

Case Study - Answers and Solutions

The following suggested answers are provided as a guideline for the test paper. It is suggested that teachers mark each answer with a HIGH, MEDIUM, LOW or NS and allocate 3, 2, 1 or 0 marks to each question. The completed paper would then be marked out of a total of 30. Points could then be allocated for grading from A+ to E to indicate the level of achievement of the 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

Candidates would be expected to identify that, under option 1, the following phases of the IPC would alter.

Phase	Change
Input	While work would still be sent in for photocopying, DTP and word-processing, some of the data for photocopying would be directly input via modem to a computer. This would be the main phase to change.
Storage	New work would have to be stored on hard disk, and a filing system developed within the hard disk to identify work sent in by modem.

As well as the changes mentioned for option 1, under option 2, the following changes to the IPC would take place.

Phase	Change
Input	The input of work to the new system would no longer require the operator to place copies of work to photocopied in the photocopier.
Output	This phase would alter under option 2 since output would be under the direct control of the computer

The above are the key changes to the IPC in the given system. Candidates may be able to discern and to justify that minor changes in some other phases of the IPC take place for which they should be given credit.

Question 2

Fast Print would need to develop procedures for the following.

Customers who wish to send their work in by modem. Customers will need procedures to operate the software and modem which they will have. They will also need operational procedures concerning the method they use to upload their work to Fast Print.

Helen Green

Helen will need completely new procedures for dealing with the work which has been submitted by modem. She will need to notify customers if there are problems with the files which customers have uploaded. She will also need procedures for identifying whose work matching work uploaded with a particular customer so that work can be both returned and billed. Attention needs also to be paid to security procedures for uploaded work.

Sally Brown

Sally Brown, as manager, will be responsible for overseeing the new system. Procedures will be needed for monitoring the efficiency and effectiveness of the new system. She will also need to monitor that standard and consistent procedures are being followed.

Other points:

- training on the new procedures will be needed
- procedures need to be standardised
- backup procedures need to be instituted for the computer hard disk if they are not already in place.

Question 3

A.

The principal software compatibility issue is the way in which the customer's computer communicates with Fast Print's computer. Fast Print would need software which would control the modem, answer the telephone and automatically upload files from the customer to Fast Print. Client software for each of Fast Print's customer's would be needed, together with some sort of 'server' software at Fast Print. Ideally the system would operate independently of the type of computer which each customer has, indicating that client software needs to be available for the most popular computers and operating systems.

Among the hardware compatibility issues are the need for the modems at either end to be capable of working at identical speeds. The client software used by Fast Print needs to be able to communicate with the modem used by the customer.

B.

The principal software and hardware compatibility issues raised here include:

- a software driver for the photo-copier needs to be available for the Fast Print computer
- a controller card may be needed for the computer
- the cable which connects the computer to the photocopier needs to have the correct plugs at either end.
- the computer needs to have a port available for the cable with a compatible socket for that cable.

Question 4

A.

Fast Print would probably be justified in purchasing both a modem and the new HT photocopier. Even if the new photocopier lasted only two years, on the figures given Fast Print would print over 8 million sheets in that time. The increased cost per copy due to using the HT photocopier would be around 0.4 cents per page. This should be able to be recovered by increased productivity due to the increased efficiency and effectiveness which the HT photocopier would bring.

B.

The immediate social problem is that it would appear that the position of the two photocopy operators (Noel Vincent and Samantha Carr) may be redundant. The operators would also suffer from some form of de-skilling. One possibility may be to re-train them in how to use the computer system. As the use of the computer-based system increases (and with it increased business) it may be possible to attach additional computer systems to the photocopier and provide them with work.

The new system may also lead to increased de-personalisation as contact with customers would be decreased.

Question 5

It seems clear that, from the information given, that the system which should be chosen is the system in option 2. While it would cost more, this system would seem highly likely to provide the organisation with increased efficiency in that it would be able to turn work around much faster, and effectiveness in that it would be able to provide a much better service to customers.

The option of providing a modem submission service only would seem to contain few benefits but contain all of the problems as well. Staff and customers would need new hardware and software as well as training, yet documents would still need to be printed and photocopied in the same old way. By eliminating the printing-photocopying bottleneck using option 2, the process of using a modem becomes much more viable and the prospect of achieving efficiencies within the organisation.

Question 6

The major problem with acquiring the new Photocopier is that it has to be imported from the US. This raises some important questions which Fast print need to answer before committing themselves to purchasing the HT Photocopier. Questions to be answered include:

- how reliable is the estimate of a 3 months delivery time for the photocopier?
- can Acme provide reliable support for the photocopier from Sydney?
- what sort of downtime will there be since presumably service engineers may have to travel from Sydney?
- how long is the warranty period?
- will spare parts be guaranteed available?
- will a maintenance contract be available?
- has the photocopier been fully tested and is it reliable?

Question 7

A.

The following are among the things which might be tested.

- the modem is set up so that it correctly answers calls at a variety of speeds
- the client software script can successfully download work for customers
- the modem works relatively continuously with a minimum of downtime. (This may be checked by random or other statistical checks which could be carried out from time to time)
- the client software works on various hardware platforms with a variety of software and hardware configurations

B.

There are two main operating procedures which need testing:

- (i) the procedures in the system used by customers to upload their work for printing, including login and logout
- (ii) the system used by Fast Print to print work uploaded by customers

For (i) the tests used could include:

- monitoring the procedures which allow clients to login efficiently and effectively
- statistical check of the time taken using the procedures which allow client work to be downloaded for printing
- monitoring of the procedure(s) for naming files by clients which allow(s) Fast Print to efficiently and effectively retrieve uploaded files

For (ii) the tests used could include:

- monitoring the procedures in place to check whether staff are able efficiently and effectively retrieve files which have been uploaded for printing by customers.
- random checks to ascertain whether work, after it is uploaded, is printed without excessive delay
- random checks to ascertain whether work, after it is printed, is returned to the customer within the desired turnaround time
- monitoring to check whether work which has been printed is returned to the correct customer and whether the customer is billed correctly

Other possible tests could include:

- trialed use of user documentation to check whether the operating procedures do what they are supposed to do

Question 8

- Training will be needed for the customers who will need to learn how to operate the client software and modem. They will also need to learn the procedures for the uploading of work to be printed.
- The computer operator (Helen Green) needs training in how to retrieve uploaded files and print them, as well as in how to 'link' the work which has been printed with the customer who submitted it.
- The two photo-copier operators (Noel Vincent and Samantha Carr) would need re-skilling and re-training. Both would need initial training on how to use the HT photocopier in manual mode. However to cope with the increased submission of work by telephone and extended hours, they should both be trained in using the computer to print work submitted by phone.
- the receptionist would need training in answering customer enquires about the new system.

A parallel conversion to the new system would seem to be feasible. Staff could be trained in using the new system 'on the job'. Initially it would probably be desirable for Fast Print to organise a weekend or night training session to familiarise staff with the new system. Ideally this would need to be organised with Acme as part of the sales deal for the HT Photocopier.

Question 9

The following documentation would be needed:

- customer manual

This manual should contain detailed instructions on how a customer would operate software to download files to Fast Print. It should also probably contain sections on software installation and customer trouble-shooting. The manual would be used by customers of Fast Print.

- operating manual for server software for receiving files

This manual should contain detailed instructions for the installation and maintenance of the software which controls the modem at Fast Print. It would provide instructions for:

- creation of User Names and Passwords
- creation of logon screen
- creation of file download areas within the computer hard disk.

This manual would be used by the computer operator (Helen Green).

- operating manual for file conversion

This manual should describe procedures for operators to convert files which have been downloaded to a format which can be printed by Fast Copy. This manual would be used by the computer operator(s).

Factors affecting design of documentation include:

- training manuals should be clearly written in plain English
- the manuals should be prepared by someone with expertise in the area - perhaps Sally Brown may have the sufficient experience. If this is not the case then an outside expert or experts should be brought in for this task.
- documentation should be trialed to check that it is workable - that the steps described within the documentation are clearly expressed and work.

Question 10

Evaluation is achieved by measuring how the system performs against goals which have been set by Fast Print before the system has been implemented. Where possible these goals should be expressed in a quantifiable form. For example, "The organisation aims to have a turnaround time of 8 hours" or "The HT photocopier downtime should be less than 1 hour per week".

The performance of the system can then be measured against these goals to check how well the system is working and to evaluate the system's performance. It also allows the system to be checked to see if its performance improves over time by providing a set of figures which allows the monitoring of the system performance. That is, both periodic and random checks of system performance should be carried out from time to time to measure system performance against both the previously established aims of the system and the previous system performance.

Other methods of evaluating system performance include:

- checking with staff involved and customers at intervals to check how they perceive that the system is working. This helps alleviate both staff and customer dissatisfaction if they perceive there to be problems with system.

END OF SUGGESTED SOLUTIONS
1994 IPM TRIAL CAT 3

CHEMISTRY ASSOCIATES

PO BOX 2227

KEW

VICTORIA

3101

AUSTRALIA

TEL: (03) 9817 5374

FAX: (03) 9817 4334

email: chemas@vicnet.net.au

Internet: <http://www.vicnet.net.au/~chemas/education.htm>