Chapter 3
A Study of Robotics in Banking and Financial Services

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ABSTRACT

Banking and financial services are essential services for all organizations including government, public, private, academic, and not-for-profit organizations. The need for all government and non-government businesses to be digital businesses is on the increase, especially due to the situation arising during the COVID-19 pandemic. Organizations were forced to provide online service, even though the complete ecsystem like internet connectivity, smartphones, technology to deliver, or workforce readiness was not completely available. Robotics is a multi-disciplinary branch that designs machines that can emulate and replicate human actions, saving time and cost and improving the quality of service. The RPAs in banking and financial services can reduce costs, strengthen compliances, streamline operations, reduce operational risks, and can improve customer services. This study describes in general the emergence of robotics and studies robotics in banking and financial services.

INTRODUCTION

Banking and financial services are essential services for all government, public, private, academic and not-for-profit organisations. Every organisation has to keep a record of financial transactions and maintain an account with a bank. This bank

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can be a government bank, public sector bank, private sector bank or cooperative or regional bank. The need for all government and non-government businesses to be digital businesses is on the increase and growing faster than ever before, especially during and after the Covid19 pandemic. This was forced even though a complete echo system like internet connectivity at both ends, smartphones, and technology to go online, the readiness of stakeholders like employees, customers, suppliers, government, supply chain etc was not completely available. However, most of the institutions quickly adopted the new mode of hybrid online delivery. This was true for all sectors like entertainment, eCommerce, medical consultation, banking, financial services, government services, etc. Banks were early adopters of technology, with the use of simple note-counting machines, use of calculators for day-to-day work, the use of the telegraph system in 1838, the laying of trans-Atlantic cable in 1866, to use of FedWire fund services in 1918, the introduction of diners credit card in 1950, Telexed network interlinking USA, Canada, Great Britain, Germany & France in 1966, followed with the installation of first ATM from Barclay's in 1967 (Kalra, 2019).

The word 'digital business' is a wider term, and may have different interpretations. One of the definitions is the delivery of products and services using any technology, connecting customers, with an organisation, and using a machine, to full fill their needs. A simple example can be a customer making an online bill payment by scanning a QR code or using a mobile wallet. Most of the digital transformation journey leads to larger and more complex transformation programs, focussing on consolidation, standardisation, and automation impacting people and process. Automation peace generally focuses on leveraging technology to automate repetitive tasks carried out by human beings.

Robotics is a multi-disciplinary branch, that designs machines, which can emulate & replicate human actions, saving time and cost and improving the quality of service. Robots can be virtual robots or referred to as bots, which are software-based and executed like an instance of a robot user hosted on a computer system, or can be hardware robots, which can perform human tasks, say on a factory production floor. In 1920, artificial automata were attributed to the term 'Robot' by a Czech writer. The term 'Robot' was pronounced differently between 1930 and 1960, and the current pronunciation came into practice in the '70s. The first digital robot came into existence in 1954, and this was the beginning of a new era for robotics. General Motors installed the first commercial robot in a manufacturing plant in 1961, for lifting hot pieces of metal and stacking them (History of Robots, n.d.).

Robotic Process Automation or RPA is a software-based robot application, where using drag and drop rule-based configuration and scripting, the repetitive tasks can be performed by a software-based robot running on a computer. Using RPA applications, one can configure robots like a human beings and assign them user