

Impact of Digital Business on Performance of Power Distribution and Supply Companies: A Case of Oman Electricity Distribution and Supply Companies (DISCOS)

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Abstract

Digital business, incorporating advanced digital technologies into power distribution and supply operations, is recognized as a crucial factor in improving performance and sustainability within the energy industry. This article explores the significant impact of digital business on power distribution and supply, with specific attention to Oman Distribution Company (DISCO). The research involves an in-depth investigation into the benefits of digital technologies and the potential it offers for entrepreneurial endeavors, and in addition how it contributes to promoting sustainability. It aims to transform traditional business models, improve products, and provide better customer experiences. The main goal of this study is to evaluate the impacting of digital technologies, including Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), and Customer Relations Management (CRM), on the performance of electricity distribution companies (DISCOS) in Oman. The research intends to investigate the relationships between these digital technology's advantages and different aspects of DISCO performance. This study employed a descriptive-analytical approach to thoroughly describe and assess the data, allowing for a more profound comprehension of the research issue. Quantitative research techniques were selected based on the type of data collected and their effectiveness in measuring research inquiries. The investigation concentrated on 263 employees working at Oman Electricity (DISCOS) and utilized structured online questionnaires to collect data. Numerical data was evaluated using SPSS (Statistical Package for the Social Sciences) to accomplish research goals. According to the study's results, the increased efficacy of Oman Electricity DISCOS is attributed to the utilization of digital technologies like Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), and Customer Relations Management (CRM). These digital technologies significantly enhance aspects like revenue generation, operational efficiency, employee productivity, and customer contentment. The study suggests that Oman Electricity DISCOS should focus on continue and extended utilizing digital technologies in their operations to solve their challenges based on

these findings. This approach will enable DISCOS to enhance its electricity distribution and supply services, benefiting the organization and its customers.

Keywords: Digital Business, Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), Customer Relations Management (CRM), Performance of Oman Electricity Companies (DISCOS).

Introduction

Today's power industry is undergoing a significant change, primarily shaped by incorporating digital business into business. The works of Alexandra (2021) emphasize this change and define it as implementing Sustainable Digital Business, Management, and Entrepreneurship principles. The role of technology, more specifically, is crucial in transforming how power distribution and supply function. Various advancements in technology have contributed significantly to the growth of organizations performance (Masoud, 2023). With time, the power sector has adopted technological advancements to revolutionize its systems and practices. Scholars such as Orina and Luketero (2018) stress the significance of technologies like smart metering, electronic billing, electronic payment, and management information systems in tackling the various complexities encountered by power distribution and supply firms.

Utilizing digital technologies is essential for power distribution and supply utilities to tackle the numerous obstacles they face. Companies harness these digital technologies to improve efficiency, optimize operations, and boost customer contentment (Zaki, 2019; Polas et al., 2019). In 2017, the Oman Electricity Distribution Companies (DISCOS) took a significant step by implementing smart meter technology for approximately 80% of their substantial commercial and industrial customer base. This move was catalyzed by a study did by the Authority for Public Services Regulation (APSR) to mitigate power losses through automated consumption readings and enhance billing accuracy, eliminate estimated meter readings, and reduce labor costs.

The transition from manual, paper-based billing systems to streamlined E-Billing technology represents another pivotal advancement. E-billing reduces billing errors, enhances organizational efficiency, and streamlines financial processes by facilitating digital bill generation and transmission to consumers via email or SMS (Poel, Marneffe and Vanlaer, 2016). E-payment technology has also brought transformative changes to the retail sector, empowering customers to engage in online transactions conveniently. The heightened adoption of e-payment technology has led to a substantial decrease in reliance on traditional paper-based transactions, reducing the prevalence of check and cash payments (Bezhovski, 2016). The importance of Customer Relationship Management (CRM) systems that prioritize customers is growing. CRM comprises processes and technologies aimed at improving customer retention and satisfaction (Bui Thanh, 2020; Bhattacharjee et al., 2019).

In response to challenges such as electricity losses, meter reading limitations, theft, estimated bills, and customer complaints in Oman. Oman Electricity DISCOS decided to tackle these problems head-on through declared national project to adoption digital technologies such as Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT) and Customer Relations Management (CRM). The national project involves replacing traditional mechanical meters with smart meter ones to achieve unmatched

accuracy in meter readings while eliminating estimated readings. Also, they adopted E-Billing & E-Payment systems to enhance customer convenience and satisfaction and reduce operational costs of manually process in bills and payment methods. Furthermore, they adopted CRM system to support customer services and improve customer satisfaction through collecting the customer data and evaluating the appropriate data into actionable practical in suitable channels and the right time (Bashir et al., 2020). So, the harnessing of these digital technologies can help Omani Electricity DISCOS to enhance their performance. So, it has become necessary to evaluate the impact of utilization of digital technologies in performance of Omani Electricity DISCOS.

Problem Statement

The Omani Electricity Distribution and Supply Companies (DISCOS) have significantly decreased overall losses since their inception in 2004, signifying a noteworthy enhancement in the country's electricity industry. This accomplishment came after experiencing a peak loss of 24% in 2004. The manifest as difficulties in Omani Electricity (DISCOS) came from electricity losses, electricity theft, manipulation, and manual methods for consumption calculated led to human errors in consumption calculation, which led to impacted revenue in power distribution (Al-Mahroqi et al., 2012). That prompted the Omani Electricity DISCOS to develop new strategies to improve efficiency and effectiveness of meter reading through adopted the Smart Metering Technology (SMT) to close this gap. While these losses have been reduced in previous years, they still registered some losses as per annual report for 2020 from the Authority for Public Services Regulation (APSR).

Although Omani Electricity DISCOS has made strides in enhancing e-channels for bill delivery, with a notable increase in the percentage of bills delivered via email and SMS and a growth in the rate of invoices paid electronically (Nama Sustainability Report, 2018). The utilization of these e-channels remains relatively low of customers (Alshams et al., 2020). As a result, the efficiency gains in bill processing and payment methods have not been fully realized. Customer satisfaction levels have only experienced a marginal 4% increase, reaching 74% (Nama Sustainability Report, 2018). The Authority for Public Services Regulation (APSR) in Oman has urged continued progress in customer service enhancements, especially in meter reading performance and the accuracy of estimated bills, to avoid operational issues, service quality deficiencies, and customer dissatisfaction. Despite efforts to align with technological and e-service improvements, the Oman Electricity DISCOS continues to grapple with challenges.

Consumers now demand error-free billing systems and precise metering. Digital technologies have been identified as a potential solution to issues related to meter reading, billing, revenue collection, and customer satisfaction (Khaled et al., 2019). Therefore, it is imperative to investigate the impact of digital technologies on protecting revenue, reducing power theft, enhancing billing and collection processes, increasing employee productivity, and delivering quality services for customers.

Limitations

Throughout this study, various constraints were faced. Initially, the literature predominantly concentrates on the technical facets of implementing and configuring digital technologies like smart meter systems, electronic payment systems, electronic billing, and customer relationship management. This emphasis on technical implementation failed to correspond

with the main goals of this research, which sought to explore how these technologies impact organizational performance. Consequently, pertinent literature was scarce. The research necessitated obtaining specific data and knowledge that wasn't consistently accessible. Adding to this problem was the hindrance caused by the COVID-19 outbreak, which disrupted data gathering and interview processes.

The pandemic brought about restrictions like quarantine measures, physical distancing protocols, and the upsurge of remote work, making it challenging to conduct face-to-face interviews, especially with DISCOS employees from Oman Electricity Distribution Companies. Also, due to Oman's vast and scattered land areas, logistical difficulties were faced, making communicating and reaching employees in different regions challenging. These geographical limitations inhibited qualitative data collection from a diverse group of employees.

Literature Review

In recent years, advancements in digital technology have greatly enhanced and optimized electricity distribution and supply systems. Oman Electricity DISCOS, like other nations, has adopted various technological innovations to enhance operational efficiency and improve customer service quality. Digital technology, encompassing Smart Meter Technology, Electronic Billing Technology, Electronic Payment Technology, and Customer Relationship Management, has firmly entrenched itself as the bedrock of Oman Electricity DISCOS' operations. This evolution will inevitably lead to more efficient, customer-centric services and contribute to the ongoing success and sustainability of Oman Electricity DISCOS.

Smart Meter Technology, also known as smart meters, has made significant advancements and now plays a crucial role in the current electricity distribution systems. The efficacy of SMT has been acknowledged by researchers for its ability to automate crucial business processes, enhance customer relationship management, and minimize technical and non-technical losses (Sinha, 2013). Smart meter can help to issue accurate consumption by reducing consumer consumption recording errors, leading to accurate bills that reduce customer complaints (SGIG, 2016). Omani Electricity DISCO have focus of utilization smart meter technology to obtaining reliable readings, reducing estimated readings, and reducing customer inquiries.

The performance of Oman Electricity DISCOS has been dramatically impacted by the introduction of Electronic Billing Technology (EBT). Research indicates that EBT saving operating costs of bill generation and delivery, reducing billing errors, enhancing cash flow for organizations and improving supply chain efficiency (Vesela and Radimersky, 2014). That which led to improve the efficiency and accuracy of the billing process, leading to fewer errors and customer complaints.

Electronic Payment Technology (EPT) has heralded a transformation in how customers settle their electricity bills through offers secure and convenient payment methods, contributing to enhanced revenue collection and heightened customer satisfaction. Research has highlighted that EPT aims to boost organizational efficiency, augment security measures, and enhance profitability, all while offering customers unparalleled convenience and ease of use (Pelandiana, 2018). Oman Electricity DISCOS has adopted E-Payment of its digital strategy to

diversify payment methods and facilitate electronic payment services (Nama Magazine, 2019).

Customer Relationship Management (CRM) systems have played a pivotal role in elevating the performance of Oman Electricity DISCOS. CRM profoundly emphasizes enhancing customer interactions, addressing their concerns expeditiously, and ensuring high satisfaction levels. Extant research recommends that organizations maintain CRM systems to improve responsiveness to customer's needs, increase their satisfaction and make them loyal to the organization (Mkawuganga, 2018).

Research Questions

The research questions for this study are as follows

1. What is the impact of digital technologies (Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT) and Customer Relations Management (CRM)) in on performance of Oman Electricity DISCOS?
2. What is the relationship between utilization of digital technologies (Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT) and Customer Relations Management (CRM)) and performance of Oman Electricity DISCOS?
3. What the recommendations for enhancement performance of Oman Electricity DISCOS?

Research Objectives

The following research objectives have been formulated as per research questions:

1. To discover the impacting of digital technologies (Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), and Customer Relations Management (CRM)) on the performance of Oman Electricity DISCOS.
2. To find the relationship between the utilization of digital technologies, encompassing Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), and Customer Relations Management (CRM), and the performance of Oman Electricity DISCOS.
3. To provide recommendations aimed at enhancing the performance of Oman Electricity DISCOS through the effective utilization of digital technologies.

Research Methodology

The focal point of this study focused on the essential role of digital technologies in impacting on Performance of Oman's Electricity (DISCOS). These technologies, namely Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), and Customer Relations Management (CRM), which hold significant advantages. Leveraging the Technology Acceptance Model (TAM) and IS Success Model, the study will evaluate these technologies' perceived usefulness and benefits within Oman Electricity DISCOS. The Balanced Scorecard (BSC) framework will be the primary evaluation tool, tracking performance indicators like revenues, operational efficiency, employee productivity and customer satisfaction. The conceptual model illustrates the relationships between the utilization of digital technologies and the organization's performance, intending to uncover

their direct impact and provide valuable insights into the impact of digital technologies utilization on its overall performance.

The researcher adopted descriptive research because it allows identifying the relationships between several variables and how they affect the dependent variable (Kabir, 2016). For this study, the descriptive-analytical research designed to examine how the performance of Omani Electricity Distribution and Supply Companies (DISCOS) is affected by digital technologies such as Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), and Customer Relationship Management (CRM). The methodology utilized in this study included gathering and examining quantitative data by disseminating structured questionnaires. Quantitative approaches were deemed most appropriate considering the organized character of the research issue. Statistical tools were employed to conduct data analysis using quantitative methods. Due to practical limitations arising from the COVID-19 pandemic, qualitative methods were not employed; hence, quantifiable research was chosen as the preferred and productive approach for gathering and analyzing data.

The focal group for this research consisted of the workers employed by Oman Electricity Distribution and Supply Companies (DISCOS) in Oman. This encompassed employee from Muscat Electricity Distribution Company SAOC (MEDC), Mazoon Electricity Company SAOC (MZEC), Majan Electricity Company SAOC (MJEC), Dhofar Power Company SAOC (DPC), and Rural Areas Electricity Company SAOC (RAECO). The researcher focused on individuals who directly involved in these digital technologies and equipped with the necessary technical skills to assess their impact on organizational performance, the researcher specifically selected a group of 828 actively engaged employees into digital technologies. This population represented around 40.33% of the overall employee count within DISCOS (Nama, 2019). The researcher created a sampling frame by utilizing a precise and current employee directory to ensure that this sample accurately represents the entire population and offers valuable insights toward achieving the research objectives.

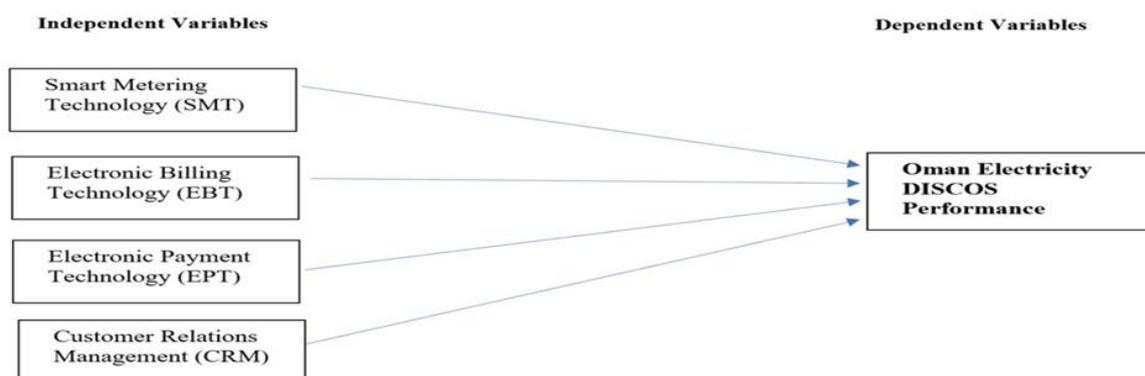


Figure1: The Schematic Diagram Showing the Conceptual Model of the Study.

A probability sampling technique was utilized to create a sample for this study. The reason behind selecting this method is to ensure that all employees with relevant knowledge and expertise were included equally (Taherdoost, 2016). The researcher considered this approach appropriate as it focused on well-educated individuals who possessed expert knowledge and could provide valuable perspectives on the impact of digital technologies on organizational performance within Oman Electricity DISCOS. The sample size formula was utilized to

compute the number of respondents needed, considering a 5% margin of error and a 95% confidence level. This calculation was applied to the total population size of 828, yielding a final sample size of 263 participants. This comprehensive sample was then divided among the five companies within Oman Electricity DISCOS, each receiving a share proportional to its target population size. To account for possible employee absences or unresponsiveness, an additional degree of caution was taken by including 10 extra surveys for each company. As a result, the sample sizes assigned to each subsidiary were as follows: MEDC with 65 surveys, MZEC with 84 surveys, MJEC with 68 surveys, DPC with 44 surveys, and RAECO with 52 surveys.

Data Analysis Plan

Statistical analysis is vital for comprehending and interpreting the data gathered in this study. Descriptive statistics involve organizing and summarizing data to enhance comprehension and simplify intricate information into a more accessible format. The researcher will utilize the Statistical Package for the Social Sciences (SPSS) software to perform statistical analysis of the data extracted from the questionnaire and interpreting it. In brief, the research will extensively use descriptive statistics to arrange and display the data understandably. The primary data analysis tool will be SPSS, guaranteeing timely and precise results. The statistical methods utilized in this analysis will encompass frequency and percentages, average values, variability measures such as standard deviations and coefficients of variation, and Pearson coefficients to effectively examine correlations between variables and address the research inquiries.

Data Analysis

This data analysis explores how digital technologies affect the performance of Oman's Electricity Distribution and Supply Companies (DISCOS) performance. More specifically, it investigates how Smart Metering Technology (SMT), Electronic Billing Technology (EBT), and Electronic Payment Technology (EPT) impact crucial metrics of performance such as revenues, operational efficiency, employee productivity, and customer satisfaction. The data found through questionnaires was analyzed through Statistical Package for Social Sciences (SPSS) to assess whether digital technologies have impact Oman Electricity DISCOS' performance and find relationship between digital technologies and performance of Oman Electricity DISCOS. To sum up, based on the data analysis findings in below table (1.1) and below appendix, it can be inferred that advanced technologies like SMT, EBT, EPT & CRM significantly contribute to enhancing the performance of Oman Electricity DISCOS.

Table 1.1

Statistical Data and Results for impacted Digital Technologies on Performance of Oman Electricity DISCOS.

Category of Result	Data Analysis
Smart Metering Technology (SMT)	<ol style="list-style-type: none"> 1. SMT able to improve revenues levels through reduce fraud, theft, and estimated readings of meter indicators in Oman Electricity DISCOS. 2. SMT able to improve operational efficiency through deliver efficient and accuracy reading of consumption on electric load and capacity in Oman Electricity DISCOS. 3. SMT able to improve employee productivity through deliver fast and accurate data collection to complete the tasks in less time and effort in Oman Electricity DISCOS. 4. SMT able to reduce customer complaints and improve customer satisfaction through provide accurate consumption for customers in Oman Electricity DISCOS. 5. SMT have high impacted on performance of Oman Electricity DISCOS. 6. The relationship between of Smart Meter Technology (SMT) and Omani Electricity (DISCOS) were found to be positively and significantly.
Electronic Billing Technology (EBT)	<ol style="list-style-type: none"> 1. EBT able to improve revenues levels through reduce operation cost of bill generation and delivery in Oman Electricity DISCOS. 2. EBT able to improve operational efficiency through reduce bills and operating expenses for bills generation process in Oman Electricity DISCOS. 3. EBT able to improve employee productivity through reduce human errors, working effort and task completion time in bill generation and delivery in Oman Electricity DISCOS. 4. EBT able to improve quality of bills delivery service and customer satisfaction through send the bills via SMS, e-mail, and electronic links within short time in Oman Electricity DISCOS. 5. EBT have high impacted on performance of Oman Electricity DISCOS. 6. The relationship between of Electronic Billing Technology (EBT) and Omani Electricity (DISCOS) were found to be positively and significantly.
Electronic Payment Technology (EPT)	<ol style="list-style-type: none"> 1. EPT able to increase cash flow, revenue collection efficiency and enhance profitability collection through provide multiple payment channels and tracking customer payment in Oman Electricity DISCOS. 2. EPT able to improve operational efficiency through enable efficient payment process, less transactions cost, lowers error rates of payment process in Oman Electricity DISCOS. 3. EPT able to improve employee productivity through enable fast and secured payment transaction, better tracking of transactions, facilitated job-tasks in Oman Electricity DISCOS.

	<p>4. EPT able to improve quality of payment process and customer satisfaction through provide efficient, reliable and ease of use payment channels in Oman Electricity DISCOS.</p> <p>5. EPT have high impacted on performance of Oman Electricity DISCOS.</p> <p>6. The relationship between of Electronic Payment Technology (EPT) and Omani Electricity (DISCOS) were found to be positively and significantly.</p>
Customer Relations Management (CRM)	<p>1. CRM able to improve revenues levels through continuously interact with customers and providing quality services that meet customer requirements and expectations in Oman Electricity DISCOS.</p> <p>2. CRM able to improve operational efficiency through enabling automate customer management processes, speed, quality and effective of services in Oman Electricity DISCOS.</p> <p>3. CRM able to improve employee productivity through enhancing customer-oriented skills of employees and their ability to close monitoring for complaints, interpret customer behavior and respond with timely in Oman Electricity DISCOS.</p> <p>4. CRM able to improve customer satisfaction levels through increase customer loyalty, understanding customer needs, service delivery in real-time and efficiency of responsiveness in Oman Electricity DISCOS.</p> <p>5. CRM have high impacted on performance of Oman Electricity DISCOS.</p> <p>6. The relationship between of Customer Relationship Management (CRM) and Omani Electricity (DISCOS) were found to be positively and significantly</p>

Finding

As per table (1.1), The examination uncovered that a significant majority of the employees at Oman Electricity DISCOS, precisely 90.49%, agreed that implementing Smart Metering Technology (SMT) is crucial in impacting the organization's overall performance. The evidence in this study suggested that utilization SMT can help Oman Electricity (DISCOS) to solve its problems related to revenues and improve revenues levels. Also, SMT can help to solve the problems related to operational efficiency and improve its operational efficiency performance. In additional, SMT can help to solve the problems related to employee productivity and enhancing employee productivity performance. Also, SMT can help to solve the problems related to customer complaints and customer satisfaction. Finally, the empirical evidence in this study suggested the existence of a positive relationship between Smart Meter Technology (SMT) usage and performance of Oman Electricity (DISCOS).

Also, the impact of Electronic Billing Technology (EBT) on DISCOS' performance was deemed significant by 81.56% of the respondents. The evidence in this study suggested that utilization EBT can help Oman Electricity (DISCOS) to solve its problems related to revenues and improve revenues levels. Also, EBT can help to solve the problems related to operational efficiency and improve its operational efficiency performance. In additional, EBT can help to solve the

problems related to employee productivity and enhancing employee productivity performance. Also, EBT can help to solve the problems related to quality of bills delivery service and customer satisfaction. Finally, the empirical evidence in this study suggested the existence of a positive relationship between Electronic Billing Technology (EBT) usage and performance of Oman Electricity (DISCOS).

Concerning Electronic Payment Technology (EPT), a significant number of respondents, 80.32%, acknowledged its strong impact on DISCOS' performance. The evidence in this study suggested that utilization EPT can help Oman Electricity (DISCOS) to solve its problems related to cash flow, revenue collection efficiency and profitability performance. Also, EPT can help to solve the problems related to operational efficiency and improve its operational efficiency performance. In additional, EPT can help to solve the problems related to employee productivity and enhancing employee productivity performance. Also, EPT can help to solve the problems related to quality of payment process and customer satisfaction. Finally, the empirical evidence in this study suggested the existence of a positive relationship between Electronic Payment Technology (EPT) usage and performance of Oman Electricity (DISCOS).

Also, concerning Customer Relations Management (CRM), a significant number of respondents, 80.42%, acknowledged its strong impact on DISCOS' performance. The evidence in this study suggested that utilization CRM can help Oman Electricity (DISCOS) to solve its problems related to revenues and improve revenues levels. Also, CRM can help to solve the problems related to operational efficiency and improve its operational efficiency performance. In additional, CRM can help to solve the problems related to employee productivity and enhancing employee productivity performance. Also, CRM can help to solve the problems related to customer satisfaction levels. Finally, the empirical evidence in this study suggested the existence of a positive relationship between Customer Relationship Management (CRM) usage and performance of Oman Electricity (DISCOS).

Conclusion

Omani Electricity Distribution Companies (DISCOS) aims to establish itself as a leading service provider in Oman by offering exceptional services. Their commitment drives them to deliver secure, reliable, and efficient electricity solutions to the people living in Oman. To achieve this objective, Omani Electricity DISCOS has embraced digital technologies such as Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT), and Customer Relations Management (CRM). These technologies play a vital role in enhancing their overall performance.

The primary actual of this study was to investigate the impacting of digital technologies on the performance of Omani Electricity DISCOS. The findings from the analysis revealed significant and favorable effects on the company's performance when utilization Smart Meter Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT) and Customer Relationship Management (CRM). Also, the research detected a strong and notable correlation between utilizing these digital technologies and the overall performance of Omani Electricity DISCOS. These results highlight the profound impact that digital technology can have on enhancing the electricity distribution and supply industry, positioning it as a driver for economic advancement and efficiency.

To sum up, based on the data analysis findings, it can be inferred that advanced technologies like SMT, EBT, EPT & CRM significantly contribute to enhancing the performance of Oman Electricity DISCOS. These technological advancements are vital in increasing revenue, improving operational efficiency, enhancing employee productivity, and ultimately raising customer satisfaction. The results emphasize the significance of accepting and incorporating these digital technologies into DISCOS activities and business. Including them can result in better revenue management, enhanced operational procedures, decreased expenses, and increased customer satisfaction. Hence, it is advised that Oman Electricity DISCOS persist in investing in and utilizing these technologies to optimize their effectiveness and competitiveness in the energy industry (Daim et al., 2018). This research offers valuable perspectives for DISCOS and decision-makers by shedding light on the potential advantages of digitalizing their technological framework to attain operational superiority and fulfil the changing requirements of the energy market.

Recommendation

Taking into account the results of this study and acknowledging the crucial significance of advanced technologies in DISCOS (Oman Electricity Distribution and Supply Companies), several suggestions can be put forward to improve their efficiency and overall performance:

1. Smart Meter Technology (SMT) having significant role in improve performance of revenue, operational efficiency, employee productivity and customer satisfaction in Oman Electricity DISCOS and it is necessary to implementing this technology for all customers to reduce challenges into Oman Electricity DISCOS.
2. Electronic Billing Technology (EBT) having significant role in improve performance of revenue, operational efficiency, employee productivity and customer satisfaction of Oman Electricity DISCOS and its continue and utilization in billing procedures is a necessity to reduce challenges with customers into Oman Electricity DISCOS.
3. Electronic Payment Technology (EPT) having significant role in improve performance of revenue, operational efficiency, employee productivity and customer satisfaction of Oman Electricity DISCOS and its continue and utilization in payment procedures is a necessity to reduce challenges with customers into Oman Electricity DISCOS.
4. Customer Relationship Management (CRM) having significant role in Oman Electricity DISCOS and its continue and utilization in customer procedures is a necessity to reduce challenges and complaints with customers into Oman Electricity DISCOS.
5. Take advantage of Balanced Scorecard advantages as a comprehensive and valuable tool to evaluate Oman Electricity DISCOS performance and measure their extent to strategic goals and future vision.

Acknowledgement

This crucial investigation led to many findings of the study which will contribute significantly to Oman Electricity DISCOS and in any other organizations in Oman. The contribution of the study for the actual scenario in Oman Electricity DISCOS include:

1. Despite the lack of recent studies on the benefits of using digital technologies (Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT) and Customer Relations Management (CRM)) in utilities of Oman, the research contributed to providing a clear picture of the benefits of using digital technologies on employees, customers and organization.

2. Despite the lack of recent studies on the impact of the use of digital technologies ((Smart Metering Technology (SMT), Electronic Billing Technology (EBT), Electronic Payment Technology (EPT) and Customer Relations Management (CRM)) on the performance of utilities in Oman, the research contributed to presenting a clear link between the use of digital technologies and the performance of the organization.
3. Absent of technologies in organizations considered as main factor to persistence of the problems mentioned in the research, such as financial losses, poor operational efficiency, poor employee productivity, and customer dissatisfaction with the services provided.
4. The research contributed to providing a clear explanation of how to discover the performance issue and how to treat them by digital technologies.
5. Despite the lack of studies on the use of the balanced scorecard model for evaluating organizations in Oman, as it is a new tool developed in the year 2000, the researcher contributed to clarifying this model as an appropriate measurement tool to discover strengths and weaknesses in the performance of the organization.

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Appendix

Category of Result	Result of Frequencies and Percentages				Mean	Std. Deviation	Variation Rate	Pearson coefficient
	Measurement	Strongly Disagree/ Disagree	Neutral	Agree/ Strongly Agree				
	Frequencies							
Percentages								
Smart Metering Technology (SMT)	Frequencies	15	10	238	4.05	0.741	18.31	0.894
	Percentages	5.61%	3.90%	90.49%				
Electronic Billing Technology (EBT)	Frequencies	28	21	215	4.04	0.862	21.4	0.923
	Percentages	10.55%	7.89%	81.56%				
Electronic Payment Technology (EPT)	Frequencies	30	23	211	3.92	1.010	25.75	0.916
	Percentages	11.31%	8.65%	80.32%				
Customer Relations Management (CRM)	Frequencies	38	14	212	3.88	1.072	27.70	0.862
	Percentages	14.26%	5.32%	80.42%				