

COST ANALYSIS FOR AUTOMATED TELLER MACHINE

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Abstract

An automated teller machine (ATM) is a computerized tele-communications device that provides the customers of a financial institution with access to financial transactions in a public space without the need for a human clerk. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe that contains a unique card number and some security information. Security is provided by the customer entering a personal identification number (PIN). In this paper, the authors have done their analysis to compute the capability of an ATM system. In this study, the authors assume two bank computers which are connected in parallel. The capability of the system is affected by all the units of the system. System configuration and transition-state diagram have been shown in Figure-1 and Figure-2, respectively. The authors have used supplementary variables to convert Non-Markovian system[2], [7], into Markovian. This mathematical model has been solved with the help of Laplace transform. Availability and cost function of considered system have been computed. Steady-state behaviour of the system and some particular cases has also been appended in the end to improve practical utility of the model.

Key Words:A.T.M., Markovian Process, Availability, Cost Function, Laplace Transform.

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