

科目：資訊管理導論 類組別：B-3 共 6 頁第 1 頁 *請在試卷答案卷（卡）內作答

Part I. Multiple Choice (30%, 單選題@2%):

1. The Internet is capable of increasing _____ for most organizations.
 - a. richness and reach.
 - b. transaction costs.
 - c. agency costs.
 - d. both b and c.
 - e. all of the above.
2. The capacity to offer individually tailored products or services on a large scale is called:
 - a. economy of scale.
 - b. mass customization.
 - c. electronic commerce.
 - d. economy of scope.
 - e. none of the above.
3. The company that controls finances in the home country and decentralizes production, sales, and marketing operations to other countries is using:
 - a. the domestic exporter.
 - b. the transnational strategy.
 - c. the multinational strategy.
 - d. the franchising strategy.
 - e. None of the above.
4. Because it makes it easier for managers to oversee a greater number of employees, information technology can reduce:
 - a. transaction costs.
 - b. interdepartmental conflicts.
 - c. agency costs.
 - d. information retrieval costs.
 - e. None of the above.
5. Mintzberg defined the interpersonal roles of a manager as those in which the manager:
 - a. disseminates critical information and negotiates conflicts.
 - b. acts as the nerve center of the organization, receiving and disseminating critical information.
 - c. initiates activities, handles disturbances, allocates resources, and negotiates conflicts.
 - d. acts as a figurehead and leader of the organization.
 - e. initiates activities, allocates resources, and leads the organization.
6. In Simon's four stages of decision making, "intelligence" is when:
 - a. the individual selects among the possible alternative solutions to a problem.
 - b. the individual conceives possible alternative solutions to a problem
 - c. the individual collects information to identify problems.
 - d. the individual puts the decision into effect and reports on the progress of the solution.
 - e. the individual puts the decision into effect.
7. The underlying personality disposition toward decisionmaking is called the:
 - a. cognitive style.
 - b. personal bias.
 - c. systematic approach.
 - d. intuitive approach.
 - e. model of rationalization.
8. The three principal concepts for analyzing strategy at the industry level are:
 - a. supply chain theory, customer response theory, and network economics.
 - b. managerial, operational, and marketing.
 - c. network analysis, competition analysis, and customer response analysis.
 - d. information partnerships, the competitive forces model, and network economics.
 - e. Miller's theory of adjusted dataflow, Porter's competitive forces model, and network analysis.

9. A content provider:
- provides product, pricing, and availability information to individuals and businesses.
 - provides initial point of entry to the Web and specialized content and other services.
 - provides on-line service for individuals and businesses.
 - creates revenue by providing digital content over the Web.
 - All of the above.
10. The removal of intermediate organizations or business process layers in value chain is called:
- disintermediation.
 - reintermediation.
 - customer self-service.
 - pure-play.
 - one-stop shopping.
11. Digitally enabling a firm for electronic commerce and electronic business requires:
- a major financial investment in retraining.
 - far-reaching organizational change.
 - CEO support.
 - technological expertise and trained employees.
 - cooperation from business partners.
12. Information systems literacy requires:
- technical knowledge about computers.
 - behavioral knowledge about organizations and individuals using information systems.
 - financial and accounting skills.
 - a and b.
 - a, b, and c.
13. The Information Systems Investment Challenge asks:
- How can organizations determine the business value of information systems?
 - How can firms understand the business and system requirements of a global economic environment?
 - How can organizations redesign the organization and build new technology structures to support their goals when business conditions and technologies are changing so rapidly?
 - How can businesses use information technology to become competitive, effective, and digitally enabled?
 - How can organizations ensure the ethical and socially responsible use of their information systems?
14. The Internet makes it possible for small companies to:
- gather more customers than before.
 - download more pertinent information.
 - sell their wares globally, without a physical sales force or local offices.
 - avoid payment of local taxes.
 - manage without a sales force.
15. Successful supply chain management requires:
- an atmosphere of trust among the members.
 - an ability to redesign business processes to coordinate activities with partners.
 - shared systems and business processes to optimize the value of relationships.
 - a and c.
 - a, b, and c.

Part II. Fill In the Blanks (20%, 填充題@2%)

- A(n) _____ is used to identify a visitor and track visits to a Web site.
- A(n) _____ program traces on-line user activities without the users' permission or knowledge.
- _____ is software that connects two disparate applications.

4. _____ is an approach to software development that combines data and procedures into a single object.
5. A(n) _____ is a type of logical database model that organizes data in a treelike structure.
6. A(n) _____ is one that has been in existence for a long time and that continues to be used to avoid the high cost of redesigning it.
7. A(n) _____ is a set of rules and procedures that govern transmission between the components in a network.
8. A(n) _____ is a shared network service that packages data into bundles for transmission but does not use error-correction routines.
9. The method of obtaining relevant information on networks by having a computer broadcast information directly to the users based on prespecified interests is called _____.
10. A(n) _____ is a secure connection between two points across the Internet.

Part III. Short-Answer Questions (15%, 簡答題@3%)

1. There are new technologies developed to protect user privacy, please list three privacy protection tools for such purpose.
2. How do fourth-generation languages and PC software tools differ from third-generation languages?
3. Please list the three basic operations of the relational database.
4. Please briefly distinguish between EDI and ATM.
5. Please list the five layers of Transmission Control Protocol/Internet Protocol.

Part IV. Case Study (個案題, 35%)

Please answer the two questions based on the following real-world case.

The grocery business is gigantic, with annual retail store sales that are estimated at \$650 billion. However, it is a very tough business because the profit margins are tiny, only 1 to 2 percent of sales. Moreover, the industry is very price competitive. Yet Webvan, which was founded in late 1996, chose groceries as the way to establish itself as a Web-based powerhouse. Aside from the tiny profit margin, on-line grocery sales face other problems. Most successful Web retail sales involve delivery several days after ordering via parcel delivery services such as UPS or FedEx. Yet people usually need grocery delivery right away, and the groceries usually include such spoilables as milk, cream, fresh vegetables, and meats.

A number of companies, including Peapod, HomeGrocer.com, Kozmo.corn, and Safeway have struggled to establish on-line grocery businesses. Webvan Group Inc. of Foster City, California (in the Silicon Valley), was the brainchild of Louis Borders, the cofounder of the very successful Borders bookstore chain. Webvans founders and management believed they could succeed where others were faltering by using a different business model. The company carried about 20,000 high-quality grocery items, including fresh fruits and vegetables, meats, and frozen foods, and delivered the orders to customers throughout a large metropolitan region. Webvan had no retail outlets, but instead it operated out of massive regional distribution centers of about 350,000 square feet each.

Management claimed one distribution center could sell as many products in one day as 18 metropolitan-area supermarkets. Orders could be entered on the Internet 24 hours per day, every day, and the goods would be delivered from the distribution centers. The company expected to have only about 900 to 1,000 employees per center, compared with about 2,200 to 2,700 for the supermarkets. The company kept real estate costs low by having only one large site per metropolitan region, and the sites were located in low-cost industrial areas rather than in high-priced residential neighborhoods. Thus Webvan would achieve a much higher operating margin than supermarkets, more than enough to pay for such added expenses as software and delivery.

The grocery business is difficult to break into. Customers expect high quality and yet prefer not to pay extra for convenience. Polls show the majority wants to smell the strawberries and squeeze the tomatoes before purchasing them. The most difficult challenge is breaking consumers' habits of actually going to the store.

Webvan's top management believed that the leverage in groceries was distribution. The company decided on a hub-and-spoke model (distribution center (hub) to the local centers (spoke)) in which orders would be filled in the massive warehouses and then taken to tiny transfer stations that served specific neighborhoods where they would be transferred to a leased fleet of Webvan trucks for delivery. Thus, Webvan could efficiently serve a 60-mile, heavily populated radius. Time-starved shoppers would be lured by the convenience of being able to order products 24 hours a day and having the goods home delivered exactly at the time of their choosing.

The original plan was for a rapid rollout in 26 U.S. metropolitan areas by the end of 2001. Customers included not only people who are at home but also office workers who would use their work computers to order groceries for home and even order lunches and snacks for the office. The long-range plan was to expand into other businesses. If Webvan could deliver groceries to a number of places in a neighborhood, it was set up to deliver other products as well.

The model relied on extremely sophisticated, highly automated information systems centered in the warehouses. An inhouse engineering team worked with Optimum Inc. of WhitePlains, New York, to design and build systems for warehouse management, routing and scheduling, and for communication with suppliers. The systems were designed to handle as many as 50,000 items, leaving plenty of room for expansion into non-grocery products. A data repository in San Jose, California, served as the information center for all the warehouses.

The warehouses had three temperature zones for shelf items, fresh items (such as vegetables and meats), and frozen foods. Every warehouse had 12 huge carousels, each of which held up to 7,500 items. An employee stationed at each carousel could stand still rather than having to move around to pick the items. When they were picked, the items were placed in totes and moved around using the warehouses 4 1/2 miles of conveyer belts.

The ordering process began when customers placed their orders on Webvan's Web site. When the order was completed, customers selected an open 30-minute delivery time slot in any of the next seven days. The delivery optimizer marked slots as taken if they had already been reserved or if they were too far away from the delivery location of the new order for on-time delivery.

The order was electronically transmitted to the relevant warehouse where it would be filled. The software system devised an optimal picking plan, and the totes were automatically marked with a barcode, tying them to a specific order. The totes were color-coded to identity the type of products that were in them. The software determined how many totes were needed. Webvan stored data on many characteristics of each item. For example, it needed item size to determine if that item would fit into the tote, whereas weight was needed to be certain the tote would not become too heavy for the staff to lift. Some items could not be split, such as watermelons. "Crushability" was necessary to track that fragile items, such as eggs, would be on top of the totes, and heavy items, such as big cans would be on the bottom. Totes for frozen items were styrofoam-lined and contained dry-ice packs. Shelf items were collected in sequence according to the picking plan, and then the tote was conveyed to the carousel station where the picker checked the products from a list and loaded the remaining items (often working on more than one order at a time). When a tote was completed, the picker closed it and placed it on a conveyor that moved it to shipping. The system even calculated the amount of picking time required for each part of the order. Based on the scheduled delivery time and workload, it determined when to start loading each tote to arrive at shipping at the proper time. The totes were then rolled onto a truck designated for the specific transfer station where they were placed on delivery trucks and delivered according to a route prepared by route optimization software. This complex system was unprecedented.

Delivery was technically complex as well. Webvan's software optimized delivery schedules so that deliveries could be made every 10 to 30 minutes. Webvan used sophisticated route-planning software to map out the most efficient delivery route for each order. The driver's location was monitored by dispatch using the Global Positioning System (GPS) in each van. When an unplanned delay occurred, dispatchers called to inform customers who could choose either to accept a late delivery or to reschedule it. The drivers also used the GPS to plot alternate routes to circumvent traffic problems, thereby more easily meeting their schedules. At the home, the driver carried the totes inside and unpacked them. Alternatively, the customer could have the totes left unpacked for a small deposit per tote. The driver then used a handheld wireless device to print out a receipt and an itemized order list. The device also notified dispatch that the delivery was completed.

Webvan also developed a system of ordering products from its suppliers. Webvan determined what to order based on both actual and expected demand. If an item was not in the warehouse at the time a customer ordered it, Webvan used a rapid and reliable communication Web site (harbinger.net) to automatically inform suppliers. Harbinger software formatted orders for all suppliers and forwarded the orders to them. When goods arrived at a warehouse, receiving opened the cartons and scanned the products. Shelf items were put into trays, and the system used a very complex "round-robin" algorithm to assign each tray to a specific carousel. However, like many of its supermarket rivals, Webvan did little else to automate its supply chain because it was too small to force its suppliers to invest in supply chain technology.

Webvan took its first orders on June 2, 1999, in the San Francisco Bay area, and by the end of June it had nearly \$400,000 in sales. On July 8, the company signed a blockbuster \$1 billion deal with Bechtel to design and construct 26 distribution centers within the next two years, reflecting both the large amount of capital Webvan had raised and its plan for rapid expansion. In October, George Shaheen, the former CEO of Andersen Consulting (now Accenture), became the CEO of Webvan. The company was flying high, even though it had no profit and was spending investor capital rapidly, much of it devoted to building warehouses.

In February 2000, Webvan announced its average order size had risen from \$72 to \$80. By June Webvan had spread to Atlanta, Georgia, and Sacramento, California. At the same time it purchased a rival, HomeGrocer.com, allowing Webvan to move into Dallas, Los Angeles, San Diego, Seattle, Portland, and Orange County, California, at a very low cost while eliminating the need to compete with HomeGrocer for customers.

However, Webvan's situation was worsening. On February 21, Webvan shut down the Dallas operation. Atlanta was receiving only half the number of orders it needed to break even, and no site had yet become profitable. Unintimidated and confident of its future success, in August Webvan opened in Chicago. The San Francisco area facility had failed to break even as had been predicted, and the company curtailed its growth plans in order to preserve cash, delaying expansion into Washington, D.C., Baltimore, and New Jersey (even though each had \$35-million warehouses). In November Webvan announced that its average order had risen only to \$91. In addition to groceries, the company was selling drugstore and pet items, books and CDs, electronics, games, and toys. Webvan stock kept plummeting. Webvan was forced into brutal cost cutting. More Webvan centers closed-Dallas on February 21, 2001, and Sacramento and Atlanta in April of that year. The company slashed marketing expenses and started charging for deliveries. Borders had been replaced by Shaheen as CEO, and Shaheen resigned on April 16, replaced by COO Robert Swann. The company noted that only 6.3 percent of San Francisco households had ordered from Webvan, and less than half of them had placed a second order.

On July 9, 2001, Webvan ceased all operations, laying off 2,000 employees and announcing plans to file for Chapter 11 bankruptcy protection. During its short life it had burned through \$1.2 billion in investor capital, making it one of the most spectacular dot.com failures on record. Since then, the company has been liquidating its assets.

Questions:

1. *Describe the Webvan business model and then analyze it using the value chain and competitive forces models. What were the assumptions that drove this business model? (25%)*
2. *Describe the role of technology in the Webvan model. What Webvan problems could computer technology solve, and what could it not solve? Explain your answer. (10%)*