Lesson plan

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| Topic 3 Impact of IT systems on organisation |
| Learning Objectives:* Describe the impact and implications for organisations of IT systems in terms of:
* User experience – ease of use, performance, availability, accessibility
* Employee and customer needs
* Cost, productivity, working practices and user support
* Implementation – timescales, testing, downtime
* Replacement or integration with current systems
* Staff training needs (initial and ongoing)
* Security
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| Content |
| StarterPowerPoint Guide: Topic 3 Impact of IT systems on organisationThe starter continues with the subject of security discussed in the previous topic. This time the focus is on asking students how such a system can be installed. The aim is for students to think of all the people and factors involved in installing such a system. At the end of the discussion, show students the answers slide.MainUser experienceThe user experience is something that all students will have experienced. The slide gives a ticket machine as the example. It is interesting to note that newer systems are not always better for the user experience. Older ticket machines used to have one hundred or more buttons for each station on the network. Whilst they looked confusing, they often only required one or two buttons to be pressed to obtain a ticket. These machines worked well in bright sunlight too. For some users they will have given a better experience to more modern machines. Ask students for their experiences of the user experience of using MacDonald’s ordering screens. Make sure they give both areas of the system they like and those that they find could be improved.Performance and availabilityAsk students where and when they experience poor performance. It may be devices that they use that are old or computers were under specified when purchased. They may also have experienced poor performance due to a slow or overloaded network. Now ask how this effects businesses and go through the answers slide.Case study: LAX AirportGo through the case study of a software bug which caused the air traffic control system known as ERAM (En Route Automation Modernization). The effect of the system crash was caused by a spy-plane which had an unknown altitude. This cause the system to run out of memory. More information about the incident can be found here: <https://www.reuters.com/article/us-airtraffic-bug-exclusive/exclusive-air-traffic-system-failure-caused-by-computer-memory-shortage-idUSBREA4B02320140512>. Such incidents at an airport will cause people to have delayed and cancelled flights due to planes being grounded. Ultimately a loss of income and reputation will be the result for the airport and developers of the software.AccessibilityComputer systems need to be accessible to all users including those with disabilities. Some areas are given on the slide and answers slide. Some products that make systems more accessible may be as simple as a wrist rest on a keyboard, a kneeler chair or a standing desk.Give out **Worksheet 3** and ask students to do **Task 1** and **Task 2.**Topic 3 Worksheet 3Topic 3 Worksheet 3 AnswersEmployee and customer needsFor the three scenarios, there are different needs between the customer and employees. In an airline booking system, the employees need to be able to quickly find customer information and be able to update parts which may have errors. The system could be more complicated. For customers, it needs to be easy to use, but may take longer to go through the same options. In a restaurant payment system, customers may have a menu that shows the meals, whilst the kitchen will have just key details in text. Students may want to consider McDonalds self-service vs kitchen machines for this scenario. A personal trainer will a require a system that shows them many different clients and how they are doing, whilst the customer will only need their own information.Costs of IT systemsThere are significant costs to IT systems with the very largest costing billions. Ask students to consider some of the costs of these larger systems. Answers are given on the next slide with some of the key areas being covered in the following slides.Implementation, testing and downtimeTake students through the three slides. Even for smaller projects such as the installation of a new IT room in a school or college, there will still be a specification written. Ask students what sort of things would need to be considered for this – such as desks, network connections and the specifications of the computers. Testing is especially important when only one system will be used after the upgrade. If the new system fails, then the organisation may not be able to do anything for a period of time which will lead to a loss of earnings and potentially bankruptcy. To reduce downtime, backup systems of power are often used. Ask students how else downtime can be reduced and take them through the answers slide.Ask students to do **Task 3** and **Task 4** on the worksheet.Replacement or integrationIT systems often evolve over time. This is particularly true in banking where many of their systems have components which may go back decades. Furthermore, customers may expect the old system to still be present. For example, some customers expect bank branches (with computers), others expect online banking whilst some wish to bank with a dedicated bank. New banks such as Monzo and Starling have been able to keep costs low by only offering an app to customers. This has eliminated their costs of dealing with old systems.Case study: Universal CreditThe government wanted to combine lots of different benefits into one payment known as universal credit. This involved combining many different IT systems into just one. The significant increase in the cost of the system shown on the slide is not atypical for large public sector projects.Productivity and working practicesNew IT systems have often managed to increase company’s productivity. Some tasks or jobs which have been replaced in the last few decades include robotics for car manufacture and Computer Aided Manufacture (CAM), email instead of letters and downloading documents instead of having to print them. Use of IT not only increases productivity, but it can change working practices. Some of these changes are given on the slide, but students may wish to come up with further examples.Ask students to do **Task 5** on the worksheet.Staff training and user supportUser support may be given by either a software company, an external company or internally. This is a good opportunity to discuss training and user support that is given to both staff and students with IT systems within your school or college. Students may have experienced the implementation of a new system and should have a good knowledge of any ongoing support. What do they think works well and what could be improved?SecurityIn the previous topic, students considered how IT is used in security systems. This time we are considering the impact and implications for organisations in terms of security. The focus therefore is in how organisations protect their systems and data. Take students through the slide and answers slide. Ask students to do **Task 6** on the worksheet.PlenaryAsk students to complete the plenary task and then go through the answers. Hand out **Homework 3**. Topic 3 Homework 3Topic 3 Homework 3 Answers |