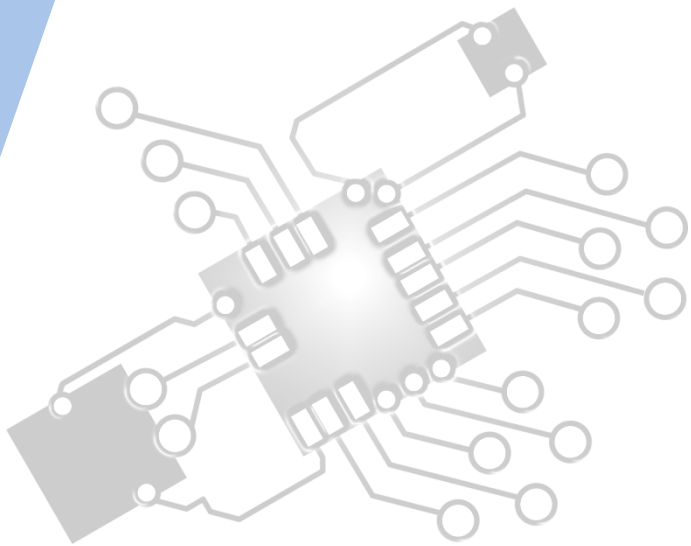
Planning & system installation

IB Computer Science



Content developed by
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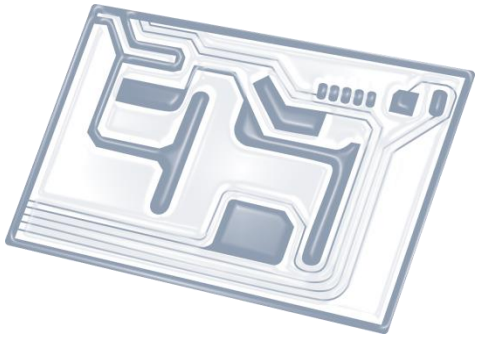
Computer Science Department

HL Topics 1-7, D1-4



1: System design

2: Computer Organisation

3: Networks

4: Computational thinking

5: Abstract data structures

6: Resource management

7: Control

D: OOP

HL & SL 1.1 Overview

Planning and system installation

1.1.1 Identify the context for which a new system is planned.

1.1.2 Describe the need for change management

1.1.3 Outline compatibility issues resulting from situations including legacy systems or business mergers.

1.1.4 Compare the implementation of systems using a client's hardware with hosting systems remotely

1.1.5 Evaluate alternative installation processes

1.1.6 Discuss problems that may arise as a part of data migration

1.1.7 Suggest various types of testing

User focus

1.1.8 Describe the importance of user documentation

1.1.9 Evaluate different methods of providing user documentation

1.1.10 Evaluate different methods of delivering user training

System backup

1.1.11 Identify a range of causes of data loss

1.1.12 Outline the consequences of data loss in a specified situation

1.1.13 Describe a range of methods that can be used to prevent data loss

Software deployment

1.1.14 Describe strategies for managing releases and updates

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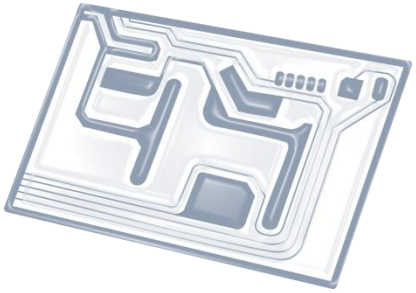
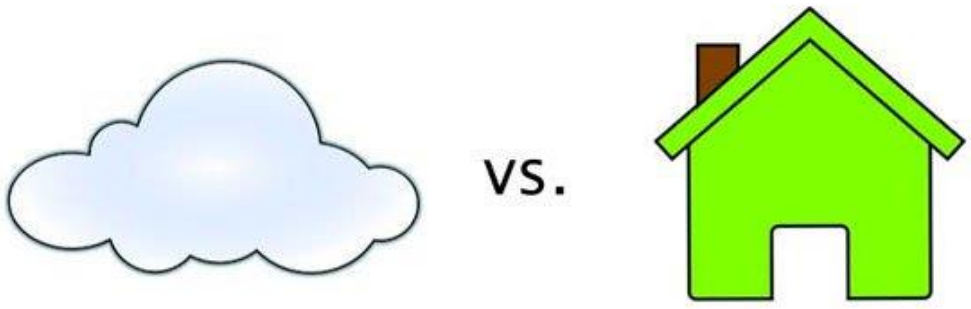


Topic 1.1.4

Compare the implementation of systems using a **client's hardware** with hosting systems **remotely**

Local software vs Remote software

- There are two competing models of distributing software: **Local** and **Remote** (also called *SaaS/cloud*).
- You can either buy a program and install it on a particular computer or set of computers (called **local**)
- Or you can buy/rent/use software that is installed on a computer somewhere on the internet and then use it though a browser or dedicated local application (called **remote**)



SaaS (Software-as-a-Service)

SaaS is a software distribution model in which a third-party provider hosts applications and makes them available to customers over the Internet.

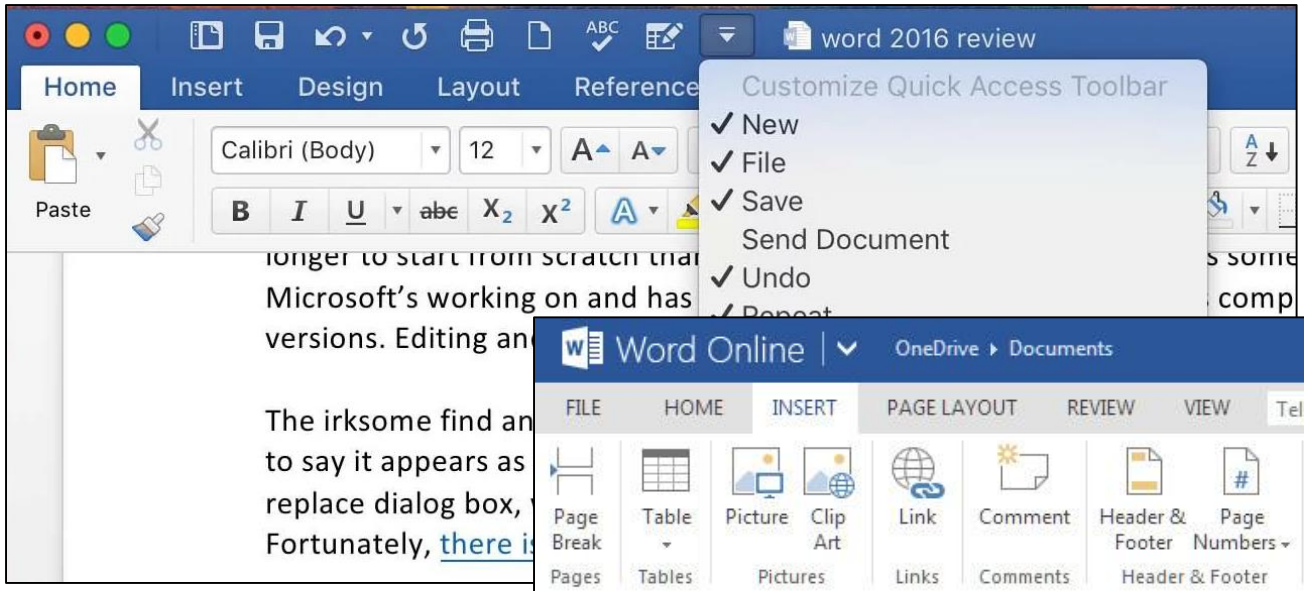
Also known as *on-demand software*, hosted software or web-based software, **SaaS** does away with the traditional software installation, maintenance and management approaches in favour of delivering cloud-based applications via the internet.

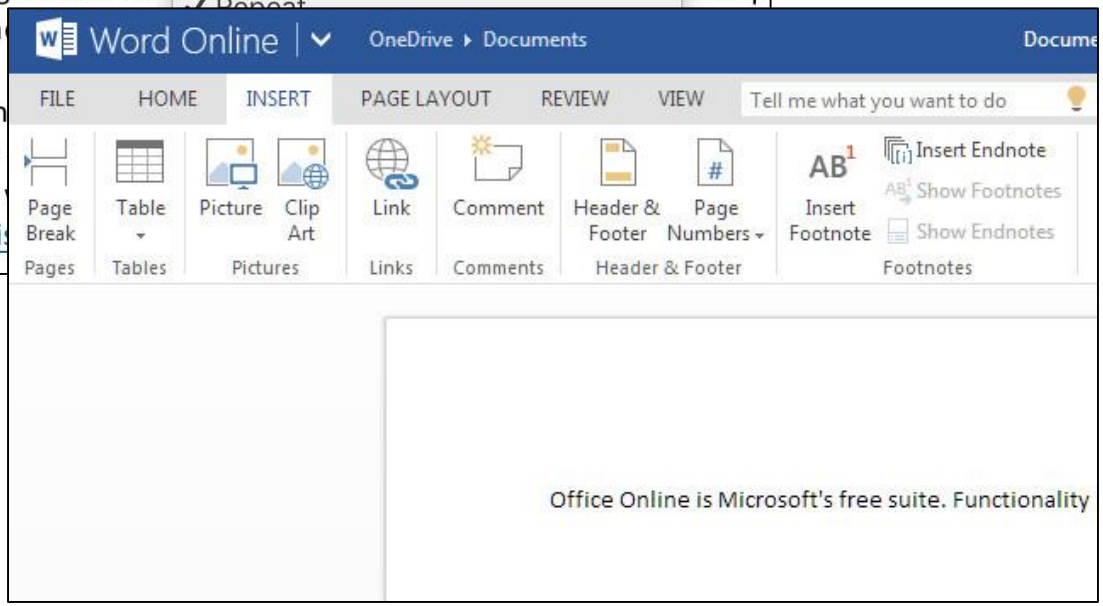
With **SaaS**, service provider partners shoulder the burdens of **security**, **availability** and **performance**.

Common SaaS examples

- Microsoft Office 365
- Google Apps
- Amazon Web Services
- Dropbox

Office 2016 (local) vs Office 365 (SaaS)





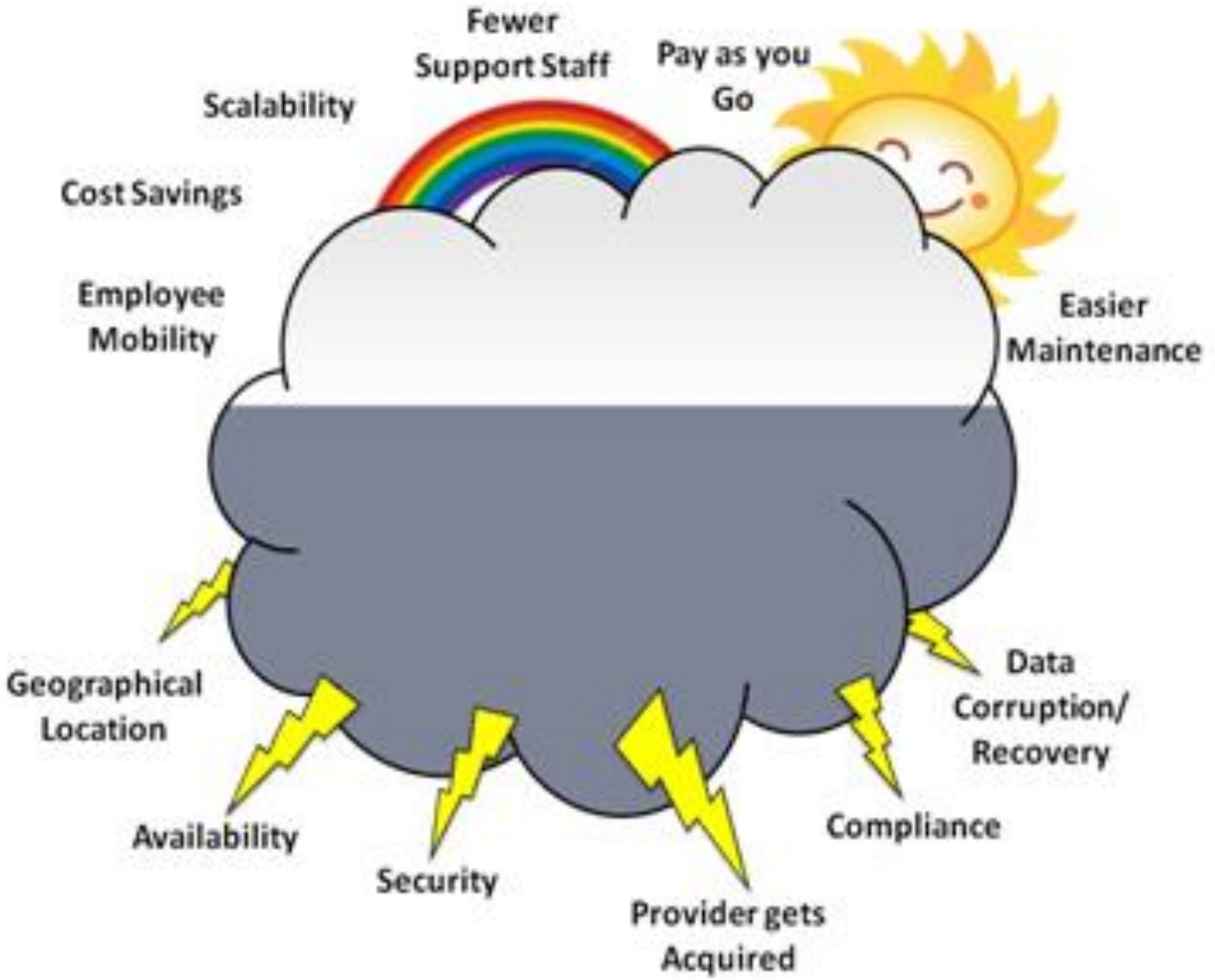
Almost identical, but Word 365 runs in a web browser, while Word 2016 has it's own *dedicated* locally installed application.

Benefits of being 'cloud-based'

- **SaaS** is great for any organisation that wants to minimize it's IT responsibilities and costs.
- **SaaS** is particularly well suited for small businesses. Instead of investing in additional in-house server capacity and software licenses, companies simply can adjust their **SaaS** subscription on a monthly basis,
- There's also a reduction in staff workload. In-house IT workers are liberated from the tasks associated with on-premise hardware and software
- Because the IT infrastructure resides in the service provider's data centre, the organization can get back up and running immediately in the event of a service outage or more dramatic disruption.

Drawbacks of SaaS

- Companies that adopt multiple SaaS applications or plan to connect hosted software with existing on-premise apps may encounter software integration headaches along the way.
- Security is another common concern: whenever sensitive company data and business processes are entrusted to a third-party service provider, issues such as identity and access management must be addressed.
- Businesses must also take into account the government compliance regulations inherent to storing customer data in a remote data centre, i.e. laws might be different in different countries.


Fewer
Support Staff
Pay as you
Go
Scalability
Cost Savings
Employee
Mobility
Easier
Maintenance
Geographical
Location
Data
Corruption/
Recovery
Availability
Security
Provider gets
Acquired
Compliance