

POKHARA UNIVERSITY
Faculty of Management

Introduction to Management Information System

Model Question

Time: 3 hours

Full Marks: 100

Candidates are expected to answer the questions in their own words as far as practicable. The figures in the margin indicate full marks.

Section - A

Attempt All questions.

10 X 2 = 20 Marks

1. What is Management Information System?
2. Mention types of memories used in different computer generations.
3. What do you understand by Database Management System?
4. Write down the features of Decision Support System?
5. What are application software? How are they different from system software?
6. What are the usefulness of ERP in MIS?
7. What is Transaction Processing System (TPS)?
8. What is Supply Chain Management System?
9. What is meant operating system?
10. What do you understand E-business?

Section – B

Attempt any six questions:

6 X 10 = 60

11. Why Information Systems in many organizations fail? Explain the causes of failure.
12. Write about different types of MIS at organizations.
13. Explain the concepts of System Development Life Cycle and its stages.
14. Discuss about Decision Support System and its importance for organization.
15. Explain the data communication model? How can telecommunication add business value to organization? Elaborate.
16. What are the problems of managing data resources in a traditional file environment?
17. Which features of organizations do managers need to know about to build and use information systems successfully?

Section – C

18. Read the case situation given below and answer the questions that follow. (20)

CAN PANDORA SUCCEED WITH FREEMIUM?

Pandora is the Internet's most successful subscription radio service. In May 2014, Pandora had 77 million registered users. Pandora accounts for over 9 percent of total U.S. radio listening hours. The music is delivered to users from a cloud server, and is not stored on user devices.

It's easy to see why Pandora is so popular. Users are able to hear only the music they like. Each user selects a genre of music based on a favorite musician or vocalist, and a computer algorithm puts together a "personal radio station" that plays the music of the selected artist plus closely related music by different artists. The algorithm uses more than 450 factors to classify songs, such as the tempo and number of vocalists. These classifications, in conjunction with other signals from users, help Pandora's algorithms select the next song to play. Users do not control what they hear.

People love Pandora, but the question is whether this popularity can be translated into profits. How can Pandora compete with other online music subscription services and online stations that have been making music available for free, sometimes without advertising? "Free" illegally downloaded music has also been a significant factor, as has been iTunes, charging 99 cents per song with no ad support. At the time of Pandora's founding (2005), iTunes was already a roaring success. Pandora's first business model was to give away 10 hours of free music and then ask subscribers to pay \$36 per month for a year once they used up their 10 free hours. Result: 100,000 people listened to their 10 hours for free and then refused to pay for the annual service. Facing financial collapse, in November 2005 Pandora introduced an ad supported option. In 2006, Pandora added a "Buy" button to each song being played and struck deals with Amazon, iTunes, and other online retail sites.

Pandora now gets an affiliate fee for directing listeners to sites where users can buy the music. In 2008, Pandora added an iPhone app to allow users to sign up from their smartphones and listen all day if they wanted. Today, 70 percent of Pandora's advertising revenue comes from mobile.

In late 2009 the company launched Pandora One, a premium service that offered no advertising, higher quality streaming music, a desktop app, and fewer usage limits. The service costs \$4.99 per user. Some users have opted to pay for music subscriptions, with the vast majority opting for the free service with ads. In fiscal 2013 Pandora's total revenue was \$427.1 million, of which \$375.2 million (88 percent) came from advertising. Pandora has been touted as a leading example of the "freemium" revenue business model, in which a business gives away some services for free and relies on a small percentage of customers to pay for premium versions of the same service. If a market is very large, getting just 1 percent of that market to pay could be very lucrative— under certain circumstances. Although freemium is an efficient way of amassing a large group of potential customers, companies, including Pandora, have found that it is challenging to convert people enjoying the free service into customers willing to pay. A freemium model works best when a business incurs very low marginal cost, approaching zero, for each free user of its services, when a business can be

supported by the percentage of customers willing to pay, and when there are other revenues like advertising fees that can make up for shortfalls in subscriber revenues.

In Pandora's case, it appears that revenues will continue to come overwhelmingly from advertising, and management is not worried. For the past few years, management has considered ads as having much more revenue-generating potential than paid subscriptions and is not pushing the ad-free service. By continually refining its algorithms, Pandora is able to increase user listening hours substantially. The more time people spend with Pandora, the more opportunities there are for Pandora to deliver ads and generate ad revenue. The average Pandora user listens to 19 hours of music per month. Pandora is now intensively mining the data collected about its users for clues about the kinds of ads most likely to engage them. Pandora collects data about listener preferences from direct feedback such as likes and dislikes (indicated by thumbs up or down on the Pandora site) and "skip this song" requests, as well as data about which device people are using to listen to Pandora music, such as mobile phones or desktop computers. Pandora uses these inputs to select songs people will want to stick around for, and listen to. Pandora has honed its algorithms so they can analyze billions more signals from users generated over billions of listening minutes per month. Pandora is also trying to figure out when people are listening in groups such as car pools and dinner parties, which might justify Pandora charging higher prices for songs heard by groups rather than single individuals. The company is looking for correlations between users' listening habits and the kinds of ads that would appeal to these users. People's music, movie, or book choices may provide insight into their political belief, religious faith, or other personal issues.

Pandora has developed a political ad-targeting system that has been used in presidential, congressional, and gubernatorial campaigns that can use users' song preferences to predict their political party of choice. As impressive as these numbers are, Pandora (along with other streaming subscription services) is still struggling to show a profit. There are infrastructure costs and royalties to pay for content from the music labels. Pandora's royalty rates are less flexible than those of its competitor Spotify, which signed individual song royalty agreements with each record label. Pandora could be paying even higher rates when its current royalty contracts expire in 2015. About 61 percent of Pandora's revenue is currently allocated to paying royalties.

Advertising can only be leveraged so far, because users who opt for free ad-supported services generally do not tolerate heavy ad loads. Apple launched its iTunes radio service for the Fall of 2013 that will compete directly with Pandora. iTunes radio has both free ad-supported options, and a subscription service for \$25 per year, undercutting Pandora's annual subscription fee of \$60. Can Pandora's business model succeed?

Attempt any Two

1. Analyze Pandora using the value chain and competitive forces models. What competitive forces does the company have to deal with? What is its customer value proposition?
2. Explain how Pandora's "freemium" business model works. How does the company generate revenue?
3. Can Pandora succeed with its "freemium" model? Why or why not? What people, organization, and technology factors affect its success with this business model?