FACTFILE:
GCE DIGITAL TECHNOLOGY

AS2: FUNDAMENTALS OF DIGITAL TECHNOLOGY: WEB TECHNOLOGY AND MULTIMEDIA

WEB APPLICATIONS 2

Learning Outcomes

Students should be able to:
- Describe the role of the International Telecommunications Union (ITU) and World Wide Web Consortium(W3C) in agreeing web standards.
- Evaluate the use of an Intranet by an organisation.

Content in Web Applications 2

- ✔ The role of the International Telecommunications Union in agreeing web standards.
- ✔ The role of the World Wide Web Consortium (W3C) in agreeing web standards.
- ✔ The use of an Intranet within an organisation.

The role of the International Telecommunication Union in agreeing web standards

The ITU is a United Nations agency which specialises in information communication technology. It is responsible for:
- allocating radio spectrum and satellite orbits;
- developing standards related to network technology which enables interconnection all around the world;
- Improving interconnectivity between countries across the world.

Its membership comprises 193 countries and hundreds of organisations across the world. The ITU has three main areas of activity: the radio communication sector, the standardisation sector and the development sector. It is through the standardisation sector (ITU-T) that the ITU contributes to web standards. Examples this are:
- 95% of international Internet traffic is carried on submarine fibre cables built using ITU standards;
- ITU-T standards are used for fixed broadband subscriptions;
- The Cyber Security Information Exchange provides a standardised way for organisations to exchange warnings about cyber threats;
- ITU-T X.509 is a standard for digital certificates used in e-commerce;
- ITU studies the cost of Internet connectivity and its impact on the economy;
- ITU-T standards provide standards for cloud computing and machine to machine communications on the Internet of things.

The role of the World Wide Web Consortium (W3C) in agreeing web standards

The W3C is a global organisation which develop open standards to ensure the growth of the web. It was founded by Tim Berners-Lee. It has 423 members and provides a forum for discussion and education about the web. The ITU works with W3C. Examples of how the W3C contributes to web standards are listed below.

- Promotes compatibility of HTML by different

vendors. The aim of this is to ensure that all webpages can be viewed using a variety of web browser and that the page will look the same within different browsers.

- A significant set of standards for programming has been developed through W3C and are in use globally. Standards set by the organisation include:

  – CGI – Common Gateway Interface, a protocol for web servers to interface with CGI scripts;
  – CSS – Cascading Style Sheets a standard for describing how HTML elements are to be displayed onscreen;
  – HTML – Hypertext Mark-up Language is the standard mark-up language for creating web pages;
  – XML – Extensible Mark-up Language a software and hardware independent tool for storing and transporting data.

The use of an Intranet within an organisation

An intranet is a network communication system based on TCP/IP protocol which belongs to a company or organisation. An intranet can only be accessed by authorised members of the organisation. It can be limited to a local area network (LAN) or can be accessed from a remote location over the Internet, possibly using a virtual private network, where a username and password is required.

The main functions of an intranet are to:
- provide tools which facilitate collaboration and communication between employees. For example, project management software, calendars, timelines, email;
- enable file exchange and upload;
- allow messages to be broadcast across the company;
- provide information and learning opportunities for employees and so enhance employee engagement;
- provide search functionality so that the relevant and most up-to-date information is available for decision making.

Intranets are becoming more sophisticated and their role and function within organisations is expanding. In the past an intranet was used for delivering content and some communication. Collaboration and activity is now the focus of a modern company intranet. On-line applications are provided within the intranet for use by employees for example, online forms, application forms, collaborative tools. This means that employees will use the intranet to complete part of their normal day to day work. The intranet has moved from being an 'add-on' to being an integrated part of the work flow within an organisation.

? Questions

1 a) Visit www.itu.int and watch the video on the Standardisation sector on the "About ITU" page. Using your school as a model, create an e-poster or presentation which details how the ITU-T standards have impacted on the design and development of the IT system. [10]

b) Write a set of speaker notes which includes a section on why standards are needed when designing and developing new technologies. [8]

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2 The W3C has a major role in developing new web standards.
a) Describe how this organisation contributes to web standards. [8]
b) Explain six standards which the organisation have developed and how they impact on web technology. [6]

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3 A company wants to implement an intranet.
   a) Explain the term 'intranet'. [4]
   b) Describe how a company can use an Intranet to:
      (i)   enhance employee productivity
      (ii) improve communication within the company [8]

Extension Task
   c) Investigate how one commercial product (for example Microsoft SharePoint) provides intranet capabilities for organisations. Summarise your findings and include the features provided by the product

Bibliography
BCS Academy Glossary Working Party, 2013, *BCS Glossary of Computing and ICT*, 13th Edition, Swindon, BCS Learning and Development Ltd