

國 立 清 華 大 學 命 題 紙

96 學年度 科技管理研究所 系(所)乙(資管) 組碩士班入學考試

科目 管理資訊系統 科目代碼 5102 共 4 頁第 1 頁 *請在【答案卷卡】內作答

Question 1. (25%)

It was a lesson learned from the chaos created by the unreliable ticketing system offered by Taiwan High Speed Rail Company (THSRC) in January, 2007. The reason that it attracted public attention so much is that it is a system designed for general passengers who take high speed trains. For information system professionals like you and me, it is indeed an IT project management case for us to learn some lessons from this “cutover” chaos. Please answer the following questions regarding IT project management issues in THSRC ticketing system project.

- a) From media reports, we more or less knew that the ticketing system was outsourced to a system integration company which is responsible for integrating various functions and facilities for THSRC ticketing services. However, the public may not be interested in knowing who exactly designed and implemented the system, but THSRC should take the loss from the damage of reputation and trust. Therefore, assuming that you are the CIO of THSRC, would you still make such IT outsourcing decision? Please explain your decision in details given the criteria you set. (10%)
- b) No matter you finally decide to develop the system in house or outsource it, you still need to face the risk of chaos during the system cutover. Especially, it will create a high public attention on its reliability and convenience. Assuming that you are the project manager, what kind of project management methodologies that you will adopt to ensure its success? Please identify major activities you should conduct by following the methodology you adopt. (15%)

Question 2. (25%)

While the wireless broadband Internet technology, WiMAX, is getting mature, business opportunities emerge. For example, in Wikipedia, at least five potential applications (please see the reference listed below). As we also knew that m-commerce has been enabled by mobile communication technologies, such as 2G, 3G, GPRS, etc. The mobility of emerging WiMAX technology will be an additional mobile/wireless communication platform to enable mobile transactions on Internet. In facing emerging technologies such as WiMAX and popular business practices such as Web 2.0, it is a challenge for e-business innovation. Please answer the following two questions:

- a) Assuming you are a WiMAX operator which provides WiMAX access services to your subscribers, please design your value chain so that the launch of WiMAX services can be a successful alternative of existing 2G and 3G services. (10%)

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- b) Assuming you are a content service provider to WiMAX users, what would be your innovative business model to bring Web 2.0 practice to WiMAX users. Please use a specific content service as an example to elaborate your business model. You should also analyze your proposed business model in terms of value proposition, source of revenue, relationship with suppliers and customers, etc. (15%)

References:

WiMAX (Source: <http://en.wikipedia.org/wiki/WiMAX>)

WiMAX is defined as **Worldwide Interoperability for Microwave Access** by the WiMAX Forum, formed in June 2001 to promote conformance and interoperability of the IEEE 802.16 standard, officially known as WirelessMAN. The Forum describes WiMAX as “a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable and DSL.” The bandwidth and reach of WiMAX make it suitable for the following potential applications:

- Connecting Wi-Fi hotspots with each other and to other parts of the Internet.
- Providing a wireless alternative to cable and DSL for last mile (last km) broadband access.
- Providing high-speed mobile data and telecommunications services.
- Providing a diverse source of Internet connectivity as part of a business continuity plan. That is, if a business has a fixed and a wireless internet connection, especially from unrelated providers, they are unlikely to be affected by the same service outage.
- Providing Nomadic connectivity.

Web 2.0 (source: http://en.wikipedia.org/wiki/Web_2)

Web 2.0, a phrase coined by O'Reilly Media in 2004, refers to a perceived or proposed second generation of Web-based services—such as social networking sites, wikis, communication tools, and folksonomies—that emphasize online collaboration and sharing among users. O'Reilly Media, in collaboration with MediaLive International, used the phrase as a title for a series of conferences, and since 2004 some developers and marketers have adopted the catch-phrase. Its exact meaning remains open to debate, and some technology experts, notably Tim Berners Lee, have questioned whether the term has meaning. The last, compact definition of Web 2.0, according to Tim O'Reilly is this one:

“Web 2.0 is the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them.”

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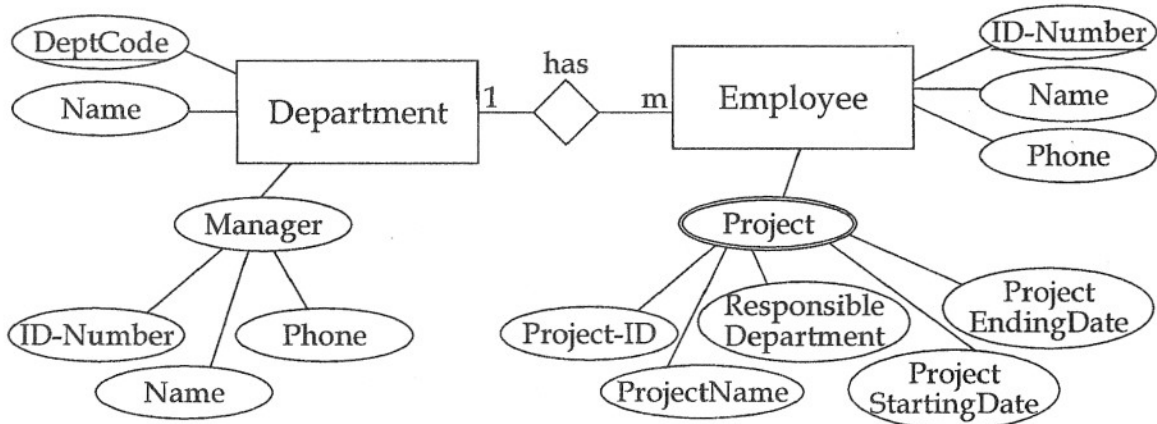
In the opening talk of the first Web 2.0 conference, Tim O'Reilly and John Battelle summarized key principles of Web 2.0 applications:

- the web as a platform
- data as the driving force
- network effects created by an architecture of participation
- innovation in assembly of systems and sites composed by pulling together features from distributed, independent developers (a kind of "open source" development)
- lightweight business models enabled by content and service syndication
- the end of the software adoption cycle ("the perpetual beta")
- software above the level of a single device, leveraging the power of The Long Tail.
- easy to pick up by early adopters

Question 3. (25%)

Please study the following ER diagram. Let us assume that the information (including the attributes, relationships, and cardinalities) shown in this ER diagram is complete.

- a) As you will notice, several areas in this ER diagram are considered "inappropriate" or "incorrect." Please identify inappropriate or incorrect designs in this ER diagram and explain why they are inappropriate or incorrect. (15 points)
- b) Please also provide a correct ER diagram that captures all information represented in the original ER diagram. (10 points)



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Question 4. (25%)

Many consumer review websites have been established on the Web (e.g., epinions.com, Rateitall.com, c|net.com) for collecting customer opinions (i.e., comments) on a variety of products. The following shows a sample consumer review on the digital camera Canon PowerShot SD600.

SD600 is very easy to use, the menu is very self explanatory. I like the quality of pictures, but what I don't like is the red eye reduction tool- I don't think it works very well because if I take pictures of anyone with light colored eyes they always come out red regardless of the red eye reduction tool being on. Other than that, everything is good. The memory card that comes with the camera is too small so you will want to buy a bigger one and maybe something to protect the LCD screen... I know I have my camera in the purse with the keys and all the other things and you don't want to scratch the screen!

Consumer reviews are essential to retailers and manufacturers to understand general responses of customers on their products (i.e., what product features customers like or do not like) for marketing campaign or product improvement. In addition, from the customer perspective, consumer reviews provide valuable information essential to their purchase decisions.

- a) Users of the consumer review website often need to browse consumer reviews pertaining to a specific product. However, the quality of consumer reviews varies (i.e., some reviews are of high quality, whereas others may contain biased opinions and thus are considered low quality). Therefore, when presenting the list of consumer reviews to users, we would like to rank them according to their quality. Please design a mechanism that can automatically assess the quality of each consumer review. You should explain your definition of the quality of a consumer review before you describe your proposed mechanism. If your proposed mechanism needs to collect and use additional information, please explicitly state them. (12 points)
- b) Sometimes, manufacturers may abuse the consumer review services offered by the website. For example, a manufacturer may hire people to submit many positive reviews on his products (i.e., say good but often exaggerated things about his products) in order to create an image that his products are popular and great. An unethical manufacturer may submit many negative reviews on the products of his competitors. Please describe how you can help the consumer review website automatically detect these misleading reviews. You can make any assumptions on how these abusive behaviors are conducted. However, please make sure that your assumptions are reasonable. (13 points)