



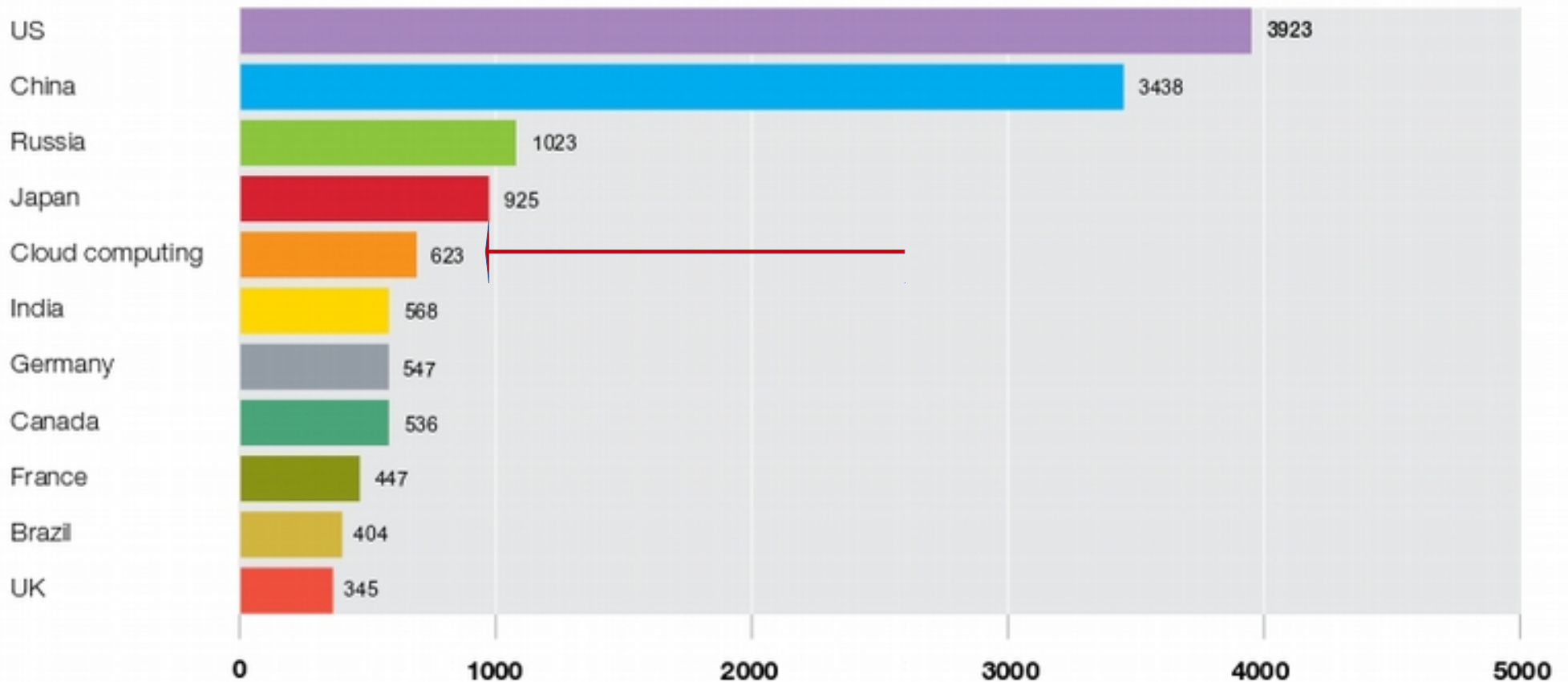
Komputasi Hijau? Apa itu?

- **Komputasi hijau** adalah kajian dan praktik penggunaan sumber daya komputer secara efisien. Sasaran primer program-program tersebut adalah pencakupan TBL (triple bottom line: manusia, planet, laba), suatu pengembangan spektrum nilai dan kriteria untuk pengukuran kesuksesan organisasi. Sasarannya antara lain adalah untuk mengurangi penggunaan bahan-bahan berbahaya, memaksimalkan efisiensi energi selama umur produk, dan meningkatkan daur ulang serta biodegradasi bagi produk gagal dan limbah pabrik.

- [wikipedia.org](https://www.wikipedia.org)








Penggunaan Listrik untuk Komputasi Awan

2007 electricity consumption. Billion kWh
















Index Energi Bersih (Greenpeace.org 2012)

Persentase semakin besar
Semakin banyak energi bersih yang
Ramah lingkungan digunakan

Company	Clean Energy Index	Coal	Nuclear				
	NA	NA					
	13.5%	33.9%	29.9%				
	15.3%	55.1%	27.8%	Microsoft	13.9%	39.3%	26%
DELL	56.3%	20.1%	6.4%	ORACLE	7.1%	48.7%	17.2%
facebook	36.4%	39.4%	13.2%		23.6%	31.6%	22.3%
Google	39.4%	28.7%	15.3%		4%	33.9%	31%
	19.4%	49.7%	14.1%	twitter 	21.3%	35.6%	12.8%
IBM	12.1%	49.5%	11.5%	YAHOO!	56.4%	20.3%	14.6%

.....waktu berjalan dan.....



	Clean Energy Index	Natural Gas	Coal	Nuclear	Energy Transparency	Renewable Energy Commitment & Siting Policy	Energy Efficiency & Mitigation	Renewable Energy Deployment & Advocacy
	24%				A	C	A	C
	23%	21%	27%	26%	F	C	D	D
	100%	0%	0	0	A	A	A	A
	10%	51%	29%	9%	B	D	B	C
	49%	10%	25%	14%	A	A	A	B
	46%	15%	21%	13%	B	B	B	A
	22%	26%	41%	11%	C	D	B	C
	24%	27%	30%	17%	B	B	B	C
	39%	19%	30%	10%	C	C	C	C
	17%	18%	50%	11%	D	F	D	D
	25%	21%	33%	21%	C	B	B	C
	23%	20%	25%	26%	A	B	C	C
	73%	6%	11%	8%	C	B	A	B

Tahun 2015

Riset
Greenpeace.org

Konsep 5 R Green Life Style



Mirip tetapi tidak sama benar ya????

Open Source = Four Freedoms

Use it: for anything, anywhere, forever

Study it: understand what you are using

Modify it: fix it, make it better

Share it: redistribute, sell, give back



Bagaimana Open Source Bisa Berperan?

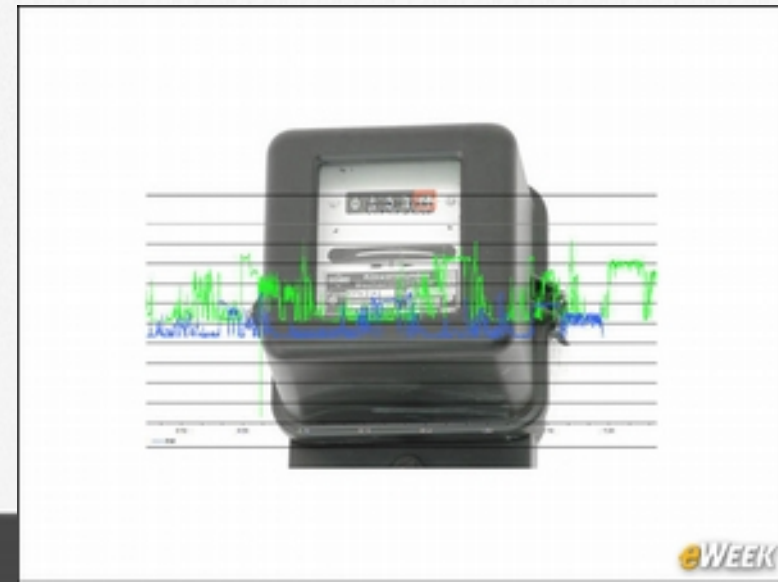
Faktor Model Pengembangan

- Model pengembangan kode sumber terbuka sangat mengandalkan prinsip berbagi sumber daya termasuk perangkat keras dan perangkat lunak
- Rencana proyek, kode sumber, pemindaian kesalahan (bug trackers) dan dokumentasi umumnya tersimpan dalam format digital secara online di “awan”.
- Kontributor biasanya bekerja dari mana saja dan tidak menambah emisi karbon karena tidak perlu melakukan perjalanan khusus



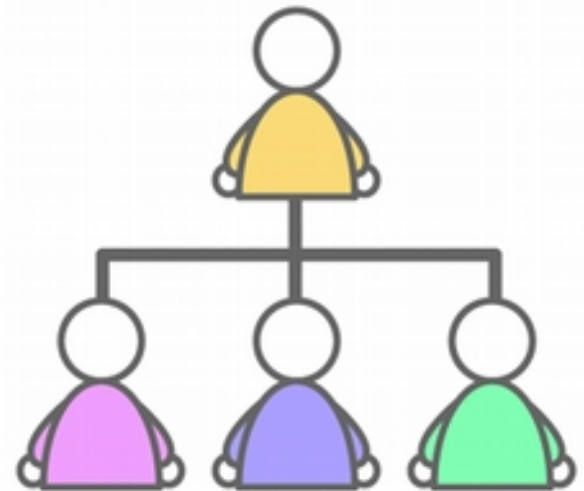
Konsumsi Energi Yang Lebih Rendah

- Pertimbangkan biaya energi satu perusahaan software, listrik/energi yang diperlukan komputer, lampu, a/c dan perawatan fasilitas pendukung lainnya.
- Perkiraan konservatif biaya ini berkisar 10 s/d 20% dari total biaya operasional perusahaan.



Biaya Tetap (“overheads”) Yang Lebih Rendah

- Biaya ini meliputi antara lain gaji manajemen dan staf pemasaran, penjualan, administrasi, bagian legal dan lain lain
- “Overheads” adalah faktor yang menghantui untung rugi dan produktifitas setiap usaha



Virtualisasi

- Virtualisasi membantu penggunaan sumber daya yang lebih optimal dengan membuka peluang manajemen skalabilitas yang lebih mudah
- Teknologi berbasis open source banyak berperan di bidang ini, termasuk dalam implementasi komputasi awan



Distribusi Secara Online

- Peranti lunak open source umumnya didistribusikan secara online
- Ini berarti energi dihemat karena tidak perlu duplikasi media CD, membuat kemasan promosi dan proses pendistribusian yang lain
- Pada umumnya software open source memiliki dokumentasi dalam bentuk elektronik (secara online) juga, sehingga bisa mengurangi penggunaan kertas dan material lainnya..



Infrastructure Services

Storage

- Amazon S3
- Amazon EBS
- CTERA Portal
- Mosso Cloud Files
- Nirvanix

Compute

- Amazon EC2
- Serve Path GoGrid
- Elastra
- Mosso Cloud Servers
- Joyent Accelerators
- AppNexus
- Flexiscale
- ElasticHosts
- Hosting.com CloudNine
- Terramark
- GridLayer
- ITRICITY
- LayeredTech

Services Management

- RightScale
- enStratus
- Scalr
- CohesiveFT
- Kaavo
- CloudStatus
- Ylastic
- Dynect
- CloudFoundry
- NewRelic
- Cloud42

Data

- 10Gen MongoDB
- Oracle Coherence
- Gemstone Gemfire
- Apache CouchDb
- Apache HBase
- Hypertable
- TerraCotta
- Tokyo Cabinet
- Cassandra
- memcached

Appliances

- PingIdentity
- Symplified
- rPath
- Vordel

Compute

- Globus Toolkit
- Xeround
- Beowulf
- Sun Grid Engine
- Hadoop
- OpenCloud
- Gigaspace
- DataSynapse
- Xeround

File Storage

- EMC Atmos
- ParaScale
- Zmanda
- CTERA

Cloud Management

- 3Tera App Logic
- OpenNebula
- Open.ControlTier
- Enomaly Enomalism
- Altor Networks
- VMware vSphere
- OnPathTech
- CohesiveFT VPN Cubed
- Hyperic
- Eucalyptus
- Reductive Lbs Puppet
- OpenQRM
- Appistry

CLOUD TAXONOMY

Platform Services

General Purpose

- Force.com
- Etelos
- LongJump
- AppJet
- Rollbase
- Bungee Labs Connect
- Google App Engine
- Engine Yard
- Caspio
- Qrimp
- MS Azure Services Platform
- Mosso Cloud Sites

Business Intelligence

- Aster DB
- Quantivo
- Cloud9 Analytics
- Blink Logic
- K2 Analytics
- LogiXML
- Oco
- Panorama
- PivotLink
- Sterna
- ColdLight Neuron
- Infobright
- Vertica

Integration

- Amazon SQS
- MuleSource Mule OnDemand
- Boomi
- SnapLogic
- OpSource Connect
- Cast Iron
- Microsoft BizTalk Services
- gnip
- SnapLogic SaaS Solution Packs
- Applan Anywhere
- HubSpan
- Informatica On-Demand

Development & Testing

- Keynote Systems
- Mercury
- SOASTA
- SkyTap
- Aptana
- LoadStorm
- Collabnet
- Dynamsoft

Database

- Google BigTable
- Amazon SimpleDB
- FathomDB
- Microsoft SDS

Software Services

Billing

- Aria Systems
- eVapt
- OpSource
- Redi2
- Zuora

Financials

- Concur
- Xero
- Workday
- Beam4d

Legal

- DirectLaw
- Advologix
- Fios
- Sertifi

Sales

- Xactly
- LucidEra
- StreetSmarts
- Success Metrics

Desktop Productivity

- Zoho
- IBM Lotus Live
- Google Apps
- Desktoptwo
- Parallels
- ClusterSeven

Human Resources

- Taleo
- Workday
- ICIMS

Content Management

- Clickability
- SpringCM
- CrownPoint

Backup & Recovery

- JungleDisk
- Mozy
- Zmanda Cloud Backup
- OpenRSM
- Syncplicity

CRM

- NetSuite
- Parature
- Responsys
- Rightnow
- Salesforce.com
- LiveOps
- MSDynamics
- Oracle On Demand

Document Management

- NetDocuments
- Questys
- DocLanding
- Aconex
- Xythos
- Knowledge TreeLive
- SpringCM

Collaboration

- Box.net
- DropBox

Social Networks

- Ning
- Zemby
- Amitive

Used for a single organization;
can be internally or externally
hosted

PRIVATE

Shared by several
organizations;
typically externally
hosted, but may be
can be internally
hosted by one of
the organizations

COMMUNITY

HYBRID

Composition of two or more
clouds (private, community or
public) that remain unique
entities but are bound together,
offering the benefits of multiple
deployment models; is internally
& externally hosted

PUBLIC

Provisioned for open
use for the public by a
particular organization
who also hosts the
service

Customer Scenarios



Traditional



**Highly Virtualized
Datacenter**



Private Cloud



Public Cloud

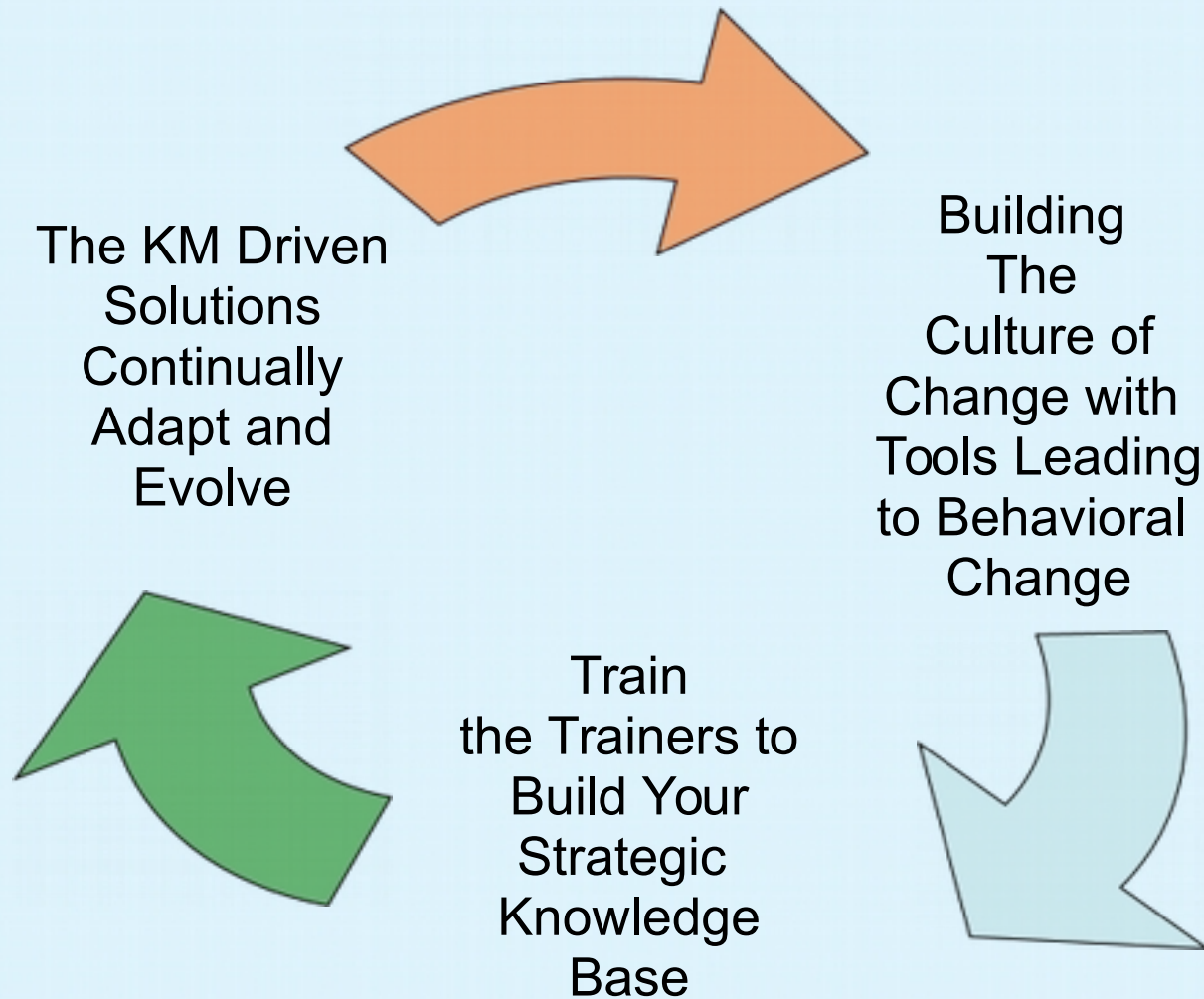
100% On Premises

Hybrid

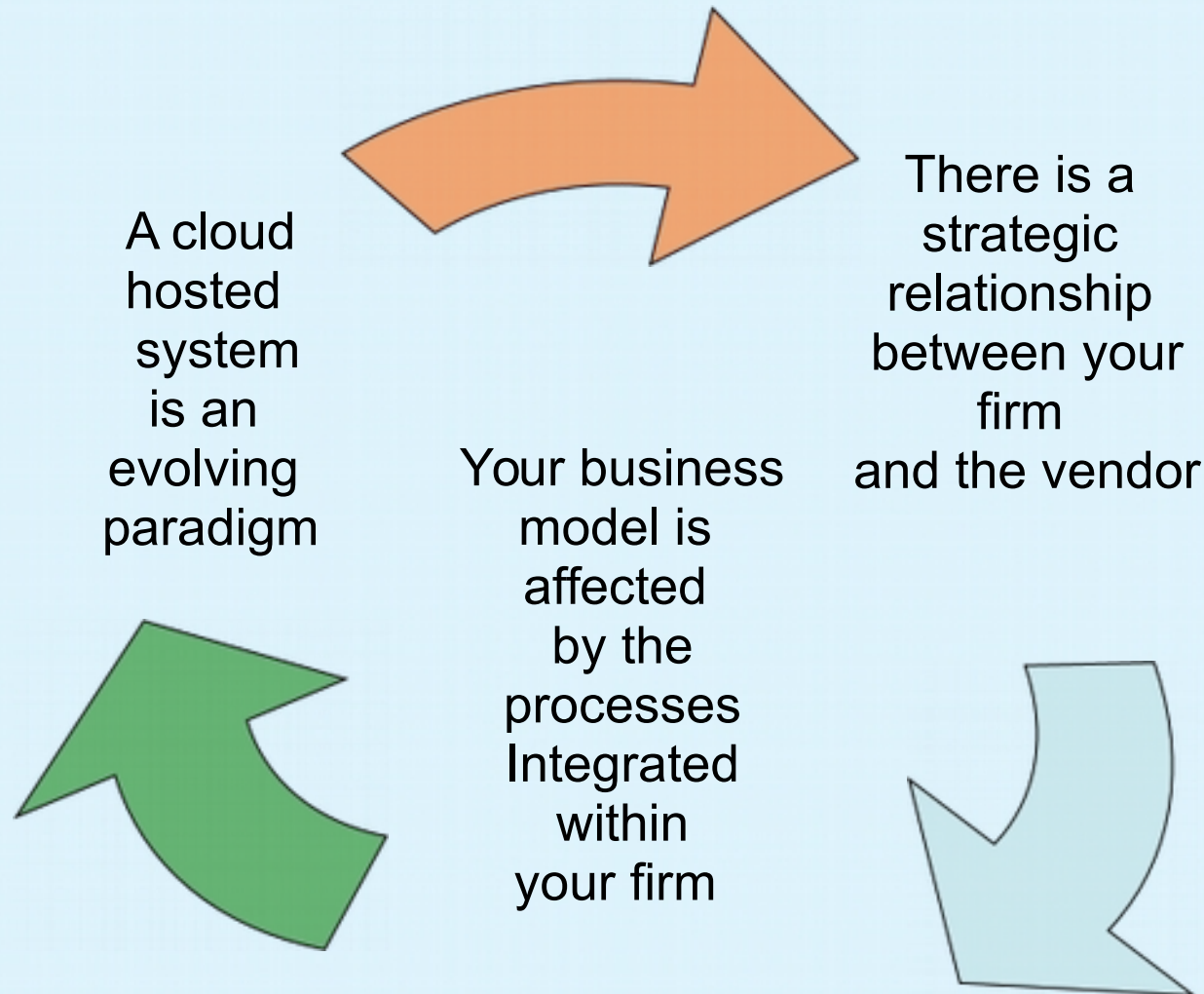
100% Cloud



A Knowledge Management Driven Solution



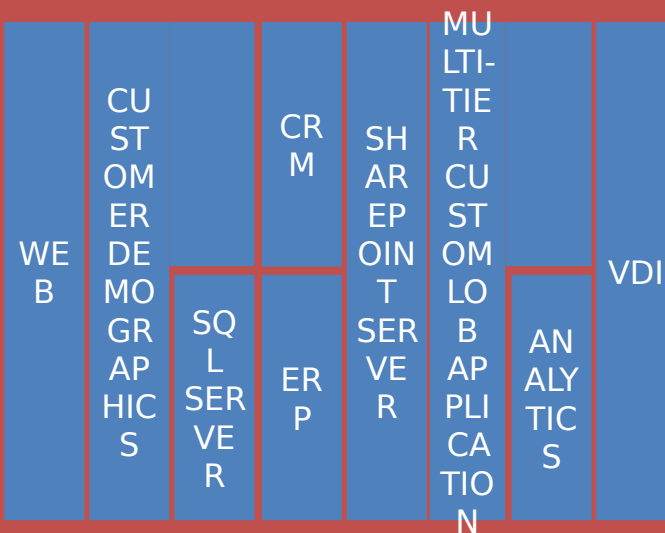
The Evolving Paradigm



Private Cloud Defined

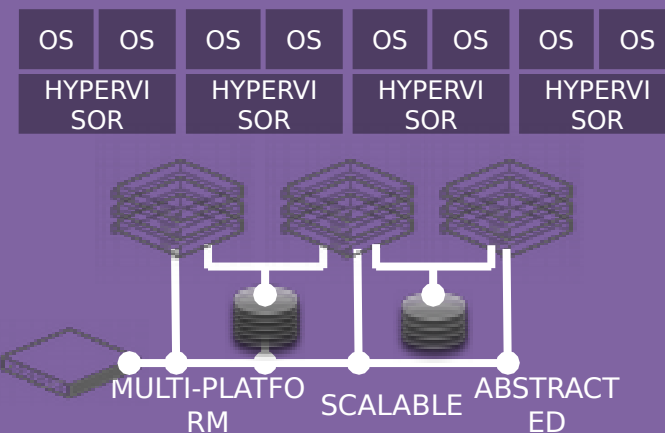
NEW: SQL Enterprise = Cores

APPLICATION MANAGEMENT



SERVICE DELIVERY AND AUTOMATION

INFRASTRUCTURE MANAGEMENT



Windows Server & System Center = Processors

Evolution of Loeb's “Private Cloud”

- **Risk**
 - Business Continuity / Disaster Recovery Objectives
 - Geographic Vulnerabilities
- **Scalability Challenges**
 - Increasing: Headcount, Offices, Application Platforms
 - Sites/Local Datacenters
- **Virtualization**
 - Early adoption of the Technology
 - Maturity and Confidence in the Technology



Evolution of Loeb's “Private Cloud”

Loeb's Concerns with moving to Cloud Infrastructure

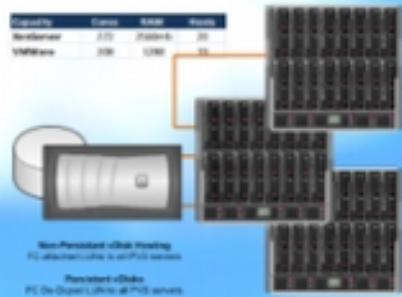
- Migration of Legacy/Traditional Platforms and Services
- Latency (Distance/Performance)
- Costs
- Connectivity

Evolution of Loeb's “Private Cloud”

Building Blocks of Loeb's Private Cloud

- Virtualization (HyperVisor)
- Storage
- Connectivity
- Security





Windows7 | XenDesktop Client VM

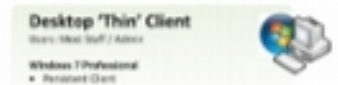


SSL/RSA
Remote Access

IPSec
WAN Failover

Network

riverbed
WAN Accelerators



Physical User/Client



Clouds: Stratus, Cumulus or Visio Stencil?

Cloud Infrastructure

- Private Clouds (Internal)
 - Provider Datacenter (Rackspace, Sungard, Thomson)
 - Off Premise Equipment
- Public Clouds | Software as a Service (SaaS)
 - Google Apps, Salesforce, Office365
- Hybrid Clouds | Infrastructure/Platform as a Service (IaaS/PaaS)
 - Virtualized Infrastructure
 - Amazon AWS, Rackspace, OpenStack
 - Platform Development
 - Amazon EC2, Salesforce, Microsoft Azure

Private, Public & Hybrid Challenges

- Hybrid Model
 - - Private for the Infrastructure Interim Step
 - - Public for KM and Future Hosted Solutions



Security, Risk, Privacy & The Innovation Tight Rope

- Homeland Security Memo
 - Law firms breached for "sensitive information"
- Hosted evolving developing resources
 - A secure, competitive platform



Security, Risk, Privacy

Risk

- Connectivity
 - Redundancy
 - Carrier, Route and Transport Diversity
- Cloud Outages
- Dark Clouds?

Privacy

- Data Exposure / Loss
- Control and Ownership

Security, Risk, Privacy

Security

- Surface Area
- Security Policies
- Multi-Factor Authentication
- Securing the Desktop/Client

Access Anywhere

We live in a Connected World

- Internet Usage in the US:
 - 1990: 0.8% of Population
 - 2009: 78.1%
- From Luxury to Necessity

Accessing the Cloud

- Browsers, Thin/Cloud Clients, iPads, Smartphones
- Citrix (WinFrame to XenApp)
 - It's not enough
 - Common Issues

Access Anywhere

The Era of VDI

- Universal Virtual Desktop
- Consistent Experience Everywhere
- User Customizations
- Profile Management

Access Anywhere

Smaller Firms

- GotoMyPC
 - Agent on Users Desktop PC
 - Accessible Anywhere

Larger Firms

- XenDesktop
 - Enterprise Ready
 - Scalable Provisioning
 - AppSense Environment Manager
 - Leveraging XenApp Hosted Applications

Access it Anywhere

- Single Sign on Solutions
 - Consumer solutions driving enterprise level adaptation
- What does this mean for the industry and how can legal and our clients benefit?



Third Party Integration

- Challenges in competitive Intelligence Solutions
 - Merging solutions through Google Docs & Sites
- Availability through Apps Marketplace
- How will Large Players and Emerging Vendors Merge?



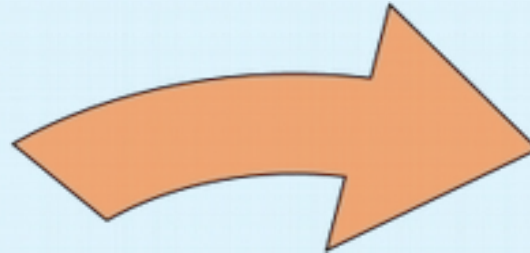
Integration with the Cloud

Third Party Applications and Services

- Authentication
 - Single Sign-on
- Application Integration
 - Microsoft Office
 - DMS / Document Authoring
 - Voicemail / Faxing
 - Larger Firms = Third-Party Integration Footprint
 - Google Apps, Office365 no longer feasible
 - Size can dictate the Cloud Computing solution
 - No one-stop solution

Social Media Aspects

They meet
with Search &
Ad Revenue



Google
Microsoft
Facebook



How is their
competition
driving
change
within the
industry?



Social Media Integration

- Internal - 'Client' Focused Social Media Environment
 - Integrate through Areas of Practice, Case Mgmt, Info Mgmt
- Blogger/Youtube now available for Enterprise Deployment
 - The decentralized model
- Streamlined processes in Knowledge Sharing/Communication
 - Rethinking how we drive business



The next step for Loeb

- **A different approach in our China Cloud environment**
- **Integrating Cloud ‘Services’**
Work Anywhere Initiative
- XenDesktop, XenApp, Edgesight, AppSense
- Diverse Platform Support
 - iPads, Macs, Smartphones, Chrome Laptops

Static Steps Stagnate

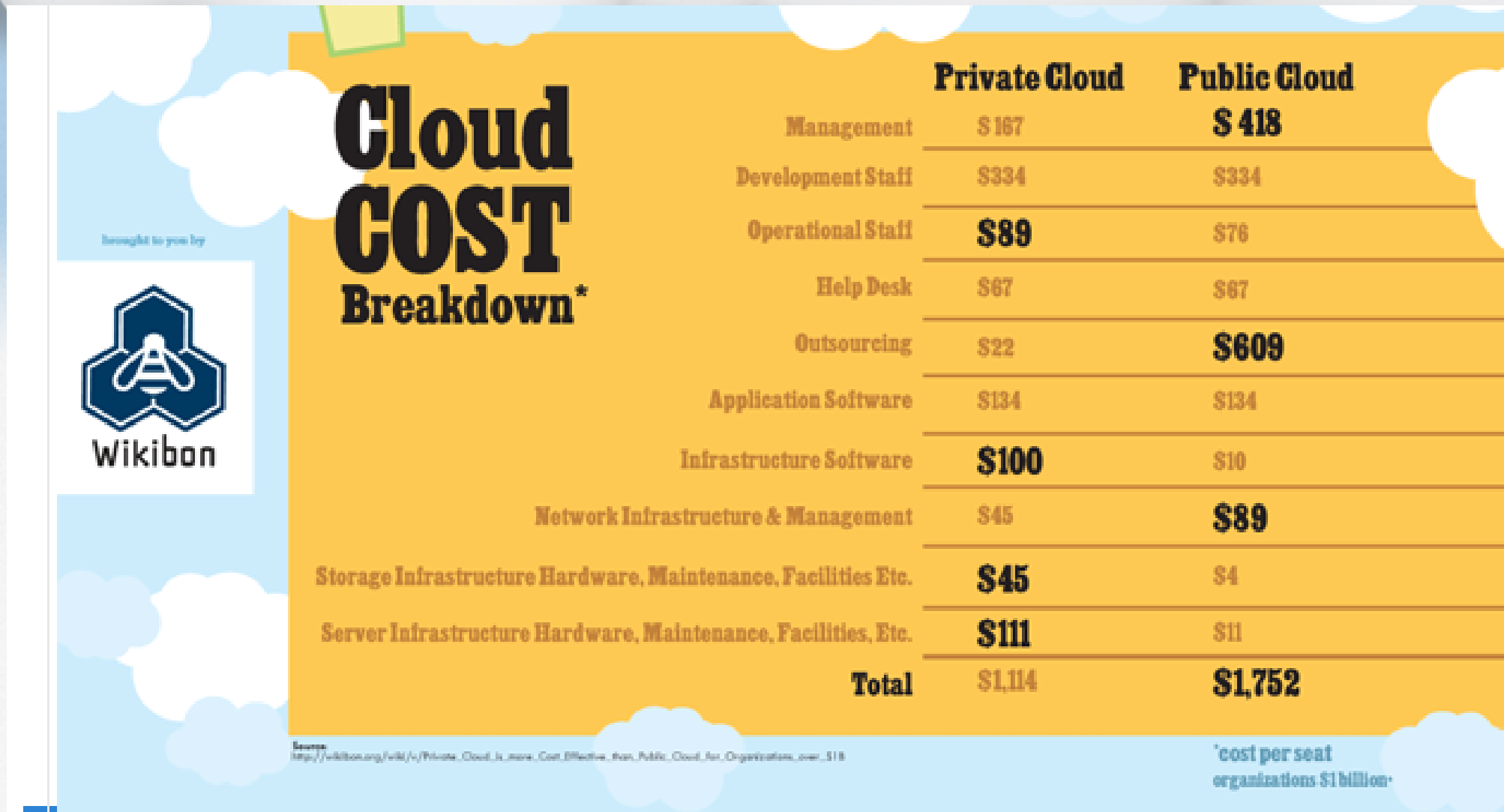
- Continually Plan and Re-adapt
 - Project Management and Document Automation
 - Alternative Staffing, Outsourcing, and AFA's
 - The shifting landscape in Video and Communications
 - Evolving platforms - Info Mgmt, Tech Ops, Apps, Org Mgmt
 - John Alber's Law 2020

Lanjutan...

Keuntungan: Menghemat bandwidth internet ketika layanan itu hanya diakses dari jaringan internal. Proses bisnis tidak tergantung dengan koneksi internet, akan tetapi tetap saja tergantung dengan koneksi jaringan lokal (intranet).

Kerugian: Investasi besar, karena kita sendiri yang harus menyiapkan infrastrukturnya. Butuh tenaga kerja untuk merawat dan menjamin layanan berjalan dengan baik.

Private Cloud vs. Public Cloud



<http://wikibon.org/blog/private-cloud-computing/>

Future Moves



Public Cloud



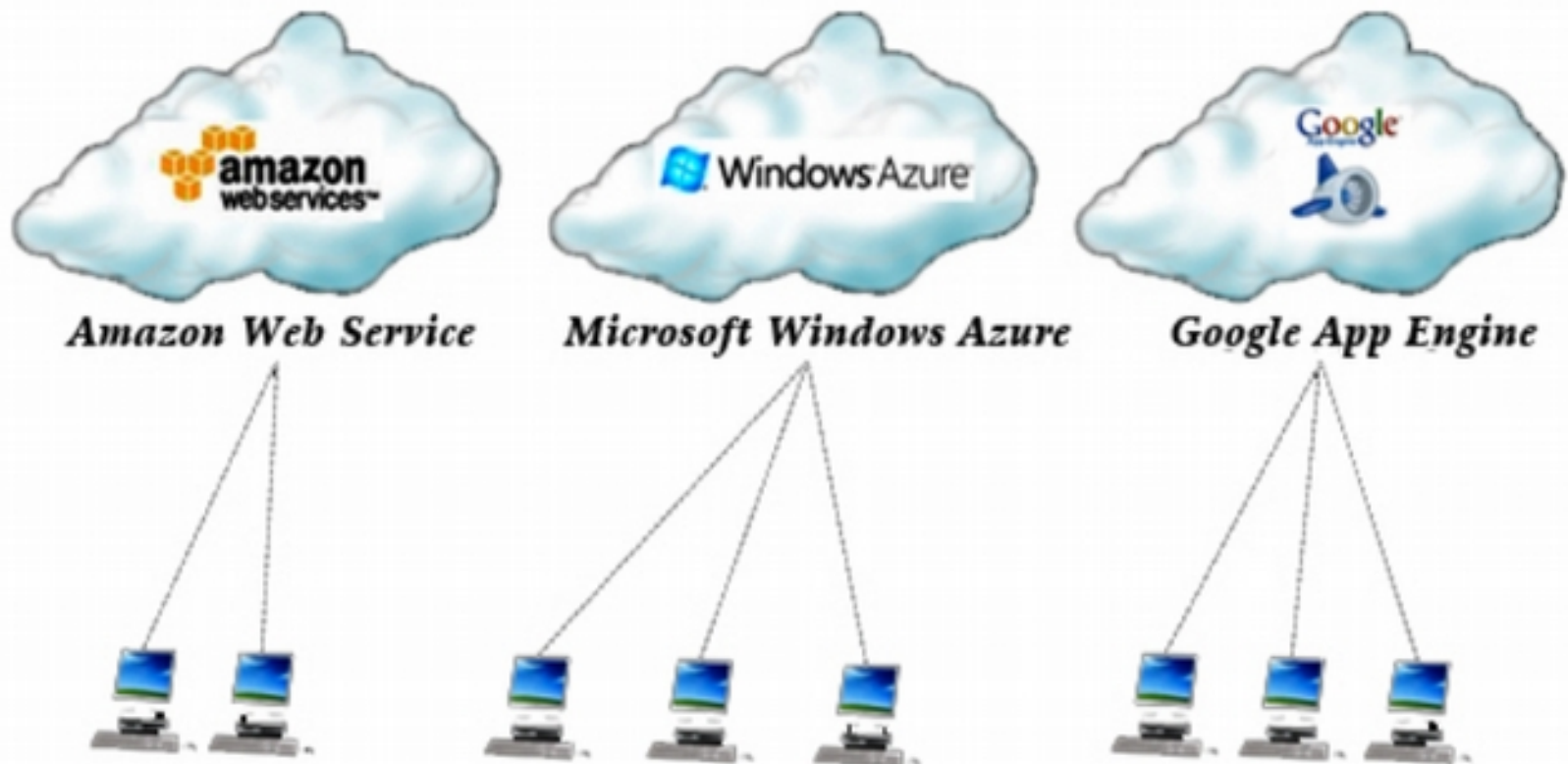
Wireless network
Disconnected - you



Public Cloud

- Cloud Public atau cloud eksternal mendeskripsikan komputasi cloud pada arti tendensi tradisional, yang mana sumber daya dengan ketentuan dinamis pada suatu fine-grained (perbaikan), basis pelayanan sendiri lewat Internet, melalui aplikasi web / jasa web, dari satu lokasi penyedia off-site oleh pihak ketiga yang berbagi sumber daya dan daftar kegunaan pada suatu fine-grained utility computing.

Public Cloud



Gambar 6. Public Cloud



Apa arti Cloud Computing bagi Service Provider ?



- Cepat menyediakan layanan
- Mengurangi skala server
- Meningkatkan tingkat utilisasi resources
- Memperbaiki efisiensi pengelolaan
- Biaya pemeliharaan lebih rendah
- Lokasi infrastruktur di area biaya gedung dan listrik yang rendah
- Memberikan 'business continuity service'
- Meningkatkan efisiensi manajemen operasional
- Meningkatkan 'service level'
- Arsitektur yang kompleks
- Mengubah model bisnis dan tingkat kepercayaan

The Enterprise Agreement Supports *Your* Cloud

Deployment Choice

Deploy software
On-Premises ,
Private and
Public cloud

Flexibility to Add or Adjust Products and Services

Match workloads
of different types
of users when
needed

Cloud Ready When You Are - Transition When it Make Sense

License software
and cloud
services
all in one
agreement

Value

Most cost
effective way to
purchase and
manage licenses

Move Between On-Premises and Cloud

Responsive to
changes in
business
requirements or
expectations

Streamlined Agreement Structure

Reduces effort to
add
to or modify your
EA and
Enrollments

DO YOU USE THE CLOUD?

