

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
AS GCE**

G041/01/IC

**APPLIED INFORMATION AND
COMMUNICATION TECHNOLOGY**

How organisations use ICT

INSERT

FRIDAY 22 MAY 2015: Morning

JUNE 2015

**DURATION: 1 hour 30 minutes
plus your additional time allowance**

MODIFIED ENLARGED

OCR SUPPLIED MATERIALS:

Loose sheet for Appendix 1

INFORMATION FOR CANDIDATES

Any blank pages are indicated.

INSTRUCTION TO EXAMS OFFICER/INVIGILATOR

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NOTICE TO CANDIDATES

The work you submit for these pre-release tasks MUST be your own.

If you copy from someone else or allow another candidate to copy from you, or if you cheat in any other way, you may be DISQUALIFIED from at least the subject concerned.

You MUST always keep your work secure and confidential whilst you are preparing it. If it is stored on a computer network, keep your password secure. When printing work, collect all copies from the printer and destroy the copies you don't need.

Any materials (e.g. books, information from the Internet you have used to help complete this work, etc.) MUST be clearly acknowledged in the work itself.

All work MUST be submitted to your teacher once completed. Ensure you include your name, candidate number and centre number on all pages and that each page is hole-punched in the top left hand corner and secured with a treasury tag.

You must NOT submit any materials other than your response to the pre-release tasks.

When you hand in your completed tasks, you will be required to sign that you have understood and followed the regulations by completing a Candidate Authentication Statement.

Your work will be returned to you at the start of the exam, in the exam room. At the end of the exam you MUST attach ALL tasks to your question paper using the treasury tag.

ALWAYS REMEMBER

YOUR WORK MUST BE YOUR OWN

PRE-RELEASE TASKS – INSTRUCTIONS FOR CANDIDATES

Read the attached case study and these instructions carefully, then carry out the tasks detailed below. There are two types of task.

In Task 1 you will produce notes that will help you to answer questions in the examination for this unit. The other tasks will be marked and will contribute up to 30 of the 100 marks available for this unit.

You will need your completed tasks when you take the examination for this unit.

The work produced in response to the pre-release tasks MUST be submitted to your teacher when it is completed. The work MUST be presented as a hard copy.

It is not acceptable for you to copy large parts of material from other sources as the tasks require you to apply your knowledge to the case study. Any books, information leaflets or other materials (e.g. videos, software packages or information from the Internet) which you have used to help you complete this work MUST be clearly acknowledged in the work itself. To present material copied from books or other sources without acknowledgement will be regarded as deliberate deception.

You MUST NOT submit any material other than your response to the pre-release tasks.

The work MUST be collated so that it is presented in task order.

Each page of the work MUST be marked clearly with your name, candidate number, centre number and task number.

When you have completed the tasks you MUST sign and date a Candidate Authentication Statement. You MUST then ask your teacher to sign to confirm that the work is your own.

TASK 1

Do your own research and make notes which:

describe the job functions/departments in Best of Wood (BoW)

describe the roles of the personnel in BoW

explain the purpose of documents used by BoW and describe their content

describe the main processes carried out by BoW, including the inputs, the processing, the calculations and the outputs involved

describe the ICT systems used in BoW

explain the weaknesses of the current systems and explain and evaluate future improvements required by the managers of BoW.

TASK 2

A customer wants to purchase a piece of bespoke furniture from BoW.

Draw a diagram to explain how information moves, within BoW and with outsiders, during the process of ordering the piece of furniture. The process starts when the customer contacts the company. The process finishes when the order is confirmed.

Your diagram should show:

who sends the information

who receives the information

the types of information communicated

the method by which it is communicated.

[15]

TASK 3

Computer aided design (CAD) software is currently used to design the furniture. The owner is considering linking this to a computer aided manufacturing (CAM) system.

Do some research and produce a word-processed report for the owner. Your report MUST explain the benefits and limitations for the company of introducing CAD-CAM and evaluate the impacts on the employees of BoW.

Briefly evaluate the method(s) you used to complete this report.

The work you produce for Task 3 MUST NOT exceed 500 words, including the evaluation of the methods you used.

You MUST include a word count.

Marks will be awarded for the quality of written communication in your answer.

You MUST acknowledge all information sources you used. This is not included in the 500 words.

[15]

BEST OF WOOD (BOW) CASE STUDY

Introduction

BoW is a company that manufactures bespoke wooden furniture to customers' design briefs. The company has a large workshop where the furniture is made, a warehouse where the wood and other items are stored and a head office. The workshop, warehouse and head office are all on a single site on the outskirts of a large village in Kent.

Goods supplied

The company can design and make any type of wooden furniture a customer requires. The most common items are tables, chairs, sideboards, bookcases, wardrobes and chests of drawers. BoW has a range of standard designs for these items that customers can order. Customers can have these designs customised to meet their needs or have a new design created from a design brief. The furniture can be made from a variety of different woods – ash, beech, cherry, elm, mahogany, maple, oak, pine and walnut. These are all obtained from certified sustainable sources. There are also a number of different finishes available. The wood can be stained in a variety of shades or a limed finish can be applied. Stained wood can be either coated with lacquer or varnish, or polished using oil or wax. Some furniture may have specific design requirements. For example chairs may include fabric. The company has a number of books of fabric swatches that customers can select from, or the customer can provide their own fabric. Other furniture such as wardrobes will require hinges, handles and other fixtures. A stock of these is kept in the warehouse but others can be ordered to meet a customer's specific requirement.

Staffing and job functions (see Appendix 1 – Organisational structure)

The owner of BoW is responsible for the day-to-day running of the company. Three managers report directly to the owner. These are the Sales and Marketing Manager, the Office Manager and the Operations Manager. Each manager is responsible for one or more job functions. For example, the Sales and Marketing Manager is responsible for the sales job function and the marketing job function. As the company is quite small, some staff do more than one job function. For example, the Office Manager and office staff do all the usual tasks relating to administration, finance and human resources (HR).

Sales and marketing

The Sales and Marketing Manager oversees the work of the salespeople and the marketing assistants. The Sales and Marketing Manager is based in the head office, as are the marketing assistants. The salespeople all work from home and are located across the southern counties of England. The main role of the Sales and Marketing Manager is to find new business for the company by ensuring that the company name and its products are widely promoted. The Sales and Marketing Manager makes bookings for stands at shows and exhibitions, arranges for advertisements to be placed in newspapers and magazines and ensures the company's website is updated when necessary.

Marketing assistants develop flyers and catalogues for distribution at shows and exhibitions. They also look after the stands at these shows and exhibitions. The marketing assistants design the advertisements for publication and make any necessary updates to the company website. Salespeople visit customers to discuss their requirements, produce a design brief and take the order.

Operations

The Operations Manager is responsible for development, the workshop and the warehouse. Each of these areas has a supervisor responsible for the job functions within it.

The Development Supervisor oversees the research and design functions. There are separate rooms for each of these functions off the main workshop area. Although the company specialises in making wooden furniture, they are always looking for new and innovative ways to use wood and other materials.

It is the job of the research staff to look for different types of wood that could be used. They also look for new techniques that could be used to manufacture the furniture. Research staff test different woods for strength, flexibility and other characteristics to determine their suitability for making different items of furniture. The research staff also try out the new techniques they discover to see whether they can be used in the company.

Designers receive the client briefs from the salespeople and use computer aided design (CAD) software to create a design to meet the brief.

In the workshop, carpenters cut and join the wood to make the furniture. The fitters add the finishing touches such as handles and fabric seats to chairs.

The Warehouse Supervisor and warehouse assistants keep track of all the wood and other items delivered to the warehouse and those used to make furniture.

ICT systems

As all of the company's premises are on one site, there is a single local area network (LAN) that links all the computers in the workshop, warehouse and head office with the single server located in the head office. There is a router attached to the server that provides broadband Internet access. This enables the salespeople working from home to access the server using a Virtual Private Network (VPN).

Most staff based in the head office have a computer on their desk. The Development, Workshop and Warehouse Supervisors each have a computer on their desk. There are two further computers in the research office and one each in the main workshop area and the warehouse. There are three networked laser printers in the head office and one each in the research office, main workshop area and the warehouse.

Marketing assistants each have a high specification computer with a large monitor and they share a networked colour laser printer. Each designer also has a high specification computer with a large monitor. A flat-bed plotter is connected as a local printer to each of the designer's computers.

Desktop publishing software and web design software is installed on each of the marketing assistant's computers. CAD software is installed on the computers used by the designers. All other software is stored on the server and can be accessed from all work stations. All data is stored on the server. The data can be accessed from all work stations but only by those authorised to do so. For example, only the designers can access the CAD designs.

Procedures for placing orders

Customers wanting to order a piece of bespoke furniture from BoW must first telephone or email the Sales and Marketing Manager to request a visit from a salesperson. The Sales and Marketing Manager emails the salesperson nearest to the customer's home, giving them the customer's contact details. The salesperson telephones the customer to offer them a date and time for the visit. During the visit, the salesperson shows the customer photographs of examples of bespoke furniture the company has made previously and their standard designs. The customer tells the salesperson exactly what they require.

The salesperson uses a template on a tablet computer to create a client brief which specifies the customer's requirements. It is important that the salesperson records as much detail as possible about what the customer wants, so that the design created matches their needs. This will include:

the type of furniture required

the dimensions (height, width, depth)

the type of wood and finish required

any specific design requirements.

When completed, the salesperson emails the client brief to one of the designers. The designer uses CAD software to create a design from the client brief. The flat-bed plotter is used to produce a blueprint for the piece of furniture. The designer inputs the type of wood and the finish required by selecting from a drop-down list. The software converts the drawing to a 3D wireframe and renders it, using the selected wood and finish, to create a lifelike 3D image of what the finished piece of furniture will look like. A hard copy of this 3D image is made. The 3D image and the blueprint are handed to the Sales and Marketing Manager who uses the blueprint to calculate the price for making the piece of furniture. The price is based on the materials to be used and the complexity of the design. The Sales and Marketing Manager posts the 3D image to the customer for their approval, along with a letter and an order form. The letter tells the customer the price, including VAT, and outlines any additional costs such as delivery charges. If the customer is happy with the design and the quoted price, they post back the completed order form with a deposit of 50% of the quoted price to confirm the order.

Procedures for fulfilling an order

When the Sales and Marketing Manager receives the order and deposit from a customer, they hand the blueprint to the Workshop Supervisor. The Workshop Supervisor assigns a carpenter and a fitter to make the piece of furniture based on the blueprint. The order and deposit go to one of the office staff who enters the order details into an order processing system (see FIG. 1).

FIG. 1

Order Input Screen

Customer ID

Customer Address

Customer Name

Address 1

Address 2

City

Postcode

Tel. No.

Mobile No.

Design No.

Description

Bespoke

Standard

Completed

N

Delivery Address

Same as customer address

Address 1

Address 2

City

Postcode

Price

VAT on Price

Delivery

VAT on Delivery

Total

Deposit

Balance

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If the customer has ordered before, their customer ID is keyed in and their name and contact details are looked up and displayed automatically. The member of office staff inputs the name and contact details of new customers and the system generates a unique customer ID. The piece of furniture can be delivered to the customer's address or to an alternative delivery address. There is a check button to select that the delivery address is the same as the customer's address. When this is clicked, the customer address details are copied to the delivery address. If the delivery address is different, the member of office staff must key it in.

Radio buttons are used to select whether a bespoke or a standard design is being used. For standard designs, the design number is selected from a drop-down list and the description and price are looked up and displayed. For bespoke designs, the design number, description and quoted price without VAT are entered using the keyboard. For both types of design, the amount of VAT is calculated and displayed. The delivery charge is based on the distance from the factory to the delivery address. The mileage is found using the delivery address postcode and mapping software. This is multiplied by £1.50 to give the delivery charge, which is displayed. The VAT on the delivery charge is also calculated and displayed. All of these values are added to give the total cost that the customer must pay. The amount of deposit paid is keyed in and deducted from the total to give the balance.

When the piece of furniture is finished, the Workshop Supervisor checks that it matches the design requirements. The Workshop Supervisor then accesses the customer order on the order processing system and selects 'Y' from the drop-down list. This triggers the system to print an invoice which a member of office staff posts to the customer. This informs the customer that their furniture is finished and that they need to pay the balance.

Procedures in the warehouse

Although other parts of the company make good use of ICT, the warehouse is not fully utilising the ICT systems. There is a stock database on the server that both the Warehouse Supervisor and warehouse assistants can access but the stock levels are often out-of-date and inaccurate. This is because details of new stock received must be recorded manually using the keyboard. Sometimes, the carpenters and fitters need an item urgently and remove it from the warehouse before it has been recorded. Also, the carpenters and fitters often take wood and other items from the warehouse to use without telling the warehouse assistants so that they can update the stock level. This means that the warehouse assistants spend a lot of time counting stock to try to keep the stock database updated.

The owner and the Operations Manager are very concerned because there is sometimes a delay in completing an order because the wood and other items required are not in stock. They want to install a system that will automate the recording of new stock and that will make it easy for carpenters and fitters to record what they have taken to use, so that the stock database is updated.

Company website

The company website currently shows pictures of different pieces of furniture that the company has made, provides information about the types of wood and finishes available and explains the process of placing an order, including the Sales and Marketing Manager's phone number and email address. The Sales and Marketing Manager would like to make greater use of the website but is concerned that e-commerce might not be appropriate for a company like BoW.

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