

# Unit 4 : Impact of the Use of IT on Business Systems

<b>Unit code:</b>	<b>K/601/7260</b>
<b>QCF Level 3:</b>	<b>BTEC National</b>
<b>Credit value:</b>	<b>10</b>
<b>Guided learning hours:</b>	<b>60</b>

## ● Aim and purpose

The aim of this unit is to ensure learners understand the effects developments in IT have on organisations and how organisations respond to these developments, and enable learners to propose IT-enabled improvements to business systems.

## ● Unit introduction

Developments in IT have had a major impact on the way organisations operate. Few organisations in the developed world would be able to survive in a competitive market without utilising IT in some way.

New technologies are being developed all the time and organisations often need to upgrade their computer systems if only to keep up with the competition.

This unit starts by exploring the range of new technologies that have had an impact on business and then considers why organisations need to respond, how they will benefit and what the implications of change may be. Some established businesses have failed because they have not been nimble enough in adapting to the new information technologies. The business environment has changed as a result of technology. The borders between local, national and global markets have disappeared.

The impact of changing technology on both employers and employees is considered. Employment patterns and the expertise required of staff are changing. Flexibility in the face of new information technologies will be essential if organisations and individuals are to survive and flourish in the business world.

The introduction or enhancement of technologies will always carry some risk and learners will consider the types of risk and how organisations can manage these.

Finally, learners will consider how organisational business systems may be improved by the introduction of new technologies and they will propose an improvement to a business system through the use of IT.

## ● Learning outcomes

**On completion of this unit a learner should:**

- 1 Understand the effect of developments in information technology on organisations
- 2 Understand how organisations respond to information technology developments
- 3 Be able to propose improvements to business systems using IT.

# Unit content

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## 1 Understand the impact of developments in information technology on organisations

*Hardware:* developments eg increasing power, increasing capacity and sophistication of computer platforms, increasing sophistication of communication technologies

*Software:* developments eg increased sophistication and integration of application software; specialised support software eg management information systems, decision support software, expert systems, security software; e-commerce

*Reasons for upgrading systems:* external pressures eg changing regulatory and legal frameworks, keeping up with competitors; enhanced business opportunities eg increasing globalisation, potential for outsourcing, improving customer service

*Benefits:* productivity gains; cost reductions; increased profitability; efficiency; improved management information; improved customer service; synergy and integration of systems

*Impact:* cost; impact on procedures; impact on staff eg upskilling/training, dealing with redundancies, balancing core employees with contractors and outsourced staff, enabling home and remote working, dealing with impact of regular restructuring on staff; integration of legacy systems; security; legal requirements eg data protection, copyright

## 2 Understand how organisations respond to information technology developments

*Responses:* adapting business processes eg sales and marketing strategies for global opportunities, purchasing strategies for automated ordering, customer support processes for online systems, financial systems for secure funds transfer, automating manufacturing processes; no response eg not cost effective, insufficient skills; other eg staff training, redundancies

*Managing risk:* cyber crime eg diverting financial assets, communications sabotage, intellectual property theft, denial of service attacks; preventive technologies eg firewalls, access control methods, secure payment systems; disaster recovery

## 3 Be able to propose improvements to business systems using IT

*IT developments:* recent developments eg new applications, wireless technologies, operating systems, innovative software platforms; changing market leaders; future developments

*IT improvements:* developments eg integrated systems, databases, networks, communication technologies, web presence, management reports

*Business systems:* functions eg customer relationship management, supplier management, product development, service delivery, people management, stock control, finance

## Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
<b>P1</b> explain the reasons for upgrading IT systems in an organisation	<b>M1</b> examine why an organisation needs to keep pace with IT developments [IE1, EP6]	
<b>P2</b> explain the impact of IT developments on an organisation		<b>D1</b> evaluate the impact of IT developments on an organisation
<b>P3</b> explain how organisations respond to information technology developments		
<b>P4</b> explain how an organisation can manage risk when using IT technology [EP3]		
<b>P5</b> describe recent IT developments	<b>M2</b> suggest how recent developments may improve a business system [CT5]	
<b>P6</b> produce a proposal for an IT-enabled improvement to a business system. [EP2]	<b>M3</b> demonstrate originality in proposing an IT-enabled improvement. [CT1]	<b>D2</b> fully justify proposals for an IT-enabled improvement. [IE6]

**PLTS:** This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

# Essential guidance for tutors

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## Delivery

The outline learning plan (OLP) gives an indication of how time can be allocated between the various areas in the unit content. It is designed as a guide only and tutors will use knowledge of their learners to adjust the allocation of time, and order of delivery, accordingly.

This suggested programme follows the same sequence as the learning outcomes, but tutors may have their own preference for order of delivery.

If there is the possibility of an external speaker who is experienced in the field, or of taking learners on a visit to a large organisation that has experienced major changes because of changing ICT, then it should be taken up. Learners should be prepared for such events so that they can ask the right sort of questions. If this is not possible then tutors need to have access to 'real world' type case studies.

Tutors are expected to reflect current trends, current thinking and potential impacts of current trends in delivering this unit.

The starting point is to look at the generic developments in hardware, and whole systems, which have had a major impact on organisations. This being the first topic it is a good idea to start with a unit introduction and whole-class teaching of some basic information, and it is important that tutors keep up to date with trends in hardware development and potential impacts. It is useful to give learners some directed study to investigate the current trends in hardware and software. The internet is the most appropriate medium for this directed study, but other media should not be excluded, particularly trade magazines. Case studies can then be used to allow learners to see the use and impact of developments in 'real world' situations. The case studies also allow learners to identify the impact, or potential impact, that the developments have made, or will make. Much of this and subsequent work may best be carried out in small-group research and discussion, with follow-up whole-group feedback and pooling of findings.

Much of the terminology to do with reasons for change will be unfamiliar to learners with terms such as 'globalisation', 'outsourcing' and 'geo sourcing' needing to be defined by the tutor in an introductory briefing. The use of case studies or examples to illustrate the various points is important. Learners can then use simple case studies or examples to identify, and learn where the changes in external environment result in changes in the organisation.

To understand how organisations respond to changes, for LO2 first look at the business activities which are subject to adaptation. This will need some form of introduction to make learners aware of activities that may have to be adapted. This will be followed by case studies or examples showing where ICT developments have meant significant changes to one or more of these activities.

Some of the work on managing risk may well have been delivered in other units. Learners should at least already be aware of types of risk, and here they are looking at the application of those risks to the business and the resultant effects. Tutors may find it beneficial to remind learners of types of risk either through a briefing, or by using checklists. Directed study may be useful for researching specific risks in terms of cyber crime and the use of preventative technologies. The subsequent use of case studies or examples can allow learners to identify risks and propose potential counter measures.

This will lead to the first and second suggested assignments. Suggested Assignment 2 could be introduced earlier as it covers new developments in IT-related technologies. It has been suggested here because the research needed will also be useful for the final assignment.

Before suggesting developments of their own, learners will need guidance on how to analyse a business system to identify what changes are necessary and what technologies it may be appropriate to introduce. Small groups of learners can then be presented with a case study or example which describes various activities and various ICT developments, and can use this information to try to identify the adaptations of activities involved, feeding back their findings to the whole class for discussion and criticism. There may be an opportunity for role play on decision making and determining how, or why, such activities should be changed. The group as a whole could decide how best to present their proposals.

This leads to the final suggested assignment, which targets criteria P6, M3 and D2.

## Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
<p><b>Introduction to the unit</b></p> <p>Effect of technological change:</p> <ul style="list-style-type: none"> <li>• whole-class exercise – tutor presentation on hardware and software developments, followed by individual exercise</li> <li>• whole-class exercise – tutor presentation on reasons for change, external pressures; enhanced business opportunities. Followed by individual exercise</li> <li>• individual exercise – directed research into benefits and implications of change</li> <li>• mixture of whole-class teaching, directed study using the internet and other media, case studies, visiting speaker from commerce or industry, learner visit.</li> </ul>
<p>Responding to change:</p> <ul style="list-style-type: none"> <li>• whole-class exercise – tutor presentation on business functions and changes due to IT developments. Followed by individual exercise</li> <li>• individual exercise – directed research into managing risk</li> <li>• mixture of whole-class teaching, directed study, case studies, visiting speaker.</li> </ul>
<p><b>Suggested Assignment 1 – The Pros and Cons of Technological Development</b></p>
<p><b>Suggested Assignment 2 – What's New?</b></p> <p>Proposals for change:</p> <ul style="list-style-type: none"> <li>• group exercise – researching systems to meet scenarios and case studies provided by the tutor</li> <li>• group exercise – identifying the changes needed and suggesting suitable technologies</li> <li>• individual exercise – putting together a proposal</li> <li>• mixture of tutor-led, small-group work with case studies, discussion, research.</li> </ul>
<p><b>Suggested Assignment 3 – Moving Forward</b></p>

## Assessment

The suggested assessment of this unit is through three assignments as summarised in the *Programme of suggested assignments* (PSA) table.

Learners will need to be supplied with a scenario or case study detailing an organisation's (real or invented) activities and usage of IT. It is important that the scenario provides the broadest possible vehicle for learners to meet all the assessment criteria, and that it relates directly to current trends and thinking. If at all feasible it would be of great value for learners if they were able to carry out their own research with a suitable organisation.

### **Suggested Assignment 1 – The Pros and Cons of Technological Development**

The first assignment involves learners in thoroughly researching the impact of IT on an organisation. The IT considered should be relatively recent, ie implemented within the last 2-3 years.

The pass criteria are straightforward and learners should use the unit content as a guide. While P1 concentrates on the impact (implications) of IT development, M1 requires a reasoned explanation of why the organisation felt change was necessary.

For P2, learners should explain the impact that the changes will have, while for D1, learners should evaluate the benefits of change when weighed against the risks. A cost benefit analysis, although not specifically required, may provide a good vehicle to do so.

Any suitable method may be used to present the assessment material. A presentation or web-based method can provide more interest for learners and introduce a competitive element. If the presentations are followed up with a discussion to identify pros and cons and successes and failures, this will help learners gather ideas for the final assignment.

### **Suggested Assignment 2 – What's New?**

For the second assignment, learners can carry out research into some of the most recent developments in hardware and software. 'Recent' means anything within the last 2-3 years. Learners should be encouraged to access trade magazines as well as websites to find opinions and reviews. They need to remember that the focus is business systems not the latest gaming or social networking developments!

P3-P5 could be evidenced with magazine style reviews, awarding stars or points under various categories (such as cost, speed, usability) for each device or software development, together with comments about how organisations might use the technology and the risks involved. Learners should include both hardware and software but the number of each reviewed must be flexible as it will depend on the complexity and detail included.

For M2, learners should suggest how these developments may be used to improve a specific business. This may be an extension of their review or a separate document.

Both can be presented in any electronic format or on paper.

### **Suggested Assignment 3 – Moving Forward**

The scenario/case study used for the first assignment may be extended for this assignment. The operation of a business function or functions will need to be outlined ensuring there is at least one fairly obvious way of improving the system such as the introduction or improvement of a database system or the addition of a customer feedback form to a website.

For P6, the proposal should be fit for purpose but may be the simplest and most obvious solution. The proposal should be sufficiently detailed to show how the improvement would fit in with the existing systems, and include details such as cost, inputs, outputs, effect on staff and other knock-on effects as appropriate.

For M3 to be awarded, the proposal must demonstrate some original thought. This may be the introduction of more than one improvement or a series of improvements over time, or the same technology (as a pass candidate) may be recommended but the proposal will give more consideration to the impact it will have.

D2 requires a justification for the improvement proposed including pros and cons. A basic cost benefit analysis could be included.

### Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, M1, D1	The Pros and Cons of Technological Development	You are to analyse the impact of IT developments on an organisation, exploring why and how changes were made, evaluating benefits and examining risk and present your findings for discussion.	Presentation/report
P3-P5, M2	What's New?	Research recent hardware and software developments and produce a review.	Review (paper or IT based)
P6, M3, D2	Moving Forward	You are to analyse a business system and present a proposal for improvement involving the use of IT.	Presentation

### Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC in IT sector suite. This unit has particular links with the following unit titles in the IT suite:

Level 2	Level 3	Level 4
Unit 22: Doing Business Online	Unit 8: e-Commerce	
	Unit 33: Exploring Business Activity	

This unit maps to some of the underpinning knowledge from the following areas of competence in the Level 3 National Occupational Standards for IT (ProCom):

- 4.8 IT/Technology Infrastructure Design and Planning
- 6.1 Information Management.

## Essential resources

Tutors must ensure that all learners have access to the internet. They must also develop a bank of case study materials so that learners can extend their research.

## Employer engagement and vocational contexts

Tutors should explore local businesses and establish a directory of internet addresses for local organisations. This will enable learners to carry out research both online and face to face with local owners and managers, to develop their understanding of the implications of the use of IT in business.

There is a range of organisations that may be able to help to centres engage and involve local employers in the delivery of this unit, for example:

- Work Experience/Workplace learning frameworks – Centre for Education and Industry (CEI University of Warwick) – [www.warwick.ac.uk/wie/cei](http://www.warwick.ac.uk/wie/cei)
- Learning and Skills Network – [www.vocationallearning.org.uk](http://www.vocationallearning.org.uk)
- Network for Science, Technology, Engineering and Maths Network Ambassadors Scheme – [www.stemnet.org.uk](http://www.stemnet.org.uk)
- National Education and Business Partnership Network – [www.nebpn.org](http://www.nebpn.org)
- Local, regional business links – [www.businesslink.gov.uk](http://www.businesslink.gov.uk)
- Work-based learning guidance – [www.aimhighersw.ac.uk/wbl.htm](http://www.aimhighersw.ac.uk/wbl.htm).

## Indicative reading for learners

### Textbooks

Bocij P, Greasley A and Hickie S – *Business Information Systems: Technology Development and Management for the e-business, Edition 4* (FT Prentice Hall, 2008) ISBN-10 027371662X, ISBN-13 978-0273716624

Reynolds J – *E-Business: A Management Perspective* (OUP Oxford, 2009) ISBN-10 0199216487, ISBN-13 978-0199216482

### Websites

[www.oncallgeeks.com](http://www.oncallgeeks.com)

[www.teach-ict.com](http://www.teach-ict.com)

## Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
<b>Independent enquirers</b>	identify questions to answer and problems to resolve when examining why an organisation needs to keep pace with IT developments
<b>Effective participators</b>	proposing practical ways forward for an organisation to manage risk when using IT technology, breaking these down into manageable steps proposing a persuasive case for an IT-enabled improvement.

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
<b>Independent enquirers</b>	fully justifying and supporting the proposals for an IT-enabled improvement, using reasoned arguments and evidence
<b>Creative thinkers</b>	suggesting how new IT solutions may improve business systems demonstrating original ideas for, and exploring possibilities of an IT-enabled improvement
<b>Effective participators</b>	acting as an advocate for an organisation needing to keep pace with IT developments.

## ● Functional Skills – Level 2

Skill	When learners are ...
<b>ICT – Finding and selecting information</b>	
Use appropriate search techniques to locate and select relevant information	researching risk management and recent IT developments
Select information from a variety of sources to meet requirements of a complex task	producing and justifying a business proposal
<b>ICT – Developing, presenting and communicating information</b>	
Combine and present information in ways that are fit for purpose and audience	producing and justifying a business proposal.