
2.6

Exploring Business

Impact of Digital Technologies

Learning Outcome Notes

LO 2.6 - Discuss the impact of digital technologies on an organisation, debating the associated rewards and costs.

CHAPTER QUESTIONS

By the end of this Learning Outcome, you should be able to answer the following questions -

1. Explain the term digital technologies?
2. Explain the different types of technologies that a business uses?
3. Outline the benefits of using digital technologies?
4. Explain the costs of using digital technologies?
5. Explain the opportunities for organisation using digital technologies?
6. Identity the ICT skills needed by employees?

DIGITAL TECHNOLOGY IN BUSINESS

Information and Communication Technology ^{Def}

This is the use of digital technologies, such as computers, software, and the internet, to access, store, process, and communicate information. It is also known as ICT.

Digital Technology ^{Def}

This is the specific technologies that are used to store, process, and communicate information in a digital format. It includes computers, mobile devices, cloud computing, AI, and blockchain to handle digital data,

A business uses technology in a variety of ways. These include the following -

- | | |
|--------------------------------------|----------------------------------|
| 1. To design and produce product | CAD and CAM |
| 2. To conduct market research | Websites - Desk / Field Research |
| 3. To prepare financial budgets | Spreadsheets - The Big Red Book |
| 4. To train staff | Online courses - tutorial videos |
| 5. To write Reports | Microsoft Word |
| 6. To communicate with suppliers | Email, EDI, EPOS |
| 7. To promote and sell their product | E-commerce - websites |

1. CAD

Or Computer-Aided Design is a technology that enables designers and engineers to create, modify designs using computer software. This technology can improve the accuracy, speed, and efficiency of the design process, and it is commonly used in industries such as architecture, engineering, and product design. For example, IKEA using it to design a kitchen.

2. CAM

Or Computer-Aided Manufacturing is a technology that uses computer software to control machines and tools in the manufacturing process. This technology can automate the production process, from design to production, and it is commonly used in industries such as automotive, aerospace, and electronics. For example, Audi using it to assemble cars.

3. EDI

Or Electronic Data Interchange is a technology that enables the exchange of business documents, such as purchase orders, invoices, and shipping notices, electronically between different companies' computer systems. This technology can improve the speed, accuracy, and efficiency of the supply chain and reduce the need for paper-based documents and manual data entry. For example, Eason reordering books, so they are always in stock

4. EPOS

Or Electronic Point of Sale is a technology that enables retailers to process sales transactions electronically and manage stock, customer data, and sales information. This technology can improve the efficiency and accuracy of sales transactions, reduce the risk of errors and fraud, and provide insights into customer behaviour and sales trends. EPOS systems typically include hardware such as a barcode scanner, cash drawer, and receipt printer, as well as software to manage the data. For example, Tesco uses it to keep track of customer sales and issues voucher to them as a loyal customer.

TECHNOLOGIES USED BY BUSINESS

Business used the following technologies to send, retrieve, gather, store analyse, distribute and communicate information.

1. Word Processing

A business can use word processing software, such as Microsoft Word or Google Docs, to create, edit, and format documents, such as reports, proposals, and letters. This technology can improve efficiency and accuracy when creating documents, as well as provide collaboration features for multiple users to work on a document simultaneously.

2. Spreadsheets

A business can use spreadsheet software, such as Microsoft Excel or Google Sheets, to organise and analyse data, such as financial information, stock, and sales data. This technology can help businesses to make better-informed decisions based on the data analysis.

3. Databases

A business can use database software, such as Oracle or Microsoft Access, to store and manage large amounts of data, such as customer information, stock, and sales data. This technology can improve data organization, accuracy, and security.

4. Desktop Publishing

A business can use desktop publishing software, such as Adobe or Microsoft Publisher, to create professional-looking documents, such as brochures, flyers, and newsletters. This technology can improve the quality and visual appeal of the documents, which can attract and engage customers.

5. Presentation Packages

A business can use presentation software, such as Microsoft PowerPoint or Google Slides, to create visual presentations, such as sales pitches, training materials, and reports. This technology can help to communicate information in an engaging and compelling way.

6. EPOS

Electronic point of sale (EPOS) systems are used by businesses to process transactions and manage stock. This technology can improve the efficiency of sales transactions and stock management.

7. Email

A business can use email to communicate with customers, suppliers, and employees. This technology can improve communication speed and efficiency, as well as provide a written record of the communication.

8. Internet

A business can use the internet to access information, market products and services, and communicate with customers and suppliers. This technology can improve the reach of the business, as well as provide access to a global market.

9. Cloud Computing

A business can use cloud computing services, such as Google Drive or Microsoft Office, to store data and access software and applications over the internet. This technology can improve the flexibility, and cost-effectiveness of the business.

10. WiFi

A business can use WiFi to provide wireless internet access to employees and customers. This technology can improve productivity, as well as provide a more convenient and comfortable environment for employees and customers.

11. Video Conferencing

A business can use video conferencing software, such as Zoom or Skype, to conduct virtual meetings with employees, customers, and suppliers. This technology can reduce travel costs and improve communication efficiency.

12. Social Media

A business can use social media platforms, such as Facebook or Twitter, to market products and services, communicate with customers, and build brand awareness. This technology can improve the reach and engagement of the business with customers and potential customers.

13. Tablets

A business can use tablets, such as iPads or Android tablets, to provide employees with portable devices for working on-the-go, accessing information, and conducting sales transactions. This technology can improve mobility and flexibility.

14. Apps

A business can use mobile applications, or apps, to provide customers with a more convenient and personalised experience, such as online shopping, booking services, or accessing information. This technology can improve customer satisfaction and loyalty.

THE IMPACT OF USING DIGITAL TECHNOLOGIES

The impact of digital technologies on different stakeholder include the following

| Stakeholder | Positive Impact | Negative Impact |
|--------------|---|---|
| 1. Employees | Improves efficiency - using CAM | Can lead to loss of employment. |
| | Improves productivity using CAD | Can lead to increased workload or burnout if not managed properly. |
| | Provides opportunities for online training | Can also lead to burnout if not managed properly. |
| 2. Customers | Providing convenient and personalised service - online shopping | Reduces privacy and security for customers if data is not properly protected. |
| | Faster transactions - Contactless payments | Creates barriers for customers who do not have access to technology |

| | | |
|--------------------------------|---|--|
| | 24/7 availability - shopping from home | |
| | Improves the quality of products and services - customer feedback | |
| 3. Shareholders/Investors | Improves business efficiency, reduces costs, and increases profits, leading to higher returns for investors | Requires significant upfront investment and ongoing expenses, which may impact short-term profitability |
| | Helps businesses stay competitive and innovative in a rapidly changing market. (Research) | Creates risks related to cybersecurity, data privacy, and legal compliance, which can impact long-term value. |
| 4. Suppliers | Improves communication and collaboration with suppliers and partners, leading to stronger relationships and increased sales (EDI) | Creates dependencies on certain suppliers who provide critical digital services - AIB and contactless payments |
| | Helps businesses manage Stock (EDI) | Increases the risk of data breaches or cyber attacks |
| 5. Society and the Environment | Provides solutions to societal and environmental challenges, such as reducing carbon emissions (Video Conferencing). | Creates e-waste and contributes to carbon emissions through energy consumption (Data centers) |
| | Improves the efficiency of public services and reduces waste. (Tele working) | creates new forms of digital divide, where those who lack access to technology are further marginalised. |

It's important to note there may be other positive and negative impacts of digital technologies for different stakeholders. Also impacts may vary depending on the technology and context in which they are used.

Additional impact include the following

1. Staff

- a. Job vacancies can be advertised. Video Conferencing can be used to interview staff.
- b. Online shared calendars can be used to by employees to view meetings.
- c. E-mail and text messaging can be used to communicate with staff.
- d. Staff can use online training at their own pace.
- e. Staff can work from home - Teleworking.

2. Market Research and Marketing

- a. Information on customer spending habits can be gathered (Loyalty Cards). Business can target special offer to consumers.
- b. Field research can be gathers quickly and easily (Survey Monkey)
- c. Customer information stored on data bases can be used for direct marketing.
- d. Products and service can be promoted to a larger market - Globally (Website)
- e. Business can sell their product worldwide.
- f. Text message can be used to give special offers.

3. Production

- a. Suppliers can research for the cheapest Raw Materials.
- b. The information from the EPOS can automatically re-order stock.
- c. CAD and CAM can speed up the production development process.

4. Finance

- a. Spreadsheet can be used to prepare accounts.
- b. Formulas can be copied to speed up the calculation of accounts.
- c. Graphs and charts can be used to create a visual and analyse information.
- d. Presentation can be used when looking for investments.

5. Administration

- a. Decision making is faster (Easier to get the budget, make report on a database)
- b. Writing letter is more personal using word and mail.

DIGITAL TECHNOLOGIES AND BUSINESS COSTS

Investing in technology can be a big cost to the business but if used correctly it can also reduce cost. The following are some of the increases and decreases in cost for a business -

| Cost | Increased Costs | Decreased Cost |
|--------------------------|--|---|
| Infrastructure | Upfront Capital expenditure in hardware and software | Reduced costs related to physical office space and equipment |
| | Ongoing maintenance and upgrades to ensure systems remain up-to-date and secure. | Reduced travel and associated costs for remote work and virtual meetings |
| Labour | Upfront investment in training and development to ensure employees have necessary digital skills. | Increased productivity and efficiency, which can lead to reduced labour costs in the long run |
| | Ongoing costs related to maintaining a digital workforce, such as salaries for IT staff and expenses related to cybersecurity. | Improved work-life balance and flexibility for employees, which can reduce turnover and associated costs. |
| Security | Upfront investment in security measures, such as firewalls, encryption, and monitoring tools. | Reduced costs related to data breaches, theft, that can have financial and reputational impacts |
| | Ongoing costs in compliance with data laws and regulation | Reduced costs related to compliance violations and associated fines |
| Marketing and Sales | Upfront investment in digital marketing tools such as social media, | Reduced costs related to traditional marketing methods, such as print |
| | Ongoing costs related to maintaining a strong online presence through various digital channels | Increased reach and visibility to potential customers, which can lead to increased revenue. |
| Operations and Logistics | Upfront investment in digital tools and platforms, such as supply chain management software | Increased efficiency and accuracy which can lead to reduced costs and improved customer satisfaction |
| | Ongoing costs related to maintaining and updating these systems. | Improved transparency which can reduce risks related to control. |

Other costs include the following

| Increase Cost for A business | Decrease Cost for A business |
|--|--|
| 1. Capital cost of buying and installing the technology | 1. A website can be used to advertise an business and as a online store |
| 2. Cost of recruiting and training staff to use the technology | 2. It can reduce the number of employees need in the business thus reducing the wages paid |
| 3. Risk to hackers | 3. Teleworking reduce the cost and needs for large premises |
| 4. Cost of design and maintaining a website | 4. Emails are a quick and cheap methods of communicating than sending letters |
| 5. Cost of technology breakdown | |
| 6. Redundancy payments to staff | |

OPPORTUNITIES WITH DIGITAL TECHNOLOGIES

The following are some of the opportunities that digital technology brings about -

1. It allows for standardise and mass production of a product.
2. It gives an opportunity to see what the consumer is buying and what the business should focus on.
3. Customer Relation Management (CRM) - can help the company manage the interaction with customers.
4. Email and video conferencing can reduce the cost of travel and meetings.
5. It can reduce the number of employees needed in a business.

REWARDS DIGITAL TECHNOLOGIES

The rewards of using digital technologies for a business can be significant and varied. Here are some potential rewards -

1. Increased efficiency and productivity

Digital technologies can automate repetitive tasks and reduce manual errors, which can lead to increased efficiency and productivity.

2. Improved customer experience

Digital technologies can help businesses better understand their customers' needs and preferences, personalize interactions, and provide faster and more convenient service.

3. Increased revenue and profitability

Digital technologies can help businesses reach new markets, reduce costs, and improve operational efficiency, which can lead to increased revenue and profitability.

4. Improved decision-making

Digital technologies can provide businesses with real-time data and insights, which can inform better decision-making and help businesses stay ahead of trends and market changes.

5. Enhanced collaboration and communication

Digital technologies can enable remote work, virtual meetings, and real-time collaboration, which can improve communication and teamwork among employees, partners, and customers.

6. Competitive advantage

Digital technologies can give businesses a competitive advantage by enabling them to offer new products and services, differentiate themselves from competitors, and respond quickly to market changes and customer demands.

Overall, the rewards of using digital technologies can be significant and can help businesses achieve their strategic goals and objectives. However, it's important to note that the specific rewards may vary depending on the business, the technology, and the context in which they are used.

2.6

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Past Exam Questions and Answers

NOTE - Very Important

It is very important when answering exams question that you use the following steps -

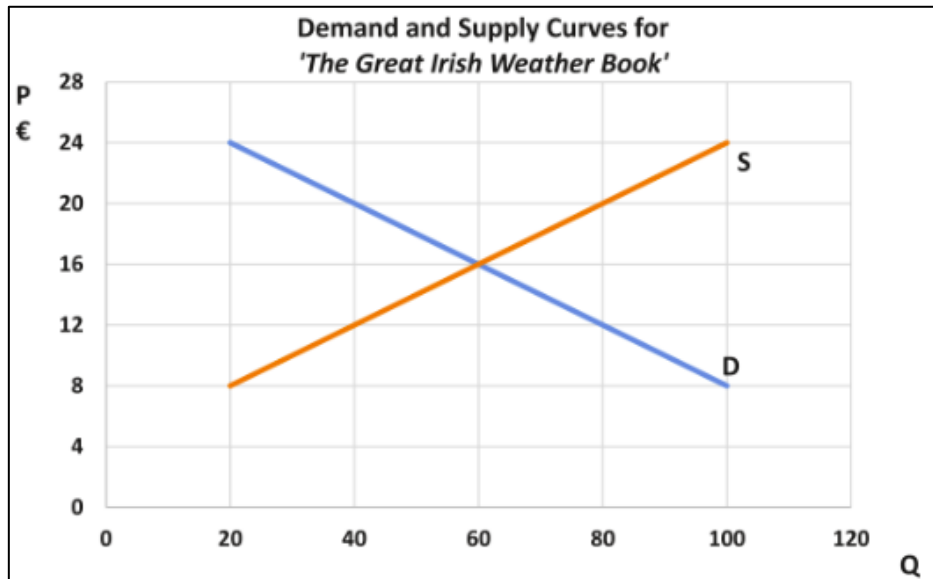
1. That you know the information for the learning outcome
2. That you understand the information form the learning outcome
3. That you can apply the information form the learning outcome to the question
4. Be able to give at least two full sentences for your answer (Fill up the space)

Questions are changing from rote learning to applying the knowledge to the Question

QUESTIONS

2019 - Question 16 - Part a (v - vi)

- (a) New chapter is an award-winning traditional bookshop located in Tinahely, Co. Wicklow. The demand and supply curves for one of its books 'The Great Irish Weather Book' are shown in the diagram below.



- (v) Investing in Information and Communication Technology (ICT) can bring many benefits to a local business-like New Chapter

Illustrate how the business could use technology to its advantage.

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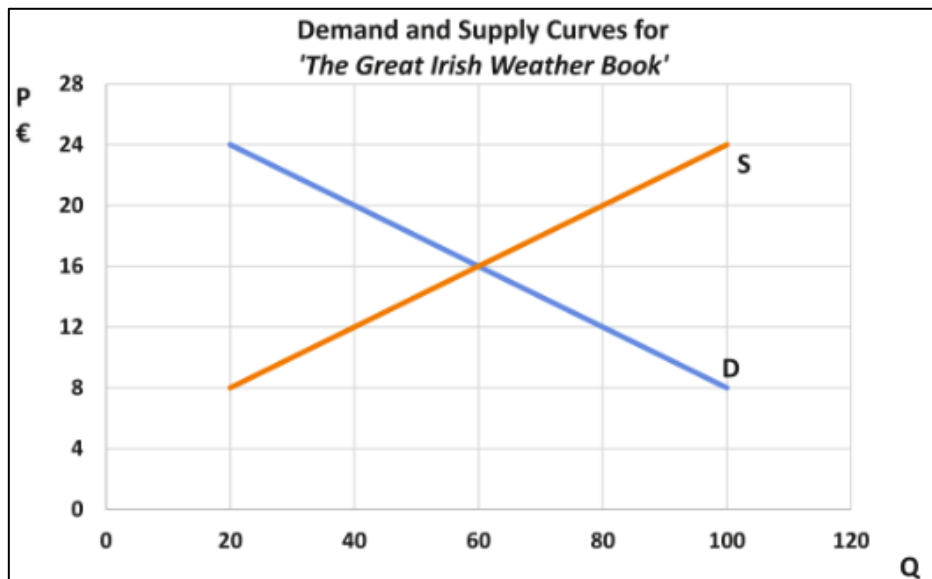
(vi) Outline two possible costs for new chapter with investing in ICT

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| 1. |
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| 2. |
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| SUGGESTED SOLUTIONS |
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2019 - Question 16 - Part a (v - vi)

- (a) New chapter is an award-winning traditional bookshop located in Tinahely, Co. Wicklow. The demand and supply curves for one of its books 'The Great Irish Weather Book' are shown in the diagram below.



- (v) Investing in Information and Communication Technology (ICT) can bring many benefits to a local business-like New Chapter

Illustrate how the business could use technology to its advantage.

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| Electronic Data Interchange - is a technology that allows the exchange of business documents, such as purchase orders and invoices, electronically between different companies' computer systems. This technology can help New Chapter to improve the speed, accuracy, and efficiency and reduce the need for paper-based documents and manual data entry. It will keep track of the stock of books for new chapter and will send order when book stocks get to a certain amount. This will mean they will not run out of books |
|--|

(vi) Outline two possible costs for new chapter with investing in ICT

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|--|
| 1. Infrastructure - The upfront capital expenditure in hardware and software can be very expensive for New Chapter. They will also have to maintain and purchase upgrades to ensure systems remain up-to-date and secure. |
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|---|
| 2. Labour - There will be upfront investment in training and development to ensure employees have necessary digital skills. There will also be Ongoing costs related to such as salaries for IT staff and expenses related to cybersecurity. |
|---|