

國立勤益技術學院九十二學年度研究所招生初試試題卷

所別：生產系統工程與管理 組別：產業決策資訊 身分別：在職生
科目：工業工程與管理 準考證號碼： (考生自填)

考生注意事項：

- 一、考試時間 100 分鐘
- 二、不得帶計算機

試題：

一、選擇題(15%):

1. The first step in the problem-solving process is to _____.
(A) Identify alternatives (B) evaluate results
(C) Find and define the problem (D) Choose a solution

2. The Highest level of need in Maslow's hierarchy is the level of _____ need.
(A) Safety (B) Esteem (C) Self-actualization
(D) Physiological

3. The control equation states that need for action = _____ - _____.
(A) profits, losses (B) desires performance, actual performance
(C) inputs, outputs (D) results, resources

4. The Japanese work kanban is associated with the _____ method of inventory control.
(A) just-in-time (JIT) scheduling (B) statistical quality control
(C) PERT technique (D) economic order quantity (EOQ)

5. Suppose that a company had Net sales of \$9.8 million, Cost of goods Sold of \$7.86 million, and the Net profit after Tax of \$350,000. What is gross profit margin ratio?
(A) 70.1% (B) 19.8% (C) 2% (D) 2.3%

二、說明工業工程與管理之主要領域與內容及其發展。(15%)

三、在知識經濟時代，知識被認為是企業中最有價值的主要生產要素。請說明：
(1)何謂知識管理(Knowledge Management)? (2)知識管理的推動應透過哪些技術或活動?(10%)

四、請說明凱茲(R.L. Katz)所提成功的管理者應具備的三種基本能力。又此三種能力與不同階層之管理者有何關係。(10%)

五、 Explain the following terminologies: (15%)

1. ABC classification
2. 6σ
3. Human factors/Ergonomics
4. Management by Objectives
5. Bullwhip effect.

六、在六倍 Sigma 管理理論中提到，針對解決產品或製程問題的步驟，請詳述其架構？並試舉例以說明每一步驟應如何實施？(15%)

七、 Read the following article and answer the questions. (20%)

The promotion of health and fitness has become an international trend and created surging demand for fitness equipment throughout the world. The phenomenon has helped Taiwan's Johnson Health Tech take a leading position in the global market for exercise machines. Already the largest manufacturer in Asia and the fifth largest in the world in terms of sales and market share, Johnson sets its goal to become the No. 1 in the world by 2008, says Jimmy Chiang, international marketing director. "We're growing at a faster pace than the entire global market," Chiang says. "The global market is growing at a rate of about 10 to 15 percent a year. We're growing at 35 percent."

The fitness equipment market operates on a "big gets bigger" principle, and there will be a reshuffle in the industry over the next few years in which some of the top companies will be pushed down the list, Chiang predicts. Citing Icon, currently the No. 1 in the market, as an example, Chiang notes there is risk involved in the company's operations, as it only exports two percent of its products and sells the rest of them in its home country, the United States, where Icon distributes about 43 percent of merchandises at the popular retail outlet Sears. "If there's something wrong with Sears, or there's a change of Sear's retail structure, then the company would lose some of that 43 percent," Chiang says.

The marketing director says Johnson's practice is different from that of Icon. The company exports 99 percent of products to destinations including the United States, Europe, mainland China and other markets throughout the world. It has distributors and retail outlets in 63 countries, and it has manufacturing facilities in the United

States to churn out exercise equipment under the company's own brands — Vision, Matrix and Horizon, Chiang says. "This way we can spread the risk," he stresses.

According to Chiang, developing the company's own brands does have some impact on its original equipment manufacturing (OEM) relationship with other companies. "But Johnson and its OEM clients have market differentiations. Our OEM products are for the higher-end segment," he says. "We'll continue to have a good relationship with our OEM clients. As long as there's no direct competition with them, they'll continue to ask us to make products for them as they trust our manufacturing capabilities," he adds.

With last year's revenue registering at US\$108 million, Johnson set its goal to see that number reach US\$914 million by 2008 and gain a 20 percent share of the global market, making it the largest fitness equipment maker in the world, Chiang says. He believes sales will grow thanks to people's increasing awareness of health and fitness. The Thai government, for example, has proposed that companies with more than 25 employees set up a gym in the building for them to exercise, and some European countries offer lowered or no insurance premiums for companies with health facilities, Chiang emphasizes. "The global economic downturn has not affected the fitness equipment industry at all," he says.

Johnson recently garnered a Symbol of Excellence recognition from the China External Trade Development Council for two of its products: the Matrix T5 treadmill and the Matrix chest press, both featuring trendy designs and advanced functionalities, says Chiang. The T5 treadmill is a professional running machine for gyms and health clubs. It has a maximum load capacity of 204 kilograms and combines health and entertainment functions. The flat panel display on the machine can be hooked up to a computer or television to allow users to watch entertainment programs while running. Meanwhile, the computer controlling the machine has a wide variety of routines for runners, who can set the device at different modes to suit their physical conditions. The equipment can be set at an angle of 0 to 15 degrees so that an uphill jog can be simulated, Chiang says. "The machine also includes a shock-resistant mechanism to offer the user the smoothest running experience," he says.

The chest press, meanwhile, features innovative designs rarely seen in competing products. For starters, it has a tubular design instead of the square design characteristic of typical chest presses. In addition, the machine has a champagne color as opposed to the traditional white or gray color. More importantly, the cable that pulls and lowers the lead discs of the machine is made of the fiber used to make

bullet-proof vests. The use of the material makes for a stronger cable. "When first launched, the chest press caused a sensation," Chiang notes. "Users were drawn to its look-and-feel as no one has made their products with a tubular design and champagne color before. We're also the first to make the cable with bullet-proof vest materials. This makes the equipment stronger and more effective."

(This article quoted from The China Post 2003/4/14)

Questions:

1. Explain and illustrate the principle of "Big get bigger"?
2. Make a comment on the strategy to spread risk for Johnson Health Tech.