



HODDER
Education

MY REVISION NOTES
T-LEVELS
DIGITAL SUPPORT SERVICES AND
DIGITAL BUSINESS SERVICES

T-LEVELS

THE NEXT LEVEL QUALIFICATION

DIGITAL SUPPORT SERVICES AND DIGITAL BUSINESS SERVICES

- + Plan and organise your revision
- + Reinforce skills and understanding
- + Practise exam-style questions

George Rouse

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Now test yourself and Exam practice answers and Glossary online at www.hoddereducation.co.uk/myrevisionnotesdownloads

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Countdown to my exams

From September

Attend class in person or via the internet if necessary; listen and enjoy the subject; make notes. Make friends in class and discuss the topics with them. Watch the news.

6–8 weeks to go

- + Start by looking at the specification – make sure you know exactly what material you need to revise and the style of the examination. Use the revision planner on pages 4–6 to familiarise yourself with the topics.
- + Organise your notes, making sure you have covered everything on the specification. The revision planner will help you to group your notes into topics.
- + Work out a realistic revision plan that will allow you time for relaxation. Set aside days and times for all the subjects that you need to study and stick to your timetable.
- + Set yourself sensible targets. Break your revision down into focused sessions of around 40 minutes, divided by breaks. These Revision Notes organise the basic facts into short, memorable sections to make revising easier.

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2–6 weeks to go

- + Read through the relevant sections of this book and refer to the exam tips, exam summaries, typical mistakes and key terms. Tick off the topics as you feel confident about them. Highlight those topics you find difficult and look at them again in detail.
- + Test your understanding of each topic by working through the 'Now test yourself' questions in the book.
- + Make a note of any problem areas as you revise and ask your teacher to go over these in class.
- + Look at past papers. They are one of the best ways to revise and practise your exam skills. Write or prepare planned answers to the 'Exam practice' questions provided in this book.
- + Use the revision activities to try out different revision methods. For example, you can make notes using mind maps, spider diagrams or flash cards.
- + Track your progress using the revision planner and give yourself a reward when you have achieved your target.
- + Find the Glossary and check your answers to the Now test yourself and Exam practice questions online at www.hoddereducation.co.uk/myrevisionnotesdownloads

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One week to go

- + Try to fit in at least one more timed practice of an entire past paper and seek feedback from your teacher, comparing your work closely with the mark scheme.
- + Check the revision planner to make sure you have not missed out any topics. Brush up on any areas of difficulty by talking them over with a friend or getting help from your teacher.
- + Attend any revision classes put on by your teacher. Remember, they are an expert at preparing people for examinations.

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The day before the examination

- + Flick through these Revision Notes for useful reminders, for example, the exam tips, summaries, typical mistakes and key terms.
- + IMPORTANT: Check the time (is it morning or afternoon?) and place of your examination. Keep in touch with other students in your class.
- + Make sure you have everything you need for the exam – for example, pens, highlighters and water.
- + Allow some time to relax and have an early night to ensure you are fresh and alert.

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My exams

Paper A

Date:

Time:

Location:

Paper B

Date:

Time:

Location:

Introduction

Assessing T Level Digital Support Services and Digital Business Services

This book supports the assessment of the core components for Digital Support Services and Digital Business Services T Level qualifications.

In addition to these examined units, there are additional employer-set projects and synoptic assessments for both qualifications.

Command words

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Familiarity with the relevant command words is important and helps you to avoid wasting time in the exam room, for example, trying to evaluate when there is no requirement for it. The most frequently used command words used for the T Level papers are:

- ✚ **Identify, State, Give:** These require just one or two words or a short phrase and are typically worth one mark per point required, for example: 'Identify two protected characteristics in the Equality Act 2010. [2 marks]'
- ✚ **Describe:** This requires a longer response and is typically worth 2 or more marks depending on the number of points required to describe the answer.
- ✚ **Justify:** This is often used together with 'Identify' and requires you to justify the answer you have given, for example: 'Identify a constant and justify why it is declared as a constant. [3 marks]'
- ✚ **Explain:** This is asking for more than a description of something and requires a more detailed explanation. It may be worth two, three or even more marks. Look to give the same number of valid, different points in your response as the number of marks available, for example: 'Explain a benefit of pattern recognition. [3 marks]' You could, for instance, describe one benefit, then go on to explain why it is a benefit.
- ✚ **Compare:** This means you will need to describe or explain two things and directly compare the features of the two things.
- ✚ **Discuss, Evaluate, Analyse:** These indicate a long answer and are typically worth six or more marks. These questions will not be marked simply on the statement of facts but on the depth of the discussion in the response. It is important that all aspects of the question are answered in some detail, and it is a good idea to identify the component parts of the question before starting a response.

If asked to **give examples**, make sure they are relevant to the scenario. For codes or diagrams, plan these before committing to the response. Make sure any planning is identified so that it is clear to the examiner that it is planning and not the response to be marked (a single diagonal line through the planning should be sufficient).

Always read the question carefully before starting a response. The keywords used in the questions will provide some clues as to what the examiner is expecting from the answer.

For the core components, there are two written examinations (Papers A and B) and an employer-set project (ESP). The percentage weighting for each paper is shown in the tables below, and the remaining percentage will be contributed by the ESP.

In addition, some of the core topics are contextualised in the Occupational Specialism. This component is examined through synoptic assessment, allowing students to apply the knowledge and skills in their own specific context and to demonstrate a threshold level of competence in the chosen specialism.

Digital Support Services

There are two papers for the qualification.

Paper A is 2 hours long and is marked out of 100. An additional 6 marks are available for quality of written communication.

Paper B is 2 hours and 30 minutes long and is marked out of 125. An additional 6 marks are available for quality of written communication.

Questions used for quality of written communication are identified on the exam paper. The pathway units are online.

	Paper A	Paper B
Weighting	34%	41%
Section A	Context (Chapter 1) Culture (Chapter 2)	Pathway units: Careers Communications Fault analysis
Section B	Digital environments (Chapter 5) Diversity and inclusion (Chapter 6)	Testing (Chapter 11) Tools (Chapter 12)
Section C	Learning (Chapter 7) Planning (Chapter 9)	Legislation (Chapter 8) Security (Chapter 10)
Section D		Data (Chapter 3) Digital analysis (Chapter 4)

Digital Business Services

There are two papers for the qualification.

Each paper is 2 hours long and is marked out of 100. An additional 6 marks are available for quality of written communication.

Questions used for quality of written communication are identified on the exam paper.

	Paper A	Paper B
Weighting	35%	35%
Section A	Context (Chapter 1) Culture (Chapter 2)	Testing (Chapter 11) Tools (Chapter 12)
Section B	Digital environments (Chapter 5) Diversity and inclusion (Chapter 6)	Legislation (Chapter 8) Security (Chapter 10)
Section C	Learning (Chapter 7) Planning (Chapter 9)	Data (Chapter 3) Digital analysis (Chapter 4)

1 Business context

1.1 Types of organisations and stakeholders within the business environment

Organisation types

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Organisation types include:

- + **Public organisations:** Any organisation run by the government such as schools and the police. They are financed from public funds (tax and national insurance).
- + **Private organisations**
 - + Small- or medium-sized enterprises (SMEs): Any profit-driven organisation owned by an individual or group of individuals. They are funded by shareholders and loans from banks.
 - + Large enterprises: Profit-driven organisations that are large enough to dominate a particular market.
 - + Non-governmental organisations (NGOs): Organisations independent of government that serve a social or political purpose for the community. They are non-profit organisations, funded from membership fees, donations, grants or sales, and often have a workforce that is a mix of paid and volunteer staff.
- + **Voluntary/charity organisations:** They raise money to spend on good causes for public benefit.
 - + All money raised is spent on the charity's work.
 - + All charities in England and Wales must register with the Charity Commission.
 - + Registered charities are exempt from tax on income.
 - + Not-for-profit organisations: They do not operate to make a profit for individuals. They do not need to register with the Charity Commission and are not subject to the legislation that applies to charities.

Stakeholder types

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Stakeholder types include:

- + **Internal stakeholders**
 - + Owners
 - + Board of directors – they set policies and make important decisions, for example, on **mergers**, **acquisitions** and **dividends** paid to shareholders.
 - + Employees – their employment contract states their rights and responsibilities, such as notice of contract termination, paid annual leave, and statutory sick pay, parental leave, and redundancy payments.
 - + Departments
- + **External stakeholders**

<ul style="list-style-type: none">+ Consumers+ Customers+ Competitors+ Outsourcing	<ul style="list-style-type: none">+ Shareholders+ Investors+ Funders+ Governments
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Stakeholder Someone who has an interest in an organisation.

Merger When two organisations consolidate their businesses.

Acquisition When the operation of a business is transferred to another business.

Dividends Payments made to shareholders based on the profits made by the organisation.

Governments have an interest in successful businesses, as they will provide tax revenues and employment. Businesses who create wealth will pay corporation tax, and businesses that employ people reduce the demands on the welfare state and increase revenues from personal taxation. Governments can influence the success of businesses, for example, by offering grants, changing the business rate or corporation tax, creating **freeports**, and setting **tariffs**.

Freeport Area where goods in transit are exempt from customs duty.

Tariff A tax added to particular types of import or export.

Typical mistake

It is a common mistake to think of stakeholders as those who gain financially from a project. Stakeholders are anyone who is affected by the project, for example, service users, suppliers, neighbouring businesses, customers, employees and the government.

Revision activity

In 2021, the UK Government announced eight new **freeports** would be created. Research the benefits that were identified to support this proposal for the areas concerned and for the country as a whole.

Exam tip

The customer and consumer are often the same people, but not necessarily so. Their requirements for a product can be different. Take this into account in your answers to questions on this topic.

Business environments

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Business to consumer (B2C) is the direct selling of goods to the consumer.

Business to business (B2B) is the selling of goods to another business that might use the product as part of its business or then sell on to the consumer.

- + B2B buyers may have to consult with other individuals or departments before purchasing, while B2C buyers make their own decisions.
- + B2B buyers are looking to make the most cost-effective purchases for their organisation, whereas the B2C buyer may make more emotional decisions.
- + B2B buyers may be spending a lot of money for their organisation and errors can be costly. B2C buyers are buying for themselves and, while there may be a financial impact from an error, the sums of money involved will often be less significant and errors less costly.
- + B2B buyers may be looking for a long-term relationship with another business and can demand discounts. B2C buyers will often be making a one-time purchase.

Business to many (B2M) is the selling of products both to businesses and directly to consumers.

Now test yourself

TESTED

- 1 Name **three** types of organisation.
- 2 List **three** employee rights.
- 3 List **two** differences between B2B and B2C buyers.

1.2 Key factors that can influence the business environment

Political factors

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- + Governments can affect business through taxation.
- + Governments may pass new legislation to raise the national minimum wage and introduce revised health and safety regulations.
- + Governments have trade policies including **bilateral trade agreements** and the use of tariffs to control international competition.

Bilateral trade agreements Agreements made between two countries about trading conditions.

Economic factors

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The Bank of England sets interest rates that can affect business overdrafts or loans.

Fluctuations in foreign exchange rates are an important factor.

Table 1.1 The effect of fluctuations in foreign exchange rates

Exchange rate	Goods and materials from abroad	Goods from the UK sold abroad
If the pound is low against other currencies	Expensive	Inexpensive
If the pound is high against other currencies	Inexpensive – more competitive	Expensive – less competitive

Major resources such as oil and gas are priced in US dollars so the rate of the pound against the dollar can affect the price of most goods in the UK when energy costs are included.

Consumer preferences can change and what is popular today may be in less demand tomorrow.

- + Over-relying on a single product can make a business vulnerable to market trends.
- + Luxury goods are particularly vulnerable to demand fluctuations when the economy is less healthy and people have less money available to spend on non-essential items.
- + **Inflation** makes essential items more expensive and consumers will cut back on more expensive or less essential purchases.
- + Periods of **recession** will make the consumer more cautious because of job insecurity or low wages.

Typical mistake

The exchange rate affects the price of goods traded between two countries, but it is a mistake to focus just on this factor when considering exchange rates. Many raw materials are traded in US dollars. The US dollar exchange rate affects the cost of many products traded between countries even though neither of them use the US dollar as currency.

Inflation When prices are increasing, and the purchasing value of money is falling.

Recession A period of economic decline during which trade and industrial activity are reduced.

Social factors

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Social mobility is a term that describes how an individual's social status is judged to be changing.

Social status is a notional (theoretical) concept based on education, occupation, income and religious or political standing. Businesses can influence social mobility by making opportunities equally available to individuals regardless of their initial social status.

Market trends indicate changes in the marketplace that businesses need to factor into their planning.

Cultural expectations are particularly important for organisations that work on a global scale.

- + In marketing, it is common to use a **persona** to represent a typical customer and plan product development and marketing for that persona, but it is important that this does not become **stereotyping**.
- + Cultural practices, customs and beliefs must be respected if the business is to succeed in these markets.

Socio-economic aspects will influence consumers and customers.

- + Businesses target their products at specific socio-economic groups.
- + Market research is used to identify any preferences within these groups.

Socio-economic groups are based on the following:

- + Income and how much money the consumer can allocate to purchase the business' products and the likelihood they will spend it on these products.
- + Occupation and education.
- + Economic circumstances, such as inflation and employment opportunities.

Persona A characterisation of a group of people that identifies the key shared features of that group.

Stereotyping To believe unreasonably that all people with a particular characteristic are the same.

Technological factors

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Productivity is key to growing a business and investment in new technology can improve the performance of the business. Emerging technology can:

- + reduce costs
- + improve efficiency
- + reduce errors
- + manage resources effectively
- + increase profitability.

Productivity A measure of the amount of business output (goods and services) compared to the input required.

Legal factors

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Legislation may change and, if operating abroad, it may be very different to that in the UK. It is vital that businesses are clear about the applicable legislation in all parts of the world in which they operate. For example:

- + The minimum wage in the UK is very different to that in the USA.
- + Redundancy regulations and discrimination rules in the UK are stricter than in many other countries.

Consumer laws provide protection for the consumer from poor-quality products or fraudulent activity. Businesses are obliged to make consumers aware of their rights.

Health and safety regulations vary in different countries and can result in significant fines if they are breached.

Environmental factors

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Governments across the world are working to reduce carbon footprints and digital waste. Businesses will be at the forefront of these efforts, aiming to:

- + reduce emissions from processes and logistics, for example, using electric delivery vehicles
- + reduce energy use by refining processes, using low energy alternatives such as LED lighting or using renewable energy whenever possible
- + reduce travel, especially air travel, through remote communication methods
- + improve the efficiency of climate controls within buildings with insulation or more efficient heating systems
- + recycle whenever possible and use recyclable packaging
- + switch to paperless communication
- + reduce digital waste by not renewing digital equipment as frequently, or by reusing or recycling it; digital waste contains valuable rare resources and some toxic elements that need to be recycled properly
- + dispose of digital waste correctly; incorrect disposal can breach legislation and incur significant fines
- + dispose of storage media correctly; if media are not cleared correctly of data, data breaches can occur.

Now test yourself

- 1 List the key factors that can influence the business environment.
- 2 Describe **three** ways the government can influence the business environment.
- 3 Explain how socio-economic groups are defined.

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1.3 The measurable value of digitalisation to a business

Sales and marketing

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Using digital technology can provide opportunities to increase revenue and decrease costs.

- + Sales are the source of income and marketing is about promoting the business and generating sales.
- + Maintaining a good market position will enable the business to expand.

The marketing department will plan advertising campaigns and marketing strategies based on market research and knowledge. Information technology (IT) will play a large part in this work.

- + Online research can provide insights into the market.
- + Analysing research data can identify market trends and inform marketing decisions.

Brand promotion

Businesses use brand promotion to create a recognisable brand in the marketplace.

Advantages	Disadvantages
+ Online marketing can be very cost effective and can reach a much wider audience than traditional methods.	+ Online presence requires skilled staff and financial investment to be effective.
+ Pop-ups, social media and influencers can precisely target a specific market.	+ Negative reviews or posts can be very damaging to a brand.
+ Loyalty schemes attract new customers, retain existing ones and provide data about customer preferences.	+ Keeping up with the competition requires constant review of the offering.
+ Point-of-sale data can be analysed to identify market trends and customer preferences.	

E-commerce

Online selling using e-commerce provides many opportunities for businesses.

Advantages	Disadvantages
+ An online presence provides businesses with the opportunity to expand their market globally.	+ The customer base is limited to those who have access to, and are able to use, digital technology.
+ Online stores cost less to set up and run than the traditional high-street store.	+ Complex logistics are needed to deliver goods and accept returned items.
+ Smaller businesses can compete effectively against large ones.	+ A large proportion of online sales are returned because they are not as expected.
+ The business is available 24/7 for the customer to purchase goods/services.	
+ If sales are analysed, then production can respond to changes in demand quickly.	
+ Marketing can be personalised to customer preferences based on browsing history and previous sales.	
+ Scaling the business is relatively straightforward compared to scaling a physical store.	

Customer service

Customer service lines are traditionally open during working hours but the use of chatbots means a digital assistant using artificial intelligence (AI) can deal with many customer queries online 24/7, including checking:

- + stock availability
- + receipt of payments or returned goods
- + progress on an order.

Digital analytics

This is the collection and analysis of customer-related data and is used to:

- + improve the customer experience
- + identify potential new customers and target them with marketing
- + monitor the performance of the business
- + identify any potential improvements to marketing methods.

This information will feed into strategic business decisions.

Scaling Enabling and supporting growth in a business, increasing revenues faster than increasing costs.

Revision activity

Try searching for a product on the internet, then note how often similar products are pushed onto platforms you use and websites you view. Note how many sites or applications are using your data to target advertising.

Communications

Digital technology can be used to improve both internal and external communication.

- + Messages can be sent 24/7, from any location.
- + Remote meetings can bring together the required expertise regardless of each individual's location.
- + Meetings can be held digitally from a single location without staff in other locations needing to travel.
- + Typed messages are less likely to be misunderstood.
- + There is an audit trail for all communication in case of queries or disputes.
- + Marketing opportunities are increased with various social media or other communication channels.
- + Businesses have access to a larger audience through digital communication.

Automation

Internal systems provide significant opportunities for:

- + streamlining processes
- + monitoring activity and responding to changes automatically
- + reducing the risk of human error in processes
- + introducing processes that it would not be possible to control manually
- + improving productivity and maximising profits
- + providing services directly to homes.

Remote working

Advantages	Disadvantages
+ The organisation requires less office space, saving on business costs.	+ The organisation needs to provide equipment and communication for its employees at home.
+ Employees can work more flexibly.	+ Security may be compromised if employees are working on sensitive data at home rather than in the controlled environment of the office.
+ Employees spend less time travelling to work, increasing their available time for productivity.	+ It is harder to support and monitor an employee who is working from home.
	+ The work-life balance for the employee may be disrupted with no separation of home and work.
	+ The employee has to pay for the heating and lighting in their own home during working hours.
	+ Isolation from colleagues may affect the quality of an individual's work and/or their mental health.

Finance

Automating the financial aspects of a business:

- + improves the responsiveness of the system to customers
- + reduces the staffing requirements for processing invoices and receipts
- + provides up-to-date accounts to monitor the performance of the business and aid financial decision making.

The finance department will use suitable financial software to:

- + keep track of cash reserves (the bank balance)
- + produce regular financial reports showing profit/loss
- + produce payroll statements for staff
- + calculate Pay As You Earn (PAYE) tax and National Insurance (NI) contributions for employees based on staff details and salaries
- + calculate **Value Added Tax (VAT)** returns based on details from **accounts payable** and **accounts received**
- + calculate the corporation tax due to HMRC based on the profit/loss.

VAT (Value Added Tax)

A tax added at each stage in a product life cycle from purchase to sale, when value is added to the product.

Accounts payable Money going out of the business.

Accounts received Money coming into the business.

Fiscal policies are government strategies to manage the economy. Governments balance income from taxes against expenditure on public services and infrastructure. Borrowing means the country will have to repay the loan with interest. The government fiscal approach will be a factor in the strategic planning and investment policy for an organisation.

Table 1.2 Weighing up the various factors to determine the best approach to fiscal policies

Borrowing used for infrastructure projects will increase employment and facilities and will often generate tax income to cover the costs of the borrowing.	Borrowing used to cover current expenditure is less likely to generate any significant additional income from taxation to repay the loan and interest.
Increasing taxes brings more money into the government.	Lowering taxes reduces the amount of money going into the government.
Lowering tax rates puts more money into the economy for people to spend. This may increase employment and encourage business expansion, leading to increased tax revenues.	Increasing tax rates removes money from the economy, leaving people with less money to spend. This may increase unemployment, decrease tax income and reduce business revenues.

Fiscal Used to describe something that is related to government spending and tax, which influence the state of a country's economy.

Infrastructure projects Building roads, hospitals, railways, etc.

Current expenditure Spending on services such as healthcare, benefits, pensions, etc.

Key performance indicators (KPIs)

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Key performance indicators are quantifiable and measurable indicators of a business' performance and generally focus on customer satisfaction, financial performance, internal processes and quality, and employee satisfaction. KPIs:

- + include key targets for the business
- + are presented in a brief summary report
- + identify key areas for improvement
- + provide an easy-to-understand overview of the business' performance for key stakeholders.

Now test yourself

TESTED

- 1 Describe the benefits of digital brand promotion.
- 2 List **two** disadvantages of remote working.
- 3 Describe how raising or lowering taxes can affect tax revenue.

1.4 The influence and impact of digitalisation within a business context and market environment

Brand differentiation

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This is about distinguishing a company's products and services from those of a competitor. Successful brand differentiation encourages loyalty to a brand and increases sales. It includes:

- + identifying and communicating unique features or qualities of a product or service
- + identifying one or more benefits over competitors' products
- + identifying brands through packaging and product design and communicating strong brand values to appeal to the target audience

- + pricing strategies
- + brand history
- + customer experience.

These values will be communicated to customers through every interaction with the brand, including in advertising and through customer services.

Virtualisation solutions

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Virtual environments are simulated computing environments as opposed to physical ones. Virtualisation often includes computer-generated versions of hardware, operating systems, storage devices and more; it can:

- + make better use of IT equipment
- + improve workflow
- + reduce costs.

Cloud solutions

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The cloud refers to storage, services and applications that are accessed via the internet rather than being stored locally on a server.

The cloud is effectively a network of servers that store data and run applications. These servers are housed in giant data centres around the world.

Examples of cloud services and applications include:

- + file storage
- + software and applications, for example, Microsoft 365
- + processing power, for example, Amazon Web Services (AWS).

Files and applications stored in the cloud can be accessed from anywhere in the world with an internet connection.

Cloud applications are always the latest version. This means that users do not have to update anything themselves, which has the following benefits:

- + It reduces the need for network managers and technical support staff.
- + The amount of storage space is flexible, and users can buy additional storage when they run out of space.
- + All data stored in the cloud are regularly backed up and kept secure by the hosting company.
- + The data and applications are spread across a number of servers, so server failure is not a significant issue.
- + Data can be shared easily with colleagues anywhere in the world.

Cloud solutions for a business provide the flexibility to make the operation **scalable**.

- + Costs are reduced compared to the traditional approach where a business purchases and maintains its own hardware and software.
- + Elastic computing means that the service provider is able to swiftly scale the available resources for the client.
- + Fewer skilled staff are required to support a cloud-based system.
- + Virtualisation saves on the cost of servers but still requires major expenditure on hardware and skilled IT support.
- + Skilled IT staff can be expensive and difficult to replace.

Scalable The ability of a computer system to function effectively when the size of the system or volume of work is increased.

Digital innovations

REVISED

Businesses identify new and innovative ways to use digital technology in their business. For example, in 1995, World Wide Waiter started an online food delivery service in California using a model that is now commonplace.

Business intelligence and insight

- Most businesses collect data from a range of sources to identify how well the business is performing and what its competitors are doing.
- Analysing lots of data requires digital technology to identify trends, patterns and valuable information.
- This key information can then be shared in a summary report for the stakeholders to identify any actions required to maintain and improve the performance of the business.
- Analysis of data can show why customers choose one product over another and identify the unique selling points (USPs) that make one product stand out in the marketplace.

Unique selling points

USPs are features that differentiate a product from other similar products within the marketplace. These can include:

- exclusivity/unique features, suggesting that this is not just another version of something customers can buy elsewhere
- environmental credentials
- a reputation for reliability.

Processes and business models

REVISED

A business model enables the management to consider how to take the business forward. It will consider:

- the range of products available
- the costs associated with and the profit made from each product
- the target market for each product
- any potential changes that might affect the availability of raw materials or market opportunities.

Business processes are the steps required to achieve the desired outcomes identified by the business model. Each department will require different processes to match its role in meeting the overall business targets.

Digital manufacturing

This is the use of digital systems to manufacture products. The process integrates research and development (R&D), acquisition of raw materials and manufacturing. This has some advantages including:

- R&D can be completed and designs tested virtually before committing to any expenditure on the manufacturing process
- the process from idea to finished product is streamlined, saving both time and money
- digital manufacturing is less prone to error and can operate without breaks for long periods of time.

Financial

Finance departments are responsible for tracking money coming in and going out. This includes:

- account receivable – money due to the business from customers
- account payable – money the business is due to pay to suppliers
- payroll – money due to employees of the business
- keeping track of the business financial situation – profit or loss and cash reserves.

Finance departments are also responsible for medium- and long-term financial needs including any budget forecasting to inform decisions, for example, on borrowing for expansion plans. This will mean keeping track of loan and interest repayments and how they affect the profitability and cash reserves. Digital technology enables the business to automate many of these processes, saving time and money and reducing the chances for human error.

Research

Sources of data collected by an organisation may be:

- + a by-product of its everyday activities
- + from external sources
- + a result of market research.

Organisations often use surveys or questionnaires to collect information.

- + This type of research will collect both **quantitative data** (numerical) and **qualitative data** (views and opinions).
- + Phrasing questions for market research to solicit the desired responses is a specialist skill and most organisations will hand over this sort of research to a third party.
- + There are large quantities of data being collected and updated constantly.

Quantitative data

Numeric data, often a range or a measurement.

Qualitative data

Non-numeric data that describe the properties of the object.

Digital technology enables a business to process and analyse large quantities of data to inform business decisions.

Wider access to customer base and range of products and services

REVISED

The customer base for a business refers to regular customers. The business will want to extend this by attracting new customers while maintaining its existing customer base. Some strategies include:

- + positive communication with existing and new customers
- + maintaining and extending an online presence to include international customers
- + using digital technology to improve logistical support for the customer
- + using a customer relationship management (CRM) system to collect and analyse data to identify the age, location, income bracket, preferences, etc., of its customer base; see Section 3.1, page 50, for more on CRM
- + maintaining or adjusting the product range to match the identified customer base
- + using digital technology to provide manufacturing support which can increase customer confidence in the business by increasing the product range and quality.

Contextualising customer behaviour

REVISED

Customer behaviour will depend upon many factors including their age, occupation, income, interests and location.

Digital personalisation and platform interoperability

This uses digital technology and the customer information to personalise communications. Platform advertising and recommendations will be based on this. Interoperability means that the business and the customer can communicate regardless of the digital platform each uses.

Open standards

REVISED

Open standards are developed by a community that collaborates to incorporate the requirements of a wide range of potential users. Open standards are made available to the public and they allow platforms to share data and ensure open competition in the IT market.

- + The digital identity of the customer should be recognised regardless of the platform.
- + Digital identities can include:
 - + username and password, personal data for identification and browsing history and e-commerce activity.

- + Having platform interoperability ensures no customer is prevented from accessing products and services because of their choice of digital technology.

Now test yourself

TESTED

- 1 Identify **three** benefits of brand differentiation.
- 2 Describe how digitalisation might impact **two** areas of a business.
- 3 Describe **three** strategies for widening the customer base for a business.

1.5 The role of technical change management in digital operational integrity

Digital change is complex and costly, so businesses and organisations need to carefully consider if change is necessary. Changes may be made in order to:

- + develop the existing systems
- + move towards a new stage for the business
- + transform the business to face new challenges.

Any change must reflect the business strategy and targets.

Preparation and planning

REVISED

Innovations in digital technology

- + Improvements in digital technology means businesses can focus on customer requirements and gain competitive advantage over other businesses.
- + Old technology may be superseded and need to be replaced because it no longer performs the role or before it hinders the organisation's progress.
- + If competitors adapt to new technology, there is a danger those who do not will be left behind.

Changes a business might implement include the following:

- + adding additional features and/or services to its existing portfolio to change or improve its current offering, for example, upgraded chatbots
- + diversification into new products and services or into new markets to spread the risk for the business
- + scaling up the product range and/or customer base to enable the business to grow
- + rebranding to change its image, to make it more up to date or relevant in the marketplace
- + introducing new technologies to improve its competitive edge, remain **solvent** and stay ahead of other organisations in the same evolving marketplace.

Changes in legislation may also force a business to adapt to comply with the legislation. Failure to comply with legislation can result in significant fines.

Some changes cannot be predicted, and disaster planning should be in place to mitigate the effects of these, for example, natural disasters, cyber attacks, system failures.

Solvent The ability to meet current and long-term debts and expenses.

Communicating the rationale for the change

- + It is vital to the success of a project that all stakeholders are on board.
- + It is important to make employees and other stakeholders aware of the case for change and provide them with information about the process and expectations.
- + Data analytics can be used to support the case for change. Internal and external stakeholders will evaluate the proposals to decide if they can support them.
- + Making changes will affect the functionality of the system or change the user experience in some way. It is important to notify customers when changes are being made, explain the reason for the changes and tell them how the changes will affect them.
- + Planning and clearly documenting the process to be followed when making changes will clarify the correct order, timescale, requirements and equipment needed.
- + Having evaluated the changes and agreed to support them, the business will commit to them and begin the implementation.
- + Identifying the right people to lead change will increase the chances of success.

Communicating the benefits of the change and getting buy-in from all stakeholders

The purpose of change is to improve a system and increase productivity:

- + Automating processes can bring cost savings and improve the quality of the service or product.
- + Well-planned changes can develop systems that engage employees and improve their productivity.
- + Communication with and support for stakeholders can be enhanced, decreasing the workload, reducing delays and errors and improving the process.
- + Better communication with customers can enhance the business' reputation and provide an improved relationship that will retain existing customers and attract new ones.
- + Security can be improved through well-planned digital systems.
- + Updating and changing processes can provide new opportunities for stakeholders, new products or new ways of working for employees. For example, enhanced digital communication and access to data can enable working from home and flexible working processes.
- + If there are only minimal improvements in productivity as a result of the change, however, then the purchase of expensive technology may adversely affect the profitability of the business.

Operations

REVISED

Interaction of new or upgraded tools and processes into current digital ecosystem

A digital ecosystem is a network of stakeholders that connect and interact online including:

- + suppliers
- + customers
- + trading partners.

A digital ecosystem is a collection of tools that combine to provide services to a customer so that the business can implement more efficient processes that:

- + reduce operational costs through automated data processing

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