ECONOMICS OF INFORMATION SYSTEMS
Trial Exam

Question 1

ISI is an old Yankee wholesale supply house which has been in business for more than three decades. It is managed by a family (president and other officers) and has prospered fairly well without extensive automation.
The corporate headquarters is in Bridgeport and uses approximately 100 application programs (mainly customised DB2 (relational database management system) programs) at independent offices in Bridgeport, New Haven and Waterbury. The software is written mainly in COBOL and C. Applications are menu driven.

Furthermore, the following information is known about ISI:

- $20M/yr gross revenues with 10%yr increase
- 500.000 data elements representing the inventory
- 50 quarterly catalogs for special clients (1000 elements with special pricing)
- 6 on-line EDI-clients, growing at 2/yr for 5 years
- 10.000 active clients, 100.000 passive clients (records retained for 10 years)
- 500 active suppliers, 100 passieve suppliers
- Accounts Receivable, Payroll and Ledger have been outsourced
- Accounts Payable is an in-house standalone application
- Inventory system in-house, with daily batch update
- The IS staff consists of 2 people, additional resources are insourced
- ISI has 100 employees in total
- The systems process 10000 transactions per month.
- The current systems are based on a SUN SOLARIS UNIX infrastructure.

The management is willing to upgrade the current configuration, as they see clearly the possibilities of new technology, including open systems based on LINUX. However, they want to recover the additional costs from the business processes.

What approach would you recommend in this case, if ISI wants to use a charging mechanism for the information processing ?

Question 2

Car dealers make increasingly use of the INTERNET to stay in contact with car manufacturers. These manufacturers impose in many cases the software which the dealers should use to contact them over the INTERNET.

Questions :

a. *Why do car manufacturers impose their software on the dealers ?*

b. *Indicate how the use of the INTERNET changes the transaction costs for the car dealers ?*

Question 3

Pfizer Inc. in New York decided to outsource the PC software support to Corporate Software Inc in Canton, Massachussets. Under terms of contract, Corporate Software will provide day-to-day support for 14000 PCs running Microsoft WINDOWSXP and OfficeXP.
“We have been spending too much time on installing software and dealing with upgrade management issues on PCs”, said Russ Baris, director of pharmaceutical systems at Pfizer. “The pact provides us with a better use of the software on our systems and allows our staff to focus on the strategic parts of Pfizer Business. It is crazy to pay someone a lot of money each year to be a systems analist and have them spend their time answering questions about Office" say” Esther Dyson, one of the directors, "Supporting PC software users is critical to the mission getting done but not to designing the mission”.
Pfizer is organized under a structure where IS personnel act as systems consultants to business units, Baris said. Outsourcing software support gives Pfizer a way out when it comes to resolving technical questions, he added “We’ve experienced tremendous frustration trying to get any one software vendor to accept responsibility for a problem. And every company we’ve talked to about client/server processing has experienced the same frustration”, Baris said. “Since making the switch, user feedback has been positive, in part because Corporate Software has installed a help desk at its facility. Pfizer intends to sign up for a CD-ROM software distribution or a Web Based service being created by Corporate Software.”

a. *What do YOU see as the major reasons for outsourcing PC software support in this case ? Motivate your answer and comment on the above statements ?*

b. *What PC-related I.C.T. functions must Pfizer still keep in-house, even with outsourcing the PC software support function ?*

Question 4

The COCOMO model gives a production function for software development, which can be expressed as an expression of the following form:

$$SIZE = f(LABOR) = a * LABOR^{b}$$

Suppose this function is generalised into one of the form

$$SIZE = a * LABOR^{b} * TOOLS^{c}$$

What unit(s) of measurement would you use for the "TOOLS" and what properties of the "c"-coefficients would be expected ?

Question 5

In a large municipal authority, the treasurer and the IS chief were wholly convinced of the business case for an extensive implementation of office systems in the City Council's departments.
The powers in the land were, however, the chief officers of the departments, and the Council committees and sub-committees which direct their priorities. The dilemma is: how could the need for departmental direction and prioritisation of office systems be reconciled with adequate technical convergence. How could the council assure itself that the potential of office systems in the varied portfolio of council services and management approaches got systematically reviewed ?

How would you organise the definition and selection of the most appropriate infrastructure ? How would you organise the decisions on the functional requirements and priorities amongst the departments ?