Building Many Bridges to the Cloud

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Director, R&D, Cloud Applications and Services, VMware
My Background

M.S. in EE from Stanford in 1996

Worked at a number of large companies and startups in the valley

Managed Yahoo! Mail backend engineering team

Helped set up EMC China R&D Center in Shanghai and Beijing

Joined VMware in 2009

Currently leading several projects in Cloud Application and Services BU

Professional areas of interest

• Large-scale, distributed storage systems
• Cloud-based software for SMBs
Today’s Opening Comments

Why does Cloud matter?

Cloud in China
For consumers and SMBs, at the most basic level…

The “Cloud” is simply the entire Internet
There are many things in the Cloud...

Cloud Computing

Cloud Storage

Cloud Applications
Characteristics of Cloud

Use pooled resources

Own or rent

Separate end user interface from service backend

Choose not to own hardware and software

Utility computing

Pay upfront or pay as you go
Cloud is not about *where*, but *how* computing is done
3 Layers of Cloud Computing

- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)
Benefits of Cloud

Lower cost

Improve efficiency

Increase economy of scale

Allow specialization and innovation

Open a new era with exciting opportunities

Provide access to technologies for the less privileged
Challenges of Cloud

Privacy

Security

Open vs. proprietary

Business model

Individual freedom vs. government control

(Un)equal access to technology
Cloud in China

The government

The telcos

The consumers

The businesses

The new generation of net companies
China: Numbers and Stats

384 million internet users (2009)

780 million mobile phone users (2010)

Digital divide between urban and rural areas

- Penetration rate: 5.1% in rural vs. 21.6% in urban (2007)
- # of computers per 100 households: 2.7 vs. 47.2 (2006)
- Usage pattern:
  - Similar level of usage of online entertainment by rural vs. urban users
  - Less use of search engine and online news by rural users
  - Much less use of online purchasing, banking, stock trading by rural users

Highly fragmented retail, payment and logistics market
Case Study: Alibaba

Based in Hangzhou (120 miles south of Shanghai)

Founded by Jack Ma in 1999

Owns and operates a number of high profile Internet businesses:

• Alibaba.com – online B2B marketplace (market cap ~USD $10B in April 2010)
• Taobao – a consumer-focused e-commerce business
• Alipay – an online payment service
• Alimama – an online advertisement exchange service
• Ali Cloud – internal- and external-facing cloud platform
• Yahoo! China – online classified listings and community-based groups

In 2005, Yahoo! Inc. purchased a 39% stake for US$1 billion
Recap: Opening Comments

Why does Cloud matter?

Cloud in China
Thank You