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FACULTY NAME: Mr JP Srivastava

Credit Cards and use of expert system:

The manufacturing industry was the first to start exploring the possibilities of expert systems, developing typical systems like fault diagnosis expert systems for plant or machinery. Such problems have much in common with MYCIN, a famous expert system application for medical diagnosis. Recently, much interest has been shown in the applications of expert systems to the finance industry. The MYCIN-type approach, however, is not necessarily suitable for this problem domain. This paper describes an application of practical expert system development in the finance industry. There are various subjects in financial applications that are expected to be treated effectively by knowledge engineering approach: i.e. loan judgment, insurance underwriting, investment selection, assets liabilities management, bond/stock/foreign-exchange dealing support, and money market forecasting. Such application areas possess following properties.

1. Human factors play a certain role in their problem domains, thus, unlike the engineering domain, they do not necessarily follow rigid rules like physical or chemical laws.
2. The objectives of application systems development of such areas are to enhance the appropriateness and to ensure the uniformity of decision making rather than cost or labor saving, though the latter has been a principal goal of implementing online business systems or office automation applications, for which the financial industry has been spending such a huge energy. Our problem, credit card application assessment, shares similar characteristics as mentioned above. Besides, it has some other features as follows.
 1. From the beginning of this project, our expert system was planned and has been developed aiming at building a practical system, not just a prototype.
 2. As a form of knowledge representation, the decision tree is adopted instead of other typical representation like the production system. Efforts are made in systematically generating an appropriate decision tree.
 3. As the knowledge source, both human experts and the results obtained from analyzing the past credit applicants and their behavior data are exploited.

1 2 Problem Domain 2.1 Overview of Credit Card Application Assessment For a credit card company, the task of screening out credit risky persons forms a crucial part of card application acceptance processes. Too strict judgment will result in the loss of expected profit opportunities; too loose acceptance will certainly bring large unredeemable credits. The business process of credit card application acceptance usually proceeds as follows. An applicant fills in an application form and submits it to a credit card company. Items on the application form are about 20 to 30, including age, sex, address, affiliation, house status and others. Preliminary checking is done to find false information and examine past credit history, through calling to the phone number designated in the application sheet and accessing to a personal credit information center. Then, a credit officer investigates the application and decides acceptance or rejection. In this judgment, the officer matches the application to a certain pattern in his or her past experience that indicates the degree of credit risk. If the application is accepted, the related administrative process is taken and the card will be issued usually within a week. 2.2 Problems of Card Application Acceptance Procedure Credit card business in Japan has relatively shorter history than in the United States. But the competitive entry into this market by the banking and the

retailing industry has caused the ever increasing volume of card issues. This situation affected the application acceptance processes in the following ways.

1. Shift of stress from risk care to profit pursuit To be competitive in the “card war”, more profitable customers must be acquired. It is often difficult to distinguish between the profitable customers and the risky ones, because both share the common characteristics of using their cards well. Therefore, the reliability of application judgment is required ever more strongly.

2. Requirement of speeding up card issue process There are many applicants who need a card for a specific immediate use such as travels abroad. In general, quick card issues are welcomed by customers. As the credit judgment process occupies a large part of the card issuing business, its speed-up is highly expected.

3. Increase in the number of applicants As the volume of card demands grows, the load on credit officers is increasing. An officer typically has to process a few hundred applications, sometimes as many as one thousand per day. As this work requires considerable experience, it takes time to supply new personnel. At the same time, over a half of cases expert officers handle are quite simple for them to judge so that they decide them almost mechanically. If such routine judgment is supported by computers, it will save much time of those officers.

4. Instability of judgment Most of the judgment are done by a single person. There is no way of completely getting rid of individual preferences and thus it is difficult to preserve stable and uniform judgment.

5. Difficulty in verifying acceptance criteria As the current process depends on individual decisions, the results are not evaluated and verified systematically.

MCQs

1. Management information systems (MIS)

1. create and share documents that support day-today office activities

2. process business transactions (e.g., time cards, payments, orders, etc.)

3. capture and reproduce the knowledge of an expert problem solver

4. use the transaction data to produce information needed by managers to run the business

5. none of the above

2 The term used to describe those people whose jobs involve sponsoring and funding the project to develop, operate, and maintain the information system is

1. information worker

2. internal system user

3. systems owner

4. external system user

5. systems builder

3 The person who ensures that systems are developed on time, within budget, and with acceptable quality is a

1. systems designer

2. project manager

3. systems owner

4. external system user

5. systems builder

4 Which one of the following is not a business driver for an information system?

1. business process redesign

2. knowledge asset management

3. proliferation of networks and the Internet

4. security and privacy

5. collaboration and partnership

5 A task of developing a technical blueprint and specifications for a solution that fulfills the business requirements is undertaken in the following phase of the system development process

1. system initiation

2. system implementation

3. system analysis

4. system design

5. feasibility analysis