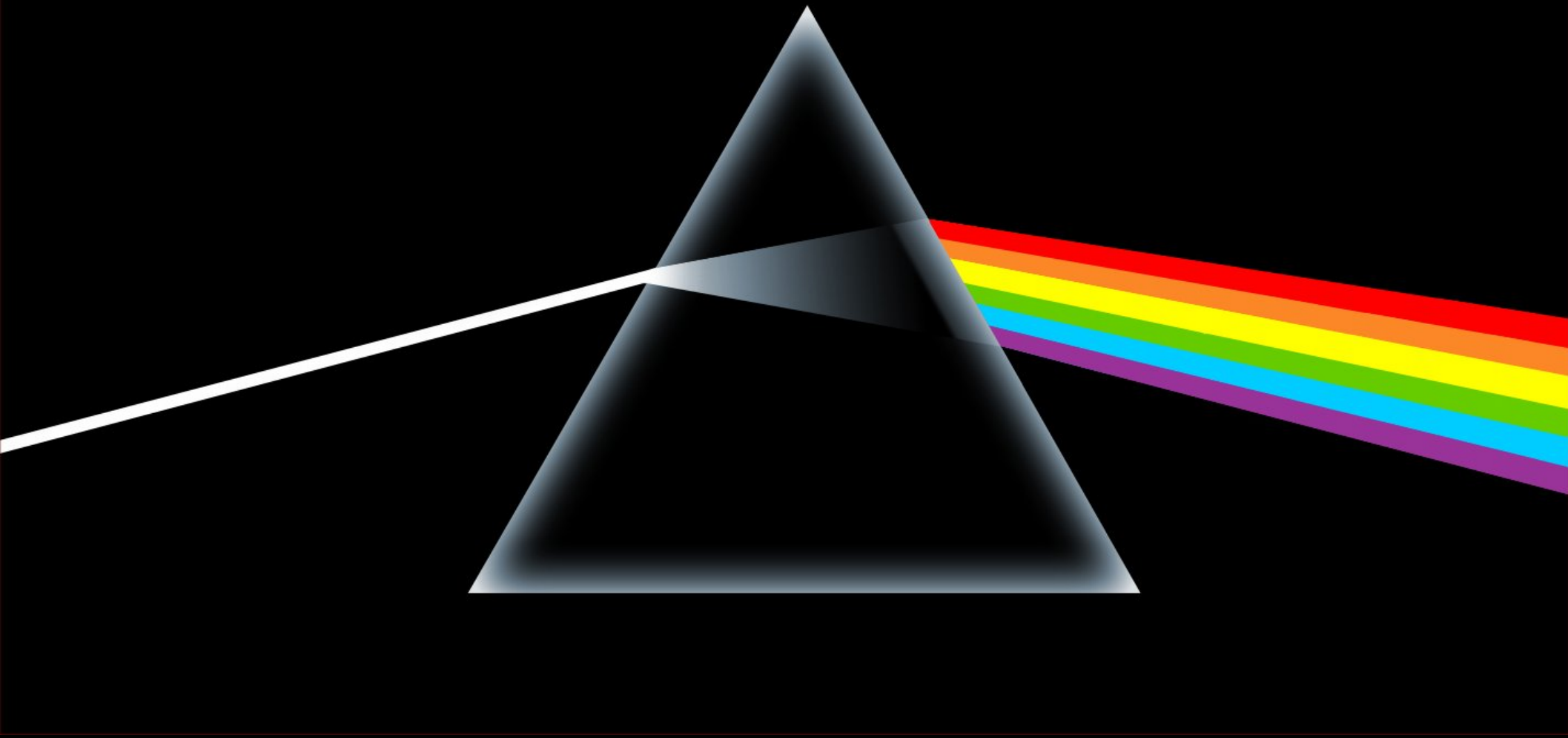


The Dark Side of Cloud

*"I've always been mad, I know I've been mad, like the most of us...very hard to explain why you're mad, even if you're not mad..."*

Speak to me

It's a trap

Vendor Lock-in

Terms of service

No Influence

*"And when at last the work is done;*

*Don't sit down it's time to dig another one. "*

Breathe

Outages

Amazon

CLOUD FOUNDRY™

VMware

Cloud Failure News
@Cloud_Fail
@cloud_fail by @thecloudnetwork #TCN
The Cloud
Follow
3,455 TWEETS
17 FOLLOWING
277 FOLLOWERS

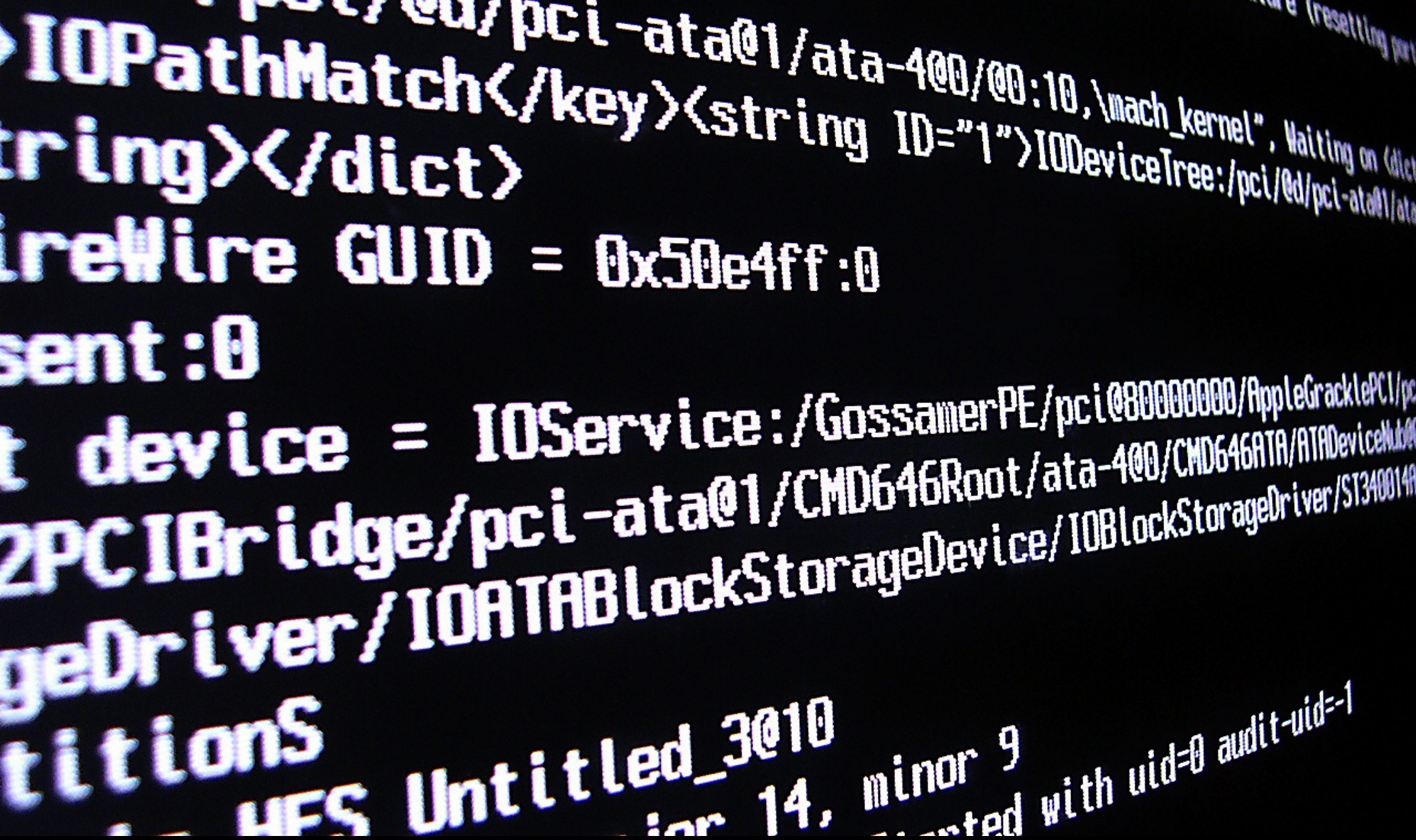
Twitter

Gmail

Breaches

Linked in

Epsilon

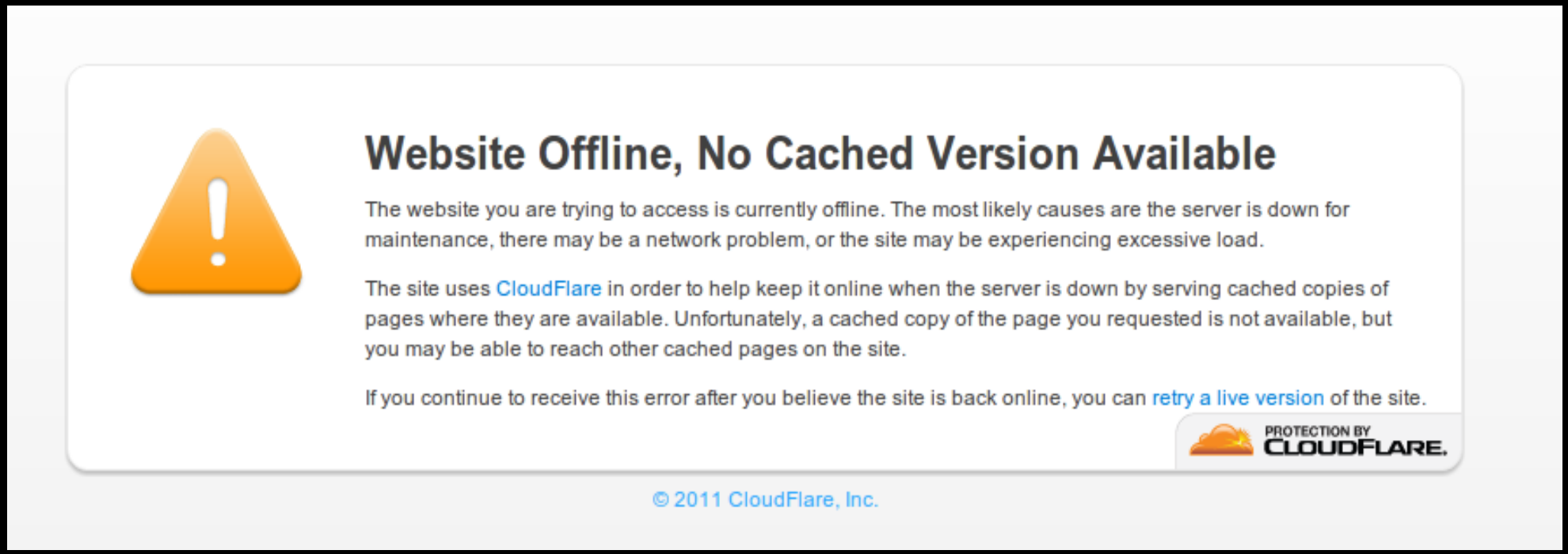

IOPathMatch</key><string ID="1">IODeviceTree:/pci/0d/pci-ata@1/ata-4@0/@0:10,\mach_kernel", Waiting on
tring></dict>
ireWire GUID = 0x50e4ff:0
sent:0
t device = IOService:/GossamerPE/pci@80000000/AppleGracklePCI/pc
2PCIBridge/pci-ata@1/CMD646Root/ata-4@0/CMD646ATA/ATADeviceNub@
geDriver/IOATABlockStorageDevice/IOBlockStorageDriver/ST340014
titionS
Untitled_3@10
14, minor 9
with uid=0 audit-uid=-1

Google Code

*"Live for today, gone tomorrow"*

On the Run

Bankruptcy


Website Offline, No Cached Version Available
The website you are trying to access is currently offline. The most likely causes are the server is down for maintenance, there may be a network problem, or the site may be experiencing excessive load.
The site uses CloudFlare in order to help keep it online when the server is down by serving cached copies of pages where they are available. Unfortunately, a cached copy of the page you requested is not available, but you may be able to reach other cached pages on the site.
If you continue to receive this error after you believe the site is back online, you can retry a live version of the site.
PROTECTION BY CLOUDFLARE.
© 2011 CloudFlare, Inc.

# Freemiums

*“Every year is getting shorter never seem to find the time.*

*Plans that either come to naught or half a page of scribbled lines”*

Time

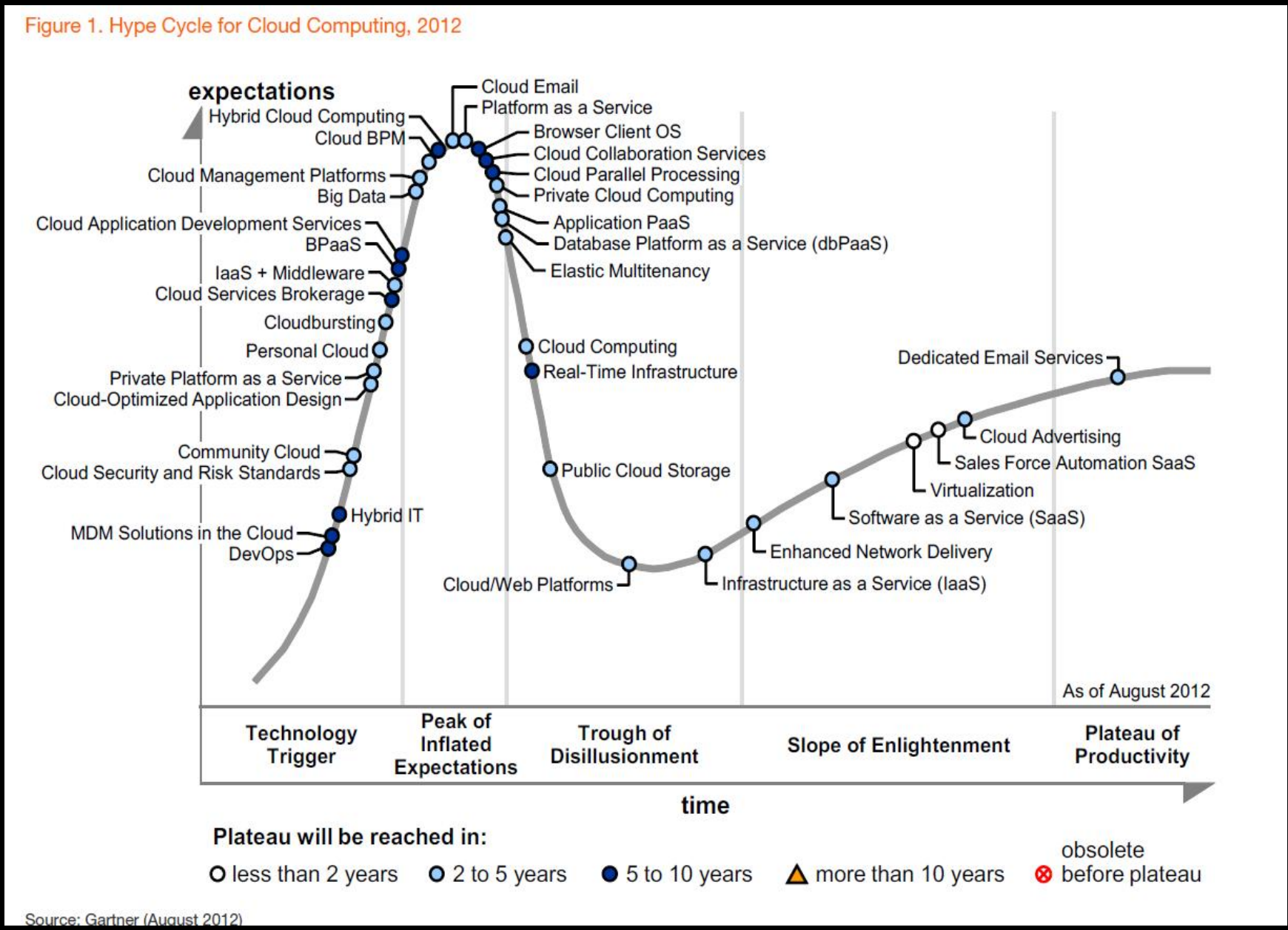
Time to Market

Migration

*"There's no reason for it, you've gotta go sometime."*

The Great Gig in the Sky

Time to live

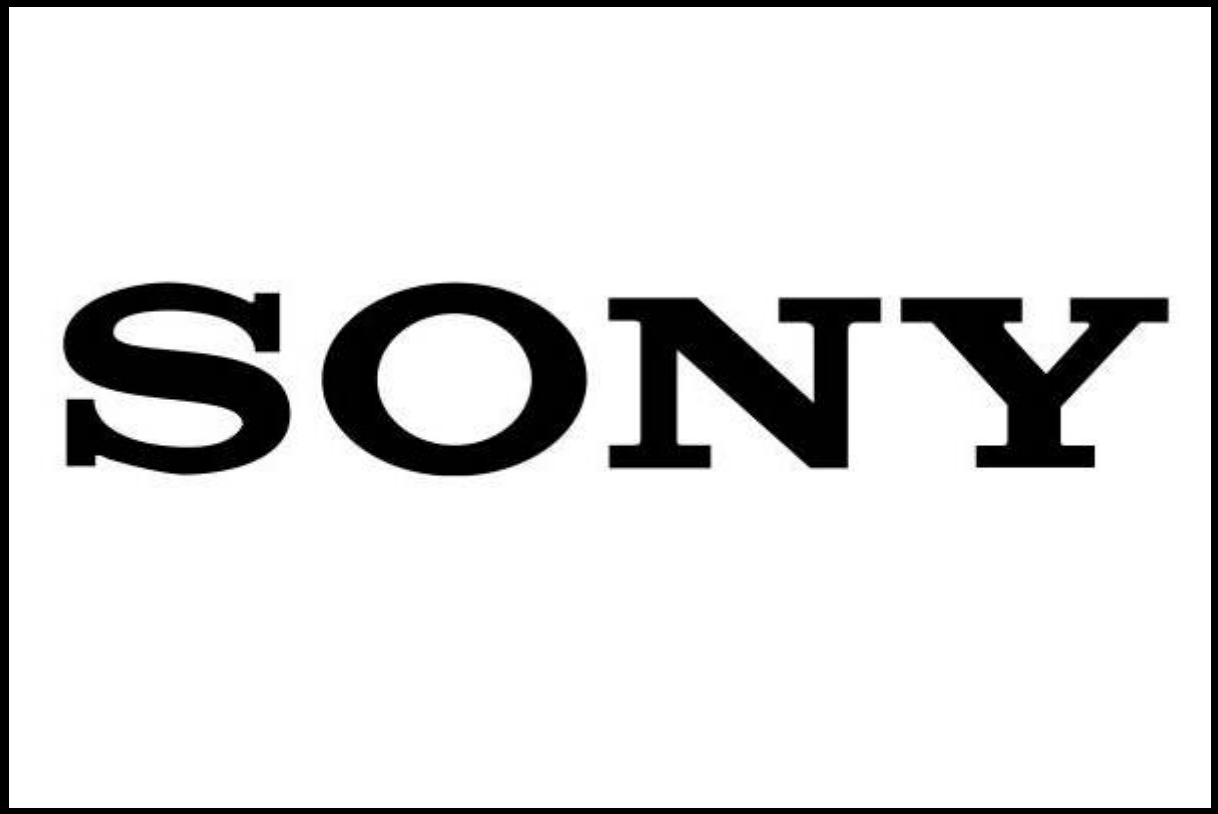



Everybody else is doing it

*"I'm all right Jack keep your hands off of my stack"*

Money

# Hidden Costs




Denial of Service Attacks

What's a business plan ?

*"God only knows it's not what we would choose to do"*

Us and Them

Bullies (?)

Cyber Criminals

Broken Hearts

Botnets

Terrorism (?)

*<Instrumental>*

Any Colour You Like

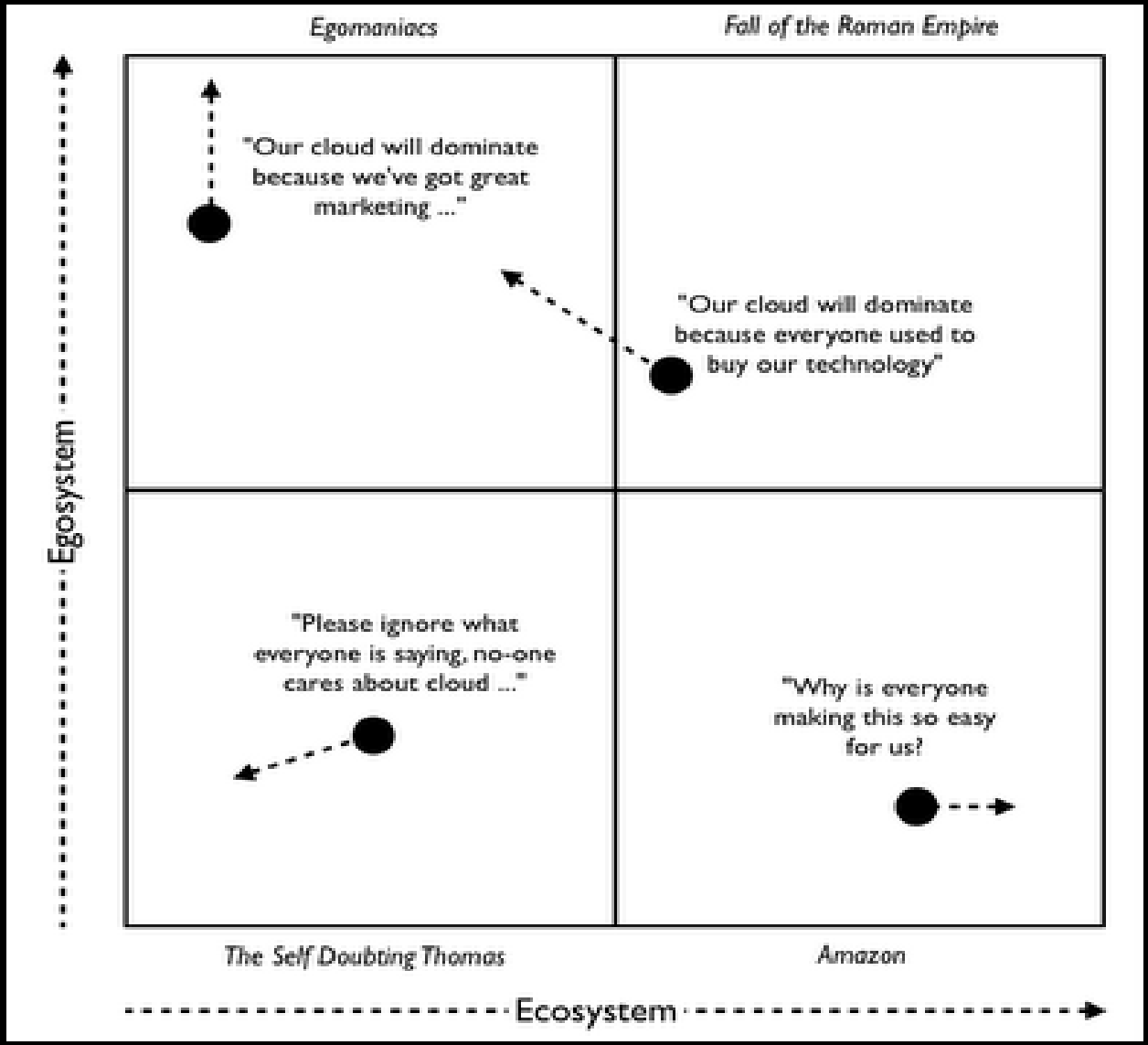
As long as its black

*“The lunatics are in my hall”*

Brain Damage

I THINK THE CLOUD'S GREAT! IT ALLOWS ME TO WORK FROM HOME. MY WIFE'S NOT SO KEEN ON IT THOUGH.
© D.Fletcher for CloudTweaks.com

End Users


Egomaniacs
Fall of the Roman Empire
"Our cloud will dominate because we've got great marketing ..."
"Our cloud will dominate because everyone used to buy our technology"
"Please ignore what everyone is saying, no-one cares about cloud ..."
"Why is everyone making this so easy for us?
The Self Doubting Thomas
Amazon
Egosystem
Ecosystem

# Ego and Eco

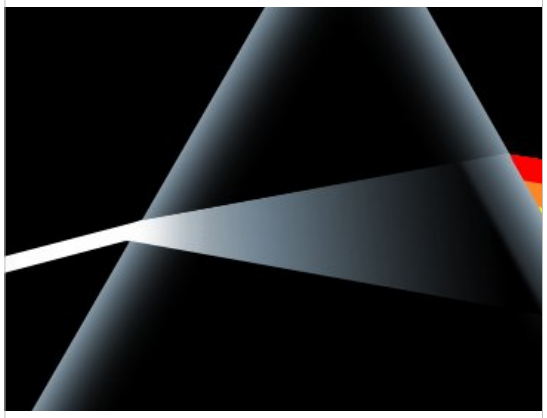
Consumption

*"...and everything under the sun is in tune but the sun is eclipsed by the moon..."*

Eclipse

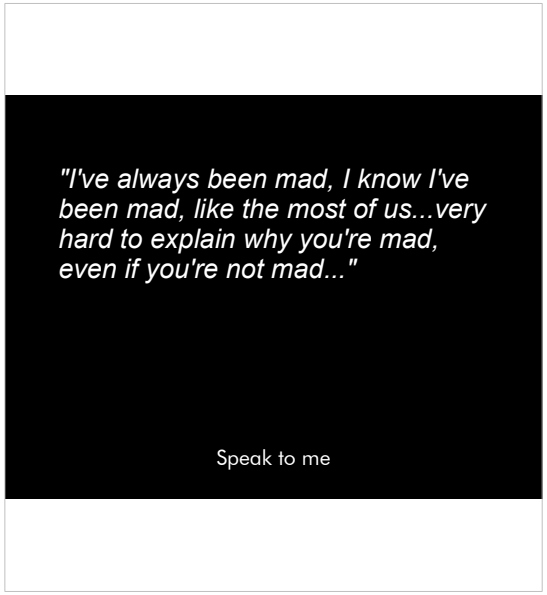
Questions?

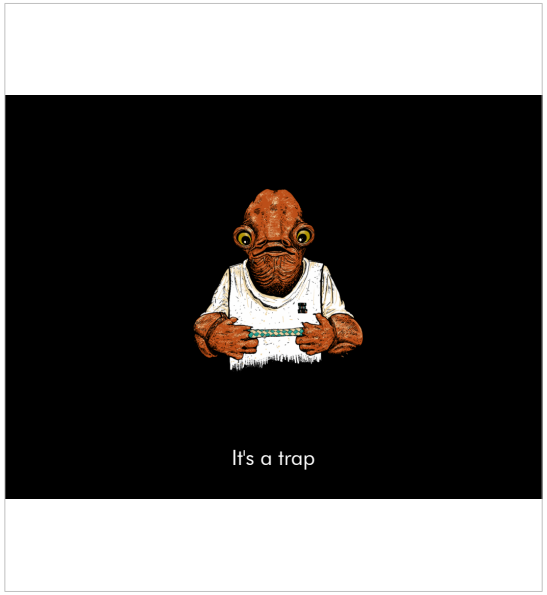
Session 11994



While Cloud Computing offers advantages for enterprise computing, startups and those with only an occasional need for massive storage or compute power, this available power offers the chance for abuse as well. Learn how Cloud Computing can threaten privacy and provide opportunities for security breaches by taking advantage of the ability to aggregate data that has until now been too expensive to store or process. Our speaker will also discuss how the emerging Big Data and Analytics technologies can be used in a Cloud Computing environment for more nefarious purposes.

The dark side of the moon is all about lunacy and some think that cloud is as well.


"I've always been mad, I know I've been mad, like the most of us...very hard to explain why you're mad, even if you're not mad..."
Speak to me




http://www.guardian.co.uk/technology/2008/sep/29/cloud.computing.richard.stallman

Richard Stallman, founder of FSF and GNU.
Stallman has been against proprietary software for years.

Stallman believes that cloud computing is the next iteration of proprietary lock-in that removes choice and restricts options.

He is quoted as saying:
"The computer industry is the only industry that is more fashion-driven than women's fashion. Maybe I'm an idiot, but I have no idea what anyone is talking about. What is it? It's complete gibberish. It's insane. When is this idiocy going to stop?"

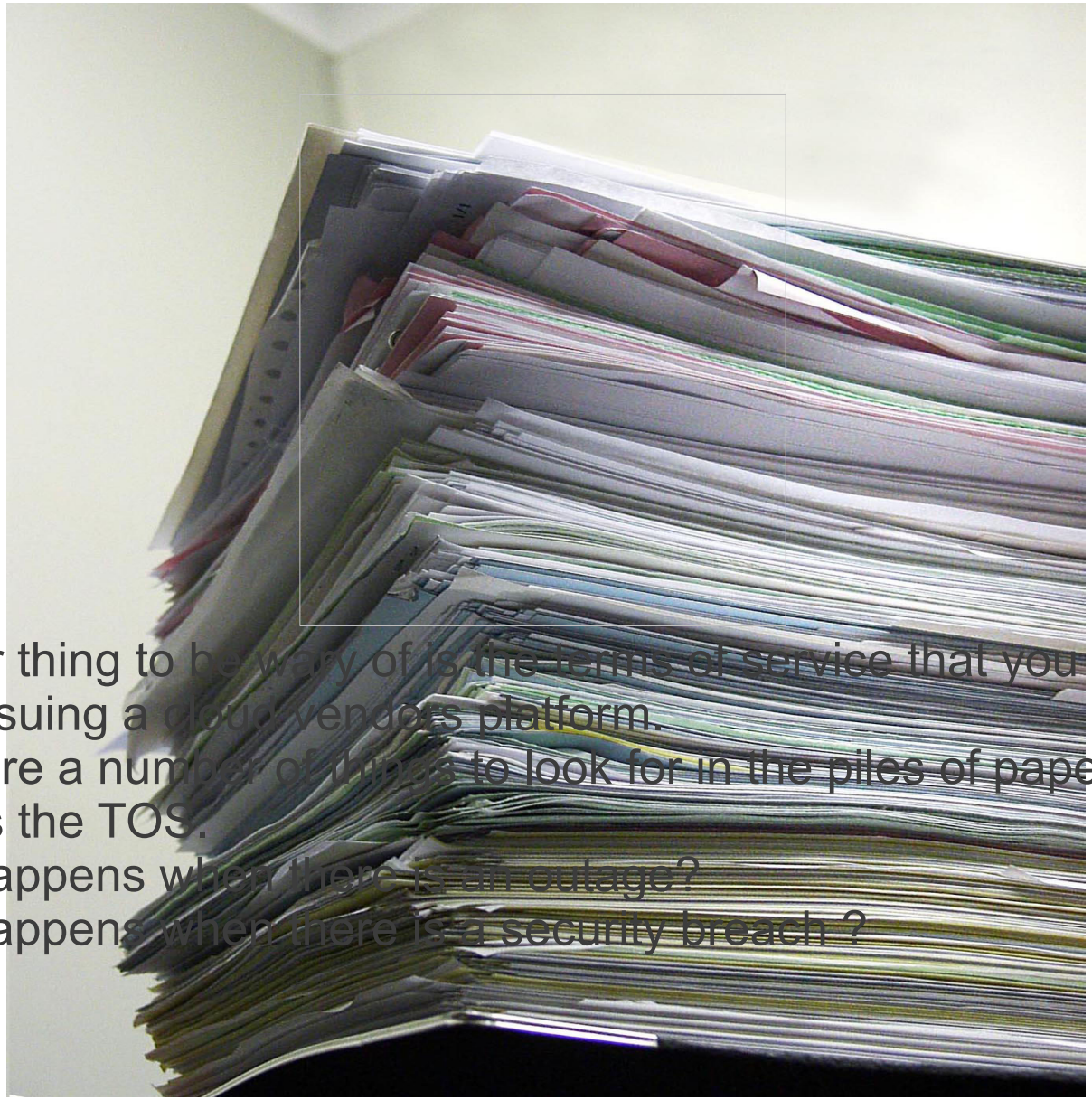
Image is from http://fashionablygeek.com/t-shirts/its-a-finger-trap/

Stallman and others believe that the biggest concern when dealing with the dark side of cloud is the potential lock in by a vendor.

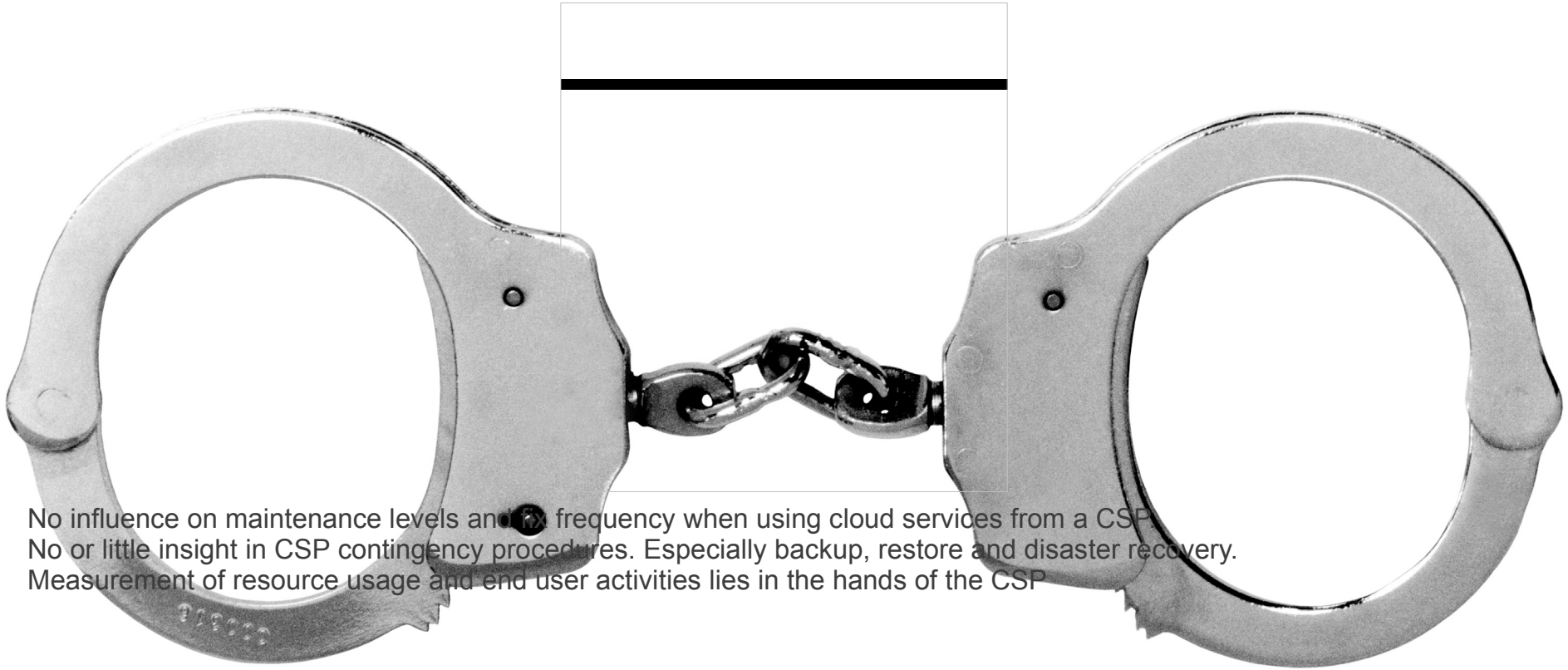
Regardless of the type of Cloud, SaaS, IaaS, of PaaS, your compute and data resources can be locked into the vendor environment.

If you look at migrating to say a HADOOP based cloud, you most likely have to recode most of your applications.

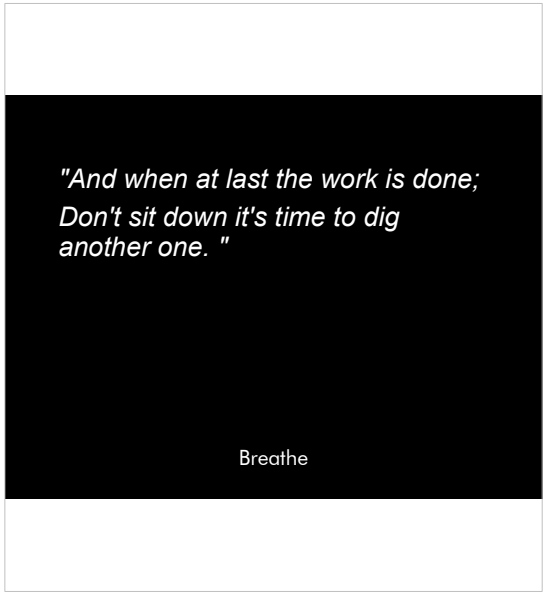
Google App engine doesn't provide a relational database. You must code to their NOSQL database. Can I get my data out of there?



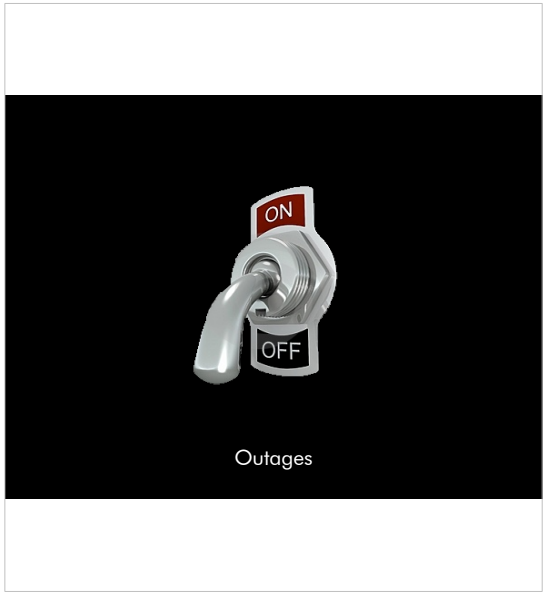
Another thing to be wary of is the terms of service that you agree to by suing a cloud vendors platform.
There are a number of things to look for in the piles of paperwork that is the TOS.
What happens when there is an outage?
What happens when there is a security breach?



No influence on maintenance levels and fix frequency when using cloud services from a CSP
No or little insight in CSP contingency procedures. Especially backup, restore and disaster recovery.
Measurement of resource usage and end user activities lies in the hands of the CSP




Even after you have migrated data and computational services into the cloud, you have to constantly be vigilant.




This is one of the biggest concerns. Having to provide a backup and disaster recover plain when you don't have full control can be very difficult.

http://www.infoworld.com/t/managed-services/popular-websites-crippled-hours-long-amazon-cloud-service-outage-657

These outages can take out a large portion of the net, includeing Reddit, Pintrest, instagram, netflix.

Amazon Web Services first reported at 1:40 a.m. PT that its Northern Virginia data center was experiencing connectivity issues and servers delays, prompted by "a networking event [that] triggered a large amount of re-mirroring of EBS volumes" on the EC2 side, according to the AWS Service Health Dashboard. "This re-mirroring created a shortage of capacity in one of the US-EAST-1 Availability Zones, which impacted new EBS volume creation as well as the pace with which we could re-mirror and recover affected EBS volumes." On the RDS side, Amazon reported connectivity and latency issues with database instances.

http://www.networkworld.com/news/2011/050211-vmware-foundry-outage.html

VMware's Cloud Foundry service suffered an outage when a power supply blew. Admins could not fix anything.

So after fixing it, they tried to put in a detection system, which caused another outage.

http://abcnews.go.com/Technology/twitter-users/story?id=16861958#.UB_q5LQYdhM

Twitter was down for almost 4 hours.

http://blog.twitter.com/2012/07/our-apologies-for-todays-outage.html

He apologies for an “infrastructure double whamy”

http://gmailblog.blogspot.com/2009/09/more-on-todays-gmail-issue.html

Basically a cascading outage issue, form the blog post

> However, as we now know, we had slightly underestimated the load which some recent changes (ironically, some designed to improve service availability) placed on the request routers — servers which direct web queries to the appropriate Gmail server for response. At about 12:30 pm Pacific a few of the request routers became overloaded and in effect told the rest of the system "stop sending us traffic, we're too slow!".

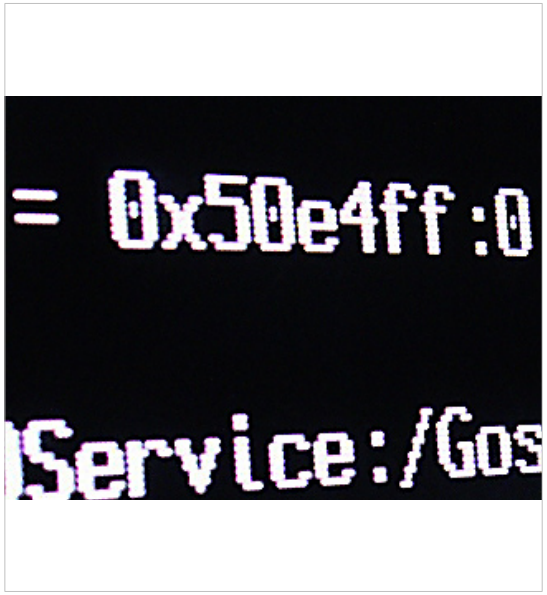
There has been, and will be, lots of different kinds of breaches.

http://www.dailyfinance.com/2012/06/07/linkedin-hacked-what-the-security-breach-means-for-you-and-the/

As an enterpriser social network cloud provider, these should have provided a much better security mechanism.

http://www.eweek.com/c/a/Security/Epsilon-Data-Breach-Highlights-Cloud-Computing-Security-Concerns-637161/

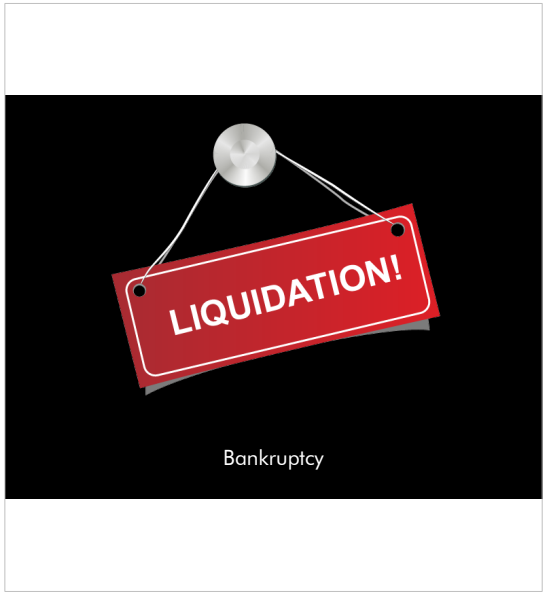
As email-marketing company Epsilon continues to deal with the fallout related to the revelation that some of its clients' customer data has been exposed to a third-party,




http://www.darkreading.com/cloud-security/167901092/security/vulnerabilities/231902718/cloud-services-credentials-easily-stol

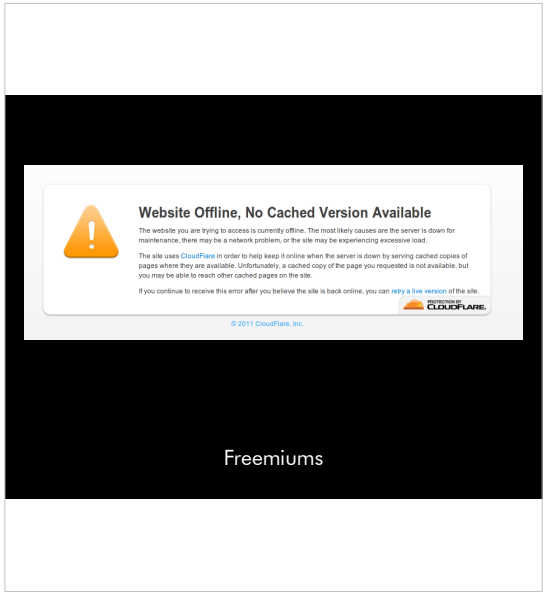
Security team finds cloud credentials through google code search

"Live for today, gone tomorrow"
On the Run




bankruptcy.ncbar.org/media/6267062/bkmay10.pdf
There are two types of bankruptcy.
Chapter 7 is when the shut down and liquidate every asset.
Chapter 11 is when they restructure and stay in business.

A couple of thoughts.
What happens to your compute and data assets that reside on the service providers infrastructure
If, say the liquidate assets in Chapter 7, can industrial espionage get access to your data ?



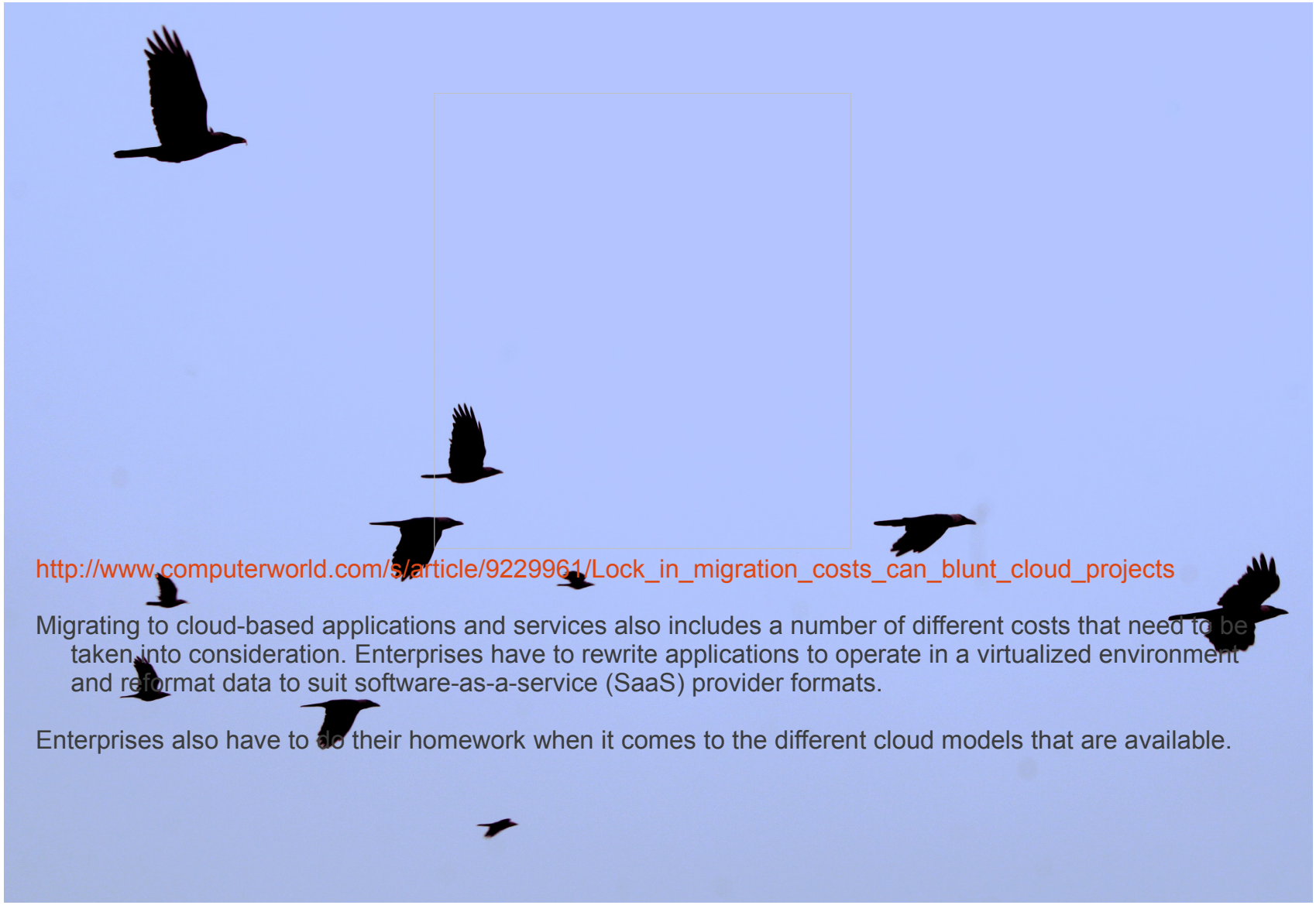

I was browsing something on the web and I hit this. Now , this company is reputable. But think about what you are paying for.
Think about what you are getting for your money.
In this case, there are cloud offering that give you a start for free, but what you really want they charge for.
How does that affect your data ?

*“Every year is getting shorter never seem to find the time.*

*Plans that either come to naught or half a page of scribbled lines”*

Time

Your competitors are already doing this. Can you turn a service around faster than your competitors who are based on cloud ?



http://www.computerworld.com/s/article/9229961/Lock_in_migration_costs_can_blunt_cloud_projects

Migrating to cloud-based applications and services also includes a number of different costs that need to be taken into consideration. Enterprises have to rewrite applications to operate in a virtualized environment and reformat data to suit software-as-a-service (SaaS) provider formats.

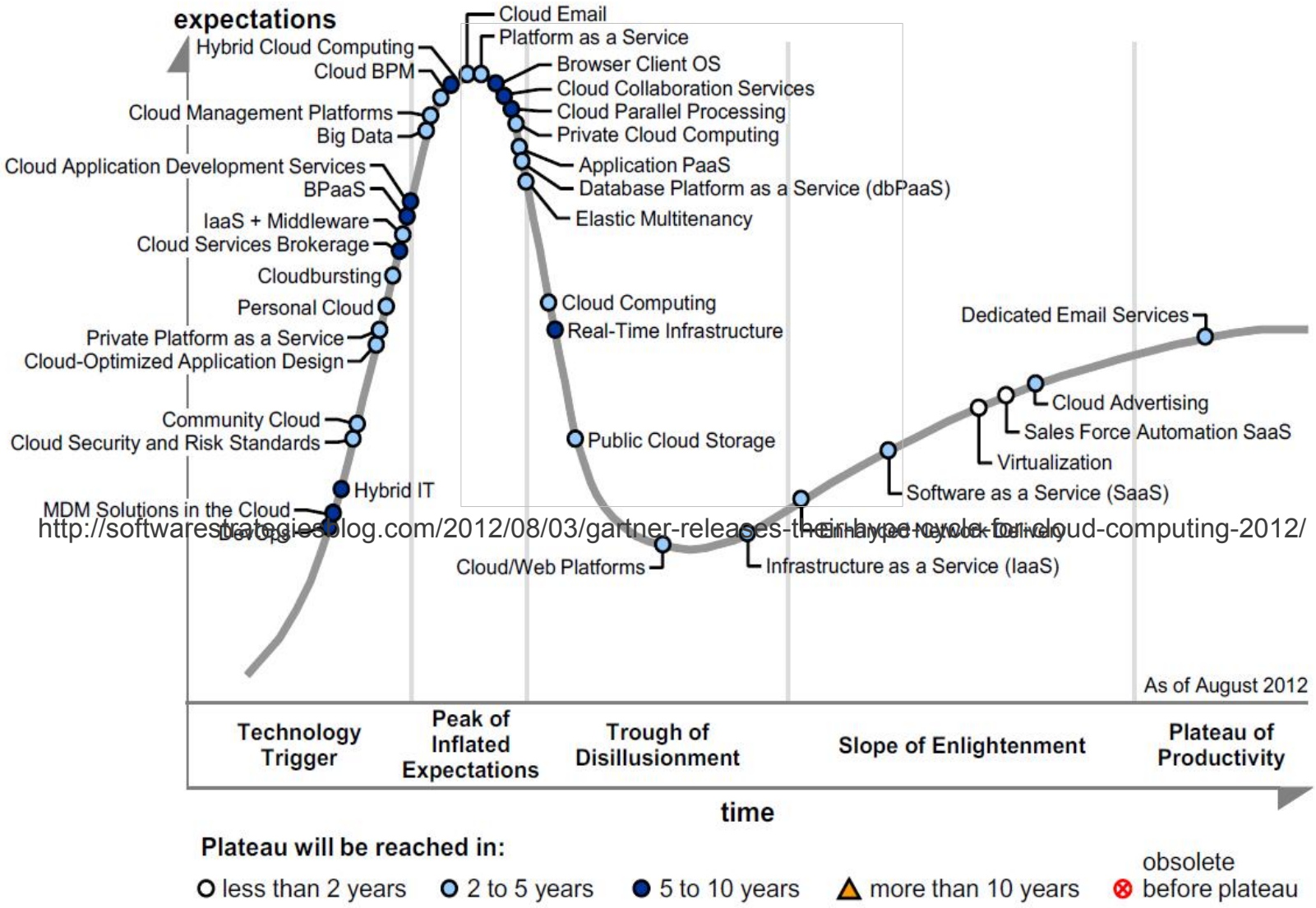
Enterprises also have to do their homework when it comes to the different cloud models that are available.

"There's no reason for it, you've gotta go sometime."
The Great Gig in the Sky

This song is about dying.
Think about your data's lifecycle.

http://publik.tuwien.ac.at/files/PubDat_202722.pdf
This paper is about drop box, pretty well know, cloud storage provider and how to attack it.

Figure 1. Hype Cycle for Cloud Computing, 2012




http://softwarestrategiesblog.com/2012/08/03/gartner-releases-their-hype-cycle-for-cloud-computing-2012/

Source: Gartner (August 2012)

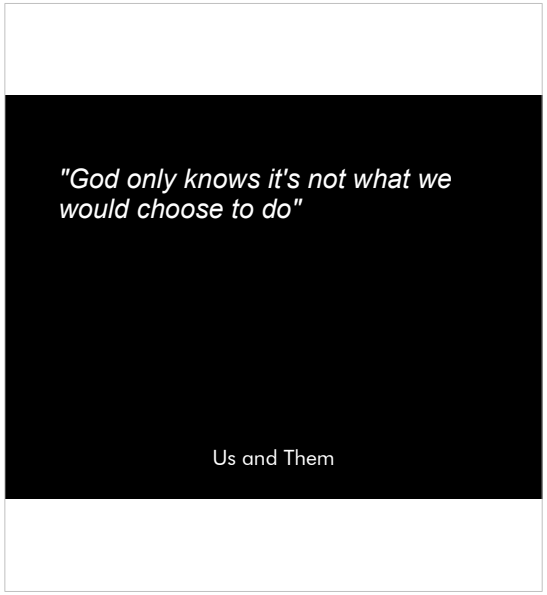
"I'm all right Jack keep your hands off of my stack"
Money

Potentially, there can be many hidden cost of running cloud computing.
Bandwidth and data storage can be very costly when migrating [illegible] data [illegible] to a cloud provider.

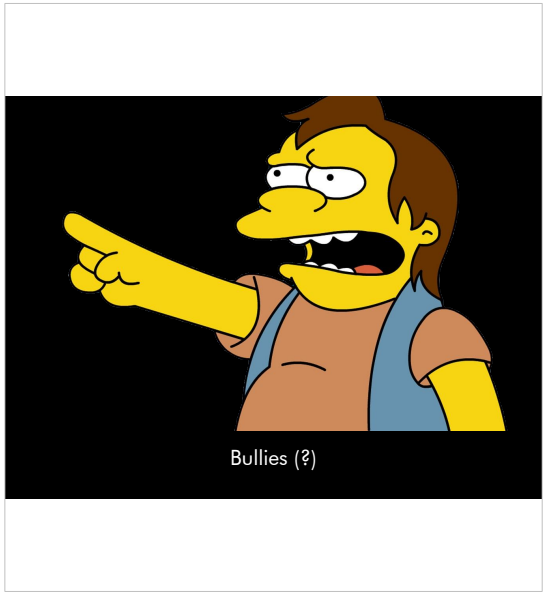
http://www.bloomberg.com/news/2011-05-15/sony-attack-shows-amazon-s-cloud-service-lures-hackers-at-pennies-an-hour.htm

http://www.inspirohost.com/cloud-computing-outages

BUSINESS-PLAN
IF WORK
ELSE
$

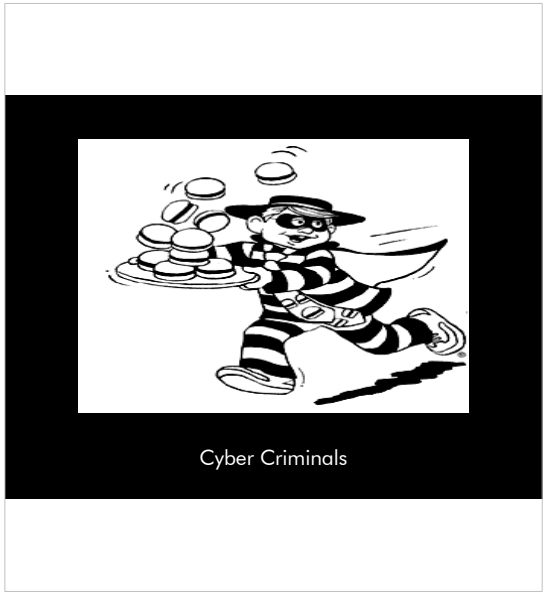



The combination of cloud and analytics promises that the future will be a better place. But what happens when people start to use these tools for nefarious purposes?



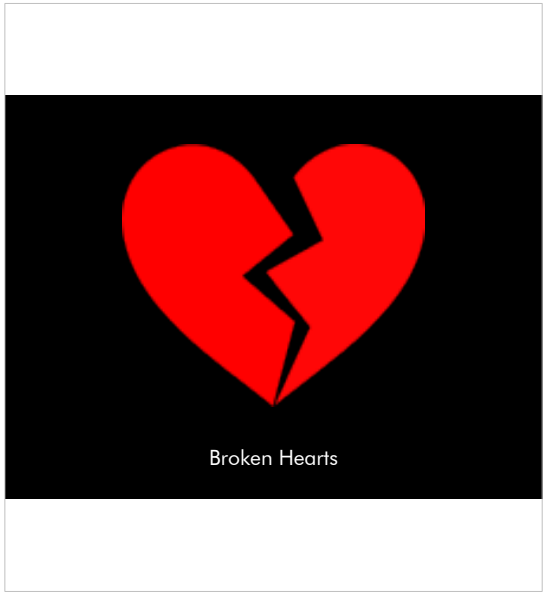

http://gigaom.com/cloud/big-data-as-a-tool-for-detecting-and-punishing-bullies/

A group of researchers has developed a machine learning model that can detect tweets relating to bullying, and even identify bullies, victims and witnesses. Next, it wants to add sentiment analysis to determine individuals' emotional states. But if they see trouble, how do they intervene?




http://www.zdnet.com/cloud-a-haven-for-cybercriminals-2062206492/

Breaking WEP keys



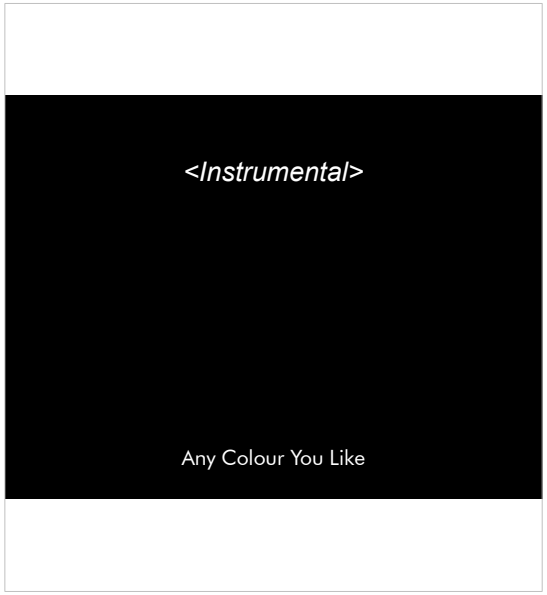

http://articles.nydailynews.com/2012-05-24/news/31842342_1_divorce-filings-facebook-divorce-online

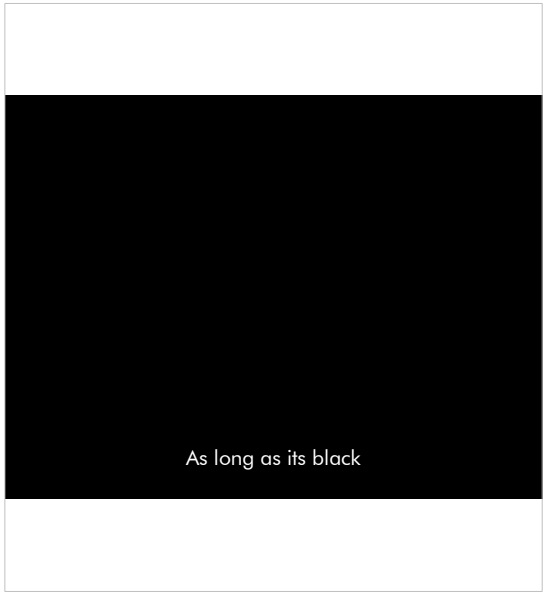
http://www.securityfocus.com/brief/1046

“The company found that infected machines would contact a server hosted in Amazon’s cloud to download updates and additional functionality to any infected computer systems. The malicious software would then steal data and banking login credentials, Methusela Cebrian Ferrer, senior researcher at CA, said in a blog post.”

http://arstechnica.com/tech-policy/2010/12/visa-under-attack-from-anonymous-payment-processors-as-wikileaks-war-escalates/

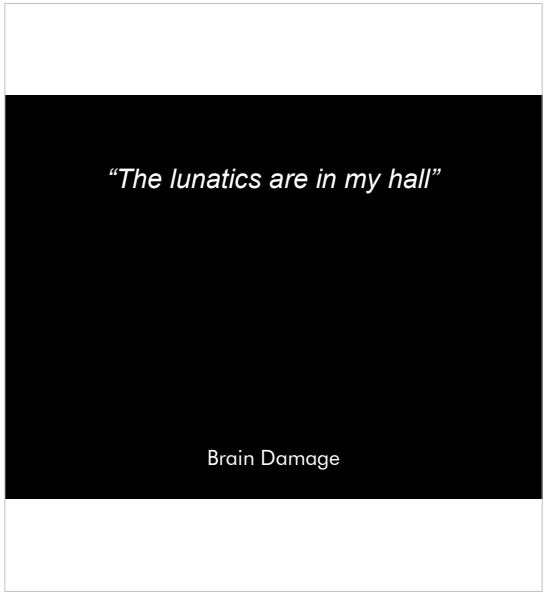
http://www.csmonitor.com/USA/2010/1209/Anonymous-How-dangerous-is-hacker-network-defending-WikiLeaks?cmpid=ema:nws:4666


<Instrumental>
Any Colour You Like




The title of this song is not clearly known. There is a rumor that it is linked to Henry Ford's apocryphal description of the Model T: "You can have it any color you like, as long as it's black."

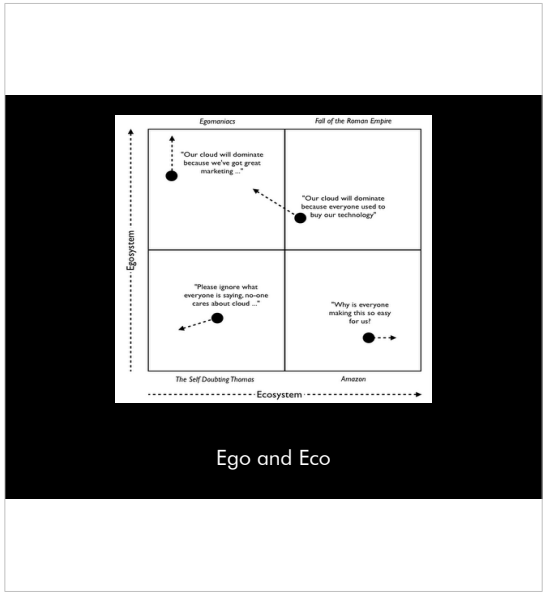
What are you giving up by using a cloud ? Choice.
When you think about how your data is used, you need to understand what the limited service catalog from the service provider really entails.




One of the big things coming is that cloud can be unnerving.
We have a lot of things to consider when using cloud to get from a to b.

Think about facebook or dropbox or linkedin users. Think about the kind of data they are willing to just give away.

The ease of use of using this cloud services are very compelling but the type and kinds or data they are providing can be quite scary

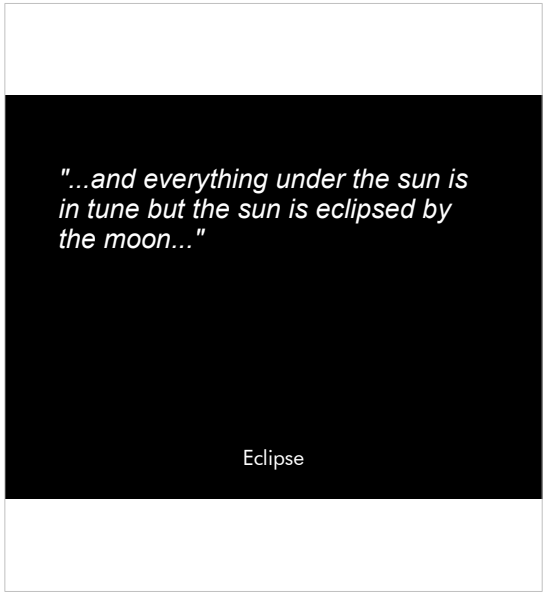


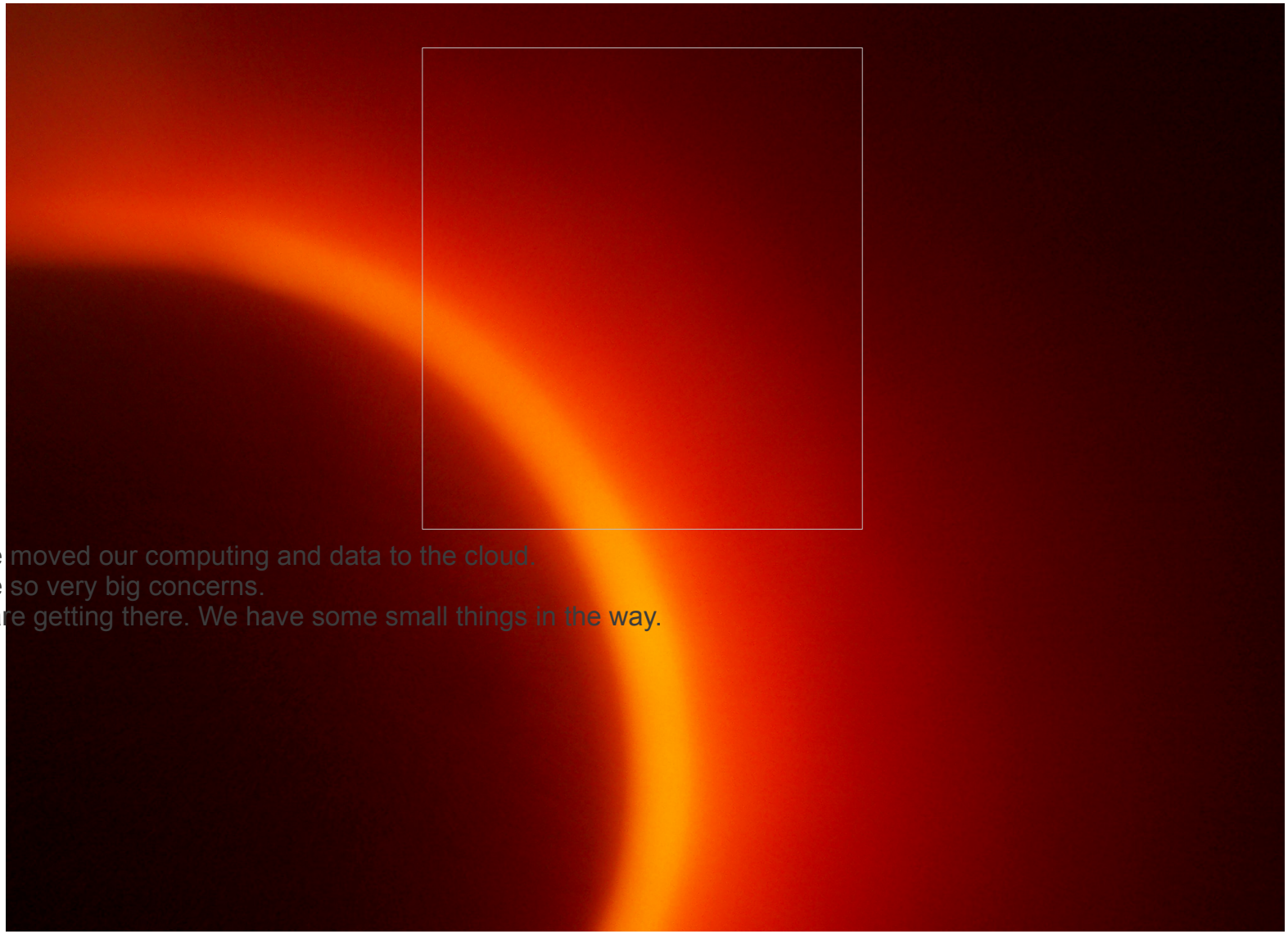

http://blog.gardeviance.org/2012/07/magic-quadrant-of-cloud.html

As a cloud architect I spend most of my time working against the egos that have built up in infrastructure silos.

http://www.guardian.co.uk/environment/2010/apr/30/cloud-computing-carbon-emissions

I deal with this all the time. When we make it easier and cheaper to use something, it gets abuses.
Clean water used to be the most cherished resource. Now, we take it for granted and we are wasting it.
Same with electricity.
Now we are doing the same thing with compute resources.


"...and everything under the sun is in tune but the sun is eclipsed by the moon..."
Eclipse



We have moved our computing and data to the cloud.
We have so very big concerns.
But we are getting there. We have some small things in the way.

Session 11994