Chapter 9
Leveraging Bi-Stacked ANN for Organizational Values in the Context of Digital Transformation

Usharani Bhimavarapu
https://orcid.org/0000-0002-0246-1420
Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, India

ABSTRACT

The digital age has brought unprecedented opportunities for organizations to innovate and transform their operations, emphasizing the importance of measuring digital maturity and organizational values. This study leverages a bi-stacked Artificial Neural Network (ANN) architecture to measure a comprehensive digital index, integrating insights from people management values. The dataset, collected from 132 companies, was preprocessed and refined through feature extraction, including parameters such as the Relative Importance Value (RIV) for future business impact and the Rate of Satisfaction Value (RSV) with people management practices, quantified using a Likert scale. The bi-stacked ANN, designed with multiple layers and dropout mechanisms, processed these features to generate an accurate and reliable digital index. By combining advanced machine learning techniques and organizational value assessments, the proposed approach provides a scalable framework for understanding digital readiness while emphasizing the critical role of people management in driving business transformation

DOI: 10.4018/979-8-3693-8477-0.ch009

INTRODUCTION

With the information age, convergence of business and information technologies has become a potent engine for industry revolution globally. Information technologies (IT) provide the hardware, software, and platforms through which companies can simplify processes, facilitate communication, and make more informed decisions. The emergence of digital platforms, cloud computing, artificial intelligence (AI), and big data analytics has provided companies with unprecedented opportunities to innovate and respond to changes in the market at a quicker rate. The technologies allow companies to operate more effectively, reduce costs, and deliver better customer experiences, thereby achieving a competitive edge.

The age of the digital has also brought new business models that are technology-based to create value. Enterprises now operate in highly networked environments, with digital ecosystems and collaborations replacing value chains. To cite an example, firms like Uber, Airbnb, and Amazon have disrupted traditional industries by connecting buyers and sellers directly through digital platforms. These new business models are scalable, global, and flexible, all of which were things that could not be achieved under traditional business arrangements.

Besides, there has been a powerful effect that digital technologies have on the interaction of companies with customers. Online sites, mobile apps, and social networking platforms have come to be essential information resources for constructing a company's relationship with customers, and in obtaining vital information from customers regarding what they desire or require. With the help of data analysis, businesses possess the ability to provide personalized products and services, forecast customer demand, and market better. It has led to a shift in attitude from product-based conventional techniques to customer-based strategies, with one of the primary drivers being customer experience to ensure business success.

Operationally, the digital age has enabled businesses to automate the majority of their processes, rendering them more efficient and precise. RPA and AI analytics are technologies that are currently being used to monitor repetitive processes, while cloud applications provide the staging for scalable processes. This enables human resources to be directed to higher-level work, encouraging innovation and enhancing workers' productivity. Moreover, the fact that it is possible to track business performance in real-time based on data insights has facilitated companies to make better decisions, enhancing business operation efficiency further.

However, business and information technologies converging is not problem-free, particularly data security, confidentiality, and ever-changing adapting requirements. As more data accumulation by companies and increased use of computer systems, companies are faced with higher vulnerability to cyberattack as well as issues on keeping sensitive information away from unauthorized parties. Besides, ever-