MIS 3534 Spring 2015 – Strategic Management of Information Technology

Week 5 – Cost of IT (I)

Min-Seok Pang

Management Information Systems
Fox School of Business, Temple University
minspang@temple.edu
Feb. 9th, 2015

Fox School of Business
TEMPLE UNIVERSITY

Today, we will discuss …

● Why does IVK have to invest in IT maintenance?

● How do competitive strategies affect IT investment decisions?

● What are the management issues with respect to Cloud Computing and Open Source Software?

IT System Maintenance (1/3)

● Why does an IT system need maintenance? It does not become rusty!

- Or does it?

● On Page 58, it reads "we've run closer to 5 to 6 percent of sales on IT spending. Which, by the way, Davies thought wasn't enough to keep IT assets from *degrading* over time.."

- Why does Mr. Davies mean by *degrading*?

http://www.mountainlodgeinfo.com/Maintenance-Page.html

Hurricane Sandy and DC Metro

● After Hurricane Sandy, DC Metro ran a Sunday schedule on Tue. 30 but charged riders the *weekday and rush-hour* fares.

http://blogs.cio.com/risk-management/17518/superstorm-hurricane-sandy-aftermath-video
http://www.freeismylife.com/2012/09/freeismylife-october-2012-calendar-dont.html
http://en.wikipedia.org/wiki/Washington_Metro

IT System Maintenance (2/3)

● IT maintenance is needed because

- business requirements are always, constantly changing.

- IT system needs to accommodate, for example, new products, new business processes, new suppliers and customers, and so forth.

- IT system degrades not by itself, but by surrounding, supporting technologies such as hardware, network, or operating systems that are becoming advanced.

IT System Maintenance (3/3)

● If it needs to spend money in maintaining IT systems, how much does a company need to spend on it?

- What happens with too little spending in maintenance?

- What happens with too much? Then, a business cannot initiate something "new" and gets behind of competition.
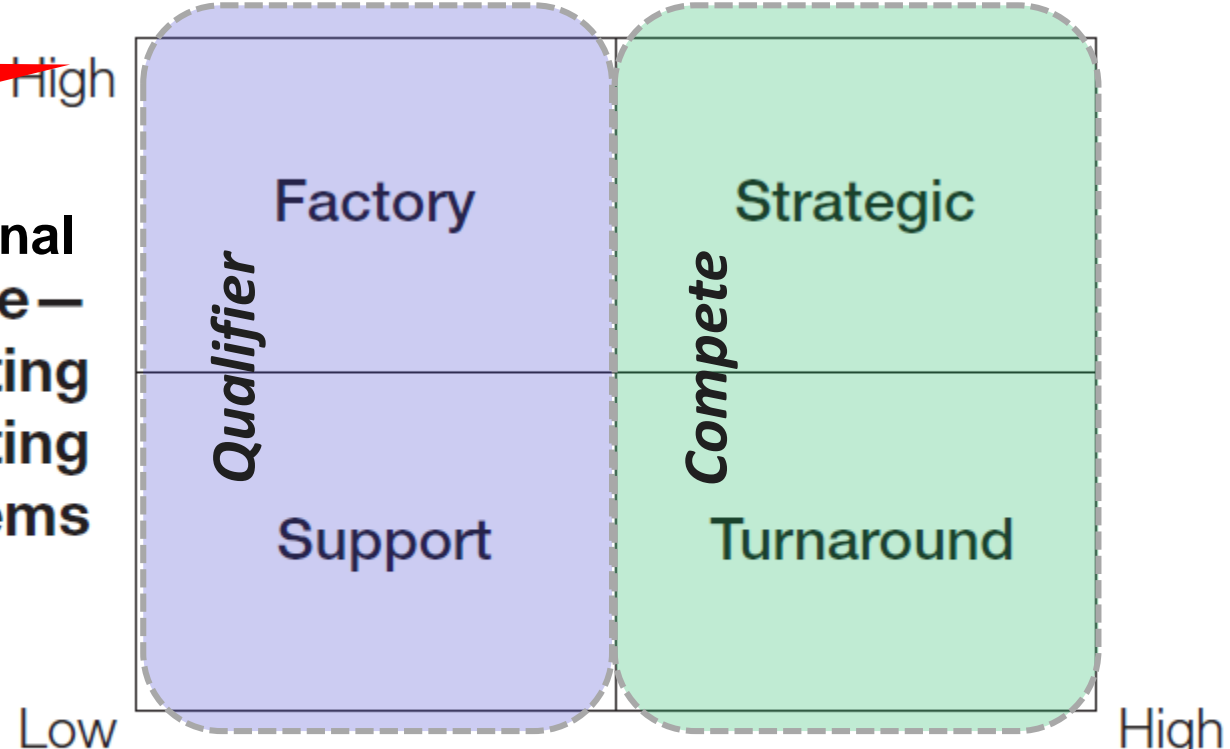
- It should depend on what?

http://www.evansautocare.com/services/

IT Strategic Impact Grid (1/2)

If IT fails, business fails.

Operational dependence—Existing operating systems

	Qualifier	Compete
High	Factory	Strategic
	Support	Turnaround
Low		High

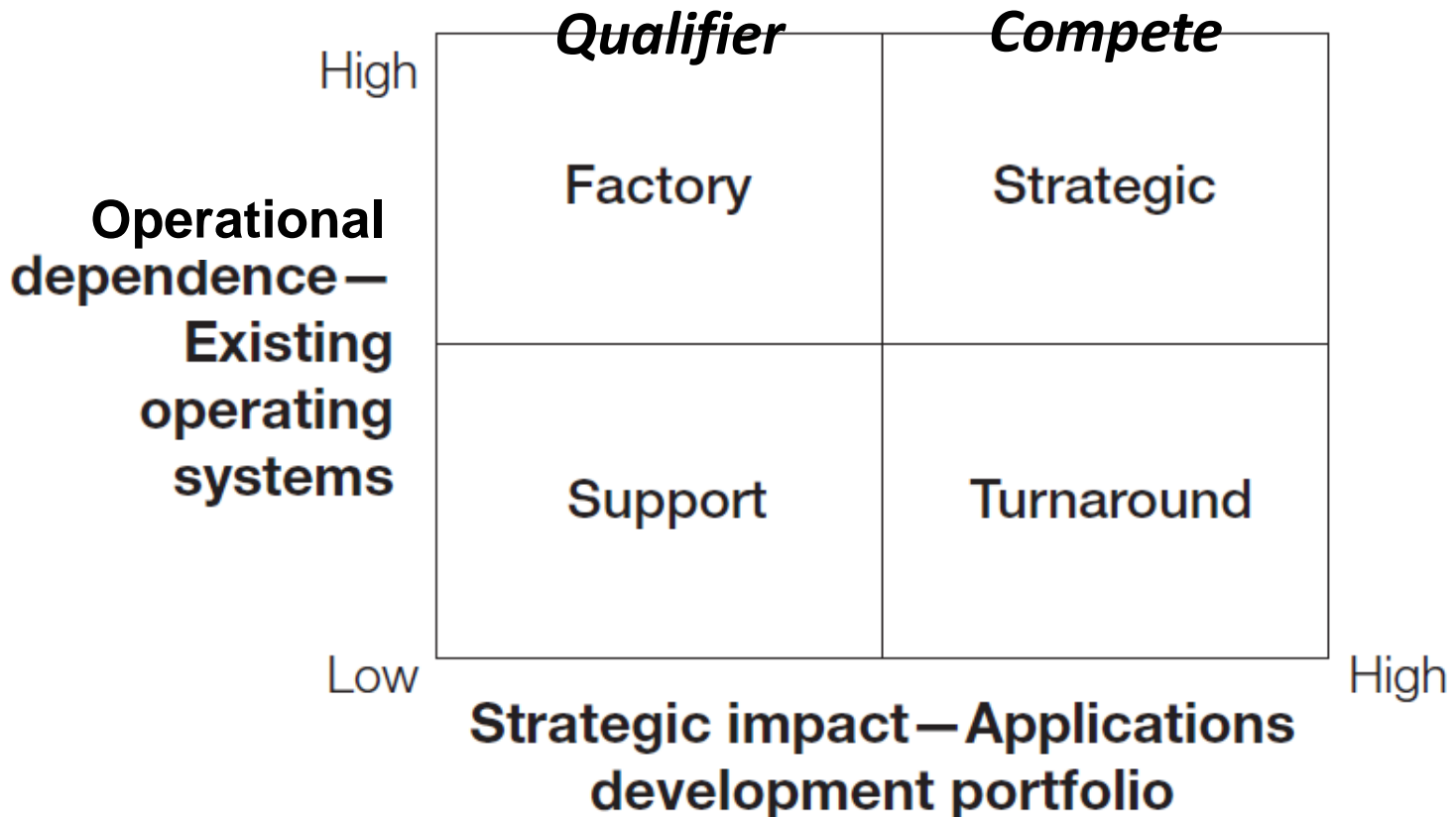**Strategic impact—Applications development portfolio**

We need IT for our strategy & future.

IT Strategic Impact Grid (2/2)
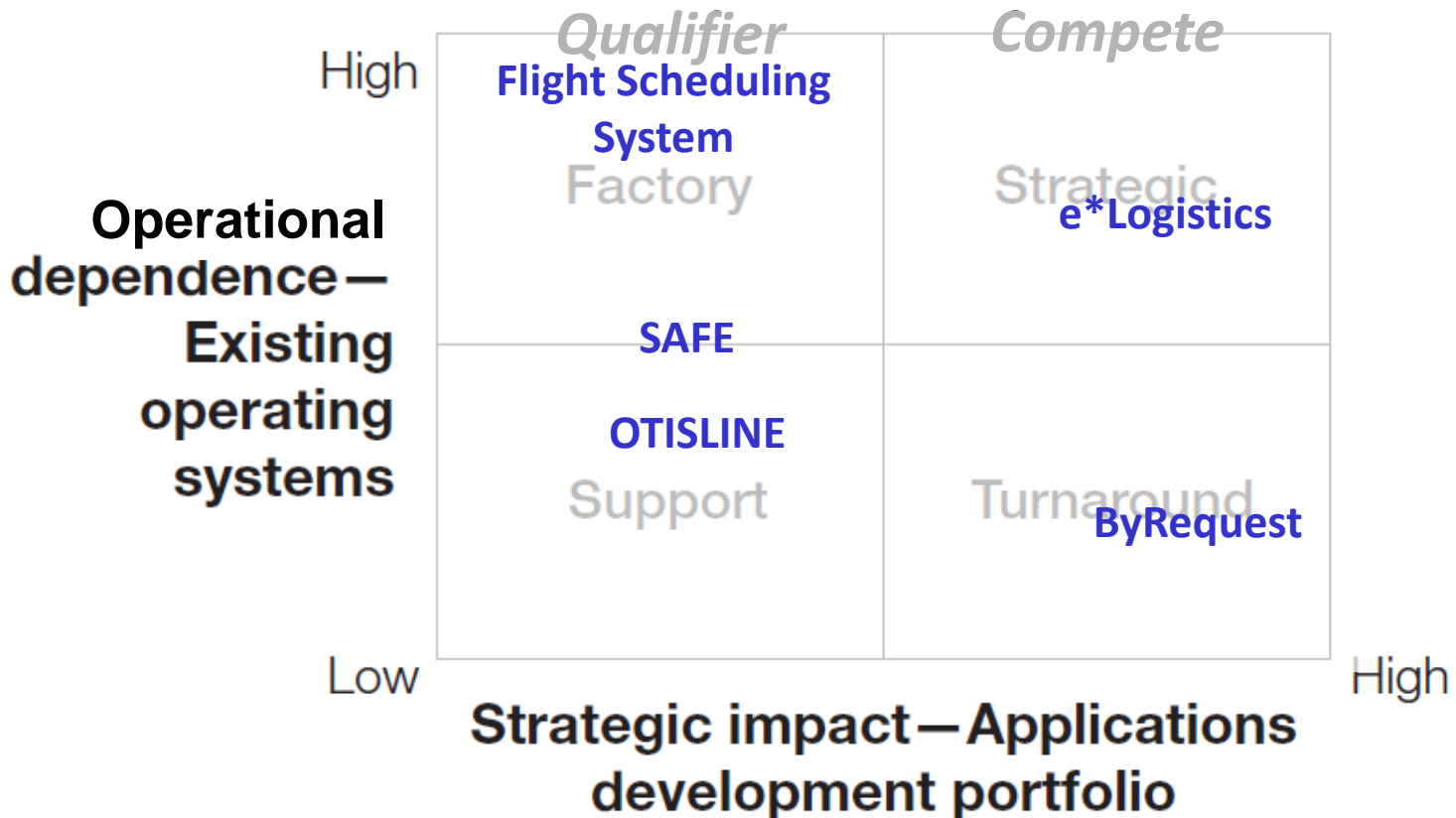
- Where can we put OTISLINE, e*Logistics, ByRequest, a flight-scheduling system, and San Francisco SAFE?

Strategic Grid and IT Cost (1/3)

	Qualifier	*Compete*
High	Factory	Strategic
Operational dependence— Existing operating systems		
	Support	Turnaround
Low		High

Strategic impact—Applications development portfolio

● What should the *right* amount of IT spending in each grid?

Strategic Grid and IT Cost (2/3)

	Qualifier	*Compete*
High	Factory	Strategic
Operational dependence— Existing operating systems	Support	Turnaround

Low → High

Strategic impact—Applications development portfolio
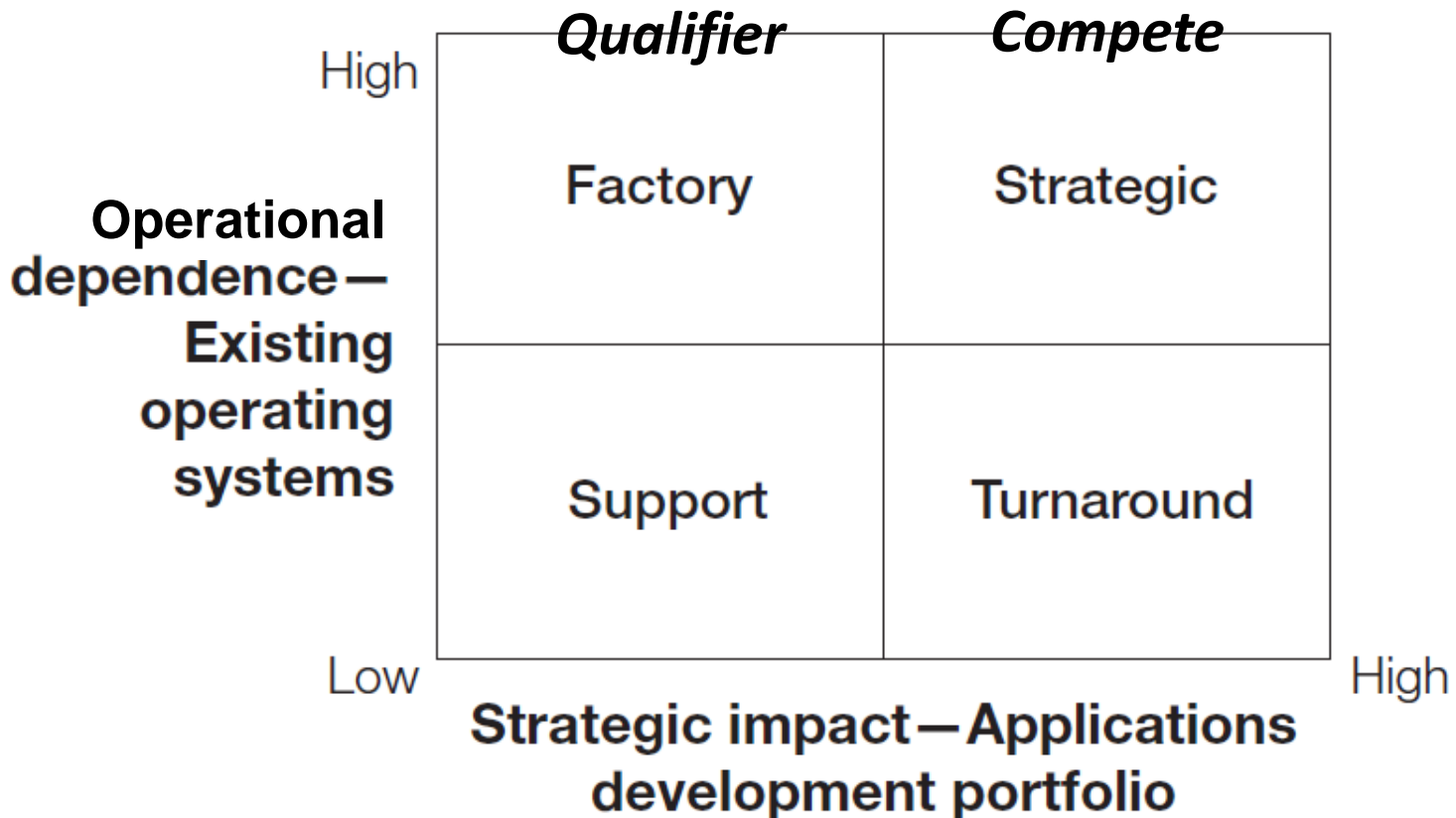
● If you've got $10 million for your IT budget, how would you divide into each grid? depends on what?

Where to Spend More?

	Qualifier	Compete
High	Factory	Strategic
Operational dependence— Existing operating systems	Support	Turnaround
Low		High

Strategic impact—Applications development portfolio
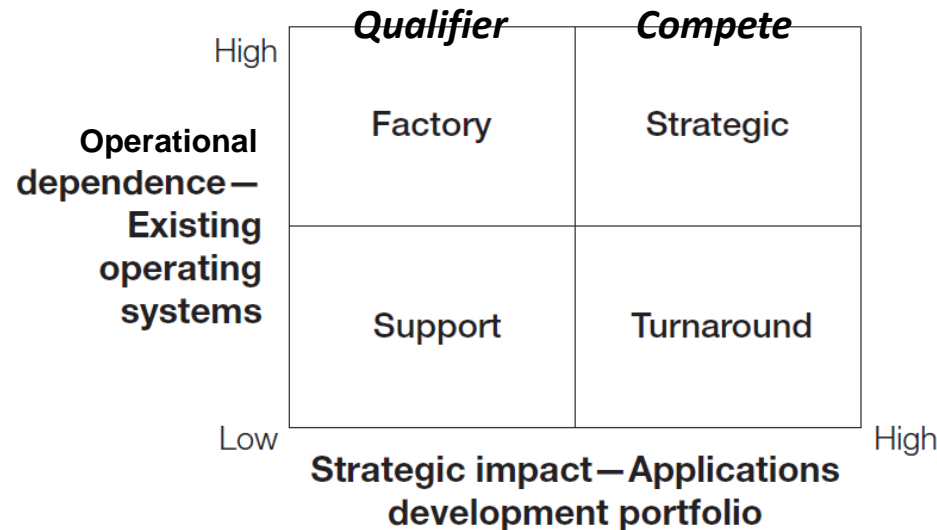
- if you are #1 in a stable, mature industry?

- if you are a follower and want to be #1?

- if you are in a dynamic, growing industry?

- if you are in a tightly-regulated industry?

- if you are in an industry where IT is "mission-critical"?

Strategic Grid and IT Cost (3/3)

● The division of a limited IT budget amongst the four IT grids depends on competitive strategies and business environments.

▪ If you are #1 in a stable, mature industry, spend more in Qualifier (Factory/Support).

▪ If you are a follower who wants to be #1 or in a growing, dynamic industry, spend more in Compete (Strategic/Turnaround).

▪ If you are in a tightly-regulated industry, spend more in Qualifier (Factory/Support).

▪ If you are in an industry where IT is very dependent or "mission-critical", spend more in Factory and Strategic.

Rent or Buy?

● When would you buy your own home instead of renting? What are the advantages and disadvantages of buying a house?

● Why would a business have its own office building? Why would it rent office spaces instead of buying ?

Cloud Computing

● What is a cloud computing?

● Why did we just discuss about buying vs. renting?

http://www.contrib.andrew.cmu.edu/~aishah/CC.html

Dropbox

● Do you use Dropbox? Why?

● Why would a company like to use Dropbox?

■ Research shows that in a typical company, more 20% of the hard disk space in employees' PCs is *empty*.

Software-as-a-Service (SaaS)

Microsoft® Office 365

Edit documents on your web browser, phone, or computer

"By using the Word Web App included with Office 365, LPG knows that its employees can easily view and share their documents online from almost anywhere." *Landkreis Passau*

Work in ways you already know

- Use the familiar Ribbon in both Office and Office Web Apps
- Save a document in the cloud, edit from almost anywhere

Write and edit with co-workers

- Share a common version
- Capture comments and changes on one doc
- Avoid version confusion: no emailing docs back and forth

Get anywhere access to your documents*

- Read and edit documents from most web browsers
- View documents on your phone

Works well with Office

- Documents are fully compatible whether created in Office or Office Web Apps
- Work online and retain desktop formatting and data

http://www.microsoft.com/en-us/office365/office-web-apps.aspx

When does it make sense to go to cloud?

Microsoft® Office 365

SMALL BUSINESS (Plan P1)	MIDSIZE BUSINESS & ENTERPRISE (Plan E1)	MIDSIZE BUSINESS & ENTERPRISE (Plan E3)
$6 per user/month	$8 per user/month	$20 per user/month
		BUY NOW free 30-day trial
	50,000+	User maximum: 50,000+

Microsoft Office Professional 2013 (1PC/1User) [Download]
by Microsoft
★★☆☆☆ ☑ (7 customer reviews)

Price: **$399.99**

Available Now.
Sold by Amazon Digital Services, Inc. Additional taxes may apply. By placing your order, you agree to our Terms of Use.

Platform: **PC Download**

| 🪟 PC Download | PC Key Card |

1 PC · Microsoft

Office
Professional 2013
Word
Excel
PowerPoint
OneNote
Outlook
Publisher
Access

http://www.microsoft.com/en-us/office365/compare-plans.aspx
http://www.amazon.com/Office-Professional-2013-Card-1User/dp/B009SPL2K0/ref=sr_1_5?ie=UTF8&qid=1361484223&sr=8-5&keywords=office+2013

Pain in the Cloud?

TroyxIr8

11/05/2012 02:45 AM PST

Reasons why you should NOT switch to office 365.

In Australia, Telstra one of the biggest pain in the a.. Phone companies to deal with does the support of office 365, every time you need assistance they want to speak to whoever the bills name is in, usually the director.. Try n get the directorof a 500+ company to help??

Second, they are hosted overseas in Singapore data centers, the speed is sh*t.. I wouldnt wish this on my least favorite people.. For example, to upload and deploy a 5mb SharePoint site restoration took 20mins on a 2mb shdsl business connection.

Third, all the features your used to in exchange, SharePoint and ad are not all available like you would expect..

There's more but to users speed is a massive important factor and your developers take a day to administer or maintain something that would normally take 2 hours there going to get annoyed and mob you for implementing it.

Cons:

- Relying on the Internet is usually not a bad thing. With Office 365, however, if your Internet service goes down, then you can't access any of its features. Your software and data would be unavailable in this case.
- If Microsoft's servers go down, the same will be true. While the company guarantees its system will be up 99.9% of the time, you have no control if there is a problem on the other end of the connection.

http://www.pcworld.com/article/259644/three_reasons_you_should_switch_to_office_365.html
http://technews.tmcnet.com/office365/topics/office365/articles/319492-reasons-why-should-why-shouldnt-make-switch-office.htm

Infrastructure-as-a-Service (IaaS)

● Why would a company like to use IaaS such as Amazon Web Services?

● Why would be the reasons not to use IaaS?

Why are we taking about Cloud?

● Because CIOs are under a constant pressure to cut IT budgets.

● In many companies, like IVK (Chapter 4), IT costs are funded by business divisions, which don't like to do it.

■ The less they know about IT, the more they hate to spend.

● Cloud computing is known to be one of the many ways to save the costs in IT.

■ BUT, cost saving should not be only consideration in cloud computing.

■ Need to take productivity/security into account.

http://www.blackenterprise.com/money/how-to-live-on-one-income/

Reasons to Adopt Cloud Computing (1/2)

● Flexibility in capacity planning

 ▪ With cloud computing, a business does not need to own IT infrastructure that is not in use.

 ▪ In case of sudden need for more capacity, adding capacity is more straightforward.
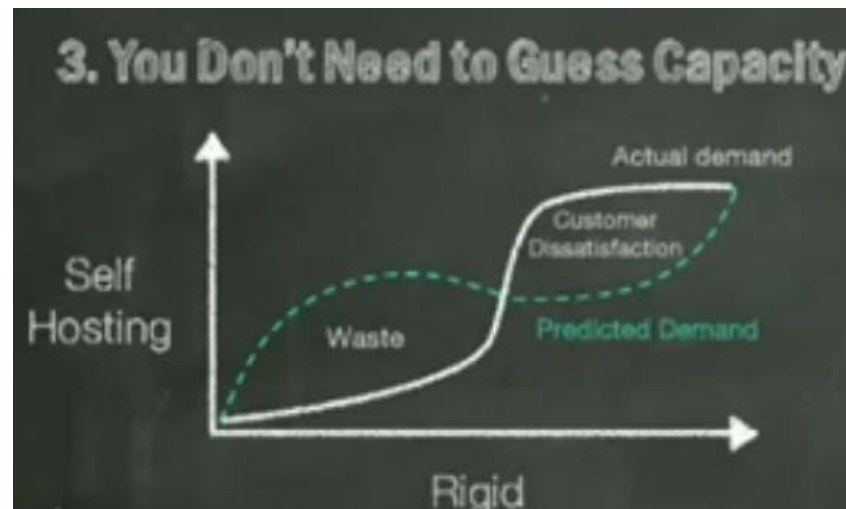
Reasons to Adopt Cloud Computing (2/2)

- Turning capital investments to current expenses

  - No initial investments in infrastructure

  - Capital investments require "transaction costs" including finding vendors, contracting, and other legal issues.

  - Current expenses need less of such transaction costs.

  - Little need for acquiring outside resources (e.g. borrowing money, issuing bonds)

- Faster development and deployment of IT system

- Enables frequent "experiments" and facilitates innovation

Reasons Not to Adopt Cloud Computing (1/2)

- Becoming dependant upon the network

  - In case of outage in the client's network or vendor's system, cloud computing cannot be accessed.

- Restricted by the cloud computing vendor

  - The client might not get every function or feature that it would get from its own system.

  - There will be something the client won't be allowed to do by the vendor.

Reasons Not to Adopt Cloud Computing (2/2)

● A legal issue – Who owns data in the cloud? Who'd be responsible?

● Security and reliability

  ■ Can we trust the vendor?

  ■ Can they provide 99.999999% of reliability and 24/7/365 availability?

  ■ Can they protect the data asset from any security threat?

  ■ Due to the large amount of information, the cloud computing is a more attractive target of security attacks.

  ■ Security management can be better by the cloud vendor than by on-premise personnel.

Open Source Software (OSS)

● Software developed by a network of voluntary software developers.

● Not only software but its source codes are available for free to anyone, free to any business.
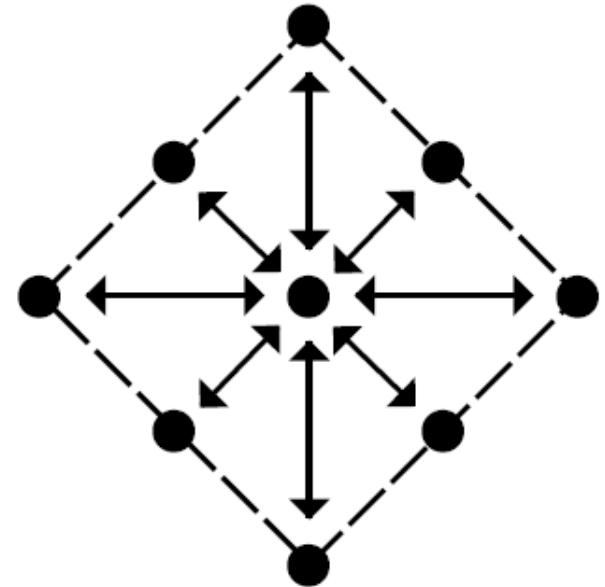
● Is it really free?

Proprietary Software and OSS
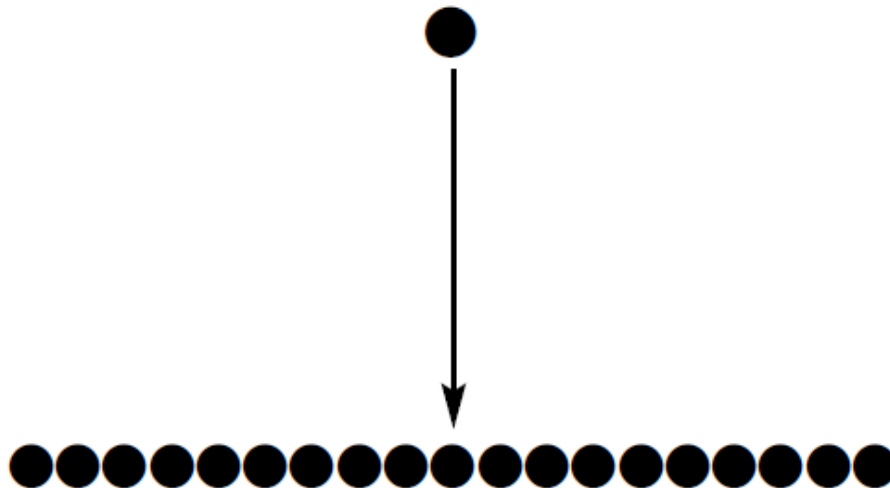
OSS development model: Author-user interaction,
user-user interaction, larger community

Commercial software model:
Strict separation between producer and user

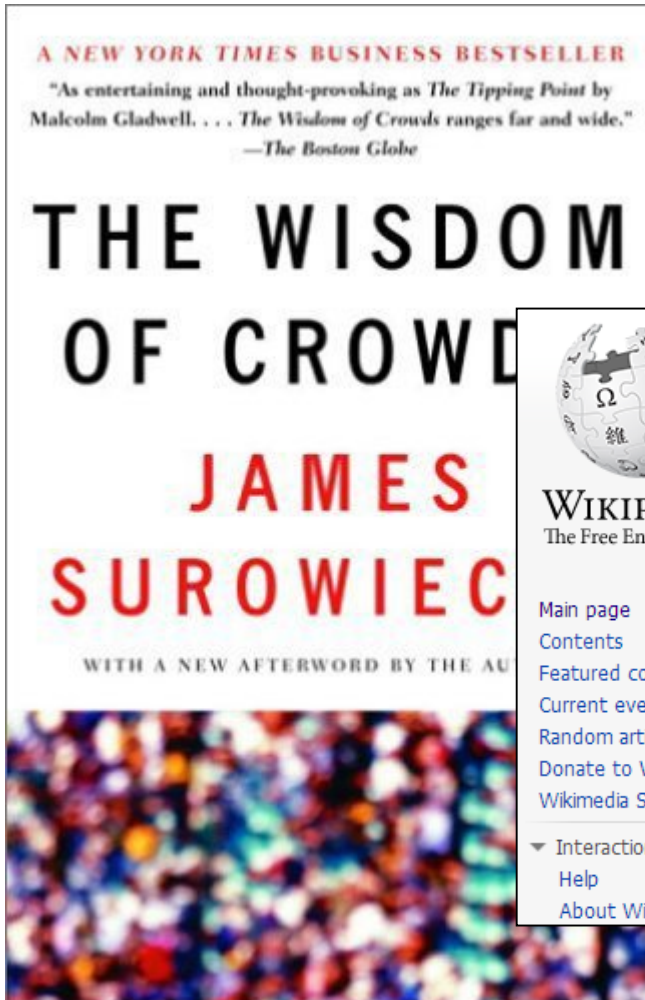

● In the OSS development network, users are developers, and vice versa. This is not the case in the proprietary, commercial software.

Source : S. Krishnamurthy, "A Managerial Overview of Open Source Software" Business Horizon

OSS Development

● Why do you think OSS developers would *voluntarily* contribute to development and make their source codes public *for free*?

● There is no command-and-control in OSS development groups. There is no boss who forces the developers to work.

■ Will the quality of OSS be better than proprietary software?

http://www.mportal.com/the-growing-impact-of-android-on-the-existing-open-source-eco-system/

Wisdom of Crowds (1/2)

A NEW YORK TIMES BUSINESS BESTSELLER

"As entertaining and thought-provoking as *The Tipping Point* by Malcolm Gladwell. . . . *The Wisdom of Crowds* ranges far and wide."
—*The Boston Globe*

THE WISDOM
OF CROWD

JAMES
SUROWIEC

WITH A NEW AFTERWORD BY THE AU

WIKIPEDIA
The Free Encyclopedia

Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikimedia Shop

▼ Interaction
Help
About Wikipedia

Article | Talk

Read | Edit | View hist

Open source software

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Plea
by adding citations to reliable sources. Unsourced material may
(February 2010)

Open source software (**OSS**) is computer software with its source code made available and licensed with an open source license in which the copyright holder provides the rights to study, change and distribute the software to anyone and for any purpose. Open source software is very often developed in a public, collaborative manner. Open source software is the most prominent example of open source development and often compared to (technically defined) user-generated content or (legally defined) open content movements.[1]

http://graphicssoft.about.com/library/reviews/blxen2-10puzzle.htm
http://en.wikipedia.org/wiki/Open_source_software

Wisdom of Crowds (2/2)

● "No single individual" is smarter than thousands or millions of the crowd.

● A large group of voluntary software developers are possible to produce more quality software than a small group of paid developers in commercial software firms (but not always).

● A group of OSS developers can improve its open source software faster and more flexibly than proprietary software firms.

Price of Open Source Software (1/2)

- Is open source software really free?

- What is not available to open source software?

Products ⌄

> MySQL Support

> MySQL Support Prices

> MySQL Support Policies

Percona MySQL Support

Percona MySQL Support is a highly responsive, effective, affordable option to ensure the continuous performance of your MySQL deployment. Our user-friendly Support professionals are **accessible 24x7 online or by phone** to ensure that your MySQL installation is running optimally. We can help you:

Prices - Support for MySQL

Percona offers exceptional MySQL Support Services which include based support. Our development team allows us to provide rapid MySQL limitations for our Gold and Platinum customers as well. M available option for Gold and Platinum subscriptions.

Coverage for Non-Standard Platforms			Available Option
Coverage for Custom Code			Available Option
Copyright Indemnification			Available Option
Percona XtraDB Cluster Support		Available Option	Available Option
MySQL Cluster Support		Available Option	Available Option
Annual Price	$1,500 per server, per year	From $15,000 unlimited servers, per year	From $30,000 unlimited servers, per year

http://www.percona.com/prices/mysql-support

Price of Open Source Software (2/2)

● OSS usually does not come with manuals, implementation service, maintenance support ("phone number"), and training, all of which are available from commercial software.

● A business should either

- purchase the services from third-party service providers (e.g. Percona MySQL service)

- or hire IT personnel who can manage OSS on its own.

● OSS is *not free*.

Source Codes are Available to Everyone. (1/3)

```perl
60  # Special handling for the InnoDB plugin
61  $plugin_params="₩"--plugin-load=innodb=ha_innodb_plugin.so;innodb_trx
62  $plugin_params=~s/so/dll/g if (windows());
63
64  $opt_help="";
65  $opt_try="";
66  $opt_engine="";
67  $opt_threads=10;
68
69  # Collection command line options
70  GetOptions("engine:s"   => ₩$opt_engine,
71             "duration=i" => ₩$opt_duration,
72             "threads=i"  => ₩$opt_treads,
73             "try", "help") || usage();
74
75  if ($opt_help) { usage(); }
76  if (!$opt_engine) {
77      print("₩nERROR: --engine=₩<engine₩> argument is required!!!₩n");
78      usage();
79  }
```

● This is an actual MySQL source code.

● From the perspective of users, what would be the benefits of free source codes to everyone?

Source Codes are Available to Everyone. (2/3)

```perl
60  # Special handling for the InnoDB plugin
61  $plugin_params="\"--plugin-load=innodb=ha_innodb_plugin.so;innodb_trx
62  $plugin_params=~s/so/dll/g if (windows());
63
64  $opt_help="";
65  $opt_try="";
66  $opt_engine="";
67  $opt_threads=10;
68
69  # Collection command line options
70  GetOptions("engine:s"   => \$opt_engine,
71             "duration=i" => \$opt_duration,
72             "threads=i"  => \$opt_treads,
73             "try", "help") || usage();
74
75  if ($opt_help) { usage(); }
76  if (!$opt_engine) {
77     print("\nERROR: --engine=\<engine\> argument is required!!!\n");
78     usage();
79  }
```

- What would be the risks?

- Which is more secure – open-source or closed-source?

Source Codes are Available to Everyone. (3/3)

● Business users can change open source software in any way they want. OSS is more flexible.

   ▪ How expensive would it be if you want Microsoft to change its Office?

   ▪ You can change OpenOffice however you want as long as you can read its source code.

● OSS might be more vulnerable to security threats since anyone can see its source code.

   ▪ On the other hand, since anyone can see its source code, anyone can fix security holes, faster than a commercial software provider.

Next Week

● Cost of IT (II)

● Read the <u>IT Adventure Chapter 8</u> and write a summary of up to 200 words by 10:00am, Feb. 16.