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ICT Project 2
Analysis

Information Handling System for 'TKO Games' in 'Newbury Park'

1.1 Identification of the problem

TKO games in Newbury Park currently run their computer games shop with a manual system to hold details of all games in the shop. Since there are so many people coming in to the shop and asking questions about stock, the staff working there are spending more time answering customer queries, searching for a product in the store, and looking on their manual index card system (which is difficult to use, and takes a lon g time) than selling stock.

1.1.2 Aim

I intend to devise a solution to the above problem. I am going to create a computer system which can be used by customer's in order to help them to find information on a certain game, console or game's accessory without hav ing to ask the staff in the shop.

1.2 Methods of data collection

To collect the information needed for my project I will go to a number of different sources. I will use the TKO shop to get price lists in order to find out about the products and prices.

In order to find out what the manager wants the system to do, I will decide whether to use interviews or questionnaires.

Interviews and questionnaires both have advantages and disadvantages. This table (below) will show what these advantages and disadvan tages are:

Interviews		Questionnaires	
Benefits	Drawbacks	Benefits	Drawbacks
• Actually speaking to the person	• Arrange interview times.	• Someone fills it out.	• Limited responses.
• Pickup on things they say	• Only 1 person at a time	• More than one person at a time.	• May not be returned.
• Tape conversations	• May run out of time	• Statistically large spread of answers.	• Questionnaire cannot be developed.
	• Difficult to carefully analyse.	• Easy to extract from.	• People may not take questions seriously.
	• You have to write everything down.	• Saves time.	

An interview is more suitable for manager's, personnel and people working at the store, because they can give the time it takes for an interview and can also give a better insight of what the new system should be able to do.

But questionnaires on the other hand would be more suitable for the customers of the store, because they won't have that much time to give long detailed answers, but will also give a good insight on how to make the store easier to use for them, since these are the people using the store.

There is also another method for collecting information. This would be to go to the shop and watch how the current system works. This is good because it lets me see for myself. But this would not be possible as I go to school during the week.

After looking at all the advantages and disadvantages of interviews and questionnaires, I have decided to produce questionnaires. I have chosen this because it allows me to get a more extensive result and it also takes up less time.

1.3 Designing the Questionnaire

In this section I will list the questions I think are suitable for the manager, staff and customers of the shop. I will give separate questionnaires to the manager, staff and customers of the store.

Questions to for the Manger/s

- Does the shop store any information about the games, consoles and accessories in the store? (Yes, No)
- If yes what information about the products are stored?
- How do you know how much of each item is stocked of each item?
- How is new stock ordered?
- How do you find out which items are selling well and which aren't?
- How do you know when an item is out of stock?
- Do you store any information about customers?
- If yes, what information is stored? (Name, Address, Telephone, Age, Sex)
- How are customers, who have made orders contacted? (via e-mail, telephone, post)
- Tick any of the problems listed below, that you are experiencing with your current system:
  - ☐ Difficult for you to keep up to date.
  - ☐ Difficult to find data quickly.
  - ☐ Complicated searches take a long time.
  - ☐ Difficult to make backups.
  - ☐ Contacting customers takes too long.
  - ☐ Not enough information about products stored on system.
- Do you have any experience with computers? (Yes, No)
- What computer types do you have experience of? (Windows, Mac, DOS)
- If a computer system were proposed for the new system how much would you be prepared to spend? (£500-£1000, £1000-£2000, £3000+)
- Do you send any mail order letters, adverts of the business or letters to customers?(Yes, No)
- If yes, is this successful?

Questions for the customer/s

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- When you go into the shop, how do you usually find the things you are looking for? (browse, ask an assistant, look at signs/posters in the shop)
- What do you think is the most time wasting aspect of being served in a shop? (long queues, assistant not knowing what is in stock, needing to write things down, staff answering telephone calls)
- What information would like to see held about the product? (Name/title, cost, what the game is about, when it was released, No. in stock, picture)
- When you go into a shop do you find it useful to be offered a price list? (Yes, No)
- When going into a shop do you find it useful to be offered promotional material? (sales, special offers)
- When asking for information about products would it be useful to be given printouts to take with you? (Yes, No)
- How would you like to be informed about an order, or a certain item? (via e - mail, telephone, post)

Questions for staff

- What are the most routinely asked questions in the shop? (how much the game, console, or accessory is, whether the games are, CD's, cartridges or minidisks, what sort of genre the games are, what the games are about, the age-group suitable for the game, whether the console has a DVD player built in it, whether the console can be connected to the intern et)
- What do you think would help reduce the amount of queries asked? (more staff, a computer system customers can see without having to ask staff)
- Can you produce quick searches for products in the shop? E.g. All games under £30. (yes, no)

1.4 Methods of collecting information

In order to collect information for my new system I thought of suitable questions and created some questionnaires for the Manger of TKO, the staff and the customers. I handed these questionnaires to users of the system and then collected them once they had been filled out. The questionnaires helped to identify a number of problems with the current system and what needs to be done in order to improve it, such as; data field requirements, system capabilities, what problems there are a lready so that they can be fixed, what kind of reports the system is capable of producing and queries. The questionnaires that hold all of this information can be found in the *questionnaire section.*

1.5. Analysis of Questionnaires

1.5.1 Identify the user's problems

After analysing my questionnaire I have found and listed key problems that the current system has. The main problems are:

- It is difficult to keep the stock up to date since new games are coming out all the time and the staff does no know which games there are quickly, because a manual stock count has to be done.

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- Complicated searches about games take a long time because not very much information is stored about products and all the information about the products are stored on paper in a record s bank.
- Estimating stock value is difficult with the current system because the manual stock count has to be taken and then it is calculated, but if mistakes are made, it could cause problems or they would have to start calculating from the start again.
- Analysing sales performance is difficult with the current system because what games are sold, when they are sold and how many are in stock is not recorded.
- It would be good to get pictures for games so customers could identify the game, if they don't know the name, but the current system doesn't allow this.
- The only way to search for games that customers are looking for is to either look through the files or look on the shelves. This may take a long time.

1.5.2 Identification of user requirements

After analysing my questionnaires I have found the features that users of the system will require. The main features the system will require are recording what stock there is as the stock is sold, keeping stock levels up to date, producing price lists for the manager, staff and customers to use. The manager also needs to know which stock is selling well, so that he doesn't buy it again and can put it for special price or buy one get one free, etc.

1.5.2.1 Database field requirements

Here is a database showing what people thought should be used for the database. I have decided to use any field that has been voted 3 times or more. The field with less than 3 votes will bee excluded:

Fields	Tally	Total
Name/Title	IIII	4
What console the game is for	IIII	4
The main character in the game		0
Cost	IIII	4
What the games are about	II	2
When it was released	I	1
No. in stock	I	1
Picture	III	3
Graphics review		0
Sound rating		0
Playability	I	1
Age rating	II	2
Rating /100	III	3
Manufacturer		0
Whether the game is action/ adventure / racing / RPG / strategy	III	3

etc		
Format CD / MD / Cartridge	II	2
New/second hand	III	3

1.5.2.2. Database query requirement
By analysing my questionnaires, it has allowed me to identify the require ments for the database.

The fields that will be entered into the database are those that have 3 or more votes, since these are the ones the customers really want. These are:

- Name/Title
- What console the game is for
- Cost
- Picture
- Rating /100
- Whether the game is action/ adventure / racing / RPG / strategy etc
- New/second hand

1.5.2.3. Database report production capabilities
The analysis of my manager questionnaire (found in my questionnaire section) has helped me to identify the sort of reports that my system will need to produce. The manager chose the following as the problems created by the current system:

- Difficult to keep up to date (new games coming out all the time)
- Difficult to find data quickly
- Complicated searches take a long time
- Difficult to make back-ups
- Contacting customers take too long
- Not enough information about products stored on system
- Stock taking
- Estimating stock value
- Analysing sales performance

1.5.2.4. Database Data Processing Capabilities
The analysis of my manager questio nnaire has allowed me to identify the different types of data processing my system will need in order to perform:

- Maintaining the database
- Analysis of sales performance
- Mailmerge
- Reports

1.5.3 Identify the outputs, inputs, and processing required

1.5.3.1 Output Requirements

- Printed stock level requirement reports: Allows the manager of the store to see what games are selling well, so that more can be ordered. Or to see the

games that aren't selling well, so that they can be discounted and not be ordered again.
- Stock check list reports: This is useful to check the stock levels (what games are in the store, or which ones need to be ordered).
- Advertisements: Advertisements in shop window – posters, banners etc, showing games that are discounted.
- Reports: These are for adverts for special offers, and order letters from customers.
- Accounts: Transferring data to and from spreadsheets to produce reports for account purposes.

1.5.3.2. Input Requirements

From the questionnaire section, I have found out that these are the types of queries that must be conducted.
- All game titles with 'Sonic the Hedgehog' in them.
- All the games under £30.
- All the games which are RPG's.
- All the games that are not selling well.
- All the games that are made by Namco.
- All games with a rating above 6.
- All games that are second-hand.
- All the games that have 'Mario' as the main character.
- The addresses of all the manufactures.

These will be the kind of examples of queries that will be made by and for the store.

1.5.3.3. Processing Requirements

All the outputs I have chosen to produce will be processed by:
- Mailmerges: Firstly a template will be made for the letter, then a query will be made in order to retrieve the data. The merge will then be made (the query with the template) and will then be printed.
- Reports: Firstly a report will be made. From the query I will retrieve the data. I will then produce a report to show price lists, stock lists etc, using a report wizard. These will then be printed out.
- Spreadsheets: Data will also be exported to produce charts for price lists, stock lists etc. This will be done using spreadsheets. Data will also be exported to Microsoft Word in order to produce order letters so stock can be ordered, quickly and easily.

1.5.4. The System Specification-General Requirements

The software that I intend to use will be database software (Microsoft Access), so that a database can be created. Word processing software (Microsoft Word) will be used to produce order letters, so that orders can be made and sent to suppliers. Spreadsheet software (Microsoft Excel) will be used in order to produce spreadsheets, so that statistical graphs can be made to show the sales analysis.

The general hardware I will be using is a PC. This is because the user (the manager) stated in the questionnaire that he is familiar with PC's in

comparison to Mac's. A printer will be used to print out reports and queries. A scanner will also be needed because the pictures for the games need to be scanned on to the database. (This has been requested by the users' in the questionnaires)

1.5.4.1. Information Handling Software

There are two types of software, which are capable of making and working as a database. I will compare these. These are spreadsheet software (preferably Microsoft Excel) and database software (preferably Microsoft Access). Both of these are capable of inputting, organising and accessing the data. The database software would probably be better to use because the user can search for the data, and it is easier to use. The user can produce complex queries and then store them for further use. But in a spreadsheet there are no query capabilities so the user must search manually. The software must also be user-friendly. Database software is also far better because forms ca n be created. Forms have combo boxes, making the database easier to use, and action buttons to flick through the various forms. Database software can also make better outputs of data when printing reports. These reports can be made using the wizard. There are no wizards in Excel for this, making it difficult and complicated to make outputs quickly and easily.

1.5.4.2. Additional Software

The additional software I will need to use will be Microsoft Word Processor, and Desktop Publishing.

I will need Word processing because I will need to produce to the suppliers when ordering stock. Wordprocessors are useful because they are capable of producing professional letters. It contains many functions, such as; Spellchecker, and word art. Wordprocessors are also capable of exporting data from databases very easily, using mailmerges.

I would like to use Desktop Publishing so that advertisements and posters displaying special offers can be made. Desktop Publishing produces quality advertisement because pictures ca n be exported into it easily from various files and clip art.

1.5.4.3. System Hardware

For the PC, I will need a high powered processor, preferably Intel, since it is the fastest and can be updated easily. The computer must be able to retrieve things quickly so a processor of around 800Mhz to 2000Mhz will be needed. The hard disk will need to be fairly large to hold the pictures (they take up lots of space) and the data from the database, spreadsheets and word processors. At least 6GB will be needed. Th e amount of RAM will need to be fairly large aswell because several tasks may be running at one time and the database will need to export lots of data to Excel and Word, in order to produce outputs quickly. The RAM must be at least 120MB. The keyboard, mou se and monitor will be standard, but wrist rest for the mouse and keyboard will be needed because the user will use the computer for long periods of time, this will cut down on RSI.

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I have decided to have a colour laser printer, as opposed to a black and white dot matrix printer. These will take too long and the printouts will not be in colour. The laser printer is quick and the quality and colour from the printouts will attract people's attention when seeing the advertisements.

1.5.5. Overall System Design Objectives

I this section, having analysed the results from my questionnaires, I will state my objectives in order to meet my aim which is stated in the problem section (1.1.2):

- To identify the hardware and software required for the new system for TK O games.
- To identify ways of collection data to be input to the new system.
- To store the following data in the database:
  - Name/Title
  - What console the game is for
  - The main character in the game
  - Cost
  - What the games are about
  - When it was released
  - No. in stock
  - Picture
  - Graphics review
  - Sound rating
  - Playability
  - Age rating
  - Rating /100
  - Manufacturer
  - Whether the game is action/ adventure / racing / RPG / strategy etc
  - Format CD / MD / Cartridge
  - New/second hand

- To store a minimum of 30 records on the system.

- To design a system that has the following capabilities:
  - In order to help the manager and staff to run the store.
  - The manager must be able to look for products which customers have specified, and whether they are available or not.
  - The new system must be able to deal with problems such as, keeping a record of stock etc.
  - To help deal with customer queries
  - Store customer details.
  - Create orders, quickly and efficiently.

- To design a system that can run the following types of query:
  - All game titles with 'Sonic the Hedgehog' in them.
  - All the games under £30.
  - All the games which are RPG's.
  - All the games that are not selling well.

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- All the games that are made by Namco.
- All games with a rating above 6.
- All games that are second-hand.
- All the games that have 'Mario' as the main character.
- The addresses of all the manufactures.

- To design an easy to use database. This is because the system will be used in situations where the manager and staff must be able to help customers in the store. Sometimes these situations become stressful and a system that is too complicated will make it even harder for the staff and manager. An easy to use system will mean that most of the staff will be able to use it and any new staff won't have any problems with it.

- To create an easy to maintain system. This is because the user must be able to add, delete and correct records. This is an essential part of the database as new stock is always coming in, and stock is always being bought. If the database is easy to maintain then the user won't have problems using it on a day to day basis.

- To create additional databases along with the main database. This is to provide the user with a list of details of the suppliers to contact them when ordering stock.

- Exchanging data between software easily. This is to allow the user to send and receive data to other software so that the user can produce mail merges and stock level reports.

- Testing the system ensures that once the system is installed, the system doesn't fail when in use. Testing the systems also helps to reveal whether there are any hidden errors in it.

- Producing a user manual ensures that if the user/s of the system has any problems, then he/she can look it up in the manual. If there is not a manual then the user would have to contact the maker of the system or take it to a specialist. This is time consuming and may cost the store money because the store may lose money while the system is unavailable.

- Once the system is in use, a report must be made on how successful or how unsuccessful the solution to the problem was.