

1997

INFORMATION PROCESSING AND MANAGEMENT *TRIAL CAT 3*

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INFORMATION PROCESSING AND MANAGEMENT

Common Assessment Task 3: Structured Questions

Reading Time: 15 minutes

Writing Time: 2 hours

QUESTION BOOKLET

Structure of Booklet

<i>Number of Questions</i>	<i>Number of questions to be answered</i>
10	10

Directions to students

Materials

Question booklet of 12 pages.
One or more script books.

The Task

Please ensure that you write your **student number** in the space provided on the front cover of the script book(s).

Read the case study contained in this question booklet and then answer questions 1 - 10.

Answer **all** questions in the script book(s) provided.

Each question is of equal value. Students should spend approximately the same time answering each of the ten questions.

All written responses should be in English.

At the end of the task.

Place all other script books inside the back cover of one of the used script books and hand them in. You may retain this question booklet.

Case study

Nayman Enterprises is a small publishing company which has been in business for 30 years and provides publications to a client base of 2000 dealers and customers in Australia and 100 dealers and customers throughout the World in the specialised field of postage stamp collecting.

Each year, Nayman Enterprises, produces approximately thirty six new booklets (3 each month) on a wide range of topics relating to stamp collecting, up-coming sales, conferences and predictions about the future state of the stamp market.

As a result of being in business for so long, Nayman Enterprises has a very large list of publications that it has produced over the years. Many older publications are still in demand by its customers and Mark Nayman, the Managing Director, has suggested to the Company Board that these titles as well as current publications should be offered to customers in electronic form, that is, on 1.4 MB Disks, CD-ROM and the Internet.

The electronic distribution of these publications would require substantial investment in hardware such as scanners and CD-ROM Writers, and software, as well significant time allocation to train the staff in the use of both.

Fortunately, the past publications from Nayman Enterprises have been beautifully printed in colour and preserved in excellent condition. These documents can be scanned easily using Optical Character Recognition (OCR) software and photographic scanning software and then converted to a platform independent format with an easy to use software conversion package. Customers will use the free software provide on each CD-ROM to recreate the original document.

Mark Nayman has also suggested to the Board that the pricing structures of the publications be set so that customers will be encouraged to make their purchases in electronic form rather than printed form. Mark claims that the falling price and increasing availability of computers, CD-ROM drives and Internet connection will ensure that this strategy will be the correct one for the future. He provides the following figures to support his proposal:

- 1.4 MB Disks available for 40 cents each.
- Writable CD-ROMS available for \$4.00 each.
- A double speed CD-ROM Writer available for \$1000.
- Web Page Creation and maintenance available for \$8,000 per year.

Mark proposes the following **ELECTRONIC** strategy for 1998.

(Date of proposal January 31, 1997)

- All past publications to be scanned and offered for sale on a single searchable and interactive CD-ROM with a direct link to the company's Internet Site
- All publications for 1998 to be offered to customers **either** on 1.4 MB disk **or** CD-ROM
- The company's catalogue and any updates to 1998 publications to be placed on the Internet Site <http://www.stamps.com.au> (already registered)

Alicia Goodman, a Board member, is not enthusiastic about Mark's proposal. Alicia is concerned that not enough customers will take up the offer of electronic delivery of the publications to make the investment pay for itself. She is of the opinion that it is better to wait for the customers to ask for the electronic delivery. Alicia is also very concerned about the security of the Internet and whether it can be used to make money for the Company.


Alicia proposes the following **PRINT** strategy for 1998.

(Date of proposal January 31, 1997)

- The thirty six new publications for 1998 to be offered in print form only.
- A survey to be included with each publication asking customers for details of their computer systems and their interest in obtaining the publications electronically on 1.4 MB Disk, on CD-ROM or on the Internet.
- A sample CD-ROM containing some past publications to be produced by the company for training purposes.
- A survey of Internet sites dealing with stamp collecting to be done so that the site <http://www.stamps.com.au> can be presented and used in the best possible way.

Question 1

If Nayman Enterprises decides to put the past publications onto CD-ROM for 1998, describe how the following phases of information processing will be affected.

- 
- i. input
 - ii. manipulation
 - iii. output


Question 2

In which ways would the proposal for putting all of the past publications onto CD-ROM for 1998, help Nayman Enterprises to achieve its organisational goals?



Make sure you fully explain your answer.

Question 3


In the event that the Nayman Enterprises decides to put all of the past publications onto CD-ROM, **and** the current publications onto 1.4 MB Disks or CD-ROM, what sort of procedures and strategies would be needed  be designed in order to implement this system?

Question 4

What economic and social implications for the staff may there be for Nayman Enterprises if they adopt the proposal put forward by Mark Nayman?



Question 5

If the **ELECTRONIC** proposal is adopted, what factors need to be considered when purchasing the necessary hard  and software?

Question 6

Describe methods for testing the effectiveness, efficiency, and reliability of the
ELECTRONIC proposal for 1998 before it is implemented by Nayman Enterprises.



Question 7

Recommend appropriate strategies for dealing with the training needs of Nayman Enterprises if they adopt the **ELECTRONIC** proposal outlined in the Case Study.



Question 8

Describe the documentation needed to support the **ELECTRONIC** system.

What factors need to be considered when designing the documentation required to support the implementation of this new system.

Question 9

In the event that the **ELECTRONIC** system is implemented by Nayman Enterprises in 1998, how and when would you evaluate whether or not the implementation of the new system was successful?



Question 10

Which of the two proposals listed in the Case Study (**ELECTRONIC** or **PRINT**) do you think that Nayman Enterprises should adopt for 1998?



Make sure that you fully justify your answer.

**END OF QUESTIONS
1997 IPM TRIAL CAT 3**

The following suggested answers are provided as a guide. It is suggested that teachers allocate 5, 4, 3, 2, 1 or 0 marks to each question. The completed paper would then be marked out of a total of 50. Points could then be allocated for grading from A+ to E to indicate the level of that student.

The answers given are suggested answers only. It is not suggested that students would make all of the points given nor that the points made within the answer are inclusive of all points which could be made.

Question 1

Input

Under the present system, the past publications are in printed form. Some of these from more recent years will have been produced using word processing software on a computer. The others will simply exist in hard copy. The hard copy past publications will have to be scanned and, thereby, put into electronic form. The word processed documents already exist in this form.

Manipulation

Under the proposed **ELECTRONIC** system, data (both image and text) would be manipulated electronically using an appropriate software package and also possibly using the scanner software. An electronic index of some kind will have to be established so that the files can be accessed easily.

Output

At present, each past publication exists in a manual file. Under the proposed **ELECTRONIC** system, past publications would be organised in files held electronically on CD-ROM. Once this is done, the reduced time for electronic retrieval may mean that there is an increase in efficiency. The procedures of the employees at Nayman Enterprises will change - employees will need to develop procedures to retrieve publications quickly from the CD-ROM rather than from the manual file.

Question 2

The organisational goals of Nayman Enterprises which are likely to improve by putting all of the past publications onto CD-ROM for 1998, are:

Improved customer service

The new system will be more efficient and effective for customers who wish to locate a past publication. For a very reasonable price, all customers will have access to all past publications. If a customer wants a single printed copy of a particular past publication, Nayman Enterprises could also respond to this request if it decides to invest in a high speed colour laser printer.

Improved staff morale, efficiency and profit

The new system will mean that, instead of having to access hundreds of individual past publications for particular customers, only one stock item, the CD-ROM, will have to be provided. This should mean improved staff morale and efficiency. Staff can then be employed to update the CD-ROM throughout the year or work creatively on the Internet Site. This more focussed approach to the business should increase the profitability of Nayman Enterprises.

Question 3

The proposed **ELECTRONIC** system would require staff to learn new skills and procedures.

New procedures will be needed for both the past publications CD-ROM and the current publications Disks and/or CD-ROMs.

- electronic production of each of the three publications for the month.
- validation of the data contained in each publication.
- creation of the master 1.4MB Disk or CD-ROM (on hard disk).
- validation of data contained on the master Disk or CD-ROM.
- duplication of 1.4MB Disks in the appropriate format required by the customer.
- duplication of the CD-ROMs using a recordable drive in the appropriate format required by the customer.
- mailing of Disks and CD-ROMs to customers.
- assistance offered to customers to use the **ELECTRONIC** system.

Question 4

Economic Implications

Added Costs

- setup costs: additional phone lines, modems, computers, scanners, recordable CD drives, software.
- running costs for the Internet Site (\$8,000 p.a.)
- higher electronic media costs (Disks and CD-ROMs)

Improved Efficiency

- lower printing costs
- staff being able to retrieve publications faster
- customers able to browse publication details for themselves
- catalogue able to be browsed around the world by potential customers
- publications list updated regularly

Training Costs

- It may be an option to train a staff member to be responsible for the regular updating of the Internet Site. This would reduce the running costs.
- Other training will be required in the use of hardware and software.

Social Implications

- some jobs may be outdated or re-defined e.g. employees who do filing may now have to use a recordable CD Writer.
- new skills required: employees will need to learn how to connect computers to the Internet and how to operate Web browser software and email.
- will the reaction of staff and customers to the new system be positive or negative?
- customers using the Internet may now be situated anywhere in the world and the personal contact may not be as great as before

Question 5

Some of the factors Nayman Enterprises should consider when purchasing hardware and software, are:

Hardware

- are the scanners, modems and CD-ROM recordable drives reliable?
- are they compatible with existing computer equipment?
- how many more computers will be required for staff?
- how much RAM and disk space are needed to use the recordable drives?
- is the CPU speed of the computer significant when using the recordable drive?
- are service and spare-parts readily available for the CD-ROM recordable drives?
- is the speed of the CD-ROM recordable drive adequate for its purpose (minutes per CD)?

Software

- does the scanner software provide a quality output?
- how easy is it to learn and use the scanner software?
- how easy is it to learn and use the software required to convert the text and images to a format that can be used by customers irrespective of their computer platform?
- what features are contained within the software?
- what is the compatibility of the software with the hardware of Nayman Enterprises?
- are manuals and documentation readily available?
- do the software suppliers provide any telephone support for problem-solving?
- is the scanner and conversion software stable or does it frequently crash?
- will the customer Disks and/or CD-ROMs that are produced need any additional hardware or software installed on client computers?

Question 6

The following tests should be carried out before implementing the system.

Past Publications CD-ROM

How long will the master CD of 30 years of publications take to produce?

- what is the time taken to create a typical output file using the scanner software and conversion software.
- is data validation fast and easy to use with the conversion software?
- is the conversion software easy to use both for the creator of the publication and the customer or staff end user?
- what is the time taken to input data into the conversion software?
- what is the time taken to recover after a software or hardware crash?
- do existing files recover properly after a crash or is it necessary to revert to a previous file generation?

Current Publications Disk and/or CD-ROM

- how many Disks or CD-ROMs will be required each month?
- will this duplication be most efficiently done in-house or out-sourced to a specialist organisation?
- do the Disks have the capacity to carry the free software required by the customer to access the publications or will this software have to be supplied independently?
- how many different types of formatted disks will have to be carried in stock to satisfy customer demand?
- is this free “reader” software available for download from the Internet?
- how do Disk and CD-ROM production schedules compare with Print hard copy schedules?

Internet Updates

- can the Internet Site be updated directly by staff or is a third party required to do this?
- what are the competing costs for a permanent Internet link versus a dial-up link?
- does the Internet Service Provider (ISP) have sufficient capacity and reliability so that customers will have easy access to <http://www.stamps.com.au>?
- can the ISP provide a secure direct ordering service so that customers can place orders using their credit cards?

Question 7

The staff at Nayman Enterprises would need to be trained in the following activities before any changeover occurred. (If it is found that present staff cannot be trained adequately, it will be necessary to employ at least one new skilled staff member)

- creation procedures for monthly publications
- use of scanner and CD-ROM software.
- creation of CD-ROMs , CD-ROM duplication and Disk duplication.
- procedures for distribution of Disks and CD-ROMs to customers.
- assisting customers using the Disks and CD-ROMs that they receive.
- documentation of new procedures
- monitoring of procedures during implementation in order to detect any problems

Question 8

The following documentation would be needed for staff.

- The scanner software operating manual for changing Print hard copy into electronic form. This would also include the documentation for using the OCR software and the Photographic software.
- The conversion software operating manual for changing electronic publication data into CD-ROM format.
- The CD-ROM Writer software operating manual for “burning” CD-ROMs from the master copy on the hard disk of the computer.
- The Internet Browser software operating manual for accessing the Internet Site and updating the files.

These manuals should contain detailed instructions on how staff would operate the hardware together with the scanner software, conversion software and Writer software, including

- starting and stopping the computer
- use of templates for inputting data
- what do in case of a specific problem
- security procedures
- **In summary, the manuals must contain detailed instructions for the production and maintenance of the output required.**

In general, information system manuals should contain the following design elements.

They should be

- clearly written in plain English
- written by someone with expertise in the area
- logically organised, easy to understand and contain an index.
- trialed to check that the steps described within the documentation are clearly expressed and work.

Question 9

It is recommended that the system be evaluated at the end of March 1998 and then again at the end of June 1998. The new system would have to be compared with the system in use in the previous years.

Elements to be considered in the evaluation would be:

- profit produced by the new system
- projected profit in 1999 by the new system (to allow for initial difficulties in the first year)
- running costs
- ease of use
- time taken
- staff reaction to the new system
- customer reaction to the new system
- CD-ROM reliability
- change in the number of Internet “Hits”
- orders received through the Internet

Question 10

Both the advantages and disadvantages of the proposed **ELECTRONIC** and **PRINT** systems should be discussed and a conclusion should be reached and justified.

ELECTRONIC - Advantages

- a single unit of stock replacing hundreds of previous units
- the potential for multimedia presentation containing text and pictures (also sound and video if needed)
- easily copied and distributed
- enhances the technological profile of the Company
- lower production costs compared to printing
- CD-ROM retains an up-to-date character by direct links to the Internet Site containing current material.
- Internet Site able to be read by potential customers around the world, contains timely information, updated after each publication

ELECTRONIC -Disadvantages

- CD-ROM creation uses software that probably needs a trained and skilled operator
- lack of computers and CD-ROM technology among the current customers
- Nayman Enterprises would rely partly on an external organisation over which they had no control (the Internet Service Provider)
- relatively high on-going costs for the maintenance of the Internet Site - future sales?

Question 10 (continued)

Both the advantages and disadvantages of the proposed **ELECTRONIC** and **PRINT** systems should be discussed and a conclusion should be reached and justified.

PRINT - Advantages

- loyal customers are getting what they have expected from the company for many years
- a current customer is worth more than a potential customer
- valuable information is not being given away free on the Internet
- staff are secure in the same things they have doing for years
- a more measured change from the print medium to the electronic medium

PRINT - Disadvantages

- change to the electronic medium is inevitable so it is best to move quickly so that rival companies will not take the current customers away from Nayman Enterprises
- this is the less politically (ecologically) correct medium since most people believe that not using paper conserves trees - but where does that plastic CD-ROM come from and where does it go eventually?

Nayman Enterprises should possibly accept the **ELECTRONIC** alternative with the modification that customers who want to stay with the old system be allowed to do so.

The customer, after all, is always right!

END OF SUGGESTED SOLUTIONS
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