

THE EFFECT OF DIGITAL PAYMENT SYSTEM ON FINANCIAL PERFORMANCE OF APDCL: A CASE STUDY

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ABSTRACT

The main purpose of the study is to analyze the effect of digital payment in the financial performance of a State Owned Public Limited Company more precisely Assam Power Distribution Company Limited (APDCL). The research paper contains statistical analysis of the performance of Assam Power Distribution Company Limited after the implementation of digital payment system. The research paper is based on data available on the website of Assam Power Distribution Company Limited. Data has been collected from the audited final accounts uploaded by the company in their website. The paper will be beneficial to the company as well as to other public limited entities for future as it is mostly based on secondary data and analytical in nature. The very success of the new technology introduced by an organization depends upon the improvement in its financial performance. The effect of digital payment in APDCL case is quite positive and encouraging one. The customers of APDCL are using digital modes of payment effectively. The collection of revenue from all kind of customers is encouraged by the digital payment system. In near future also, digital payment system boosts the financial condition of the company. Five years future trend is predicted with the help of time series analysis which will benefit the company to compare the outcome with forecast. It will also help other public limited companies dealing with digital payment system and collection of revenue in such a way that it can relate the research with their entity and respond accordingly.

Keywords: Digital Payment, Financial performance, Customers, Revenue, Profitability.

1. INTRODUCTION:

The power sector in India has undergone momentous evolution after freedom. When India became independent in 1947, the country had a power generating capacity of 1,362 MW. At that time, Hydro power and coal based thermal power have been the main sources of spawning electricity. Generation and distribution of electrical power was carried out primarily by private

utility companies. Notable amongst them and still in existence is Calcutta Electric.

The Assam State Electricity Board (ASEB), which was constituted in 1958 under Electricity (Supply) Act 1948, was entrusted with the main responsibility of integrated development of the State Power System. Before its unbundling, Assam State Electricity Board (hereafter ASEB) was the sole agency in the state of Assam

to generate, transmit and distribute electricity in the state of Assam. In pursuance with The Electricity Act 2003 and under the purview of the Assam Power Sector Development Programme, the Government of Assam has set in motion the course of action of unbundling the ASEB initially into five Government companies which are Assam Power Generation Company Ltd (APGCL), Assam Electricity Grid Corporation Ltd (AEGCL), Upper Assam Electricity Distribution Company Ltd (UAEDCL), Central Assam Electricity Distribution Company Ltd (CAEDCL) and Lower Assam Electricity Distribution Company Ltd (LAEDCL). Later for effective controlling and distribution; Upper Assam, Central Assam and Lower Assam Electricity Distribution Company Ltd were merged and become Assam Power Distribution Company Ltd.

Digital Transaction system is a main apparatus used by individuals and organizations as a sound and neat way of making transaction over the internet and at the same time a doorway to technological encroachment in the field of world economy (Kabir, Saidin, & Ahmi, 2015). In Indian context, digital payment system can be traced back in early 1990s when electronic clearing services was introduced. When global developments were taking place at a phenomenal pace, though India initially lagged far behind, several actions were set in motion to formulate a systemic foundation in the payment mechanisms. The introduction of Magnetic Ink Character Recognition (MICR) based mechanized cheque processing technology was a significant milestone. But it was also fraud prone

because of postal interception and encashment, often resulting in real beneficiaries not getting their dues at all, or at times getting delayed payments. Hence, Electronic Clearing System (ECS) was introduced which was the prominent step towards digitization of payment mechanism. Then came the Cards. Both debit and credit cards are very much popular even today which minimizes the use of physical cash handling to such extent that people like to carry more cards than cash with them. The real-time gross settlement (RTGS) system was introduced in India in March 2004 and National Electronic Fund Transfer (NEFT) system in November 2005 which has replaced the paper-based inter-bank payment structure and settles a generous number of large-value and time-critical customer transactions (Abid, 2016). In 2007, Payment and Settlement Systems Act, 2007 (PSS Act) was implemented to regulate the payment and settlement systems of India. Digital payment system synchronises the internet enabled transaction services and is also popularly known as Internet banking services. Internet banking service allows customers to perform transactions through banks' website (Banketindia, 2006). Like other corporative organizations of the country, APDCL also tries to cope up with the changing technological advancement and introduced digital payment system to ease the customers in payment of electricity dues. In recent times, customers of APDCL can pay their electricity dues in various online or digital modes. The major modes of payment of electricity through digital payment system are Internet banking, Cards and third party

payment apps. Customer can login in to the website of APDCL and proceed with the customer number to payment. At that point several options will be provided to the customer through whom the customer can pay dues. Then customer has to select internet banking and proceed by using personal internet banking credentials. One OTP (One Time Password) is provided by the site for authentication of the truthfulness of the transaction and after that, transaction is complete with a single click. Customer can also choose card payment at the time of payment. In this case, particular card number along with secret code has to be inserted at proper space provided by the site. In this payment option also, OTP is send to authenticate the transaction. The recent addition in the payment system is the various payment apps created by various banks and other wallet service providers. These apps include Google pay, PhonePe, AmazonPay, various banks apps like YONO by State Bank of India, IMobile by ICICI Bank etc. In this case, the customer has to open a particular app and go to the payment segment of electricity. Then the customer has to link customer id with the app so that the app can fetch the outstanding dues against the customer. Then, the customer can make payment through that app using either card credentials or Internet banking credentials. A new way of making payment through apps known as UPI (Unified Payments Interface) is also developed which is even more quick, easy and reliable.

This research has been carried out to study the impact of digital payment mode on the collection of revenues by APDCL. In this study, an analysis of

profitability and commercial viability of APDCL's performance is done.

2. OBJECTIVES:

The objectives of this study are as follows.

- 1) To see the profitability of APDCL after introduction of digital payment system.
- 2) To analyze the amount of revenue generated by APDCL after introduction of digital payment system;
- 3) To check the trends in the collection of revenues and profits over the period of 2012-13 to 2018-19.

3. LITERATURE REVIEW:

There have no instance about the study carried out to analyse the effect of digital payment system on power distribution Company in the country. However, several studies have been carried out to measure the effect of digital system on financial performance of banks and also the various factors that influences the willingness of bank customers to use it,

Surabhi Singh and Renu Arora (2011) also did a study about the banking services and customer satisfaction in public private and foreign banks. It was a comparative study among private public and foreign banks with the objective to assess various aspects of services provided by the banks and the extent of use of the services. It also had an objective to determine and compare the extent of customer satisfaction related to the quality of the banking services provided. The study was done on 20 banks in India using multistage random sampling technique. According to the findings of the study, most of the customer used cheque deposit and cheque clearance as the primary

services of the banks. Only a small number of respondents were using IT enabled services. Lack of facility, security, improper awareness were found to be the reason for not using the IT enabled services to its fullest extent possible.

Technology also plays an important role in adapting digital payment or internet banking system. In India a research was done by Reshma and Rajkumar (2017) about the technological factors influence on digital payment system. The study was conducted to survey the influence of technology in the banking sector among customers. According to the research, Indian banking sector is one of the fastest emerging industries in the world. Over the last decade banks portrayed a drastic improvement by the introduction of new technologies with the help of ATMs, growth of internet, mobile phones, telecommunication technologies etc. Banking has upsurge the hopes of people through e-banking, mobile banking, credit card, business loans, home loans etc. Banking has come to the fingers of the customer.

Earlier, payment system was not so much advanced and easy. Thanks to FinTechs which have created real-time, flawless payments elucidations and, as a result, snatched a noteworthy market share. To cope up with the competitors, banks have to make certain changes in their operations. Nair and Prabhu in their report discussed about the ways through which banks can cope up with competitors (Nair & Prabhu, 2018). According to the report, banks have to seize the opportunities at real time to grow. And if they do, they can grow up to 30 percent up

to the end of 2022. The researchers also presented a picture of growing market which indicates that from 2015 to 2019, mobile payment markets grow about 24 percent. They also pointed out challenges faced by the bank. According to them, both external and internal challenges were present in the market. External challenges include increase in market competition, regulatory pressure, data and fraud risk and payment channels. Internal challenges include inability of legacy systems to tap into new revenue streams and lack of efficiency and capacity. According to the researchers the research can help the banks in developing strategies, providing business function and technological consultancy, developing new mobile and digital services, maintaining payments as a revenue generator, reducing costs and improve productivity etc.

An analysis of digital payment behaviors by fixed store merchants in Jaipur was also studied by researchers. According to Catalyst, a user-centric digital finance innovation platform, in Jaipur during mid 2017, “over two-fifths of the ‘fixed store’ merchants have tried some form of digital payments. Only about a third, report sustained use, which is limited to a fraction of overall transaction volumes. Closed loop wallets are by far the most popular solution chosen by three-fourths of the user base, whereas a little less than a third utilizes cards, and a quarter use internet banking. Only 2% utilize all three” (Catalyst, 2018). In this report, the publisher presented the usages pattern and drivers, digital financial readiness of people, way to convert non users to users and various modes through

which digital payment can be improvised among merchants.

In similar area, LeoraKlapper(2017) also did a study. The main objective of the study is to explain how digital payment can help the entrepreneurs by reducing cost and increasing profit of the firm. The researcher divided the finding of the study into two heads namely pros and cons. Pros of the findings include cost effective in areas like transactions with customers, suppliers, and the government and payment of wages of employees. Getting proper credit history is another advantage identified by the researcher. Again according to the researcher, digital payments give women entrepreneurs' greater control over their income, potentially benefiting their entire household, especially children. But for all these, a strong infrastructure is required including proper gadget for digital payment. Lack of this will result in no digital payment. Again lack of financial literacy is another cons associated with it. Again to avail digital payment system proper documentation is required which most of the times are not available in the hands of the entrepreneurs.

As seen from the above reviews, most of the research works have been confined on analyzing the challenges and opportunities of digital payment system with regards to banks, merchants and entrepreneurs. But no study has been carried out to measure the effect of Digital payment system on financial performance of electricity distribution company; especially in respect of APDCL. Therefore, this study was proposed to be carried on.

4. RESEARCH METHODOLOGY:

The study is mainly analytical in nature and based on mainly secondary sources of data. The researcher collected data from the website of APDCL. Collected data has been analysed using pie diagram, Bar and frequency tables. The study is based on the data collected from the period ranging from 2012-13 to 2018-19.

5. STATISTICS USED:

For analyzing the information gathered from the website of the APDCL, time series analysis has been used. Time series analysis is used to predict the future trends in respect of revenue generation and profitability in near future. The prediction is done up-to the financial year 2023-24 i.e. five years from the research period.

6. COMPARISON OF PROFITABILITY:

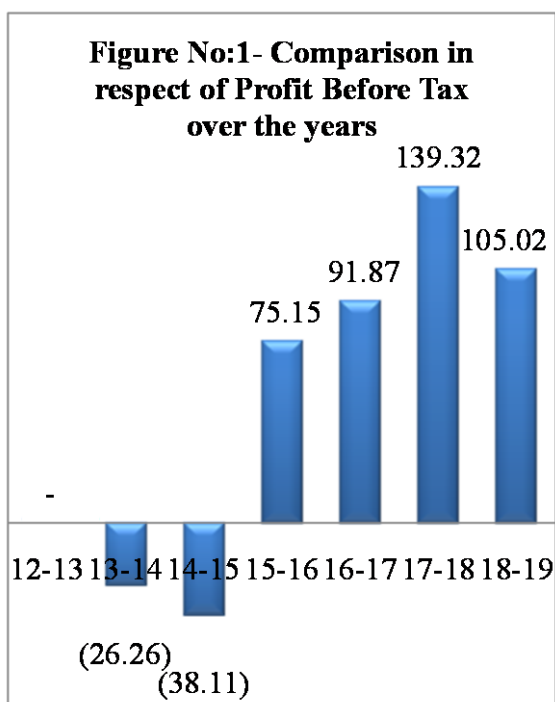
Table No: 1 Comparison of Change in Profit before Tax over the years

Year	Profit Before Tax (Rs. in lakhs)	% of change in Revenue (Base year 2012-13)
2012-13	(41,814.00)	-
2013-14	(52,793.00)	(26.26)
2014-15	(57,750.00)	(38.11)
2015-16	(10,390.00)	75.15
2016-17	(3,398.00)	91.87

2017-18	16,442.00	139.32
2018-19	2,101.00	105.02

(Source: Final Accounts (Audited) published in website of APDCL)

The collected data in respect of profit before tax has been produced in this section. Profit before payment of taxes by APDCL has been produced in the table no 1. It is seen from the data displayed in the table that profit after introduction of the digital payment mode is heterogeneous. There was loss for the financial year 2012-13 to 2014-15. The amount of loss APDCL has in the financial year 2012-13 was Rs. 41814 lakhs and it jumped to Rs. 57750 lakhs in the year 2014-15. In the year 2015-16 loss suffered by APDCL was Rs.10390 lakhs. Similarly if we take into account the financial year 2018-19, we see that APDCL recorded a profit of Rs.2101 lakhs.



From figure no 1 which shows

comparison in respect of profit before tax over the years, it is obvious that after the implementation of digital payment system, profit of the companies suffers. In case of APDCL, though profitability has an upward trend from 2014-15 to 2018-19, but the starting three years of study i.e. 2012-13 to 2014-15 has a downward bar. Thus the company has to make certain adjustments to get the upward trend.

7. EFFECT OF DIGITAL MODE ON THE AMOUNT OF REVENUE COLLECTED:

The amount of revenues collected from customers is analysed to see the effect of digital payment mode on the amount of revenues collected. It is supposed that the trends in revenues collected will reflect the extent to which the customers have responded to digital mode. The comparison of percentage change in revenue from the customers is made together taking the total change in percentage in a particular year. For this purpose domestic customer, commercial customers and industrial customers have been taken into account. Government customers are excluded for the comparison as Government made payment for various undertakings under its jurisdiction centrally.

Table No-2 Comparison of Change in Collection of Revenue from Customers over the years for APDCL

Year	Collection of Revenue from Customers (Rs. in lakhs)			% of change in Collection of Revenue from Customers		
	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial
2012-13	67,674.00	40,936.00	79,244.00	-	-	-
2013-14	82,191.00	47,444.00	86,825.00	21.45	15.90	9.57
2014-15	88,844.00	54,710.00	106,258.00	31.28	33.65	34.09
2015-16	111,769.00	66,216.00	111,967.00	65.16	61.75	41.29
2016-17	133,090.00	77,219.00	114,488.00	96.66	88.63	44.48
2017-18	156,284.00	89,140.00	131,345.00	130.94	117.75	65.75
2018-19	187,303.00	95,559.00	136,747.00	176.77	133.44	72.56

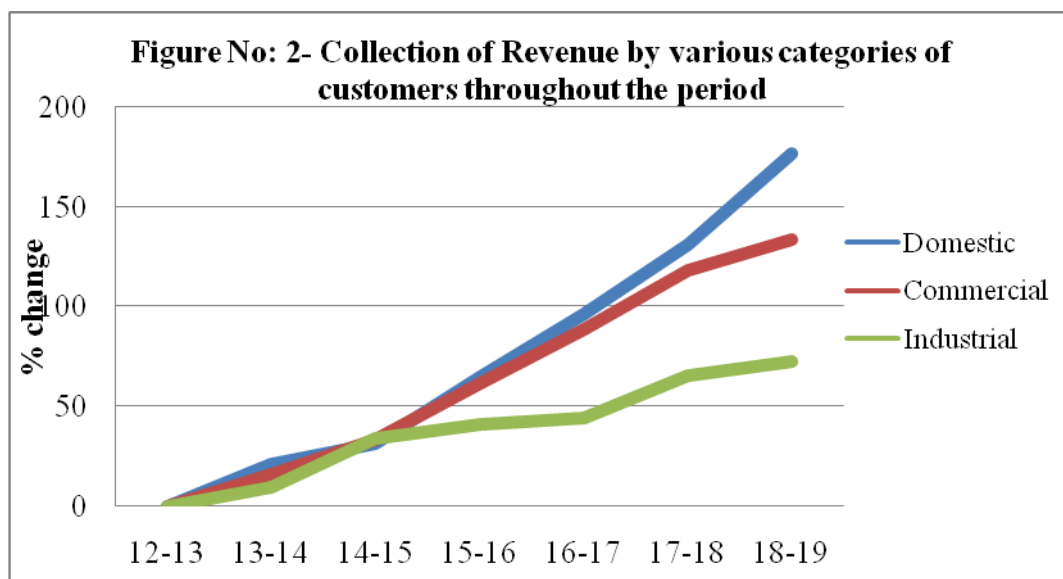
(Source: Final Accounts (Audited) published in the websites of APDCL)

Collection of revenue by APDCL has been produced in the table no 2. It is seen from the data displayed in the table that collection from household, commercial and industrial customers are diverse. There has been significant growth in collection from domestic consumers. The amount of collection from domestic consumers in the financial year 2012-13 was Rs. 67674 lakhs and it jumped to Rs. 187303 lakhs in 2018-19.

However, if we compared the collection of revenues from commercial consumers for the same period; we find that there has been increase in it. The collection from commercial consumers was Rs. 40936 lakhs in 2012-13 which reach to Rs. 95559 lakhs in 2018-19.

Lowest is in case of industrial consumers. Collection from industrial consumers was Rs.79244 lakhs in 2012-13 which come to Rs. 136747 lakhs.

As per the figure, collection from Domestic, commercial and industrial consumers are more or less same for the years 2012-13 to 2014-15. The percentage change in collection of revenue ranges between 20 % to 40% for all the customers. But from 2014-15, the rate of collection from Domestic customers has increased drastically which touches around 176% in 2018-19. It was followed by rate of change in collection from commercial consumers which are around 133% in 2018-19. Rate of change in collections from industrial customers are least 72.56% in 2018-19.



If we take the total change in revenue collection in to account, the following data depicts the comparison of the percentage of change in collection of revenue between APDCL.

Table No: 3 Comparison of % Change in Collection of Revenue from customers over the years

Ye ar s	Do mes tic	Com merci al	Indu stria l	Tot al Ch ang e
20 12 - 13	-	-	-	-
20 13 - 14	21.4 5	15.90	9.57	46. 92
20 14 - 15	31.2 8	33.65	34.0 9	99. 02

20 15 - 16	65.1 6	61.75	41.2 9	168 .21
20 16 - 17	96.6 6	88.63	44.4 8	229 .77
20 17 - 18	130. 94	117.7 5	65.7 5	314 .44
20 18 - 19	176. 77	133.4 4	72.5 6	382 .77

(Source: data pertaining from Table No:2)

Total change in collection of revenue by APDCL has been produced in the table no 3. It is seen from the data demonstrated in the table that collection for APDCL is diverse in each year. There has been significant growth in collection. The rate of collection in the financial year 2013-14 was 46.92% and it jumped to 382.77% in 2018-19.

8. FUTURE TREND OF PROFITABILITY:

The researcher stated prediction of the future trend of profitability for APDCL as one of the objective. The prediction will be based on the data that is available in the website of APDCL. To fulfill the requisites of the objective, the researcher took the help of time series analysis. With the help of this statistical tool, the researcher has done a trend analysis. In this trend analysis, the researcher predicts the profitability for the coming five financial years which come to an end in 2023-24.

For doing trend analysis, the base year selected is 2012-13 for both the companies. Let the linear trend be

$$y = a + bx \quad (1)$$

Where $x = t - 2015 - 16$ (midyear), t represents year

$y =$ Profitability, a and b are parameters which are calculated with the help of the following formula

$a = \sum y / n$ and $b = \sum xy / \sum x^2$. For estimation of variables as well as parameters, following tables are created.

Table No: 4 Projected trend in profit

Year (t)	Profit (y)	$x = t - 2015 - 16$	X^2	xy
2012-13	(41,814.00)	(3)	9	125,442.00
2013				

-14	(52,793.00)	(2)	4	105,586.00
2014-15	(57,750.00)	(1)	1	57,750.00
2015-16	(10,390.00)	-	-	-
2016-17	(3,398.00)	1	1	(3,398.00)
2017-18	16,442.00	2	4	32,884.00
2018-19	2,101.00	3	9	6,303.00
TO TA L	(147,602.00)	0	28	324,567.00

(Source: Final Accounts (Audited) published in the websites of APDCL)

Profit before tax of APDCL has been produced in the table no 4 along with calculation of parameters required for trend analysis. It is seen from the data displayed in the table that total profit for all these seven years came to -147602 lakhs. For calculation of x , the year selected is 2015-16 being the mid year of the series. The total of x came to nil whereas for x^2 , total came to 28. For parameter xy , total for the years come to 324567. Now,

$$a = -147602 / 7 = -21086 \quad (2)$$

$$b = 324567 / 28 = 11591.68 \quad (3)$$

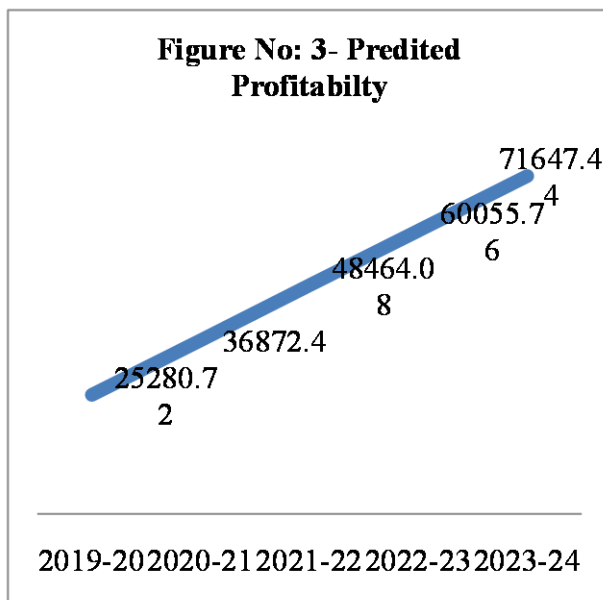
$$\text{Therefore, } y = a + bx = -21086 + 11591.68x \quad (4)$$

To study the trend up to 2023-24, value of x will be as stated in Table No 5.

Table No: 5 Predicted Value of x for APDCL over the years

Year	$x=t-2015-16$
2019-20	4
2020-21	5
2021-22	6
2022-23	7
2023-24	8

Putting the values of x from table no: 5 in the formula we get the values of predicted profitability. The data is derived with the help of trend series analysis technique. It is seen that in near future, profit of APDCL will increase. There will be significant growth in profit which will be around Rs. 25280.72 lakhs in 2019-20. The amount of profit in the financial year 2023-24 will touch Rs. 71647.44 lakhs.



From the figure depicted in figure no 3 it is clear that APDCL will have an upward trend in respect of profitability. By using time series analysis, the value predicted in 2019-20 will be around

25280.72 lakhs which will touch the mark of 71647.44 lakhs in the year 2023-24. From the result it can be concluded that APDCL will have increasing trend in respect of profitability.

9. FINDINGS AND CONCLUSION:

(1) It is seen that the post digital payment has a vital effect on financial health of APDCL. The effect is quite positive and encouraging one. The amount of profits of APDCL has constantly increased over the years. We have seen that during financial years immediate to introduction of digital payment mode the volume of losses have been declined over the years (2012-13 to 2016-17) and thereafter from the financial year 2017-18 onwards the unit earned profits. It shows that the APDCL is largely benefited from introduction of the digital payment system. It establishes that digital payment mode has a positive effect on APDCL.

(2) It is observed that after digital payment was implemented, its effect on collection of revenue of APDCL is diverse. Even, the effects of digital payment on collection of revenue from all type of customers are also not same. The effect of the digital payment system on APDCL is quite positive in case of domestic customers. Revenue collection from domestic customers is on top as compared to collection from commercial and industrial customers. The rate of increase of collection in case of APDCL for industrial customers is only 72.56% in 2018-19 as compared to 2012-13 which is 176.77% for domestic customers and 136.44% for Commercial customers. It shows that the domestic customers of

APDCL are highly benefited from introduction of the digital payment system and using the same most.

(3) There is a positive effect on customers of APDCL of digital payment mode. The rates of increase in collection of revenue from all three types of customers in respect of APDCL are very much satisfactory. The rate of increase in collection is almost double for APDCL for the year 2013-14 to 2014-15. Again, it was almost triple in the year 2014-15 to 2017-18. It establishes that customers of APDCL are using digital modes of payment effectively.

(4) It is witnessed that in near future, digital payment system has a big impact on profit of APDCL. The result of time series analysis depicts a picture of increasing profit for APDCL. Probable profit of APDCL will be around Rs. 25,280 lakhs in 2019-20. It will be almost double in the year 2021-22 and comes to around Rs. 48,464 lakhs. If everything stays similar, the profit will touch Rs. 71,647 lakhs in the year 2023-24 which will be almost triple the amount of profit in the year 2019-20.

Thus at the end, we can conclude that digital payment system will have both positive and negative effect in this scenario. For APDCL, the effect would be encouraging. As APDCL is the only company operating in Assam for distribution of electricity, digital payment system will reduce overall cost for the company which ultimately increases profitability. Increase in profitability will lead APDCL to indulge in operation like Corporate Social Responsibility (CSR). As

one of the main advantages of CSR is increasing Goodwill of the organization, APDCL will collect goodwill solely as no other entity is present in the market. And if, in future competitors enter in the market, APDCL will be in commanding position to capture the market with large market share.

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