

# Workplace Technology - Teacher Notes

*Directions:*

Fill in the blanks.

## ***Purpose & Impact Segment***

### **1. Workplace Technology**

- Plays an essential role in how **businesses function**
- Is relied upon by businesses to increase efficiency and effectiveness
- Enables people in the workplace to work more **quickly and accurately**
  - in many cases, technology allows people to work in ways previously not possible

### **2. Workplace Technology**

- Can serve many purposes, including:
  - facilitating **communication**
    - for example:
      - e-mail, messenger systems and online cloud sharing services enable communication over long distances
  - enhancing **organization and productivity**
    - for example:
      - scheduling, filing and procedure systems optimize time management, make resources more accessible and reduce downtime

### **3. Workplace Technology**

- Can serve many purposes, including:
  - **motivating employees**
    - for example:
      - employee and project management systems allow employees to track their performance and receive **ongoing feedback**

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## 4. Workplace Technology

- Can serve many purposes, including:
  - monitoring **quantitative business factors**
    - for example:
      - inventory, transaction and accounting systems track information needed for critical management decisions
  - **analyzing business information**
    - for example:
      - many types of management systems examine operational and performance information to provide statistical insight regarding business methods

## 5. Workplace Technology

- Can serve many purposes, including:
  - expanding **product/service options**
    - for example:
      - e-commerce provides an additional channel for purchase and customization systems, allowing customers more control selecting products
  - enhancing **customer service**
    - for example:
      - social media and e-mail provide customers a direct method for asking questions and commenting at their convenience

## 6. Workplace Technology

- Can serve many purposes, including:
  - improving **profitability**
    - for example:
      - tax and invoicing systems can **lower costs** and budgeting software can indicate how expenses can be reduced

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## 7. Workplace Technology

- Can present risks and ethical concerns for businesses, including:
  - **invasion of privacy**
    - organizational practices regarding information collection must be honest, ethical and respectful of individuals' rights
  - **data protection**
    - information stored and communicated using technology should be secured through appropriate tools, policies and procedures

## 8. Workplace Technology

- Can present risks and ethical concerns for businesses, including:
  - **technology failure**
    - organizations should have contingency plans in case of power loss, hardware malfunction, software corruption, etc.
  - **employee misuse**
    - policies regarding proper use of workplace technology must be clearly communicated and consistently enforced

## 9. Workplace Technology

- Is changing the profile of the workplace
  - **automation is common**, decreasing the need for labor
  - many workers are encouraged or required to receive more **education and training** to keep up with new technologies

## 10. Workplace Technology

- Is changing the profile of the workplace
  - communication and collaboration over distances is easier, so offices and workers may be in **multiple and/or shifting locations**
  - increased access to workplace tools and information means work hours may be **more flexible** and may not always fit the typical 8 a.m. to 5 p.m. workday

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## ***Types of Technology Segment***

### **1. Workplace Technology**

- Includes:
  - copiers and **fax machines**
  - business phone systems
  - computers and computer software
  - networks and **intranet**
  - the Internet and Internet applications

### **2. Copiers & Fax Machines**

- Are useful when printed documents are needed
  - copiers are machines which make **exact duplicates** of documents
  - fax machines are devices for sending and receiving printed documents over **telephone lines**
- May also include features such as the ability to scan and e-mail documents

Technology Tidbit: Copiers were first introduced in 1959 by Xerox®.

### **3. Business Phone Systems**

- Are multiline, interconnected telephone systems which allow for specialized features
  - such as **call transferring**, conference calling, shared voicemail boxes, etc.
- May involve Internet connection
  - allowing for more advanced features, such as **integrated text messenger**, voicemail and e-mail systems

### **4. Computers**

- Are programmable machines for storing, processing and retrieving data
  - includes a variety of types, such as desktops, laptops, tablets and **smartphones**
- Enhance virtually all workplace tasks
  - communication, **task management**, research and development, marketing, etc.

Technology Tidbit: The first programmable general-purpose electronic digital computer, the Electronic Numerical Integrator and Computer (ENIAC), weighed 30 tons, filled 1,500 square feet and cost \$400,000 to build.

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## 5. Computers

- Require the use of hardware and software
  - hardware is **physical elements** of a computer
    - as well as separate elements which support computer functionality
  - software is the instructions which guide **how computer hardware operates**, what tasks are performed and how those tasks are performed

## 6. Computer Hardware

- Consists of four main types:
  - input devices
    - keyboard, mouse, touchscreen, microphone, webcam, scanner, etc.
  - **processing devices**
    - central processing unit (CPU)
  - **output devices**
    - monitors, printers, speakers, etc.
  - storage devices
    - hard disk drive, optical drives (CDs, DVDs), flash devices (USBs), etc.

Technology Tidbit: The first computer mouse was made of wood.

## 7. Printers & Scanners

- Are two of the most common, most useful types of computer hardware found in the workplace
  - printers are output devices which produce **physical versions** of computer documents and images using paper and ink
  - scanners are input devices which transfer information and images from physical documents to **computer files**

## 8. Computer Software

- Includes system software
  - provides instructions for basic operation of computer hardware
    - includes operating systems, **device drivers**, firmware, programming language translator and utilities
  - is typically **pre-installed** by the computer manufacturer before purchase
    - because it is required for functionality

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## 9. Computer Software

- Includes application software
  - provides platforms and instructions for **specific tasks**
    - includes many types
  - may require installation by the user
    - some common basic applications are pre-installed
  - often available in **integrated software packages** with multiple related applications
    - sales packages, accounting packages, reporting packages, inventory packages, etc.
    - integrated software packages are often referred to as application suites

## 10. Common Application Software

- Includes:
  - **word processing** software
    - for creating and editing documents
    - example: Microsoft® Word
  - database software
    - for organizing, storing and managing data
    - example: Microsoft® Access®
  - **spreadsheet** software
    - for organizing, analyzing and storing data in tables
    - example: Microsoft® Excel®

Technology Tidbit: When made for mobile devices, application software is often referred to as an app.

## 11. Common Application Software

- Includes:
  - **personal information management** software
    - for managing tasks, contacts and correspondence
    - example: Microsoft® Outlook®
  - multimedia software
    - for creating and playing audio and video files
    - example: Windows® Media Player
  - **presentation** software
    - for formatting text, graphics, audio and/or video to accompany a presentation
    - example: Microsoft® PowerPoint®

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## 12. Common Application Software

- Includes:
  - graphic design software
    - for creating and manipulating images
    - examples: Adobe® Photoshop® and Adobe® Illustrator®
  - **web development** software
    - for creating, editing and publishing online content
    - example: Adobe® Dreamweaver®
  - **desktop publishing** software
    - for creating and editing publications which incorporate images and text
    - examples: Microsoft® Publisher and Adobe® InDesign®

## 13. Common Application Software

- Includes:
  - **content access** software
    - for accessing and viewing content
    - examples: Microsoft® Edge and Google™ Chrome™
  - **virtual meeting** software
    - for teleconferencing, videoconferencing, etc.
    - example: Microsoft® Skype®
  - enterprise software
    - for tracking and managing business information
    - example: Microsoft® Dynamics®

## 14. Computer Software

- Is either open source or proprietary
  - **open-source software** can be used without paying a license fee and can be modified to add capabilities not realized by its originators
    - for example, Linux operating system and Mozilla® Firefox® web browser
  - **proprietary software** has restrictions on its use and its source code is kept secret
    - for example, Microsoft® Windows operating system and Edge® web browser

Technology Tidbit: In addition to system and application software, there is programming software, which is used to make all types of software.

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## 15. Networks

- Are connections among computers to **facilitate communication** and sharing of resources
- May be **private or public**
- Include many types which vary by size:
  - personal area network (PAN)
  - local area network (LAN)
  - wide area network (WAN)
  - metropolitan area network (MAN)
  - global area network (GAN)

## 16. Intranets

- Are **private networks** typically used by organizations for the sharing of company news, policies, documents and other information
- May incorporate communication and collaboration tools
- May be connected to the Internet through one or more **gateway computers**

## 17. The Internet

- Is a **global system** of computer networks
  - world's largest, most popular network
- Is a **public resource** available to everyone
  - no one owns the Internet or controls who can connect to it
  - used by more than two billion people around the world

## 18. The Internet

- Requires a hard-wired or Wi-Fi connection
  - with a hard-wired connection, a series of cables are used to transport the signal between the computer and the Internet service provider
  - with Wi-Fi (**wireless connectivity**), radio waves are used to wirelessly transport the signal between the computer and a wireless access point (**usually a router**), which is connected via a series of cables to the Internet service provider



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## 19. The World Wide Web

- Is a public information system on the Internet which **connects billions of documents** known as web pages
  - the World Wide Web is a part of the Internet, not a synonym for it
- Is accessed through a **web browser**
  - web browsers are web-based content access application software

Technology Tidbit: The World Wide Web was created in 1991 by Timothy Berners-Lee, a computer programmer at the European scientific research organization, CERN.

## 20. The Cloud

- Describes a global network of **remote servers** which operate through the Internet
  - freeing storage and computing power in local computers and servers
- Stores and manages data
  - allowing users easy access online
- Runs application software
  - allowing multiple users to work simultaneously in **web-based applications**

Technology Tidbit: Using the cloud to store, manage and process data is known as cloud computing.

## 21. The Cloud

- Is owned and operated by **multiple entities**
  - companies such as Amazon<sup>®</sup> and Google<sup>™</sup>
- Is leased by its owners to individuals and organizations for a fee
  - common cloud providers include:
    - Google<sup>™</sup>
    - Apple<sup>®</sup>
    - **Microsoft<sup>®</sup> Azure<sup>®</sup>**
    - Dropbox<sup>®</sup>

## 22. Web-Based Applications

- Are application software which operate and can be accessed through the **World Wide Web**
  - rather than existing within the computer itself
- Allow users access from any computer connected to the Internet
  - regardless of **location or network connection**
- Allow multiple users to work on a single file simultaneously

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## 23. Common Web-Based Applications

- Include:
  - **e-mail** applications
    - for sending and receiving digital mail online
    - example: Gmail™
  - virtual meeting applications
    - for online teleconferencing, videoconferencing, screen sharing, etc.
    - example: Microsoft® Skype® For Web
  - **word processing** applications
    - for creating and editing documents online
    - example: Google Docs™

## 24. Common Web-Based Applications

- Include:
  - spreadsheet applications
    - for organizing, analyzing and storing data in an online table
    - example: Google Sheets™
  - **presentation** applications
    - for online formatting of text, graphics, audio and/or video to accompany a presentation
    - example: Google Slides™
  - **storage** applications
    - for storing and sharing files online
    - examples: Microsoft® OneDrive® and Dropbox®