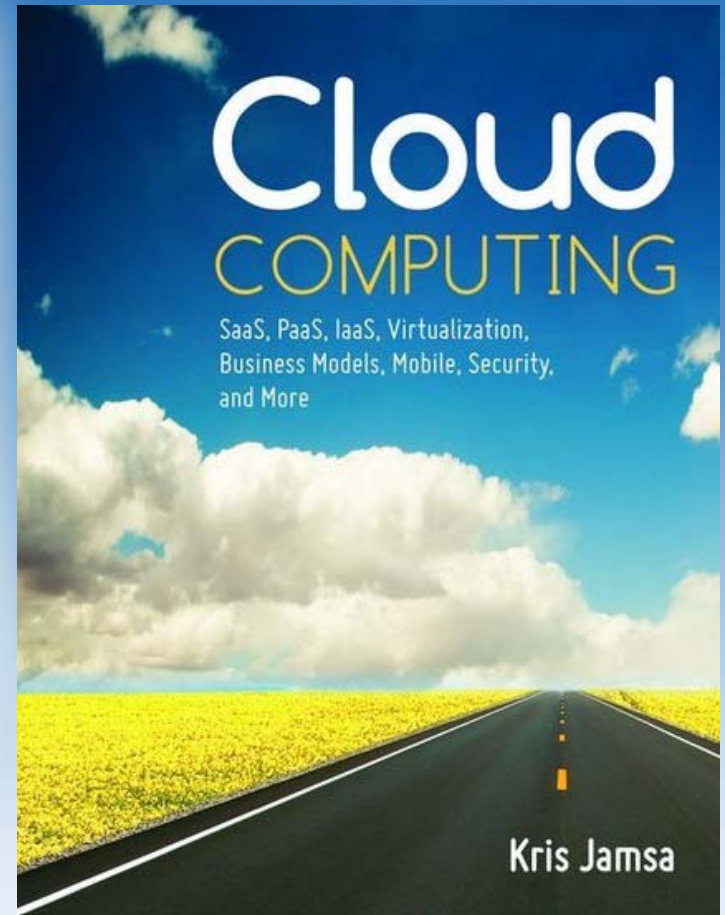




# Cloud Computing

## Chapter 2

### Software as a Service (SaaS)





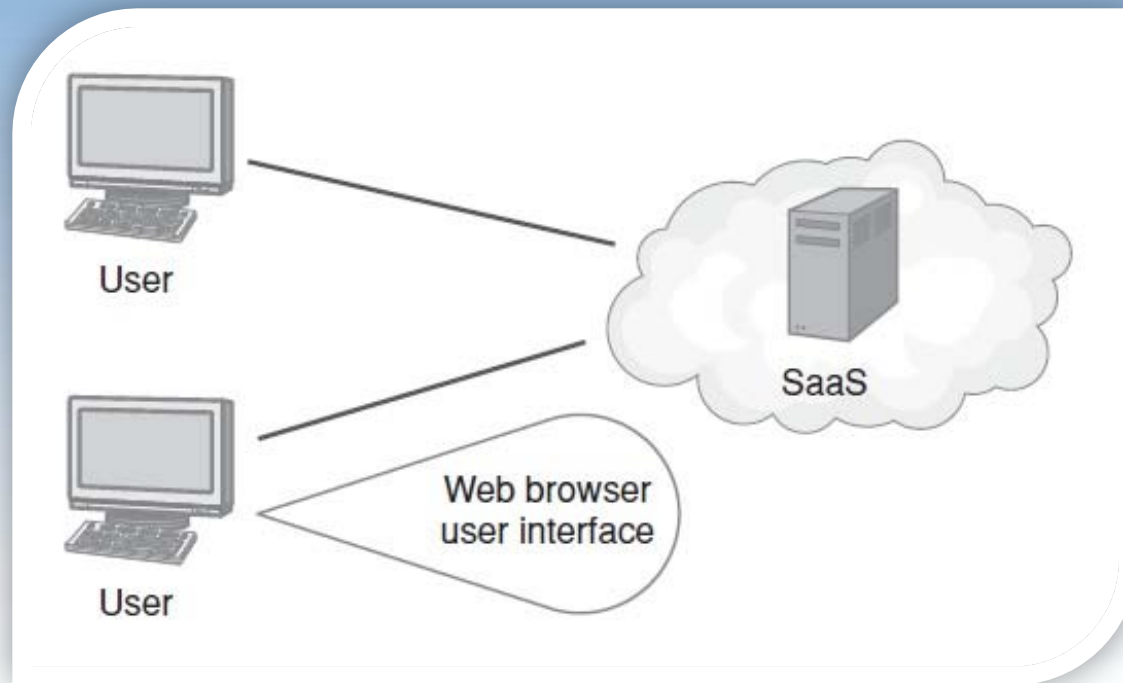
# Learning Objectives

- Define and describe SaaS.
- List the advantages and disadvantages of SaaS solutions.
- Define and describe OpenSaaS.
- Define and describe mashups.
- Discuss the wide range of SaaS solutions and their providers.



# Software as a Service SaaS Defined

- A solution model in which users use a web browser to access software that resides, along with the programs and user data, in the cloud.





# Advantages

- Eliminate the need for an on-site data center.
- Eliminate the need for application administration.
- Allow customers to pay on demand for software use, normally on a per-user basis.
- Offer application, processor, and data storage scalability.
- Offer device-independent access to applications.
- Increase disaster recovery and business continuity.



# Disadvantages

- The data, like the applications, reside in the cloud.
  - Many companies are concerned about letting go of their data.
- Also, because the company does not own the solution, it can be challenging or expensive to customize the application.



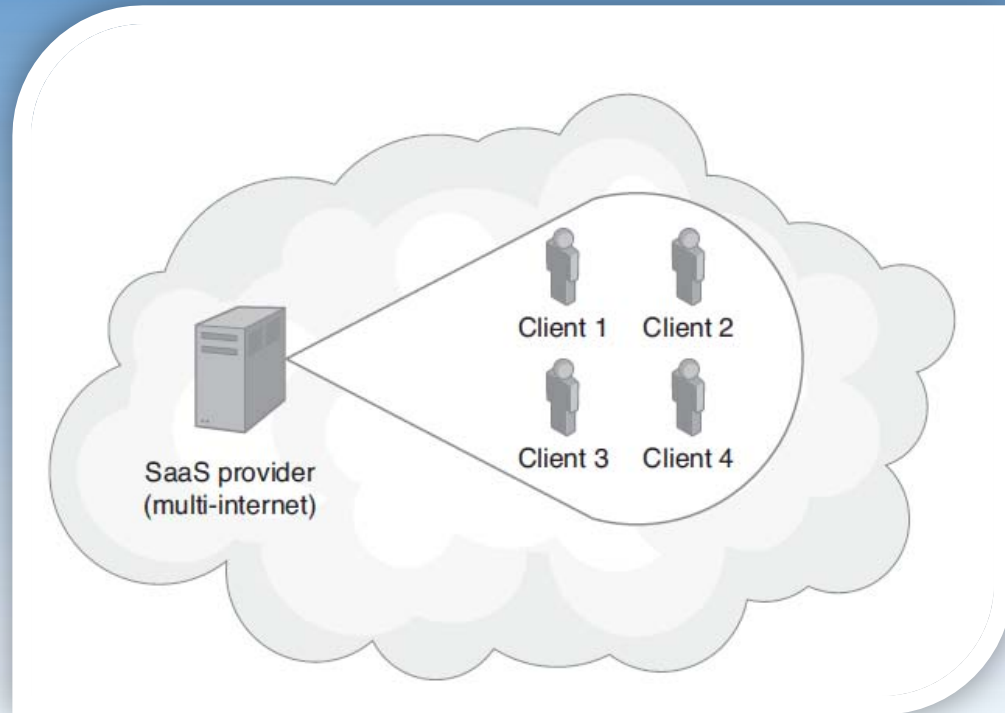
# Real World: Salesforce.com

- Cloud-based **customer relationship management (CRM)** solutions.
- Companies accomplish the following:
  - Manage sales contacts and leads
  - Centralize contact information, presentations, and project details
  - Access sales information and reports from anyplace, at any time, with any device
  - Manage project quotes and project work flow
  - Sync sales contacts and meetings with existing tools, such as Microsoft Outlook



# Multitenant SaaS Solutions

- SaaS applications are often **multitenant solutions**;
- Within the cloud, two or more companies may **share the same server resources**.





# Real World: Taleo Human-Resources SaaS

- To achieve wide-scale use, an SaaS solution must have large market potential.
- Every business must recruit, hire, train, and compensate employees.
- The Taleo cloud-based talent management system provides applications and services to meet company human resources demands.





# Taleo Corporation

- **Taleo Corporation** was a **publicly traded provider** of **cloud-based talent management** solutions headquartered in Dublin, California.
- Taleo's solutions are primarily centered around talent acquisition (recruitment), performance management, learning and development, and compensation management.
  - These capabilities combine to provide what Taleo calls "**Talent Intelligence**," or an enhanced level of insight into candidates and employees.



# Taleo Corporation

- Taleo sells its products entirely via a **software-as-a-service (SaaS)** model, in which all software and information resides in data centers operated and secured by Taleo.



# Taleo Corporation

## Oracle Taleo Cloud Service

[Free Trial](#) > [Request a Live Demo](#) > [Event: Oracle CloudWorld](#) >



### Oracle Taleo Enterprise Cloud Service

### Oracle Taleo Business Edition Cloud Service



> **Recruiting Strategies**  
The New Business of Business  
Leaders: Hiring and Onboarding

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> **Customer Highlights**  
Hyatt Embraces Emerging  
Technologies to Attract Top  
Candidates

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> **Development and Retention Strategies**  
Talent Retention: Six Technology-  
Enabled Best Practices

[More](#) ▾

Overview

Resources

Stay Connected: [f](#) [in](#) [t](#) [v](#)

### Why Oracle?

The Oracle Taleo Cloud Service enables enterprises and midsize businesses to recruit top talent, align that talent to key goals, manage performance, develop and compensate top performers, and turn today's best performers into tomorrow's leaders.

The industry's broadest cloud-based talent management platform, Oracle Taleo Cloud Service collects relevant talent information throughout the employee's entire lifecycle, empowering HR, managers, and employees to leverage talent insights to drive improved performance and business success.



### Oracle Taleo Enterprise Cloud Service

Talent management for the enterprise.

- > Oracle Taleo Recruiting Cloud Service
- > Oracle Taleo Onboarding Cloud Service
- > Oracle Taleo Performance Management Cloud Service
- > Oracle Taleo Goals Management Cloud Service
- > Oracle Taleo Succession Planning Cloud Service
- > Oracle Taleo Development Planning Cloud Service
- > Oracle Taleo Learn Cloud Service
- > Oracle Taleo Analytics Cloud Service
- > Fusion Workforce Compensation
- > Oracle Taleo Social Sourcing Cloud Service

**Live Sales Chat**

**We're Here to Help** ▾

**Oracle TBE Cloud Service**

**LOG IN**

**Active Recruiter**

**LOG IN**

INFOGRAPHIC  
**THE BUSINESS IMPACT OF  
TALEO INTELLIGENCE**



# OpenSaaS Solutions

- An OpenSaaS solution is
  - an SaaS application created using an open-source programming language and designed to run on an open-source operating system and database.
- Many customers will be easier for them to move the data to a different application in the future if the current solution fails to meet their needs.
- Because customers do not own the SaaS software, they will not be able to move the application itself.



# Real World: ADP SaaS-based Payroll Processing

- One of the first companies to leverage the power of the cloud was ADP—a **payroll processing** company.
- ADP offers cloud-based solutions for time management, employee benefits processing, workers compensation, human resources issues, and more.
- Further, ADP has extended many of its services to mobile users, allowing payroll processing to occur any time, from any place.



# ADP

<http://www.adp.ca/>

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Small Businesses**

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Employees**

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- ▶ Payroll
- ▶ Health and Benefits
- ▶ Comprehensive Outsourcing

**Solutions for  
Mid-Sized Businesses**

**50-999  
Employees**

- ▶ Human Resources
- ▶ Payroll
- ▶ Health and Benefits
- ▶ Comprehensive Outsourcing
- ▶ ADP Workforce Now

**Solutions for  
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**1000+  
Employees**

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- ▶ Payroll
- ▶ Health and Benefits
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### MOTM registration

Meeting of the Minds Conference is moving to September 2013. Stay tuned for new details!



### Automate your remittances!

To learn more about our automated statement of remittances solution just click here now



# Real World: WebEx SaaS-Based Virtual Meetings

- To gain market share, an SaaS solution must be disruptive; it must change its industry.
- The WebEx solution not only changes how and when people meet, it disrupts the travel industry by reducing business trips, hotel stays, and business meals.
- Millions of users rely on WebEx to provide a virtual yet face-to-face meeting platform.
  - A side effect of less travel is the greening of business, which has less impact on the environment.



# Cisco WebEx Meetings Server Data Sheet

[HOME](#)[PRODUCTS & SERVICES](#)[WEBEX](#)[CISCO WEBEX MEETINGS SERVER](#)[DATA SHEETS AND LITERATURE](#)[DATA SHEETS](#)[Cisco WebEx Meetings Server  
Data Sheet](#)

**Now you can bring Cisco WebEx<sup>®</sup> conferencing into your company's private cloud, for a cost-effective, secure, and flexible collaboration and communications solution. Meet your organization's requirements for highly secure on-premise conferencing, and deliver the same user experience that has made Cisco<sup>®</sup> WebEx the market-leading, software-as-a-service (SaaS) conferencing solution.**

Cisco WebEx Meetings Server is a highly secure, fully virtualized, behind-the-firewall conferencing solution that combines audio, video, and web conferencing in a single solution. With Cisco WebEx Meetings Server, you can respond to organizational requirements for higher productivity and employee-led innovation, as well as support more dynamic collaboration and flexible work styles.

Cisco WebEx Meetings Server also helps you comply with strict security or data privacy requirements, and support locations where Internet access is regulated or restricted. It also allows you to manage your conferencing solution as a capital expenditure instead of an operational expenditure.

With Cisco WebEx Meetings Server, you can:

- Meet stringent requirements for data privacy and security by bringing Cisco WebEx conferencing behind the corporate firewall
- Build on your existing investment in Cisco Unified Communications, extending your existing implementation of Cisco Unified Communications Manager to conferencing
- Enhance individual and team productivity and collaboration with high-quality audio, video, and web conferencing
- Enable mobile workers to be more productive and engaged with the ability to participate in conferences using a variety of mobile devices
- Easily manage your entire conferencing environment with the solution's Administration Dashboard

## How Cisco WebEx Meetings Server Works

Cisco WebEx Meetings Server is a virtualized, software-based solution that runs on Cisco UCS<sup>®</sup> x86 Servers and VMware 5.0. It uses virtual appliance technology for rapid turn-up of services to end users. With Cisco WebEx Meetings Server, there are two options for enabling mobile users to more securely access WebEx conferences without going through a VPN. The first option is to deploy reverse proxy (or edge servers) in the enterprise perimeter (or DMZ). The second option, shown in Figure 1, is to deploy the reverse proxy servers behind your internal firewall, which eliminates all DMZ components and related information security concerns.

### Downloads

[Cisco WebEx Meetings Server  
Data Sheet](#)





# Top-rated mobile apps

- Collaborate from wherever you are with WebEx mobile apps for iPhone, iPad, Android, or Blackberry. If you can get online, you can work together.





# More than just meetings

- You can do almost anything with WebEx that you can do in person, minus the travel time.
- Use WebEx specialized products to:
  - Present dynamic online events and webinars
  - Deliver online training and eLearning experiences
  - Provide outstanding remote technical support
  - Build stronger relationships with in-person telepresence experiences delivered over the cloud
  - Share knowledge, experience and ideas across your organization



# Peace of mind included

- WebEx products are delivered through the Cisco WebEx Cloud.
- Count on the highest levels of performance and security from this scalable network.
- Options like password protection offer extra reassurance that your collaborative spaces are safe.





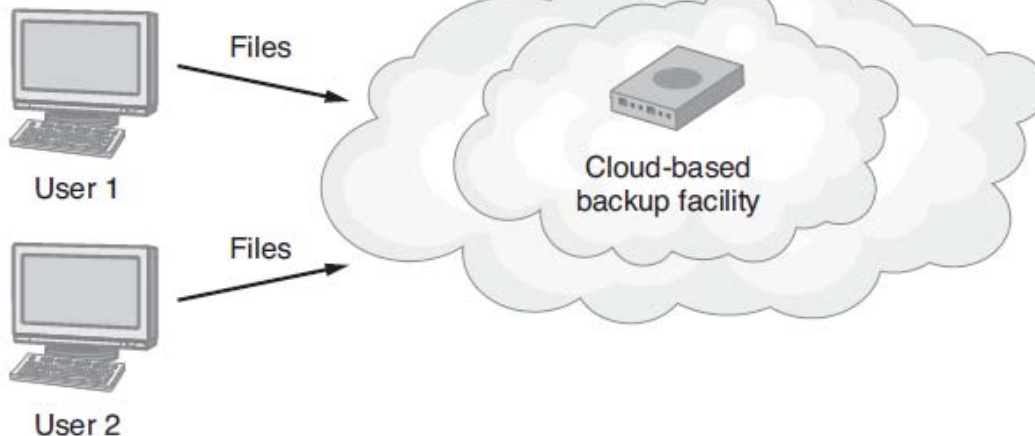
# Less travel, more green

- Using WebEx doesn't just simplify your life. It's also easy on the planet.
- [See how you're reducing your carbon footprint.](#)



# Real World: Carbonite SaaS-based Backups

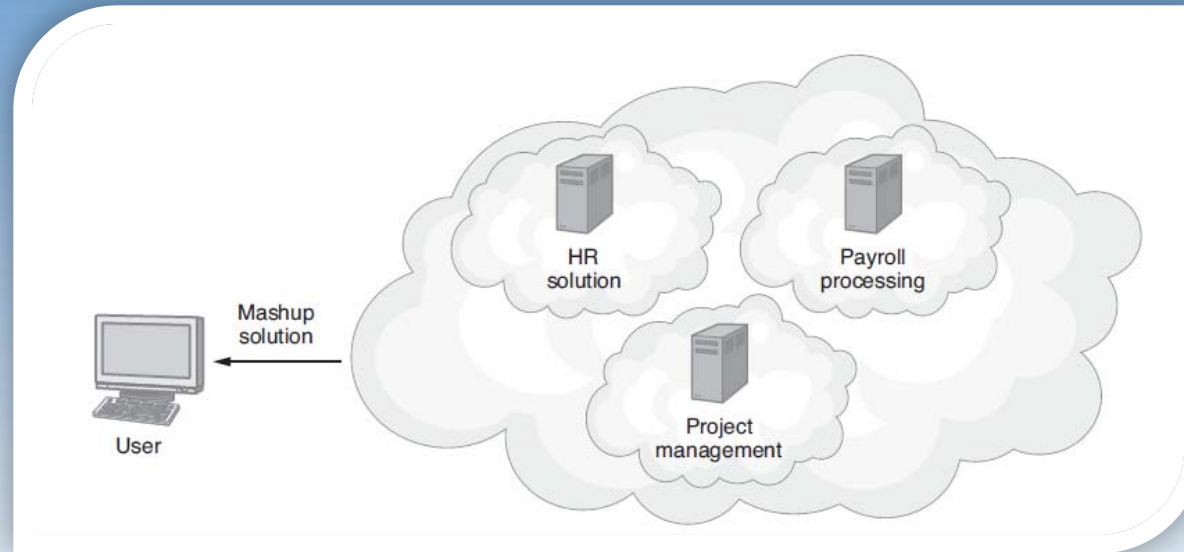
- Users should perform regular disk and file backup operations. Because the process is generally too time consuming, most users fail to back up their files on a regular basis.
- Carbonite provides **turn-key backups** to the cloud.





# Understanding Mashups

- A collection of services joined to create an overall solution.
- Mashups can be combined by JavaScript or by a server-based application.





# Introduction

- A Mashup is a web application that combines data from more than one source into a single integrated tool.
- Content used in Mashup is typically sourced from a third party via a public interface or so called API
- Web Mashup = API [1] + API [2] + API [N]
  - <http://www.housingmaps.com/>



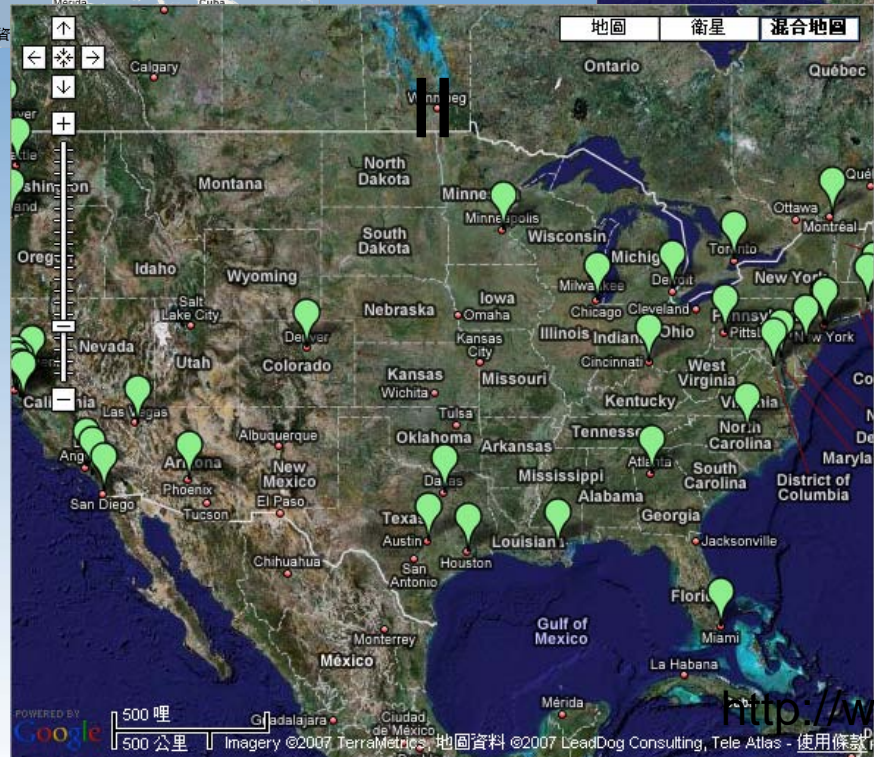
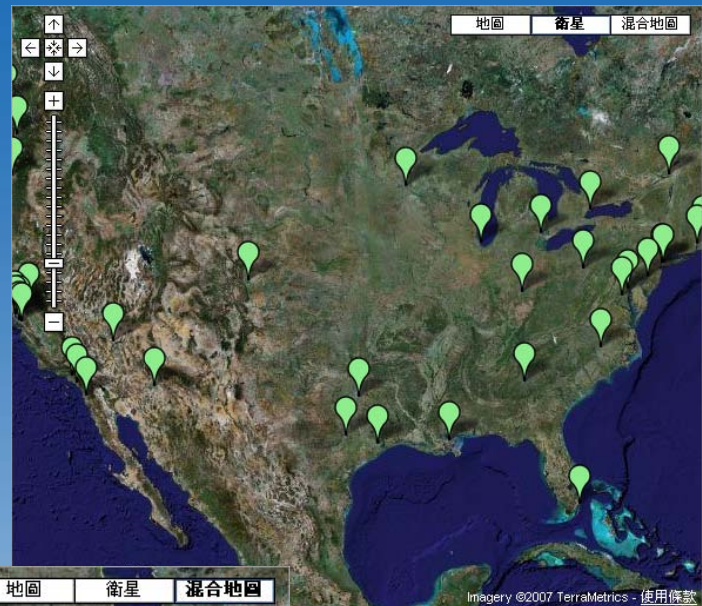
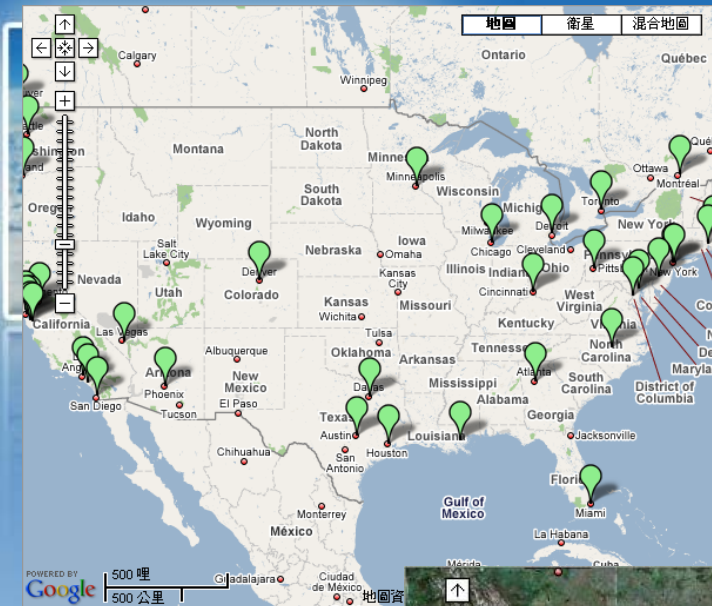
# Web Mashup genres

- Mapping mashups
  - Google Maps, Yahoo Maps, Microsoft Virtual Earth
- Video and photo mashups
  - Flickr, Youtube
- Search and Shopping mashups
  - eBay, Amazon
- News mashups
  - Diggdot.us= Digg.com + Slashdot.org + Del.icio.us

Example: <http://www.mapdango.com/>







<http://www.housingmaps.com/>

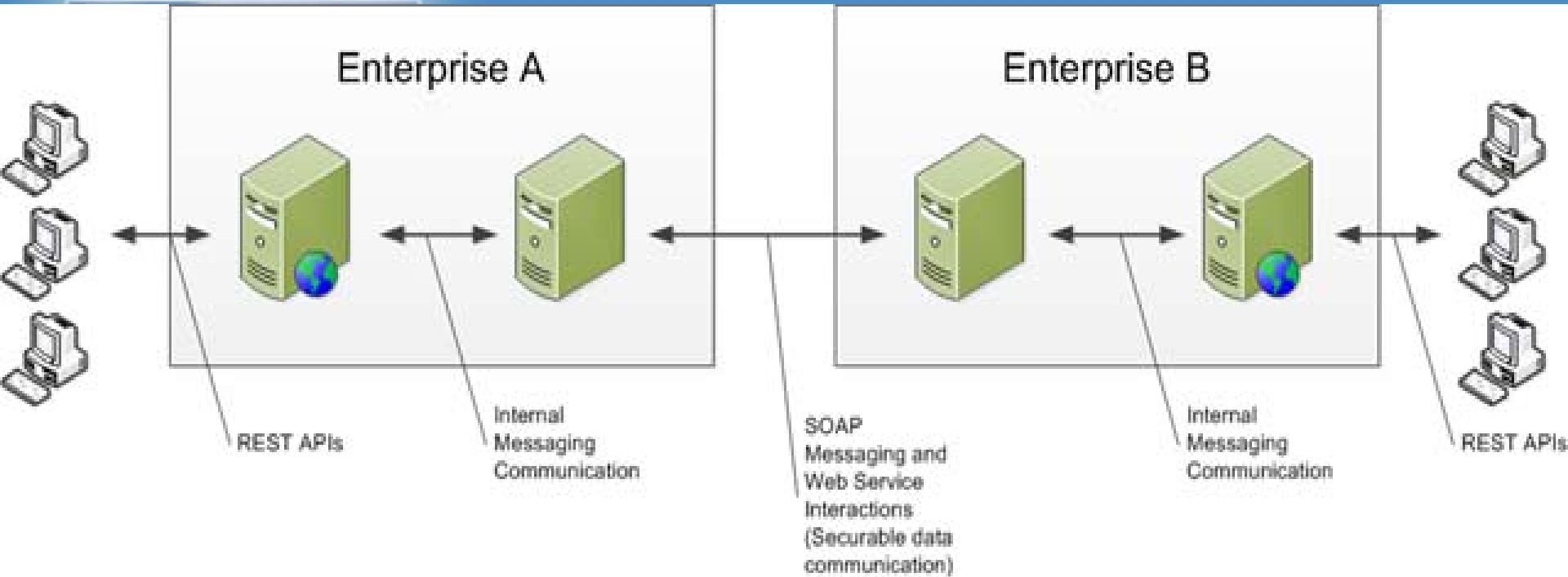


# Web Mashup architecture

- Source
  - API/content providers
  - Web Protocols: REST, Web Services, RSS/ATOM
  - Screen Scraping
- The mashup site
  - Server-side: Dynamic content aggregation
  - Client-side: Client side scripting
- The client's Web browser
  - This is where the application is rendered graphically and where user interaction takes place

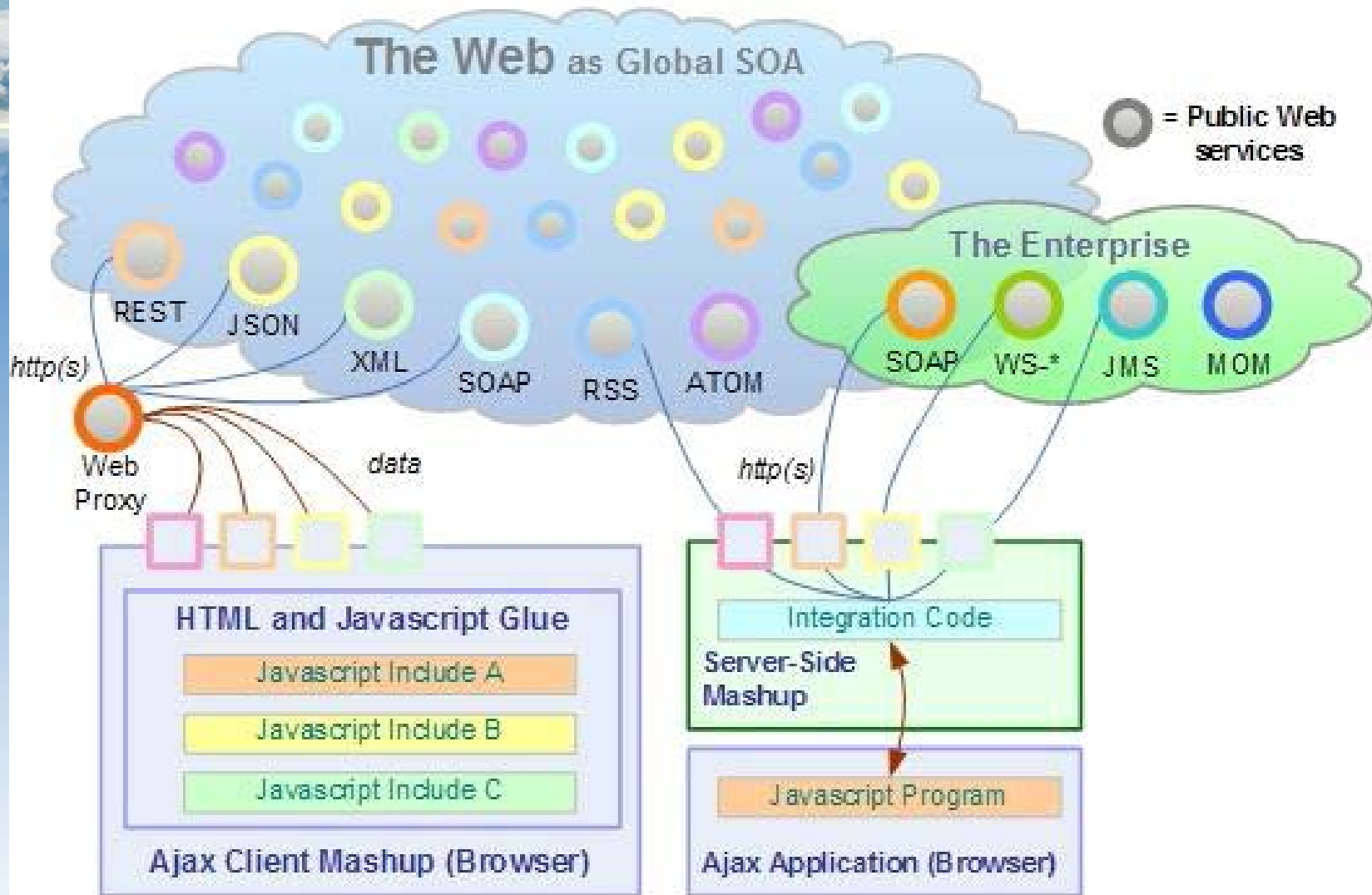
*Atom (standard)*

*Really Simple Syndication (RSS)*



# Web Mashup Styles

In-Browser | Server-side



Source: <http://web2.wsj2.com>



Asynchronous JavaScript and XML (AJAX)

Service-Oriented Architecture (SOA)



# Mashup Editors

- [Google Mashup Editor](#)
  - [Microsoft Popfly](#)
  - [Yahoo pipes](#)
  - [IBM Assemble Zero](#)
- 
- Web application from Yahoo! With GUI for building Mashup applications
  - Combine many feeds into one, then sort, filter and translate it
  - Geocode favorite feeds and browse the items on an interactive map.
  - Grab the output of any Pipes as RSS, JSON, KML, and other formats
  - You can publish your pipes and share with others



# Yahoo! Pipe : Example

The screenshot displays the Yahoo! Pipes web interface. The browser window title is "untitled\* TechFeedsPipe\*". The interface includes a sidebar on the left with categories: Sources, User inputs, Operators, Url, String, Date, Location, Number, Favorites, My pipes, and Deprecated. The main workspace contains a workflow diagram with the following components:

- Sources:** Three "Fetch Feed" widgets are connected to a central "Union" widget. Their URLs are:
  - http://feeds.dzone.com/javalloby/
  - http://www.oreillynet.com/pub/feed
  - http://developers.sun.com/rss/java
- Filter:** A "Filter" widget is connected to the "Union" widget. It is configured to "Permit" items that match "all" of the following rules:
  - item.pubdate is after datetime
- Sort:** A "Sort" widget is connected to the "Filter" widget. It is configured to sort by "item.feedburner:origl" in "ascending" order.
- Output:** The workflow ends at a "Pipe Output" widget.
- Configuration:** A "Show feeds published" widget is connected to the "Filter" widget. Its configuration is:
  - Name: dateinput1
  - Prompt: Show feeds published
  - Position: number
  - Default: datetime
  - Debug: datetime

At the bottom right, a status bar indicates "Debugger: Pipe Output (109 items)".



# Yahoo! Pipe : Example



[Home](#) [My Pipes](#) [Browse](#) [Discuss](#) [Documentation](#)

[Create a pipe](#)

You're logged in as (logout)

Search for Pipes...

## TechFeedsPipe

*Click to add description*

[☆](#) [Edit Source](#) [Delete](#) [Publish](#) [Clone](#)

Configure this Pipe

Show feeds published after this date:

Use this Pipe

[+ MY YAHOO!](#) [+ Add to Google](#) [🔔 Get results by Email or Phone](#) [📡 More options ▶](#)

List

13 items

### Do I hate BPM? No. I hate BPM Products.

John Reynolds has a post at Java.net entitled Why do Java developers hate BPM? where I think he completely misses the problem with "BPM" products: Java developers hate BPM. The preceding sentence is (of course) intentionally tailored to be controversial. People tend to read controversial...

### Sussman on DVCS, Van Zyl using GIT+SVN

Ben Collins-Sussman has an interesting blog entry about Distributed Version Control titled "Version Control and the 80%". Here's an excerpt: ...In a nutshell; with a centralized system, people are forced to collaborate and review each other's work; in a decentralized system, the default...

### Multi-Language VM

OpenJDK community has a new project, Multi-Language VM (or just mlvm). It is announced by John Rose, from Sun, on the announcement list. The focus of the project will be to prototype JVM features beneficial for dynamic languages and remove "pain points" that current dynamic language developers...



Author:

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### Properties:

Not published  
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0 clones

### Tags:

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### Sources:

[oreillynet.com](#)  
[sun.com](#)  
[developers.sun.com](#)  
[dzone.com](#)  
[feeds.dzone.com](#)

### Modules:

[fetch](#)  
[sort](#)  
[filter](#)  
[union](#)  
[dateinput](#)

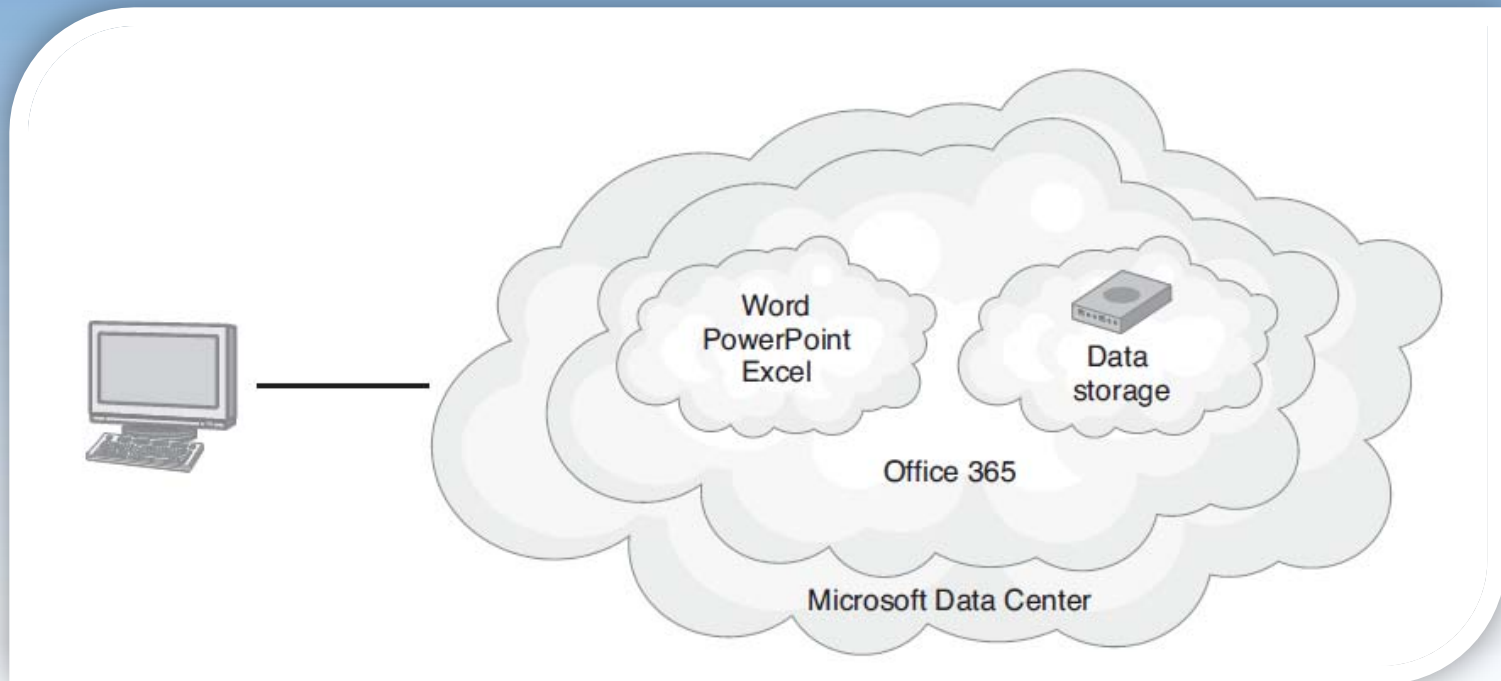






# Real World: Office365 SaaS-Based Document Creation

- Office 365 provides cloud-based subscription access to the Office suite of applications.



## 雲端互動體驗中心

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快速導入手冊

## 成功案例

[➔](#) 下載微軟雲端  
客戶成功案例導覽



### 和泰汽車

和泰汽車秉持「顧客第一」的精神，致力於創新營運與服務模式。運用微軟 Office 365，讓第一線的業務人員可以提供客戶更卓越的服務，提高顧客滿意度！



### 台灣膳魔師

Office 365 採人頭計價，免除企業評估 IT 投資預算的困擾，也帶來更多營運彈性；吳友中特助認為，IT 科技應該是要協助企業，而非成為企業困擾的來源。



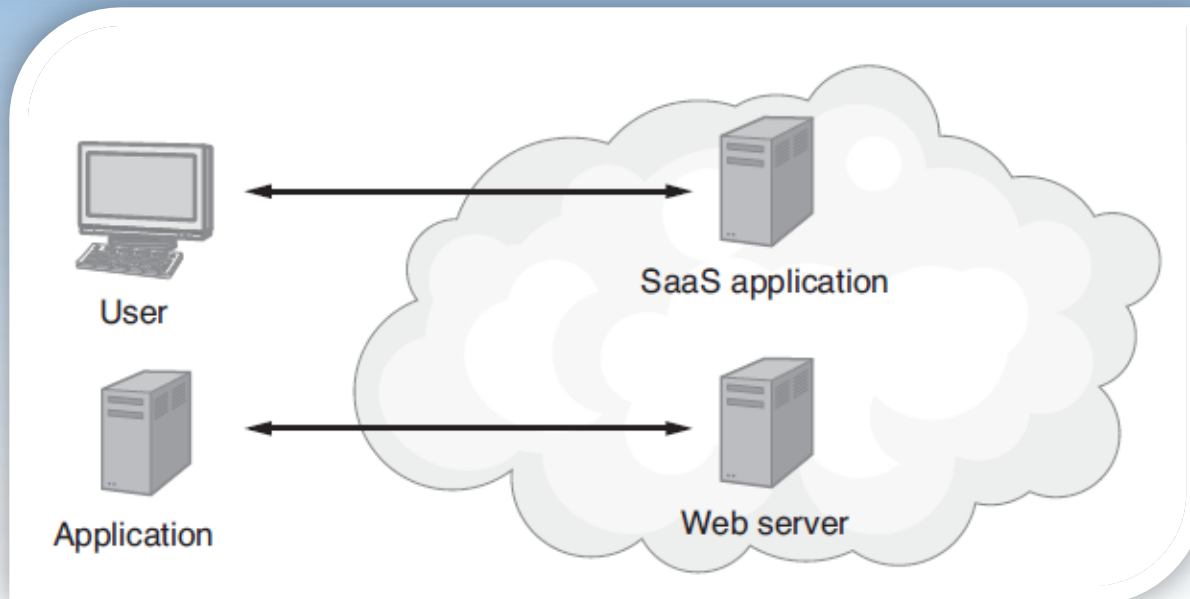
### 撼訊科技

利用 Office 365，員工可以對發布在平台上的問題及時反應，會比過去以 email 方式反覆往回要節省時間，有時員工甚至可以在家工作，突破時間與空間的限制。



# Introducing Service-Oriented Architecture (SOA)

- **Service-oriented architecture (SOA)** is an application development methodology with which developers create solutions by **integrating one or more web services**.



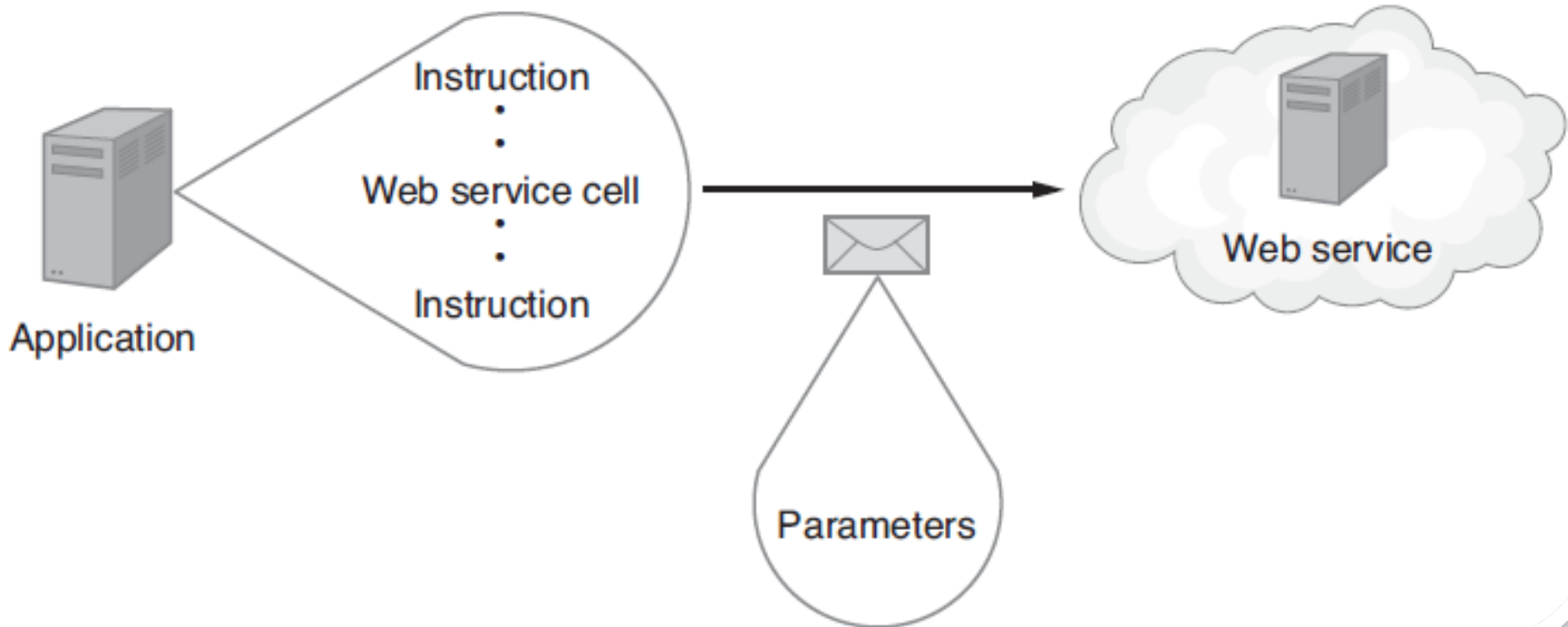


# Web Service

- A function or a subroutine program accomplishes a specific task.
- A message, possibly containing parameter values, is sent across the network (or Internet) to the computer housing the web service.
- That computer, in turn, performs its processing and normally returns a result to the caller.
- Some developers refer to web services as remote-procedure calls.



# Web Service Message Passing





# Web Services Continued

- Developers refer to a set of web services as an **application program interface (API)**.
- Amazon and eBay provide APIs that programmers can use to purchase products from across the web using the programs they create.



# Facebook: Is It a SaaS?

- If you ask 10 cloud experts if Facebook is an SaaS social media site, you will likely get 10 uncommitted “maybe” answers.
- Facebook definitely has a variety of SaaS characteristics:
  - Ability to scale with respect to processor demands and data storage needs
  - No user software to purchase or install
  - Redundant server hardware and data storage
  - Accessibility through a myriad of devices



# Key Terms

## KEY TERMS

Application program interface (API)

Customer relationship management (CRM)

Mashup

Multitenant solution

Service-oriented architecture (SOA)

Web services





# Chapter Review

- Define and describe SaaS.
- Discuss an SaaS provider for each of the following:
  - Sales and customer relationship management
  - Accounting
  - Income tax filing
  - Web-based meetings
  - Human resources
  - Payroll processing
  - Backup automation
  - Office document creation
  - Social networking



# Chapter Review Continued

- Define and describe mashups.
- List the advantages and disadvantages of SaaS solutions.
- Describe the role of OpenSaaS.
- Compare and contrast a web service and an SaaS solution.
- Define and describe SOA.