



소프트웨어 인 라이프
<http://www.softwareinlife.com>

Cloud Computing

대표이사 장선진
@jangsunjin

- Mobile Phone: (+82) 010-4585-1770
- E-Mail: jangsunjin@softwareinlife.com



Paradigm shift ?



[http://en.wikipedia.org/wiki/John_McCarthy_\(computer_scientist\)](http://en.wikipedia.org/wiki/John_McCarthy_(computer_scientist))

- If computers of the kind I have advocated become the computers of the future, then **computing may someday be organized as a public utility** just as the telephone system is a public utility...

The computer utility could become the basis of a new and important industry.

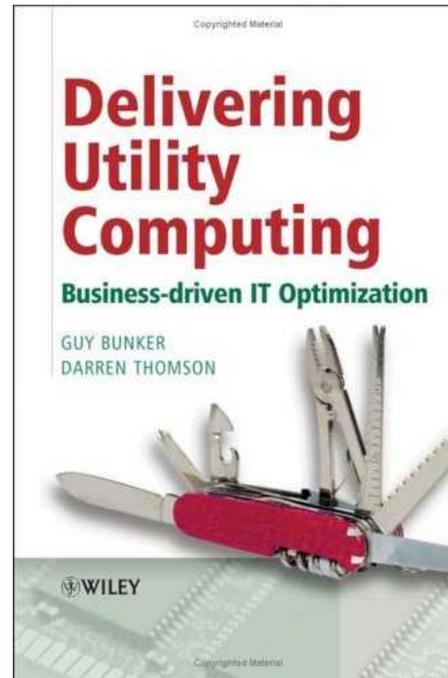
John McCarthy, speaking at the MIT Centennial in 1961

John McCarthy was responsible for the coining of the term "Artificial Intelligence" in his 1955 proposal for the 1956 Dartmouth Conference and is the inventor of the Lisp programming language.



소프트웨어 인 라이프

Utility Computing



- Utility Computing is the **packaging of computing resources**, such as computation, storage and services, as a metered service similar to a traditional public utility (such as electricity, water, natural gas, or telephone network).

http://en.wikipedia.org/wiki/Utility_computing



소프트웨어 인 라이프

Service



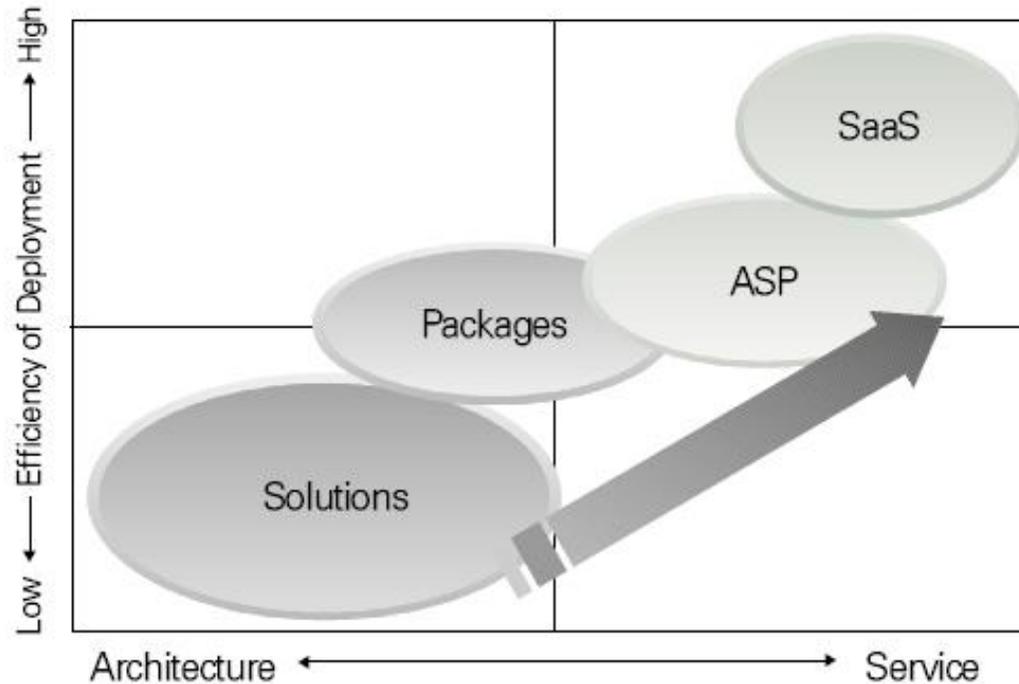
- Is software a product or a service?
 - So from the legal perspective software is really a product. I mean, a service. Sorry for this lapse.

[http://en.wikipedia.org/wiki/Service_\(economics\)](http://en.wikipedia.org/wiki/Service_(economics))
<http://se.ethz.ch/~meyer/publications/softdev/product-service.pdf>



소프트웨어 인 라이프

SaaS



- **Software as a service** is software that is deployed over the internet and/or is deployed to run behind a firewall on a local area network or personal computer.



SaaS, PaaS, IaaS

Managed by Vendor

Infrastructure (as a Service)



Platform (as a Service)



Software (as a Service)



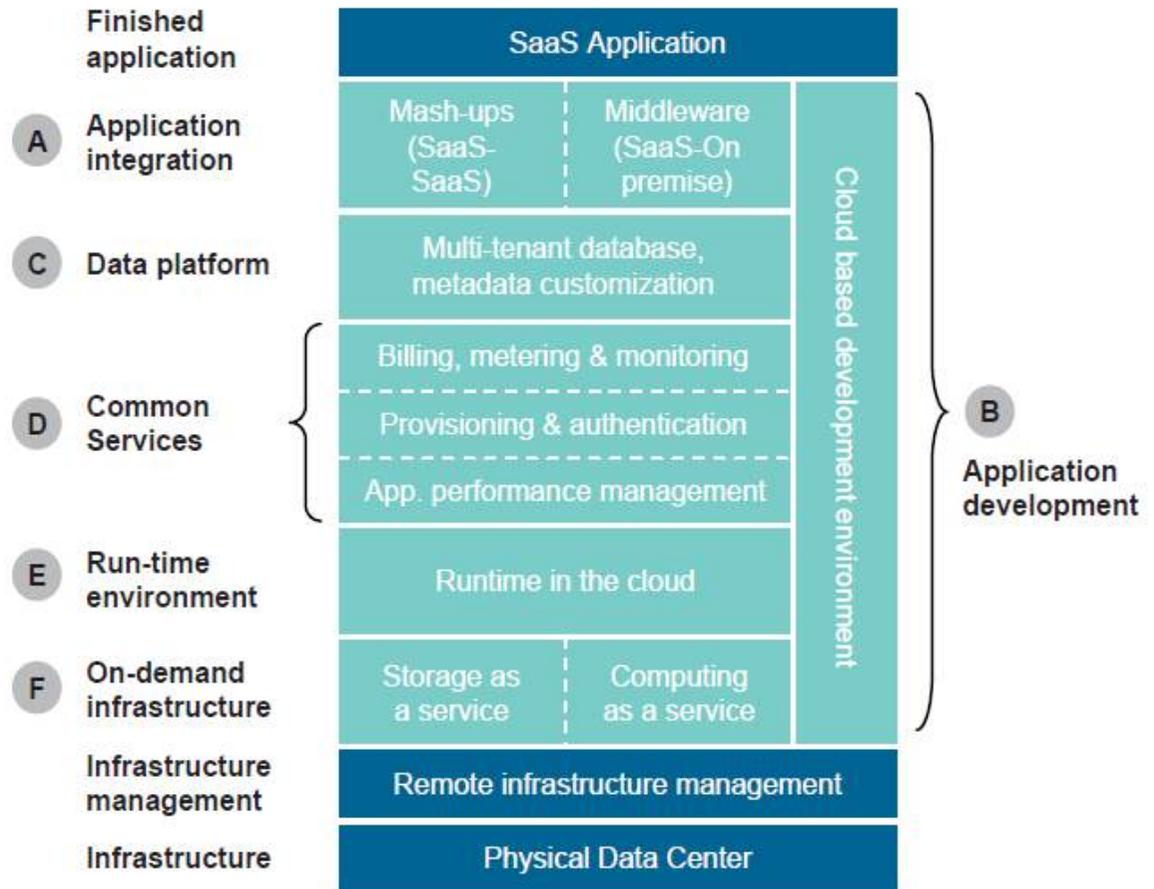
SaaS Platform Structure

What is a software platform?

A software platform is a set of products, services, tools and packages that help users develop and deliver their applications effectively

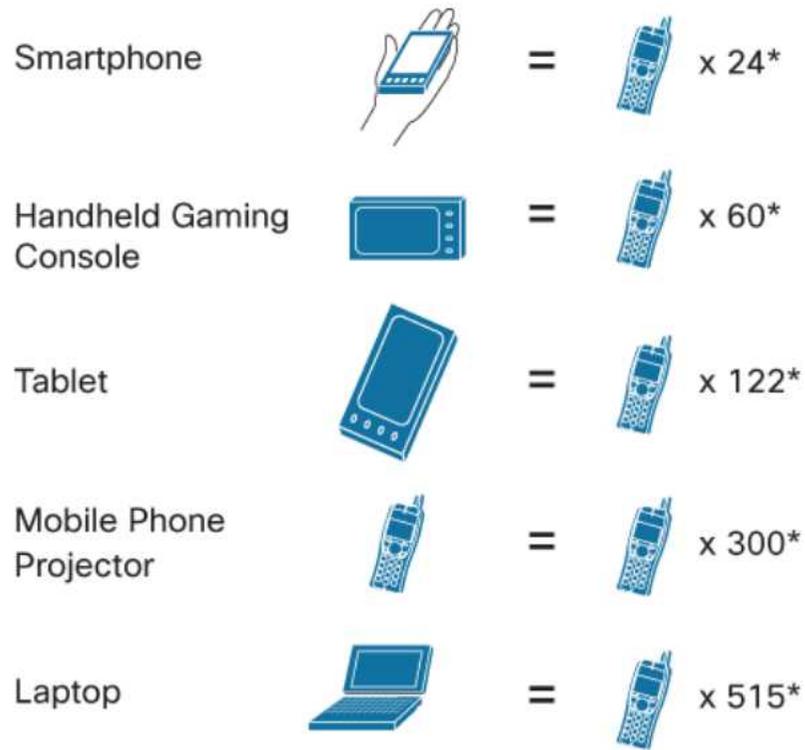
 SaaS platform components

The components of the SaaS application stack



Network Traffic

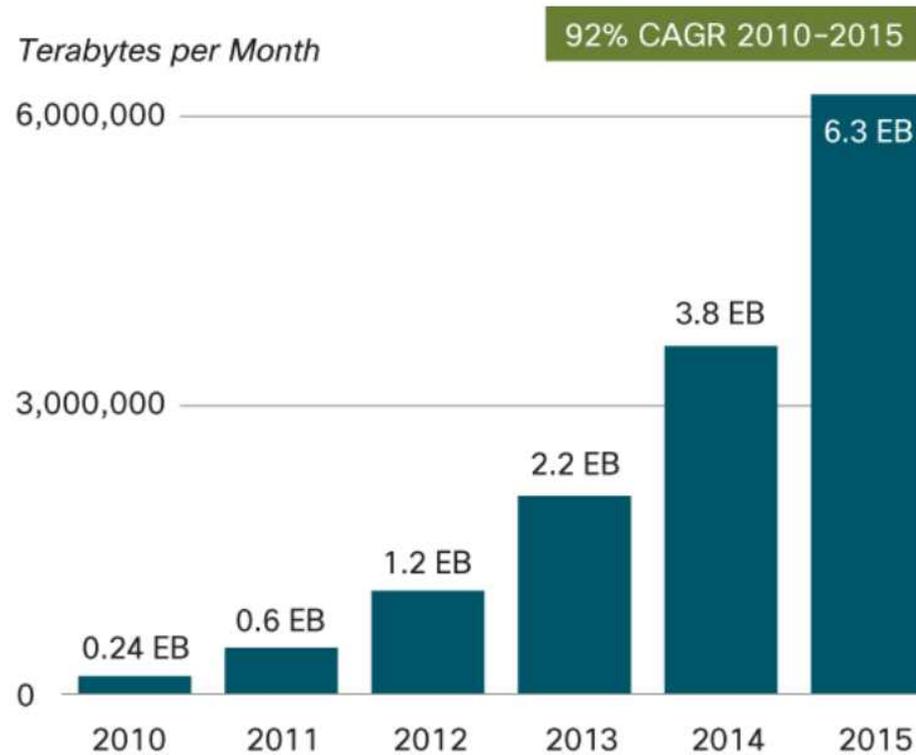
High-End Devices Can Multiply Traffic



* Monthly basic mobile phone data traffic

Source: Cisco VNI Mobile, 2011

Exabytes per Month of Mobile Data Traffic by 2015



Source: Cisco VNI Mobile, 2011

1 EB = 1,000,000,000,000,000,000 B = 10^{18} bytes = 1 billion gigabytes = 1 million terabytes



소프트웨어 인 라이프

The Network is the computer



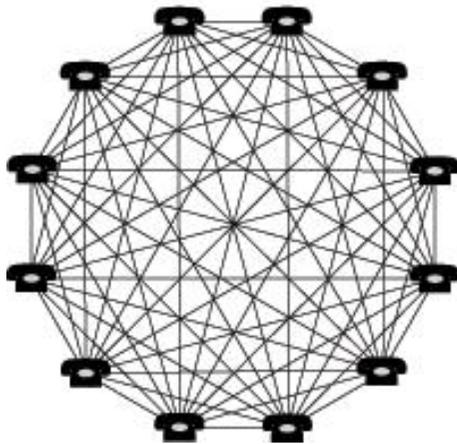
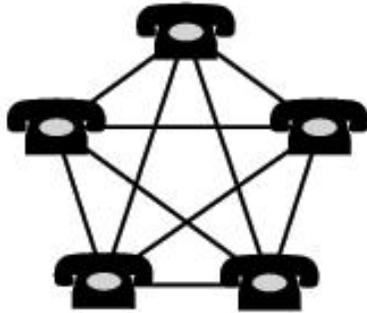
- The network will truly be the computer.
 - Google's CEO, Eric Schmidt, The Economist, 2006
- Gilder's Law: Bandwidth grows at least three times faster than computer power.
 - George F. Gilder

<http://googlesystem.blogspot.com/2006/11/network-will-truly-be-computer.html>
http://en.wikipedia.org/wiki/George_Gilder



소프트웨어 인 라이프

The Network Effect



- Metcalfe's law:
Network value rises by the square of the number of terminals.
 - Robert Metcalfe
- Metcalfe's law characterizes many of the network effects of communication technologies and networks such as the Internet, social networking, and the World Wide Web.



Cloud Computing



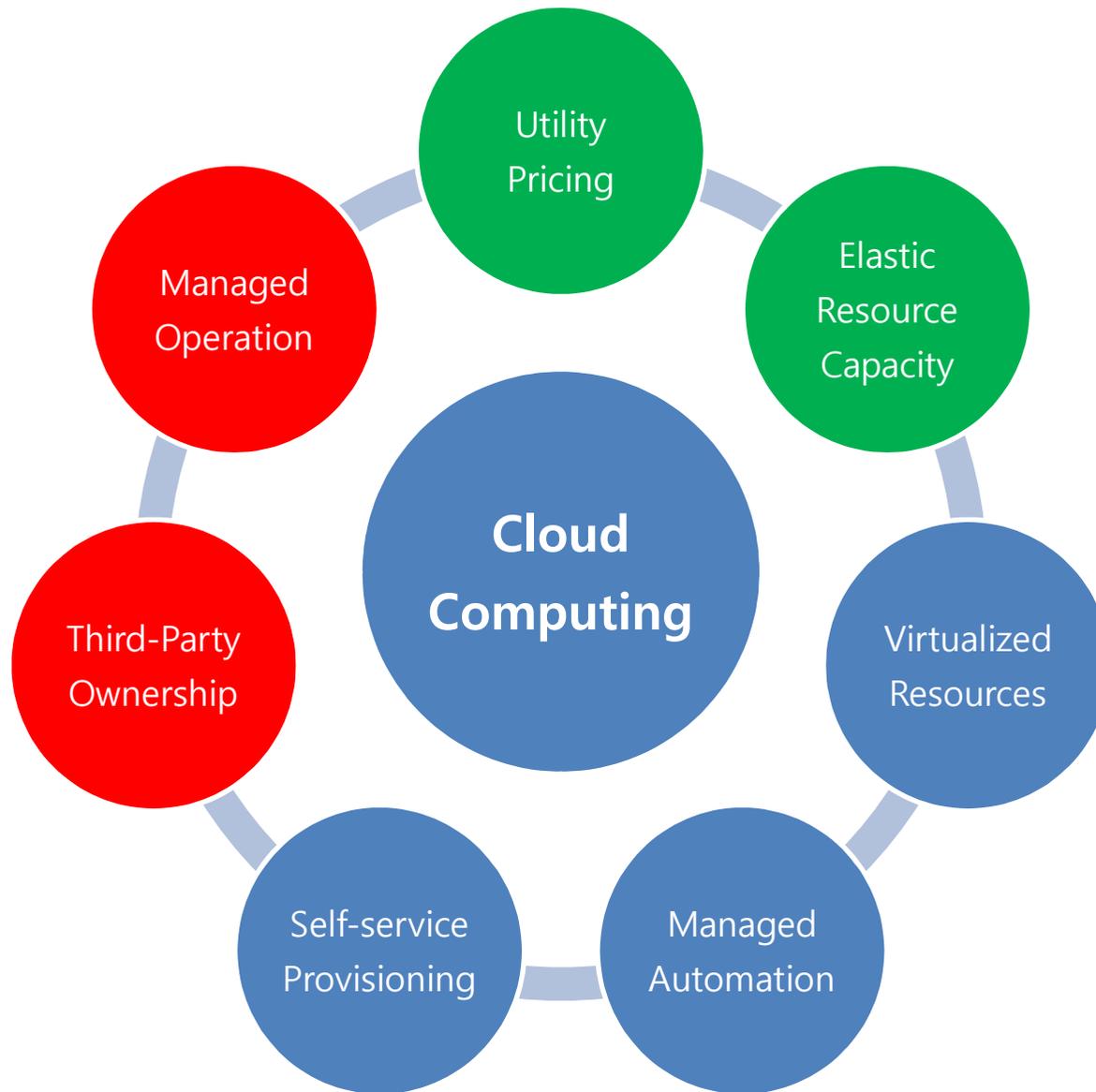
- **Cloud computing** describes computation, software, data access, and storage services that do not require end-user knowledge of the physical location and configuration of the system that delivers the services.

http://en.wikipedia.org/wiki/Cloud_Computing



소프트웨어 인 라이프

Key Benefit of Cloud Computing



Economic Element

- Pay-as-you-go
- Pay-as-you-grow
- Utility based payment
- Lower TCO

Architectural Element

- Simple, development
- Abstract environment
- Easy & Agile Development
- Device & Location Independent
- 24x7 Support(SLA)
- Secure Storage Management
- Highly Automated

Strategic Element

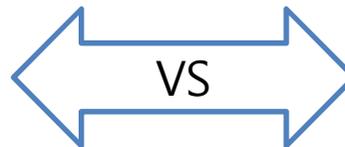
- Focus on your core business
- Reliability & Scalability
- Lower Capital Expenditure



Key Factor of Cloud Computing

	Ranked Number 1	Ranked in Top 3
Cost Savings	34%	65%
Uptime/High Availability	17%	46%
Performance	12%	43%
Consumption-based Pricing	12%	33%
Scalability	7%	40%
Flexibility	6%	41%
Rapid Deployment	5%	24%

- Cost
- Scalability
- Flexibility
- Availability
- Portability
- Collaboration



- Security
- Privacy
- SLA

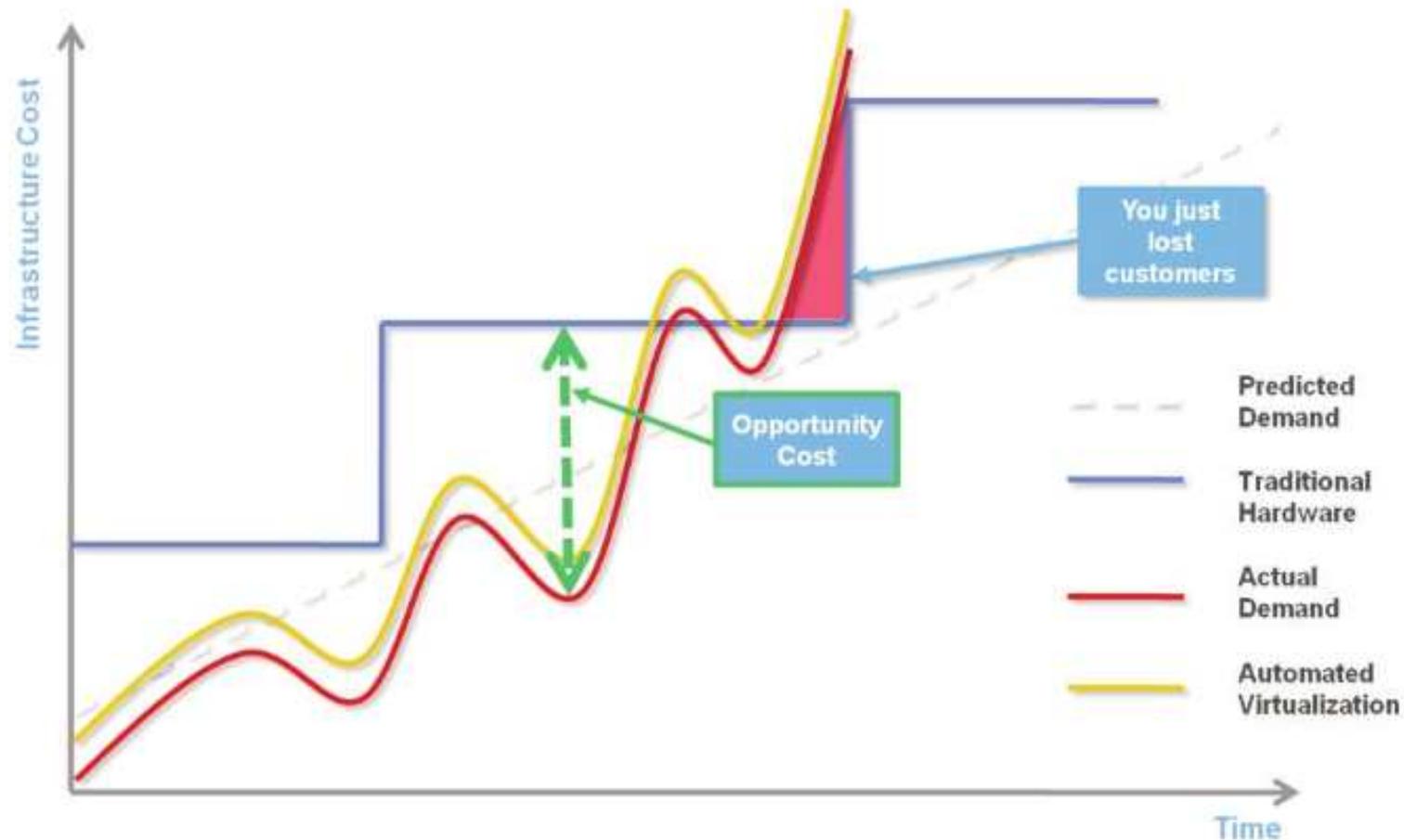
<http://www.b10wh.com/2009/02/the-size-of-the-company-does-not-reflect-on-utilization-of-cloud-computing/>



소프트웨어 인 라이프

Capacity vs Usage

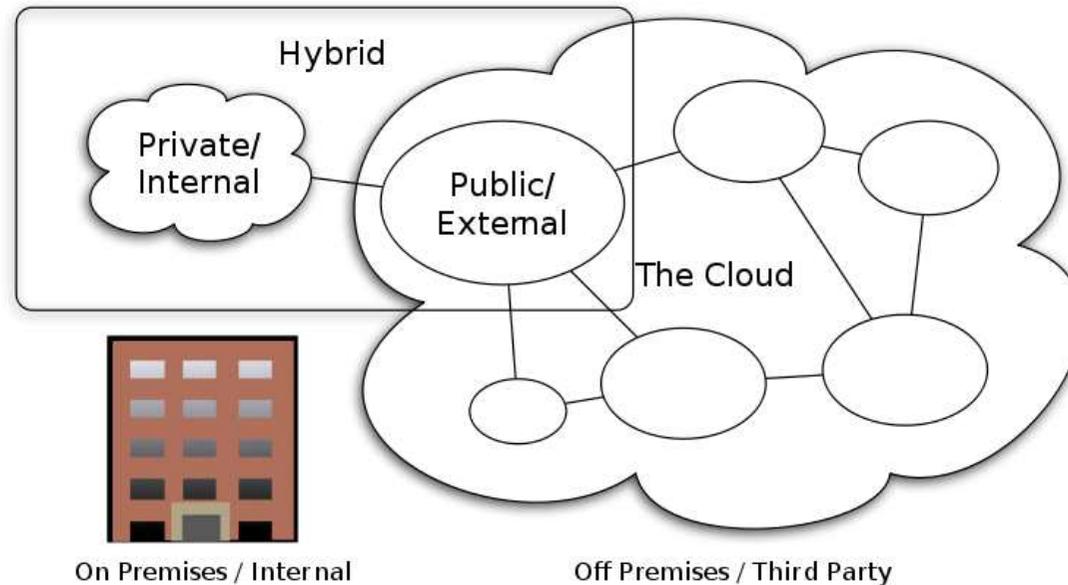
Take the Risk Factor out of Capacity Planning



Source: Amazon Web Services



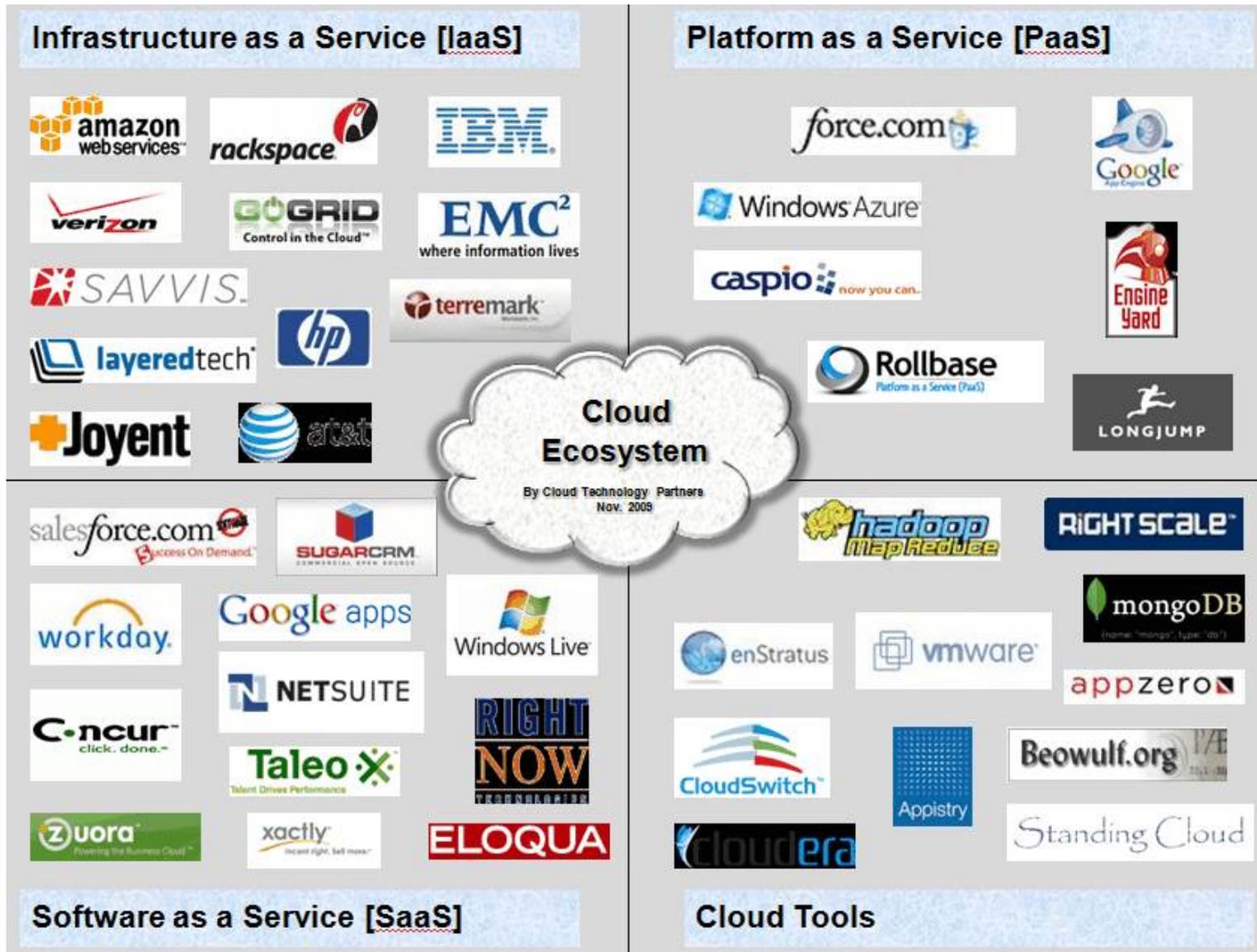
Category of Cloud Computing



- **Public Cloud** – The public cloud is standardized cloud computing where all resources like applications and storage is made available to general public over the internet by services provider itself, which offers it free of cost or pay-per use basis.
- **Hybrid Cloud** – Hybrid cloud can be defined as use of both physical hardware and virtualized cloud server instance together to provide a single common service. Two separate clouds joined together or combination of virtualized cloud server instances used together with real physical hardware is also known as Combined cloud.
- **Private Cloud** – Private cloud provides hosted services to a limited number of people, may be within the cooperation, behind a firewall and it is also called internal cloud.



Cloud Ecosystem



Wikinomics



WIKINOMICS

*How Mass Collaboration
Changes Everything*

Don Tapscott
and Anthony D. Williams

UNABRIDGED

READ BY ALAN SKLAR

- 4 Key principles
 - Openness
 - Peering
 - Sharing
 - Acting Globally



소프트웨어 인 라이프

Cloud Computing 사례

Welcome to TimesPeople
Get Started

TimesPeople recommended: Opinion

3:04 PM

Recommend

HOME PAGE TODAY'S PAPER VIDEO MOST POPULAR TIMES TOPICS

Log In Register Now Help

The New York Times
Sunday, February 20, 2011

"All the News That Was Fit to Print"

Welcome to
TimesMachine
Browse 70 years of New York Times archives

SHARE PRINT E-MAIL

1850s
1860s
1870s
1880s
1890s
1900s
1910s
1920s

WELCOME. TimesMachine can take you back to any issue from Volume 1, Number 1 of The New-York Daily Times, on September 18, 1851, through The New York Times of December 30, 1922. Choose a date in history and flip electronically through the pages, displayed with their original look and feel.

TUESDAY
APRIL 16, 1912
The Titanic Sinks

MONDAY
NOVEMBER 11, 1918
World War I Ends

MONDAY
FEBRUARY 20, 1911
100 Years Ago Today

The New York Times.
TITANIC SINKS FOUR HOURS AFTER HITTING ICEBERG;
866 RESCUED BY CARPATHIA, PROBABLY 1250 PERISH;
ISMAY SAFE, MRS. ASTOR MAYBE, NOTED NAMES MISSING

The New York Times.
ARMISTICE SIGNED, END OF THE WAR!
BERLIN SEIZED BY REVOLUTIONISTS;
NEW CHANCELLOR BEGS FOR ORDER;
OUSTED KAISER FLEES TO HOLLAND

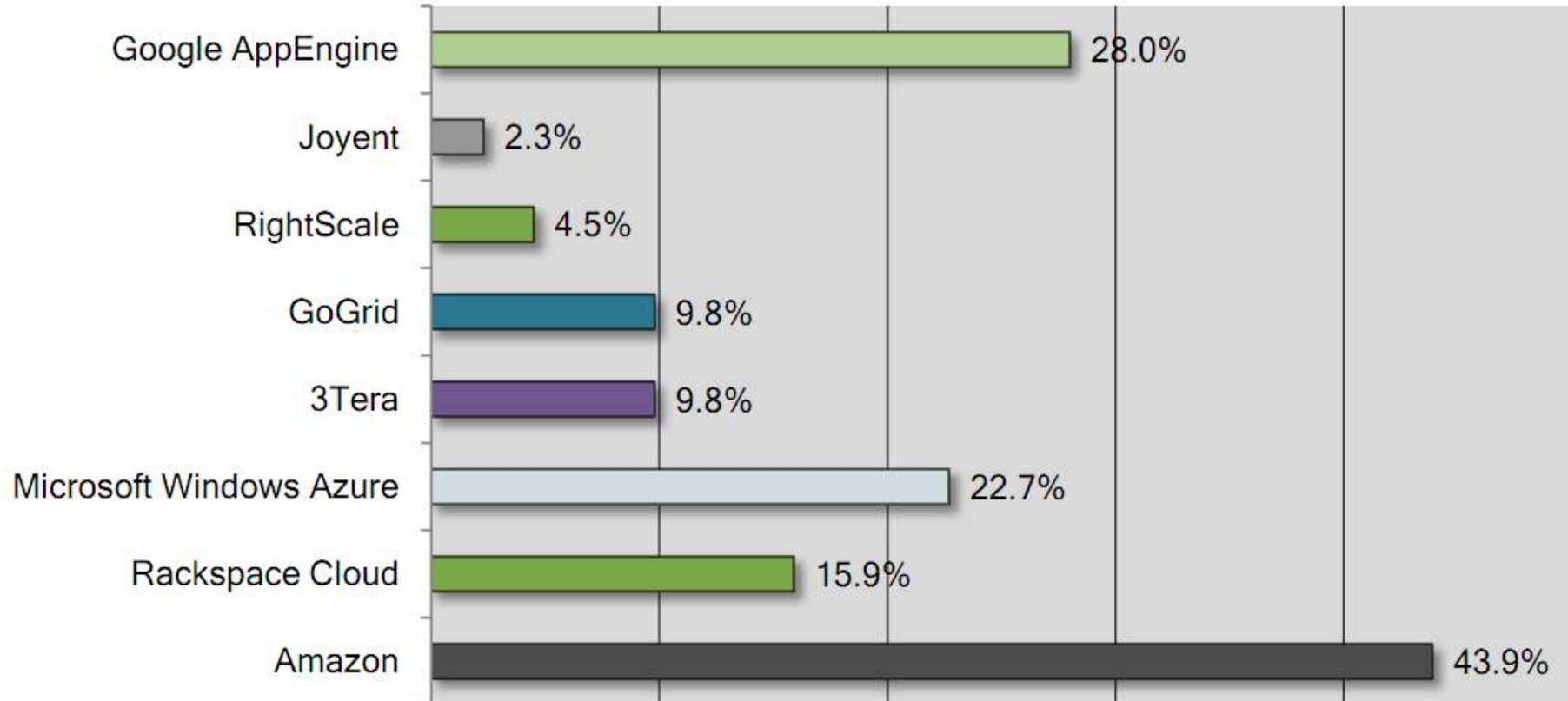
The New York Times.

- The New York Times Archives + Amazon Web Services = TimesMachine

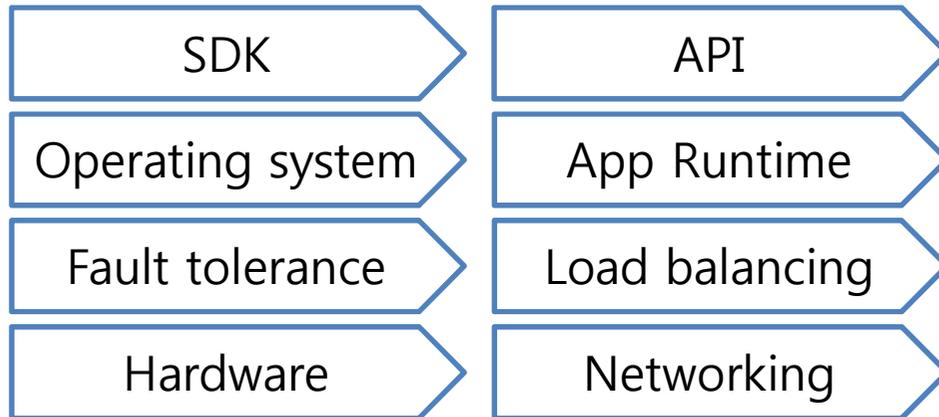
<http://open.blogs.nytimes.com/2008/05/21/the-new-york-times-archives-amazon-web-services-timesmachine/>



Cloud Computing Market



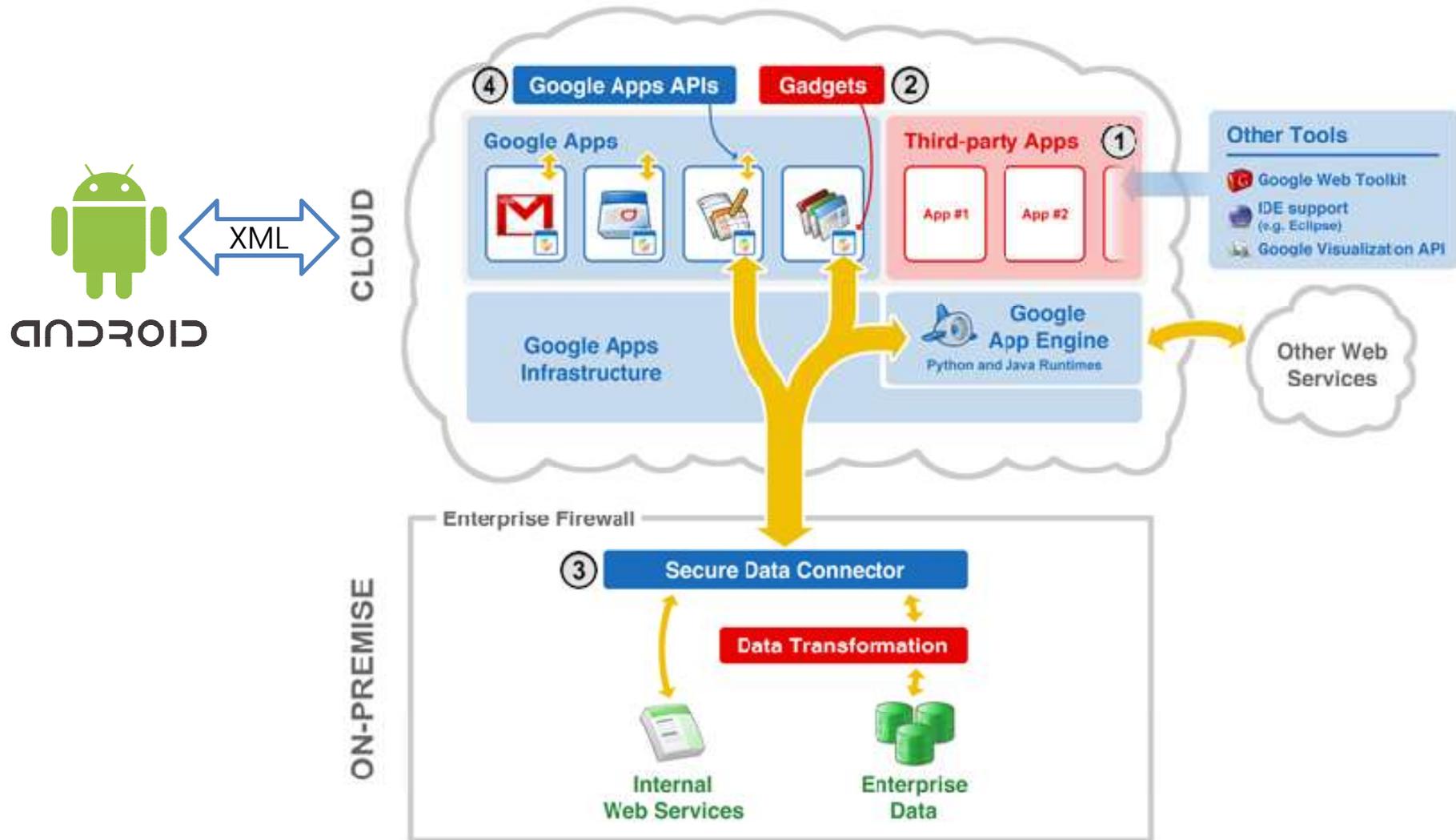
Google App Engine의 정의



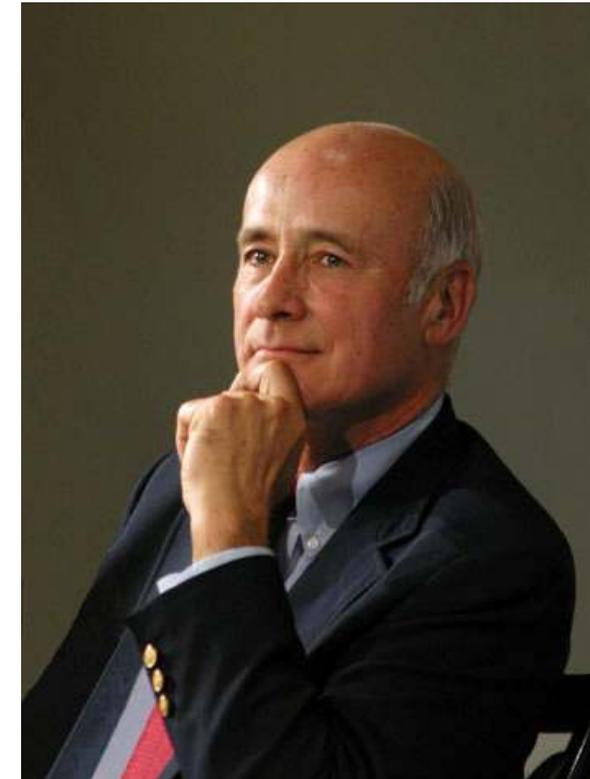
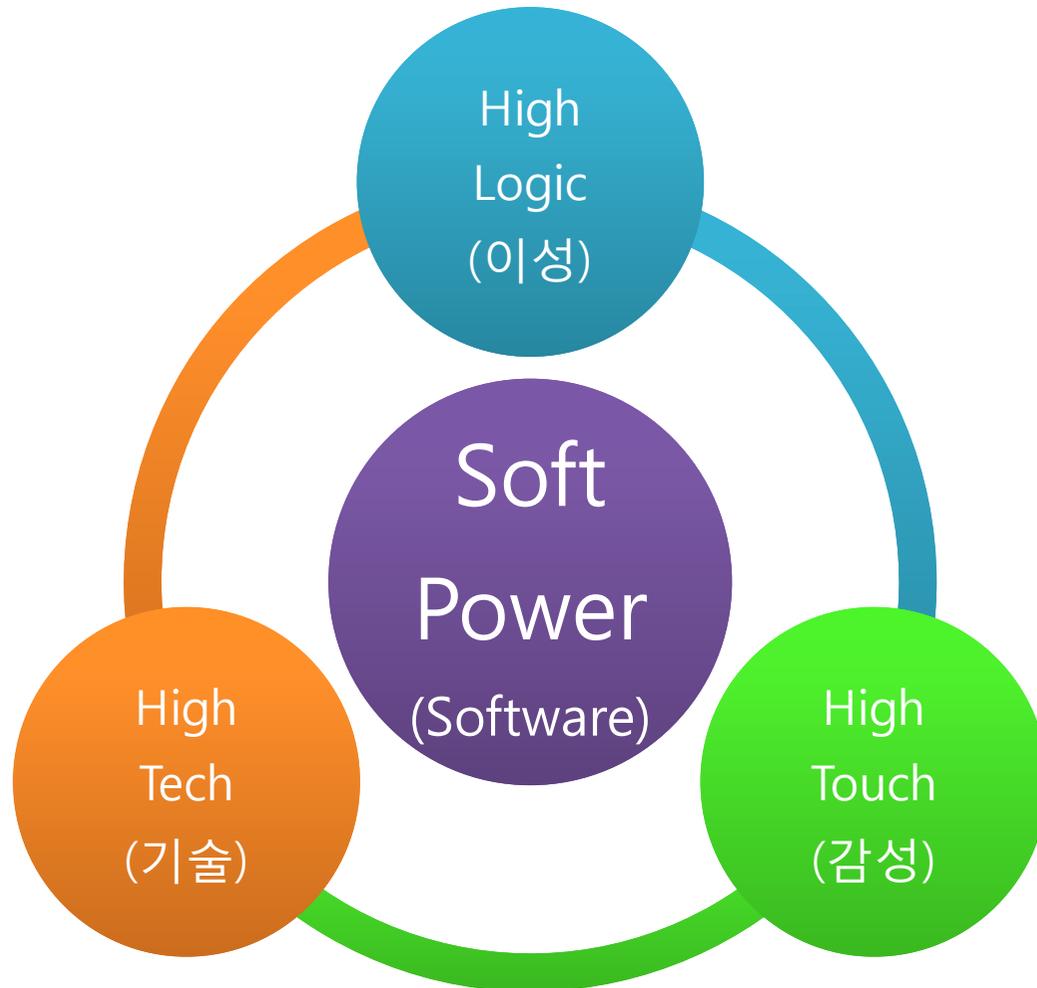
- Google App Engine이란 Google의 인프라스트럭처를 이용하여 원하는 웹 어플리케이션 등을 쉽게 개발/배포/관리 할 수 있는 Cloud Computing을 지원하는 플랫폼이다.



GAE 활용



Soft Power



Joseph Nye pioneered the theory of soft power.

http://en.wikipedia.org/wiki/Soft_power
http://en.wikipedia.org/wiki/Joseph_Nye



소프트웨어 인 라이프



감사합니다.

<http://code.google.com/p/devmento-gae-seminar/>

