CRM Practices in the Electricity Distribution Sector in Bangladesh

Supply side perspectives on improving customer service delivery

pi STRATEGY CONSULTING

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CONTENTS

ACRONYMS

GoB	Government of Bangladesh
BERC	Bangladesh Energy Regulatory Commission
CRM	Customer Relationship Management
CAB	Consumers Association of Bangladesh
EA	Electrical Advisor
CEI	Chief Electrical Inspector
EMU	Energy Monitoring Unit
BPDB	Bangladesh Power Development Board
APSCL	Ashuganj Power Station Company Ltd.
NWZPGC	North West Power Generation Company Ltd.
EGCB	Electricity Generation Company of Bangladesh
RPCL	Rural Power Company Limited
IPP	Independent Power producer
ICT	Information and Communication Technology
SIPP	Small Independent Power Producer
PGCB	Power Grid Company of Bangladesh Limited
WZPDC	West Zone Power Distribution Company
NWZPDC	North-West Zone Power Distribution Company
SZPDC	South Zone Power Distribution Company
DESA	Dhaka Electric Supply Authority
DPDC	Dhaka Power Distribution Company
DESCO	Dhaka Electric Supply Company
REB	Rural Electrification Board
PV	Photo Voltaic
PBS	Palli Bidyut Samiti
SHS	Solar Home System
IFRD	Institute of Fuel Research & Development
LGED	Local Government Engineering Department
SME	Small and Medium sized Enterprise
RREL	Rahimafrooz Renewable Energy Ltd.
BOP	Base of the Pyramid
CTS	Currency Transfer System
UTS	Unit Transfer System
PPP	Public Private Partnership

EXECUTIVE SUMMARY

The report broadly explores the customer relationship management (CRM) practices in the electricity distribution sector in Bangladesh. It identifies some of the existing challenges and how these can be improved with the use of ICTs and better service design.

In a country where less than half the population has access to electricity through 13.5 million connections to the grid, the challenge facing the sector is two-fold. First, those that are privileged to be connected to the grid, need improved services. They need to be connected 24x7, occasional outages and blackouts need to be better communicated in advance, the billing system and payment system needs to work seamlessly, and the leakage that happens through mal-governance at various levels of the system needs to be reduced. These are no small tasks. Appropriate use of ICT tools can catalyze many of the solutions to address these challenges.

Secondly, those that are not on the grid yet, require that the grid be expanded to provide them with electricity services. In the interim however, alternative renewable energy sources may be explored. Solar energy has been playing a commending role in this situation, covering nearly 2 million rural homes with solar home systems that support basic electricity needs of the households.

This report documents the context and current state of the sector to draw a better understanding of the key actors and their roles. Empirical data was collected with the recent developments in the sector. In line with the practice of innovation at pi Strategy Consulting, the study has incorporated ideas derived from secondary research and expert analysis in identifying potential improvement opportunities. Leading practices in other developing countries were also assessed to explore options for improvement of CRM in the sector.

A few specific recommendations are outlined in the report using short, medium and long-term lenses. The recommendations range from introducing or improving call centers to provide high quality and consistent customer service, to further expanding (scale, innovations) on the currently piloted pre-paid meters, to seriously considering the deployment of a private public partnership model for electricity distribution sector in Bangladesh.

However, to move from identification of challenges and potential solutions to implementation of some of the recommendations on the ground, a series of concerted efforts are required by a number of key stakeholder groups. A well thought-out process needs to be initiated to get the ball rolling. This report may be viewed as a critical first step in making the business case for that process.

BACKGROUND

Country Profile

People's Republic of Bangladesh, bordering the Bay of Bengal between Burma and India, is a unitary, independent and sovereign republic of South Asia. The President is the Head of the state and is elected by the members of parliament. However, the Prime Minister is the highest elected official of the country and holds more power than the President.

Bangladesh achieved its independence in 1971 fighting a long war of liberation for nine months against the Pakistani occupation army. After liberation, Bangladesh had to face various crises because of earlier exploitation during the Pakistan era as well as destruction of important infrastructure during the war. Within a small landmass of 143, 998 square kilometers Bangladesh is home to nearly 160 million inhabitants.

After many years of economic problems, Bangladesh has started to rebound with steady growth in recent years. Average GDP growth rate of recent years is above 6%. Improved status of women partly due to pioneering work in microcredit, foreign remittances from skilled and semi-skilled workers (around 6m), textile industry and agriculture have been the playmaker in prosperity of Bangladesh. It is no wonder that being a highly populated & underdeveloped country, Bangladesh is suffering from corruption in various level of society but progress, both economic and social, is outstanding. With its sustained growth in recent years, Bangladesh aspires to be a middle-income country by 2021.

Objective

This report outlines the current state of affairs of customer relationship management (CRM) for Bangladesh's electricity distribution sector. It also identifies some existing challenges and proposes a number of recommendations that may be explored.

The scope for this study is largely limited to the 'base of the pyramid' (BOP) market segment, predominantly in the urban areas and micro-entrepreneurs. Information and communication technologies (ICT) play a key role in this report, especially in terms of the recommendations proposed. This report focuses on the supply-side of the sector and explores the 'what' and 'how' of current CRM practices among major electricity distribution companies/providers.

Since the introduction of urban electricity in Dhaka in 1901 with the installation of a small generator at the famed Ahsan Manzil by Nabab Khaja Ahsanullah, the sector has come a long way. The electricity sector's evolution has encompassed the establishment of multiple electricity generation and distribution companies covering both urban and rural Bangladesh, and a centralized electricity regulatory authority. The considerable pressure from urbanization and migration into major cities, especially Dhaka, has led to severe demands on the sector. Frequent power outages still plague much of the country, although early signs of improvement of this situation are being observed very recently.

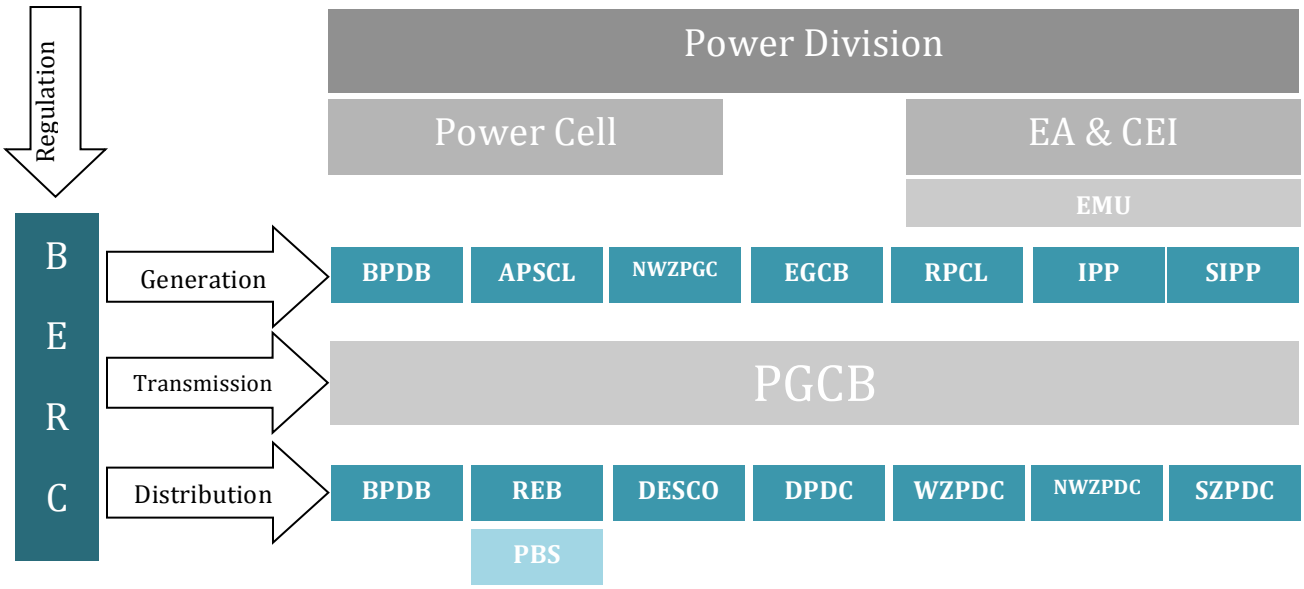
Two important trends deserve special attention at the outset. First, the rapidly expanding mobile telecom services throughout Bangladesh and the highly competitive mobile network operator (MNO) market have brought to forefront the importance of customer service. Over 50% of the population has access to a mobile phone. And many have first hand experiences with calling the helpline of an MNO, checking and reloading their airtime balance, and performing other account management services very easily. They are familiar with the value generated from improved CRM practices. This has created an expectation of similar services from other service providers, such as financial institutions and electricity providers. Therefore, a very strong latent demand exists for improvements in CRM services across various sectors in Bangladesh.

Second, the acute shortage of traditional electricity generation/distribution mechanisms, as well as a growing interest in green technology, has led to exploring alternative sources of power – most significantly in the form of solar energy. By the very nature of generation / distribution in the solar energy sector (decentralized), Bangladesh has seen a number of companies launch operations at scale in the last decade or so. Many of these companies are operating in a fairly competitive market segment, and recognize that CRM practices could potentially offer a competitive advantage to them.

pi Strategy Consulting believes that the combined effect of these two trends, along with longer term potential of privatization of the electricity distribution sector in the country, will lead to increasing demand for adoption of improved CRM practices in the electricity sector in Bangladesh. Therefore, this report provides a timely spotlight on this space by outlining the current state, identifying key challenges, and recommending strategies to initiate much-needed discourse on this topic.

SECTOR OVERVIEW

At present, there are around 13.5 million power connections in Bangladesh. Approximately, half of the total population has access to electricity. Per capita generation is 252 kWH which is still very low compared to other developing countries *(Pakistan 566.1 kWH in 2007, Sri Lanka 468.6 kWH in 2008, Bhutan 1922.4 kWH in 2009- source: NationMaster.com)*. The following diagram *(Figure-1)* illustrates the major actors in the power sector of the country.



(Source: Website of Ministry of Power, Energy and Mineral Resources)

FIGURE-1: ACTORS IN THE POWER SECTOR OF BANGLADESH

The Power Division of the Ministry of Power, Energy and Mineral Resources is the highest authority for electricity generation, transmission and distribution in Bangladesh. The Power Cell acts as a technical unit of the Power Division. It plays a pivotal role in reforming the private power generation, power tariff evaluation and establishing regulatory commissions. Inspecting installations, granting license for high tension and medium tension customers, issuing license to electrical contractors, engineers and electricians are some of the major responsibilities of the office of Electrical Advisor (EA) and Chief Electrical Inspector (CEI). Energy Monitoring Unit (EMU) is a sub unit under this office. The primary objective of EMU is to ensure efficient use of energy in industries and to induce energy conservation.

Bangladesh Energy Regulatory Commission (BERC) was established in 2003 as an independent and impartial regulatory commission for the energy sector, including electricity, gas and petroleum. BERC frames all rules and regulation to ensure transparency in the management, operation and tariff determination in the electricity sector. In the electricity sector, Power Division is the policy

maker and BERC is the regulator. BERC has its own budget and by law, it works independently. However, in reality, the decisions taken by BERC regarding tariff and other regulatory issues are often influenced by the Power Division and the Ministry.

Power Grid Company of Bangladesh (PGCB) is a public limited company, entrusted with the responsibility to operate the national power grid and to develop and expand the power grid with efficiency. The PGCB also handles the operation, maintenance and development of the transmission system for distribution of generated electricity.

BPDB (Bangladesh Power Development Board), established in 1972, has been the central authority for generating and distributing electricity in Bangladesh. At present, total generation capacity of Bangladesh is about 8,000 MW. Of this, a large portion (48%) is generated by power stations owned by BPDB. The remaining portion is generated by various private companies (e.g. EGCB, APSCL) under the concession of BPDB and reported through a consolidated BPDB reporting mechanism.

In the capital city Dhaka, there are two distributors: DESCO and DPDC (see figure-5). Dhaka Electric Supply Co. Ltd (DESCO) was established in 1996. Its distribution comprises 220 sq. km of the Dhaka city areas (see figure-2). Dhaka Power Distribution Company Ltd (DPDC) erstwhile DESA started its operations in 2008. DPDC's distribution area comprises 350 sq. km of Dhaka and Narayanganj. Both DESCO and DPDC also act as retailers within their prescribed territories, where they enjoy territorial monopolies.

BPDB used to cover majority of the urban areas in the country except the capital. But over last few years, newly formed companies such as WZPDC, NWZDC and SZPDC started their operation in some of the BDPB areas (see figure-3). At present, there are seven active distributors in the country. Three more distribution companies are getting ready to launch within the next few years.

The following table highlights the present geographic coverage for each of the distributors.

Name of the Distributors	Year of Launch	Distribution Zone
BPDB	1972	North-East part of the country.
REB	1977	Rural areas in 61 districts. (see figure-4)
DESCO	1996	Mirpur, Pallabi, Kafrul, Kalyanpur, Cantonment, Gulshan, Banani, Uttara, Uttarkhan, Dakkhinkhan, Badda, Baridhara and Tangi.
DPDC	2008	Dhaka and Narayanganj.
WZPDC	2005	21 districts of Khulna and Barisal Division and greater Faridpur district.
NWZPDC	2005	Entire Rajshahi Division.
SZPDC	2008	Southern part of the country.

(Source: Website of Distributors)

FIGURE-2: DISTRIBUTION COMPANIES AND THEIR ASSIGNED ZONES IN BANGLADESH

It must be noted that where there appears to be overlap of coverage primarily between REB and other companies (see figure-3 and figure 4), this in fact is not the case. The *rural* areas within a district are served by REB, while the *urban* areas within the same district are served by others.

The following maps illustrate the country-wide distribution scenario in Bangladesh.

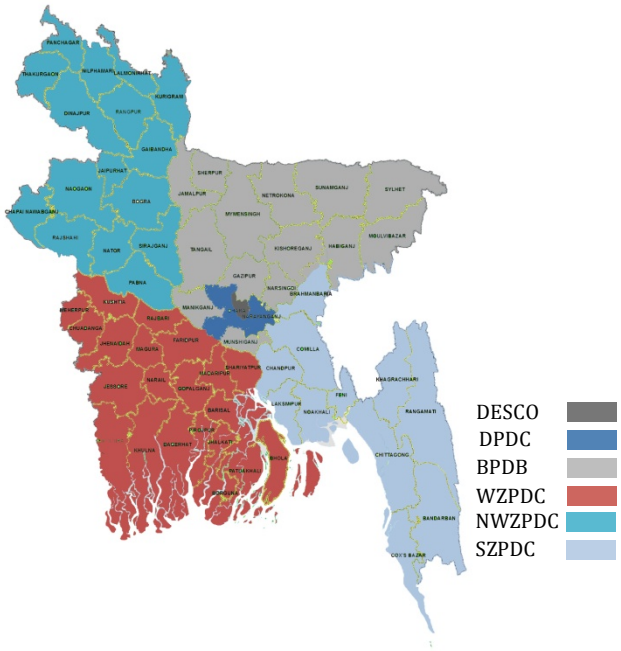


FIGURE-3: COUNTRY-WIDE DISTRIBUTION MAP (EXCLUDING THE COVERAGE OF REB)

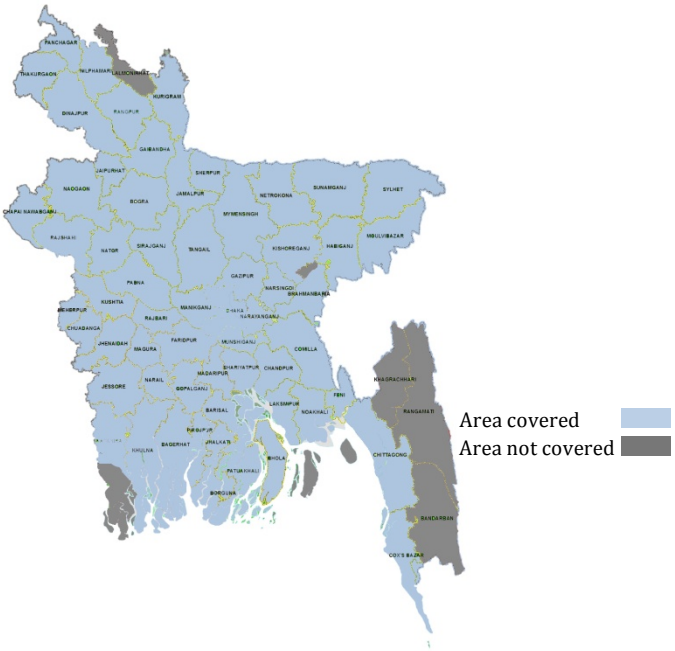
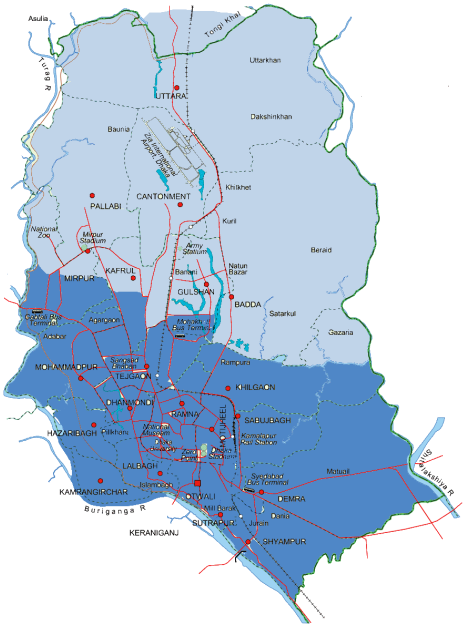


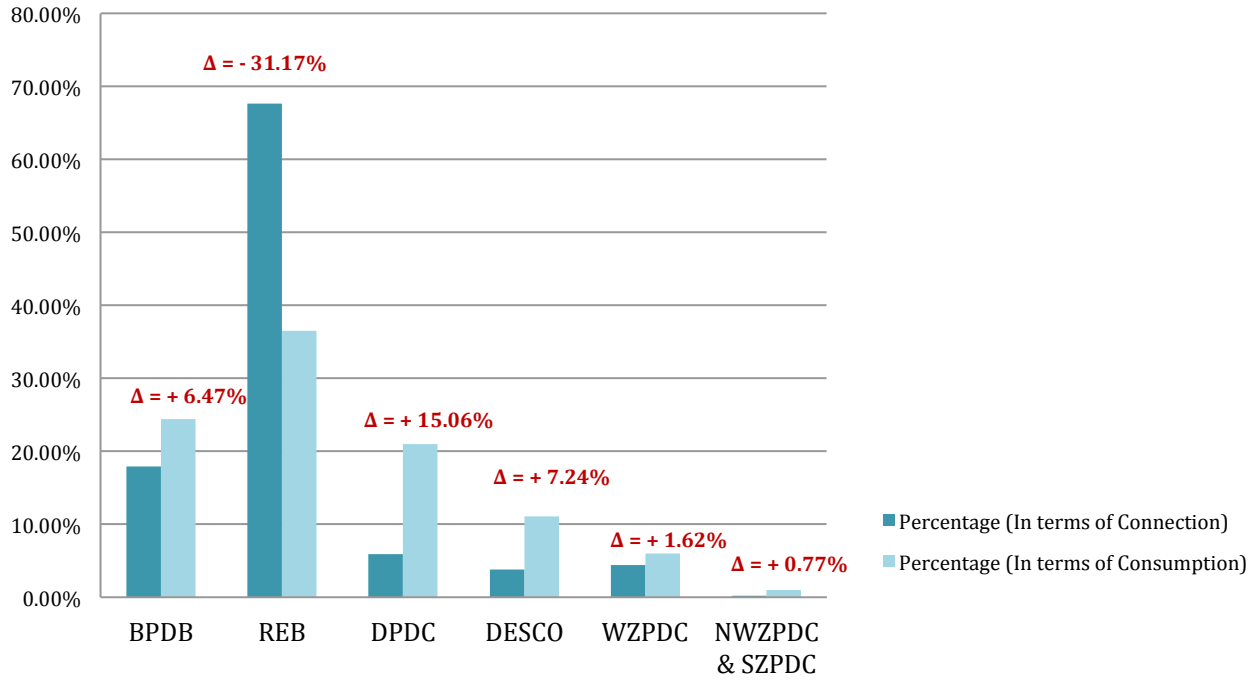
FIGURE-4: DISTRIBUTION MAP OF REB (REB ONLY COVERS RURAL AREAS)



(Source: Website of Distributors)

FIGURE-5: DISTRIBUTION MAP IN DHAKA

Figure-6 shows the market share of each of the players in the market. REB leads the distribution sector both in terms of the number of connections (around 68%) and consumption (around 36%). However, the consumption rate is higher in mostly urban areas where DESCO, DPDC, BPDB are the major distributors. For instance, DESCO distributes around 11% of total power consumed through less than 4% of total connections (differences are shown in figure-6 with delta signs).



(Source: Website of Distributors)

FIGURE-6: DISTRIBUTOR WISE CONNECTION AND CONSUMPTION

The acute shortage of traditional electricity generation/distribution mechanisms has led to exploring alternative sources of power, most significantly in the form of solar energy, primarily focusing on off-grid areas of the country. The renewable energy policy of Bangladesh set the target to meet 5% of the country's energy demand through green energy by 2015 and 10% by 2015. However, the share of renewable energy sector in power generation is still very low today - around 0.5%. More than 1.7 million Solar Home Systems (SHSs) have already been installed. At present, 30 organizations (mostly NGOs) are active in this sector. Customers have the option to choose a distributor since there are multiple players in the same area. CRM is likely to play an important role for customer acquisition and retention. Many customers are also provided with soft loans for installing SHSs. When solar companies visit customers to collect monthly loan installments, they check SHSs and provide required customer services at no cost. Bright Green Energy Foundation (BGEF), one of the solar companies, took an innovative approach to meet customer service demands. They established training centers in each of their service zones where a selected customer (typically a female) gets trained to troubleshoot basic problems with SHSs. She addresses service problems in her area, and if required, gets further support from the zone office.

LEADING CRM PRACTICES IN OTHER COUNTRIES

There are many possible ways to address the emerging challenges. Leading practices around the world have been explored as a part of the analysis. However, it is to be noted that, many of these solutions may not work as well as they worked in other geographies due to different contextual backgrounds. To match the context of Bangladesh to the extent possible, leading practices from South Asian region are mostly explored.

In the Electricity Act 2003 of India[1], open access on common carrier principle is allowed on transmission and distribution networks. Provision for parallel distribution networks in same geography is made and as a consequence private players are facing an enormous task of satisfying the ever-unsatisfied customers[2]. Before that, Indian power sector had limited focus on CRM practices. Some of the initiatives regarding improving CRM practices in the power sector of India are as follows[3]:

- **Customer Contact Centers:** Provides a complete spectrum of customer services across the customer life cycle such as application, connection, dispute resolution, re-connection, information etc. Also provides "outbound" services such as notifying customers of planned outages and making follow up calls to newly connected customers.

- **Staff at Units and Sub-Unit Level:** Adequate & experienced staff is provided at every unit and sub-unit level. Every customer is linked to a person who is accountable for their service be it the manager at the sub-unit level or a Key Customer Executive for one of the large customers.

- **Standardized Value Chain & Processes:** The value chain and processes are defined for the spectrums of service interactions with customer and associated people and departments. The fundamental underlying principle for all of these processes is that all routine work should be automated and/or handled centrally.

- **Niche Technologies:** Technologies provide innovative solutions to parts of private power companies' operations that face particular and unique challenges in the Indian environment. These include Geographic Information Systems; Meter reading via remote access or hand held data loggers; Prepayment metering technology; and the use of cell phone Short Message Service (SMS) to notify customers of planned outages and also linemen for any complaint to be resolved thereof.

[1] http://powermin.nic.in/acts_notification/electricity_act2003/distribution_electricity.htm
[2] http://www.mercindia.org.in/pdf/Order%2058%2042/Final_Discussion_Paper_Parallel_Licensing_04_05_10.pdf
[3] http://www.energypulse.net/centers/article/article_display.cfm?a_id=1017

In Pakistan[4], public communication channels are widely being used to keep customers informed about power issues. These include newspaper advertisements on safety, theft, energy conservation and monthly scorecards. To notify on special issues, such as power shutdowns, newsletters are being distributed among the people.

Since a large portion of the complaints received from customers are about billing, deploying pre-payment meters could be very useful. In Nigeria[5], electric power distribution companies are replacing post-payment meters with energy pre-payment meters to ensure 100% bill collection; reduce staff overheads, help determine actual demand of energy. In Thailand, some apartment owners use pre-payment meters to on-sell electricity to tenants. Pre-payment meters also eliminate the complaints of unfair billing to a large extent.

Escom[6], South Africa's largest power distributor has linked all of their 24/7 call centers so that if a regional site experiences a peak, the call can be transferred to a nearby regional call center. Also, in case of excess waiting times, the calls are automatically rerouted to another site where agents are available to assist. South African call centers allow customers to interact in English and several other local languages.

EXISTING PRACTICES IN CONSUMER LIFE CYCLE IN BANGLADESH

To better understand the quality of current CRM practices in the power sector of Bangladesh, a standard customer life cycle model (see figure-7) has been utilized.

(Source: QCI customer Management Tool)

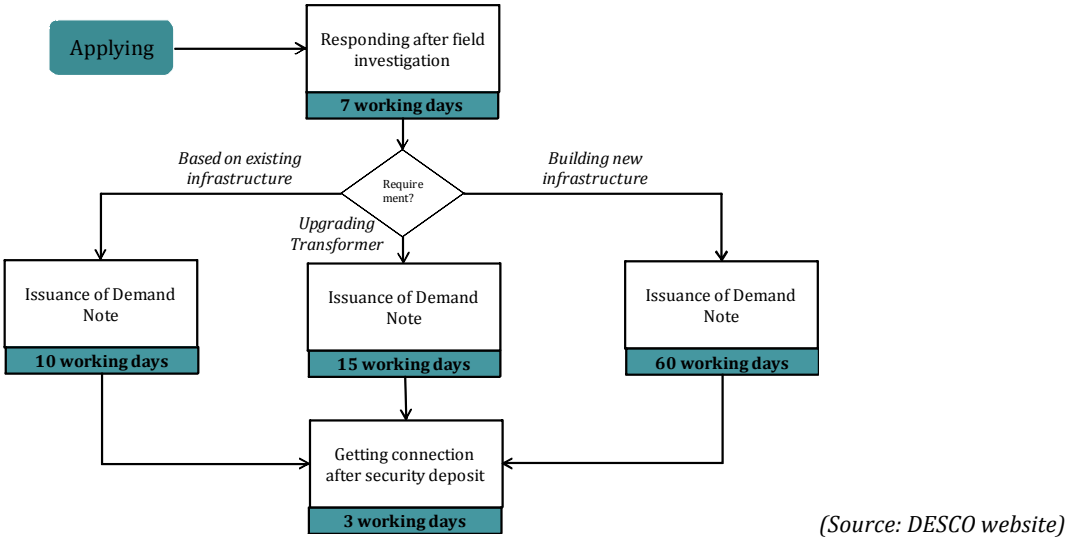
FIGURE-7: CUSTOMER LIFE CYCLE

[4] http://www.pc.gov.pk/hot%20links/PSR/5th%20OCT/2-KESC%20Presentation.pdf
[5] http://www.thenigerianvoice.com/nvnews/95993/1/benefits-of-prepaid-meter.html
[6] http://www.eskom.co.za/c/article/153/how-to-contact-us-for-service/

In Bangladesh, distribution of electricity is segmented across different zones among the distribution companies and a customer does not get the option to choose a distributor. That results in zero competition in the distribution sector at a geographic level. Because electricity is viewed as a necessity, even in the BOP segment of the population, targeting potential customers (and associated activities such as marketing) by a distributor is not something what is seen in practice. Rather, customers are found waiting in long queues to get an electricity connection.

'Enquiry Management' services largely vary from distributor to distributor. However, in most cases, customers learn about the steps to get a connection by making calls or browsing the designated websites. Two distributors – NWZPDC and SZPDC – are yet to launch their official websites. Hence, customers from the distribution zones of NWZPDC and SZPDC are left with no other choice but to make phone calls in case of any enquiry. The application form can be obtained from the customer service center or zonal office and also from the websites. The form is available in Bangla, the native language. Given the fact that access to internet is still limited in most of the rural areas of the country, customers under the distribution of REB are less likely to get the application form from the website even though it has been made available online. This customer segment mostly prefers to obtain forms by directly visiting the customer service centers or zonal offices. Customers are often assisted with the application form filling-in process if they visit the offices of the distributors. However, such assistance through phone or email is rare. The pricing structure for available categories (i.e. residential, commercial, agricultural) is clearly mentioned in the form and also available in the guidelines.

The time required to obtain a new connection is not clearly defined or articulated by all distributors. It largely depends on the type of the connection, and the state of existing electricity infrastructure at the customer's premises. For instance, DESCO requires 20 to 70 working days to provide a low-tension connection *(See figure - 8)*.



(Source: DESCO website)

FIGURE-8: TIME REQUIREMENT TO GIVE A NEW, 'LOW TENSION' CONNECTION BY DESCO

DECSO recently launched online application service through which one can get new connection within 21 days. But the time required for providing industrial connection is significantly longer. A recent report by IFC *'Doing Business: 2013'* says, in Bangladesh, it takes 406 days to get connection for an SME. If a customer needs to change the type of his connection, she needs to communicate with customer service center or zonal offices. The criteria set for different categories of business customers are specific and clear. The tariff for small industry is higher than tariff for the residential category. From the supply side perspective, there are challenges for BOP and BOP SME customers; for instance, meeting KYC requirements properly is almost always difficult for this group. However, in reality, what is observed is that consumers from BOP and BOP SME do not directly apply for the connection themselves from the distributor. Instead, they get the connection from a local landlord who owns the mother meter. The required time to complete the process is not fixed and largely depends on the customer's location and her past billing history, if any.

For any type of complaints from service breakdowns to voltage fluctuations, customers can call help lines or visit the designated customer service center. Only DESCO offers a 24x7call center. In customer service center, also known as 'One Point Service Center', a customer is provided with a serial number for in-person visits. However, in case of phone calls no reference number is provided. According to the serial number provided, she is called to a counter where she can lodge a complaint. To better address and trace the grievance, a reference number is provided. The three most common grievances are[7]: (i) disconnections (resulting from overdue bills or unknown reasons); (ii) bills not delivered/received on time; and (iii) following up on delayed services (e.g. new connection activation). Time required to resolving a complaint varies. However, DESCO provides a list of services along with the respective time requirement to solve an issue (see figure-9).

Description	Req. Working days
Queries for not getting monthly Bill	7
Bill re-print	Instant (no charges)
Correcting the amount in bill	7
Removing from the defaulter list after paying due bill	7
Not receiving acknowledgement of bill payment	5
Re-connection after getting due payment within 15 days of cut off (regular case)	1
Re-connection after getting due payment (cut off due to illegal usage)	3
Re-connection after malfunctioning of the meter (service dropped, burnt, damaged, theft)	2
Changing the name of customer in existing connection	5
Testing and authorizing meters (for connections up to 50KW)	7
Testing and authorizing meters (for connections 51KW and higher)	15
Changing Tariff	5
Withdrawal of security deposit after temporary connection	14

(Source: DESCO website)

FIGURE-9: LIST OF SERVICES WITH TIME REQUIREMENT PROVIDED BY DESCO

[7] Based on anecdotal evidence from customers present at DESCO and DPDC offices during site visits. No formal reports or statistics on this subject were made available from the distribution companies.

Distributors have brochures/leaflets on different services they are offering to the customers. Anyone can get a good sense of the customer's rights and obligations from these publications. Some of these brochures are available online as well. Billing month is not necessarily the calendar month. Rather it is decided based on the meter reading schedule. Usually, the schedule remains same for a particular customer and she is kept informed. In case of any line repairing or unusual blackouts, the residents are informed in advance, mostly through public announcements (often made through microphones from a rickshaw going through the area) and in some case, through newspapers. The bill is issued in paper format and contains detailed breakdown of fixed charge, usage charge, taxes and surcharges. Meter reading is done by a meter reader in person. Other options like SMS and email in issuing bills are yet to be explored. DESCO has initiated a plan to introduce smart meters to ease the billing process. Meter reading could be monitored centrally through GPRS in smart meters. But the work is still in a planning stage.

Customers have a number of options to pay bills both in cash and non-cash formats. One can pay bill through designated bank branches, customer service centers, mobile phones and the internet. First three options are available for any distributors, whereas DESCO and REB also offer internet bill payment service. Customer gets paper-receipts against the payment. In case of online payment, they receive e-mail receipts. In case of mobile payment, they receive SMS receipts.

All distributors, except REB, provide load-shedding forecasts on their websites. With the help of the service, one can get a clear picture of the probable number of hours of load-shedding in their respective areas over the following week. Although it is a potentially useful service during summer when load-shedding is high, it is observed that the service often provides inaccurate forecasts. The call centers of certain companies (e.g. DESCO), when contacted, were found to provide more accurate forecasting than the websites. Distribution companies conduct awareness campaigns on energy savings by advertising in newspapers, televisions, websites and billboards. So far, none of the distributors was found conducting any mass survey to collect usage data and performance analysis thereafter as a part of getting to know customers. For illegal connection and usage, tampering meter readings or any such issues, distributors can take legal actions according to the Electricity Act of Bangladesh. For illegal usage there is also a provision of issuing penal bills, which is three times the actual rate.

Pre-paid Meters

In order to curb unfair billing both DESCO and BPDB have piloted pre-paid meter in their service areas. DESCO has installed more than 11,000 pre-paid meters in Uttara, Dhaka, thus far.

DESCO's pre-paid meter is smart card based and developed by Bangladesh University of Engineering and Technology (BUET). DESCO has two vending stations to provide the recharge service in their zone. The vending stations are manned by people, who assist customers with the reload function. The electronic display of the meter shows the current balance, date, and tariff rate. There are also LED indicators to warn when balance gets low.

In case of zero balance there is a provision for negative balance period. These periods usually comprise of those hours which lie outside the working hours of the vending station. Also, covered in negative credit period are public holidays and weekends. The rationale behind providing friendly credit period is that the electricity supply to a consumer should not be disconnected during a period in which he cannot recharge his smart card and get his supply restored. Hence, in case the credit in the account of a consumer is exhausted at 10:00 PM on a particular day, his electricity will not get cut-off until noon the subsequent working day and therefore he will have sufficient time to recharge his smart card. The pre-paid meters are provided with the ability of connecting and disconnecting the supply based on the credit amount available in the meter. In addition to cutting off the supply when the credit in a consumer account is below a threshold, the meter can also be disconnected whenever the electricity load of a consumer exceeds the sanctioned load (during the pilot, this feature is turned off). Under the supervision of BUET a production unit of pre-paid meter has been set-up by DESCO with the aim of mass production of pre-paid meter. This will allow other distributor companies to purchase pre-paid meter locally in the near future.

On the other hand BPDB has set up more than 57,000 pre-paid meters as a pilot project funded by the Federal Republic of Germany in the form of a grant from KfW development bank. They plan to install another 280,000 pre-paid meters in two phases. Unlike DESCO, BPDB has been procuring these pre-paid meters from overseas, mainly Malaysia. There are primarily two types of prepaid meters installed by BPDB so far. One is Smart card based (see figure - 10) and another is Keypad based (see figure - 11). BPDB is offering customer services to pre-paid users through their existing networks of customer service points.

FIGURE-10: SMART CARD BASED PRE-PAID METER

FIGURE-11: KEYPAD BASED PRE-PAID METER

During the initial stage, it was mandatory to use pre-paid meters across all pilot locations of DESCO. However, currently, pre-paid meter is offered as a choice to consumers living in Uttara, Dhaka (the pre-paid meter pilot locality). But, we do not know the situation in BPDB areas (since BPDB provides services outside Dhaka). Most of the consumers in the pre-paid meter zone under DESCO are typically not the BOP segment of our population. The pilot was funded by DESCO. Currently, there are only two top-up locations owned and staffed by DESCO. Private vendors cannot sell electricity. We are not aware of research done to assess the change in consumption behavior.

Besides, DESCO, in a very small scale though, has experimented remote metering system enabling central monitoring of meter data through GPRS. But the initiative did not advance to next step.

Following chart (figure-12) summarizes some of the major customer services provided by the distribution companies.

Service Name	BPDB	REB	DESCO	DPDC	WZPDC	NWZPDC	SZPDC
Online Application		√	√	√		N/A	N/A
Online bill payment		√	√			N/A	N/A
Mobile bill Payment[8]	√	√	√	√	√	N/A	N/A
Load Shedding Forecasting	√		√	√	√	N/A	N/A
Help Line	√	√	√	√	√	N/A	N/A
24/7 Call Center			√			N/A	N/A
Customer Service Center	√	√	√	√	√	N/A	N/A
SMS notification[9]			√			N/A	N/A
Prepaid meter	√		√			N/A	N/A

(Source: Website of Distributors; Interviews; N/A = Not Available)

FIGURE-12: LIST OF MAJOR CUSTOMER SERVICES

Since there is a single distributor for a particular region, customers don't really have the option to switch distributing companies. Therefore, wining back a customer is not relevant in Bangladesh.

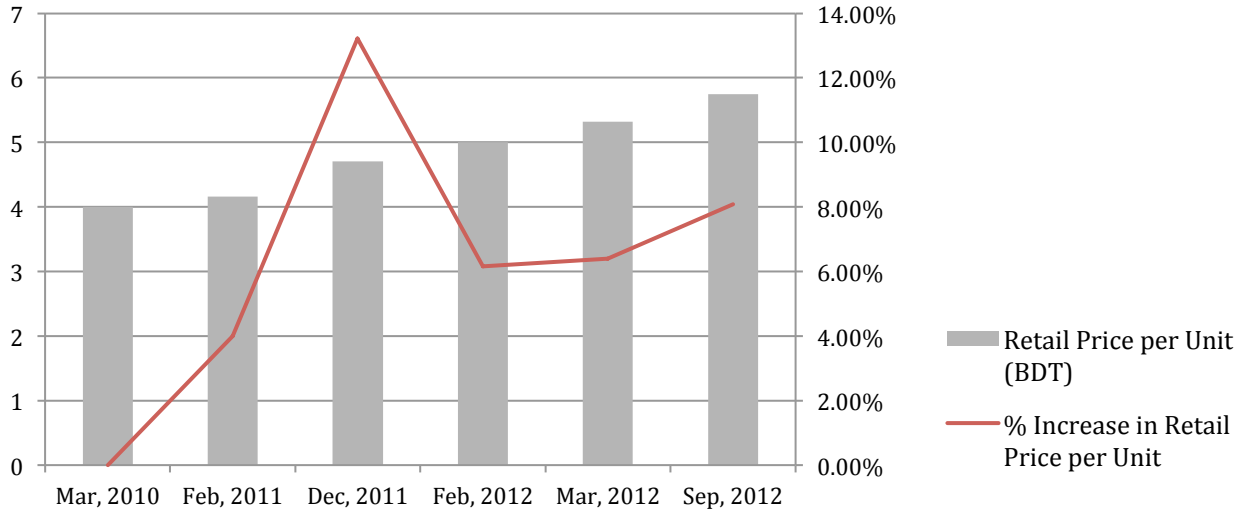
Customer experience in urban BOP segment is somewhat different from the conventional connection. Most of the end users who live as tenants in slum areas are not enlisted customers of distribution companies. Instead, they pay a lump sum amount per month to the landlord based on the number electrical appliances they are using, such as: fan, TV etc. Typically BDT100 is charged per appliance per month. The owner, on the other hand, is a real customer of the distribution company and pays bills based on her meter reading. Similar practices have been observed in case of micro-entrepreneurs in the BOP segment as well.

[8] It does not involve direct transfer of mobile talk time into the utility's account. Rather, before paying the bill, a consumer needs to open a mobile wallet and then cash-in from designated bill-pay shops of MNOs who are offering the service. The take-up is higher in middle and higher income groups in urban areas.

[9] SMS notification of bill receipt, encouraging use of energy efficient products, unusual blackout announcements, etc.

CHALLENGES

One of the largest concerns in the power sector observed over the last few years in Bangladesh is the tariff hike. This single issue has consumed the attention of most customers. BERC has raised electricity tariff four times within a year (see Figure-13). At the end of 2012, a regular customer is paying around 50% higher prices than what she used to pay in 2011. It has a direct adverse impact on customer satisfaction level. As found in different interviews (see interview list in Appendix-A), customers are found less concerned on different customer services because of such exhaustive tariff hikes. The price increased for two primary reasons: increased cost in production (higher price of oil and gas) and lowering of subsidy by the government (stipulated conditions by donors).



(Source: Average values as reported by a number of national daily newspapers)

FIGURE-13: TARIFF HIKE IN RECENT YEARS

While Customer Relationship Management is a tool of great importance to obtain competitive edge over other competitors, being the sole player in a particular geography (in effect a monopoly) has not been providing enough incentives to the distributors to better serve the customers and keep them satisfied. The regulator has not yet been involved in creating artificial competition.

Despite some recent initiatives by the distributors to better serve the customers by introducing online/mobile services, most of the customer services still remain poor due to weak designing of such services. For instance, on the DESCO website, anyone can check the consumption and billing history of DESCO customers if she knows the account number of a customer. As there is no password verification/authentication in the system, this poses a serious threat to privacy.

The level of human interaction and paper-based processes throughout the customer management system has been hindering the work process and also creating scope for informal payments. To get

a desired service, in most of the cases, customers require clearances from multiple actors, which contribute to lengthening the process and creating grounds for mal-governance.

According to the findings from interviews with distributors and industry experts, customers are often uninformed of their rights. As long as customers remain unaware of their rights, they will not demand better services. The Consumers Association of Bangladesh (CAB) is the only organization to convey people's voice but, unfortunately, they have limited their activities to overcome the bigger challenges such as price hikes rather than addressing the Achilles' heels of current CRM practices.

RECOMMENDATIONS

CRM is an integrated approach to identifying, acquiring, and retaining customers. Its goal is to make it easy for customers to do business with the organization any way they want at any time, through any channel, in any language or currency and to make customers feel that they are dealing with a single, unified organization that recognizes them at every touch point. Recommendations were developed keeping this broader goal in mind.

The recommendations made in this report are categorized into three broad clusters. The clusters, the percentage of recommendations falling within that cluster, and the description of the clusters are provided below.

- Cluster-A (40%)
- Cluster-B (40%)
- Cluster-C (20%)

Cluster-A comprises of recommendations that have been well-tested globally and successfully implemented at large scale. Hence, the recommendations within this cluster are based on most evolved set of due diligence.

Cluster-B comprises of recommendations that have been well-tested and piloted at various scales, but they have not been deployed at large scale just yet.

And lastly, Cluster-C comprises of recommendations that are neither tested fully nor implemented at large scale in the past. However, based on the secondary research and findings from the interviews with industry experts, these have significant potential for piloting and eventually for long-term implementation.

Cluster-A Recommendations:

1. Each of the distributors should have 24x7, dedicated Call Centers. At present only one of the seven distributors (which provides only 4% of total connections) provides such service and the quality of its service has been found to be below par.

2. Given that electricity is deemed a necessity in Bangladesh and people from variety of income groups and education levels are electricity consumers, the communication tool and method adopted by call centers need to be tailored to the extent possible. For instance, an electricity customer who has low literacy level and lives in a rural community is less likely to be familiar with IVR and standard dialect, be it in English or Bangla (native language). To better meet her demand, call centers need to respond with more human interaction instead of IVR and preferably with greetings through respective local dialects.

3. Complaints or issues raised by a customer through call centers or customer service centers should be recorded and handled by proper grievance tracking system with specific time line.

That way it could be treated as a good KPI tool for assessing the quality of services by distributors.

4. With the rapid market penetration of MNOs, number of internet users in the country has increased over the last few years. At present, estimated number of internet users in the country is more than 10 million and this presents a good platform to electricity distributors for staying in touch with a large pool of their consumers online. Each of the distributors should have interactive web sites offering online services, such as downloading of necessary forms, usage and payment history information, options for online application and bill payment, load shedding forecasting etc. It may be noted here, two distributors in Bangladesh, NWZDC and SZPDC, are yet to launch their official websites.

5. When providing access to the online data, for example personal billing and usage history, proper security and privacy measures need to be incorporated. At present, one of the distributors provide access to the personal usage and billing history of a customer without two factor verification, allowing anyone to pick up a copy of the electricity bill and obtaining personal usage and billing history information on that customer.

6. From the distributor's perspective, given the large subscription base of MNOs, perhaps, the best vehicle to reach any category of customer in Bangladesh is mobile phone. SMS based notifications and status updates of any query or complaint could be considered as an efficient tool of customer relationship management. But an accurate linking of mobile phone numbers with the meter numbers is a required first step in this effort.

7. At present, majority of the distributors maintain their own MIS and database system to record data in a very general format. CRM focused software (i.e. Sybase, SAP, and Oracle) could be leveraged or developed to streamline the customer support and services.

8. Given the existing power crisis in the country, the Government may consider limiting their involvement in the electricity sector to transmission, regulation, monopoly prevention, and consumer protection activities, and allow PPP in the distribution sector. This can eventually lead to a competitive market in the distribution sector, clearing the path towards better customer experience throughout the electricity distribution life cycle.

Cluster-B Recommendations:

9. The pre-paid metering system should be scaled up. The three most important concerns that can be addressed if this is done right are:
    a. In Bangladesh, meter tampering has been found to be a common scenario where meter readers usually play the lead role. Pre-paid metering could be an efficient solution to bypass the role of meter readers and hence, reduce the scope of corruption.

b. Issues such as meter bypassing could be traced more effectively and efficiently by monitoring the usage pattern of consumers through pre-paid meters.
c. Since the billing would be done on pre-paid basis it will considerably shorten the list of defaulters in the system and make the payment collection process redundant.

10. For purchasing electricity in pre-paid metering system, CTS (Currency Transfer System) should be selected as the better option because UTS (Unit transfer System) is inappropriate for Bangladesh where the tariff rate has multiple slabs[10].

11. As an alternative to the main grid power supply, renewable energy could be considered for large scale implementation for three key reasons:
    a. Regulatory bodies in Bangladesh are strongly supportive of the manufacturing and deployment of renewable power systems.
    b. The grid supply has already been found insufficient to meet the existing demand across the country.
    c. Successful manifestations of solar power have been observed within the country over the last 10 years. According to IDCOL (a government owned Investment Company) the total capacity of solar energy based installations in Bangladesh is about 65 MW through the systems installed in the off-grid areas of the country under IDCOL Solar Energy Program. This amount is significant if we consider the growth metrics for new SHSs.

12. To ensure better customer service, be it technical or operational, a post of 'Tag Officer' can be introduced for a particular zone. Each customer will be attached to a tag officer from the very beginning of the customer life cycle and customer will call him first for any kind of service or troubleshooting.

Cluster-C Recommendations:

13. Central monitoring of electricity usage could be possible by incorporating a SIM in the meter. It will simplify the audit function and make it more efficient.

14. Once a SIM is placed in the pre-paid meter for remote monitoring, the platform can be leveraged for many other add-ons. For instance, if the regulatory bodies of electricity and telecom sector both join hands to provide the service, there will be immense opportunities of improving the bill payment options. Part of the balance in the specific SIM could be earmarked as the balance of the pre-paid electricity meter and a customer could easily recharge his meter by simply topping-up his SIM and allocating the required funds into the electricity meter.

[10] In CTS, a consumer purchases a certain amount of electricity with currency from vending stations (e.g. BDT100 of electricity), whereas in UTS, a consumer purchases a certain amount of electricity in KWh (e.g. 5KWh of electricity). So the basic difference is where the conversion between electricity unit and currency takes place. In CTS, the conversion happens at the pre-paid meter end, and in UTS, it happens at the vending station end.

15. For keypad based pre-paid meter users, scratch cards can be introduced to buy electricity. It will have following advantages over the smart card system:
    a. Customer can buy it at his suitable time and location.
    b. Once the balance is entered, he does not need to preserve it like smart card.

Figure-14 shows the clustered recommendations placed in a 3 by 3 matrix according to implementation timeframe and expected impact.

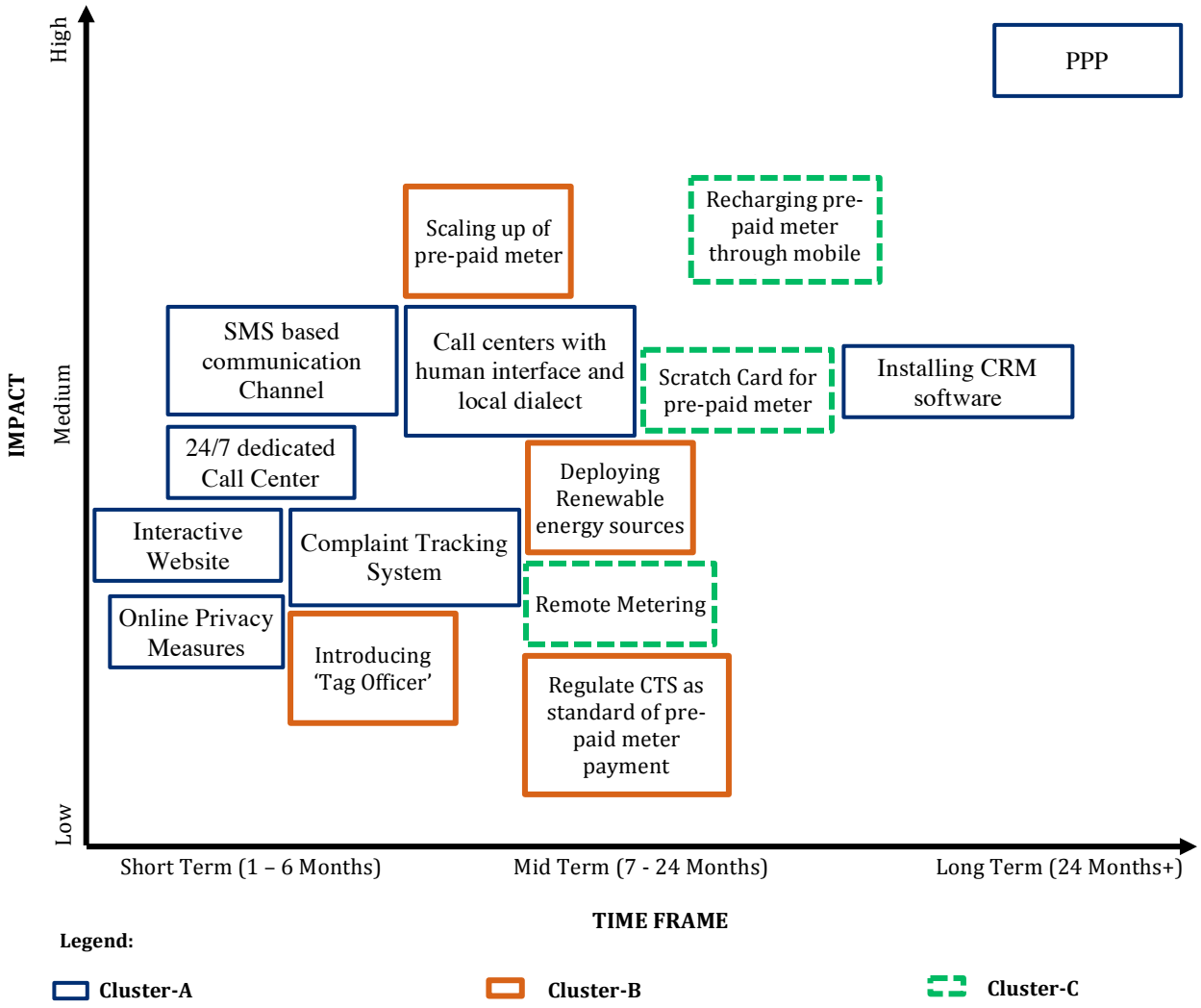


FIGURE-14: CLUSTERED RECOMMENDATIONS

Recommendations discussed so far are somewhat audience independent. However, following section broadly categorizes these messages focusing on three main audiences: Distributors, Regulators and International Donors.

Distributors

Majority of the recommendations except number-10, the one with CTS, directly go to the distributors' table. Initiatives like 24x7 dedicated call center, interactive websites, SMS based communication channel, scaling up of pre-paid meters are primarily distributor's choice.

Regulators

The regulatory body has a big role to play towards improving customer service. Especially in the case of scaling up of pre-paid meters and renewable energy, regulators can incentivize relevant projects/initiatives of various distributors. For pre-paid meter payments, CTS should be set as standard mechanism by regulation. Despite market monopolies, regulator can set some benchmarks assessing the customer centricity and quality of services of existing distributors followed by some reward system and thus can exhort an implicit competition in the distribution market. 24x7 dedicated call center with more human interface, grievance tracking with proper time management, number of pre-paid meters installed, and quality of services based on customer review could contribute to set such benchmarks. Also one of the major initiatives could be providing a PPP friendly environment in this sector that will eventually lead to healthy competition and ensure better customer experience.

International Donors

From the international donor's perspective, some of the Cluster-C recommendations such as remote metering, launching scratch cards or SIM based recharging add-ons may be quite appropriate interventions for financial support primarily for two reasons:

- There is already an established platform of pre-paid meter user base (around 60,000) in the country from two major distributors that could be leveraged in piloting some of the suggested recommendation in smaller scale.
- Such experiments could be extremely helpful in generating significant learnings and insights for further implementation both in Bangladesh and in other regions of the world.

CONCLUDING REMARKS

From the day the very first electricity-powered light bulb was switched on in Bangladesh in 1901 to the current time, the country and the sector have witnessed significant progress. And yet, 111 years on, nearly half the population is still not connected to the grid. And even those that are, face a number of challenges such as frequent and unpredictable power outages during the warmer months, high tariffs, and inadequate customer service from the electricity distributors.

But the electricity sector in Bangladesh, much like the country itself, is a story of encouraging progress amidst tough circumstances. Just as the country continues to surprise the world with its consistent 5-6% growth over the last decade or two amidst political turmoil and natural disasters at the local level and economic slowdown at the global level, the electricity sector has seen rapid deployment of renewable energy systems to reach the off-grid population and piloted innovative solutions like home-grown pre-paid meters.

The electricity sector in Bangladesh is at the crossroads. Doing more of the same is not going to yield the supply and distribution of electricity the country so urgently needs to continue its growth journey. Fundamental shifts in mindset, disruptive innovations in product and service design and delivery, and above all, an unwavering commitment by the leadership to improve the energy situation in the country is much needed.

The analysis and recommendations put forward in this report are intended to make a meaningful contribution towards this journey.

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Official website of REB: www.reb.gov.bd

Official website of WZPDCL: www.wzpdcl.org.bd

Official website of Dhaka WASA: www.dwasa.org.bd

APPENDICES

APPENDIX – A: List of Interviews

Organization	Name	Designation
BERC	Md. Delwar Hossain	Member (Power)
CAB	Quazi Faruque	President
Daffodil University	Shamsul Alam	Professor
BUET	Dr. Md. Liakot Ali	Professor, IICT
	Md. Rezaul Hoque Akanda	Principal Instrument Engineer, IICT
DESCO	A. B. M. Nazibor Rahman	Manager (Monitoring Cell)
	Md. Khalid Umar Nizami	Deputy Manager
BGEF	Dipal C. Barua	Founder and Chairman
BPDB	Saiful Hasan Chowdhury	Director
DPDC	A. M. Mizanur Rahman	Director (operation)
	Nur Kamrunnahar	Manager (PR)
REB	Sheikh Noor Nabi Jennah	Assistant General Manager (Administration)