

# **BUSINESS PROCESS REENGINEERING IN POWER SECTOR**

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# COVERAGE

**Overview of BPR**

**Implementing BPR Strategy**

**Role of I.T in BPR**

**Few Examples of BPR in other industries**

**Examples of BPR in Power Distribution**

# What is Business Process and its Re-engineering?

## What is a Business Process?

A group of logically related tasks that use the firm's resources to provide customer-oriented results in support of the organization's objectives

## What is Business Process Re-engineering?

Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.  
– Hammer & Champy, 1993

# KEY WORDS

- **Fundamental**
  - Why do we do what we do?
  - Ignore what is and concentrate on what should be.
- **Radical**
  - Business re-invention vs. business improvement.
  - 10% improvement or 10 fold advancement?
- **Dramatic**
  - “Re engineering should be brought in when a need exists for heavy blasting.
  - Companies in deep trouble.
  - Companies that see trouble coming.

# BPR IS NOT

- Automation
- Process Rationalization
- Downsizing
- Continuous Improvement
- Outsourcing

# BPR vs PROCESS RATIONALIZATION

## **Process Rationalization**

*Incremental Change*

*Process Focus*

*Assume Attitudes & Behaviors*

*Management Focus*

*Various Simultaneous Projects*

## **Process Reengineering**

*Radical Transformation*

*Vision Focus*

*Change Attitudes & Behaviors*

*Director Focus*

*Limited Number of Projects*

# BPR vs CONTINUOUS IMPROVEMENT

## Continuous Improvement

*Incremental Change*

*People Focus*

*Low Investment*

*Improve Existing*

*Work Unit Driven*

## Process Reengineering

*Radical Transformation*

*People & Technology Focus*

*High Investment*

*Rebuild*

*Champion Driven*

# NEED FOR RE-ENGINEERING

## WHY RE-ENGINEER?

- **Availability of Technology**
  - Speed
  - Sophistication
  - Correctness
- **Competition**
  - Local
  - Global
- **Customer Demands**
  - expect us to know everything
  - to make the right decisions
  - to do it right now
  - to do it with less resources
  - to make no mistakes
  - expect to be fully informed

## WHY ORGANISATIONS DO NOT RE-ENGINEER?

- Complacency
- Commitment to Existing Process
- Resistance to Change
- New Developments
- Fear of Unknown and Failure
- Cost of Change



## PERFORMANCE PARAMETERS

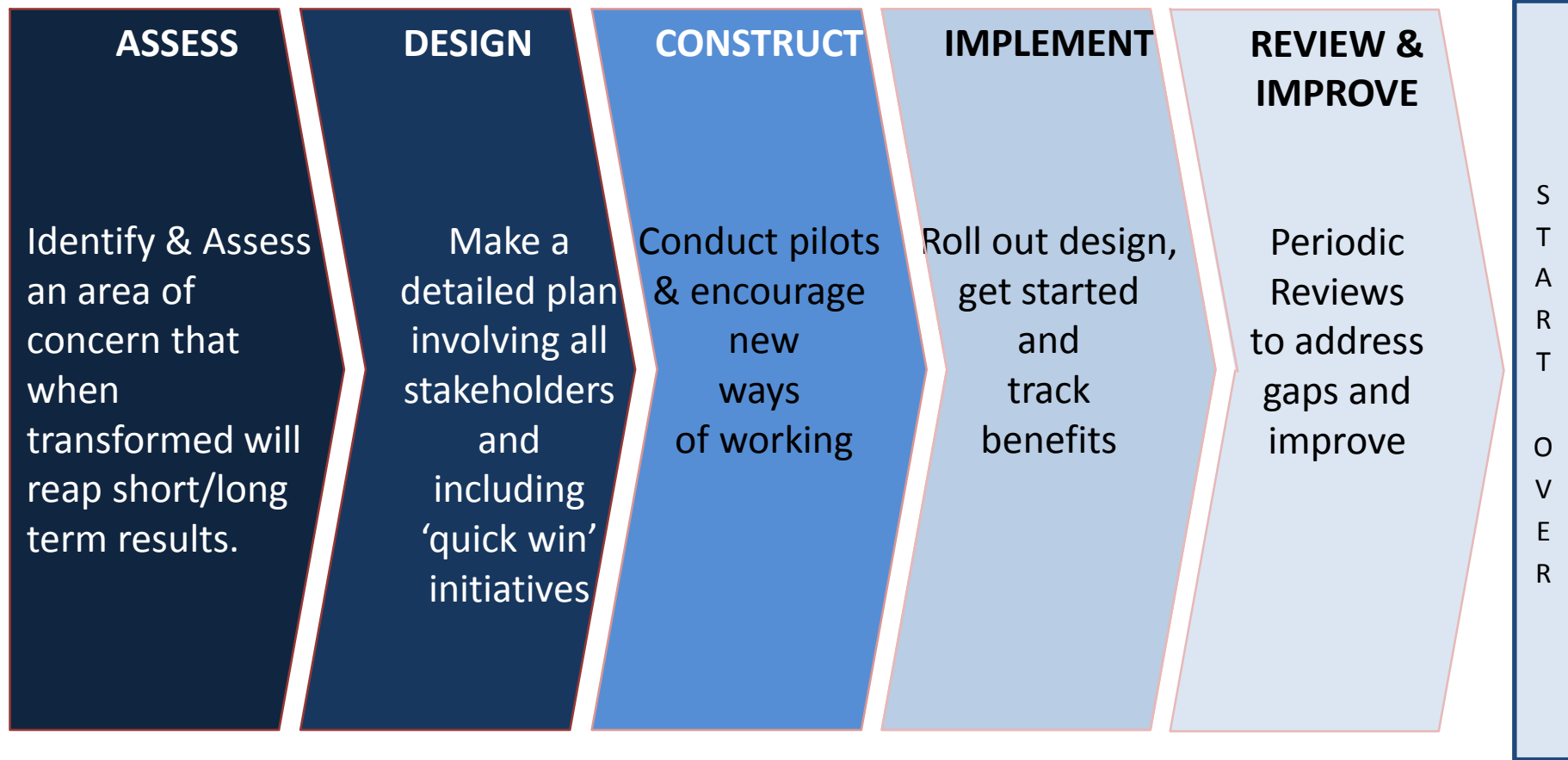
BPR seeks improvements of

- Cost
- Quality
- Service
- Speed

## KEY CHARACTERISTICS

- Systems Philosophy
- Global Perspective on Business Processes
- Radical Improvement
- Integrated Change
- People Centred
- Focus on End-Customers
- Process-Based

# Stages in Implementing a BPR Strategy



**ADDRESS CHANGE MANAGEMENT**

# Stages in implementing a BPR Strategy

1

## Assess a Process

- Review Business Strategy and Customer Requirements
- Select Core Processes
- Understand Customer Needs
- Don't Assume Anything
- Engage in Meetings with stakeholders, create focus groups
- Select best fit path for Change

2

## Design a Plan

- Have a Plan
- Look into all areas of work such as processes, locations, skills, IT enablement etc.
- Appoint BPR Champion
- Provide Training to Executive Team
- Identify Process Owners
- Take feedback from Process Owners
- Include 'Quick Win' initiatives.

3

## Construct

- Develop new Processes
- Clearly define the process
  - ❖ Mission
  - ❖ Scope
  - ❖ Boundaries
- Set out pilots
- Engage persons concerned
- Understand the requirement to implement this across the organisation

# Stages in implementing a BPR Strategy

4

## Implement

- Roll out the Design
- Implement the plan on ground
- Benchmark the process
- Ensure benefits are tracked and realised
- Address shortfall i.e. any 'leakages' identified
- Carefully resolve any inconsistencies

5

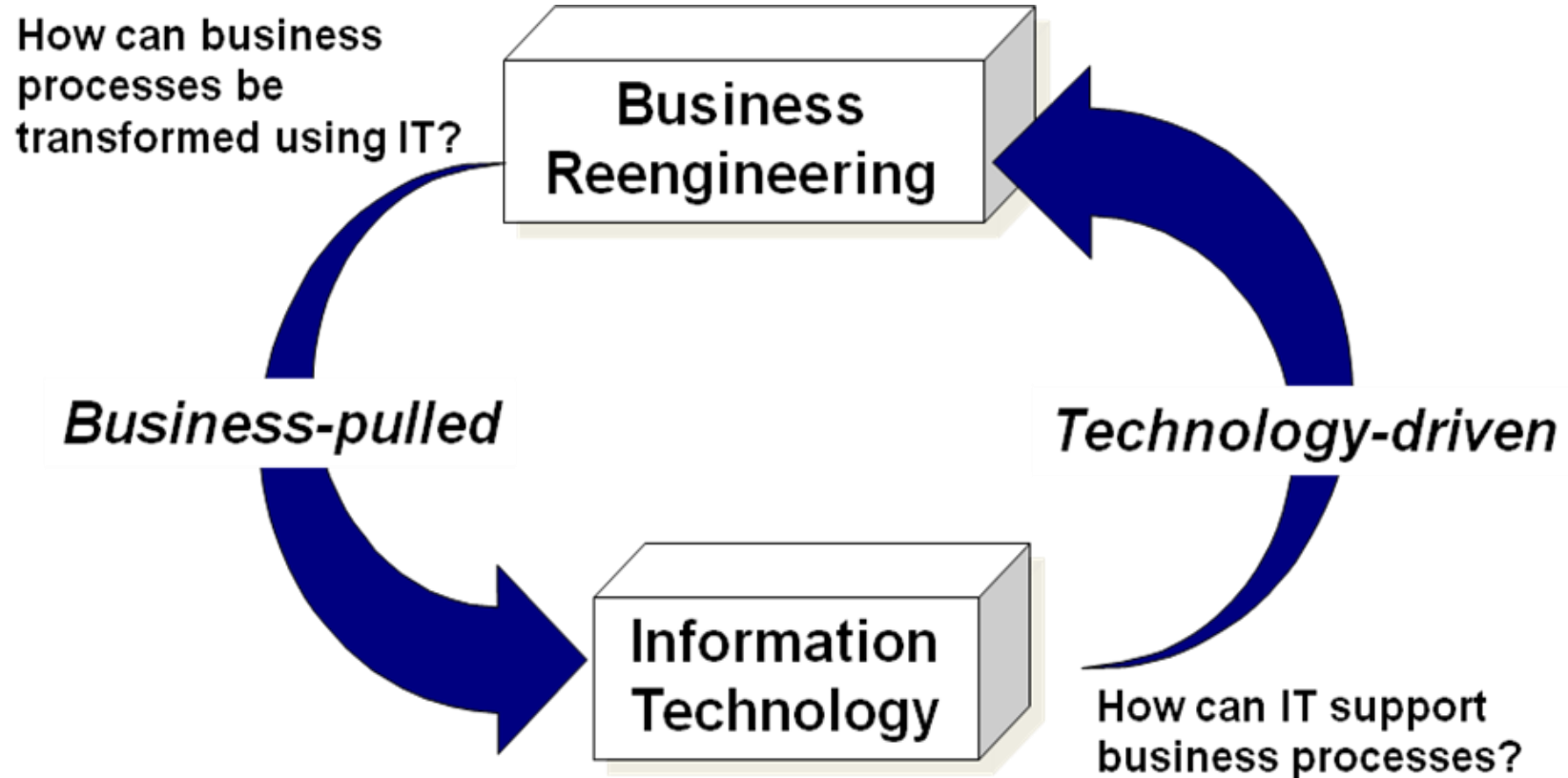
## Review & Improve

- Perform periodic qualification reviews
- Develop an Improvement Plan
- Up-grade Equipment
- Plan/schedule the changes
- Identify and eliminate process problems
- Instigate a culture of continuous check & recheck

## Importance of Change Management

- ❖ **Creating a climate of change**
  - Motivating management to move from a legacy driven structure to a market oriented framework
- ❖ **Engaging and enabling the organization**
  - Accepting and being open to new ways of working
- ❖ **Implementing & sustaining for change**
  - Inculcating change from grass root level.

# ROLE OF IT IN BPR



Source: Thomas H. Davenport and James E. Short, "The New Industrial Engineering: Information technology and Business Process Redesign," Sloan Management Review, Summer 1990, pp. 11-26.

# BPR vs ERP IMPLEMENTATION

- BPR is different from ERP Implementation

**BPR**

Driven by business requirements specifically from end customer's point of view

**ERP**

Makes the system of a company structured

Business processes may not necessarily required to be changed

In some cases computerization may not at all be required for BPR

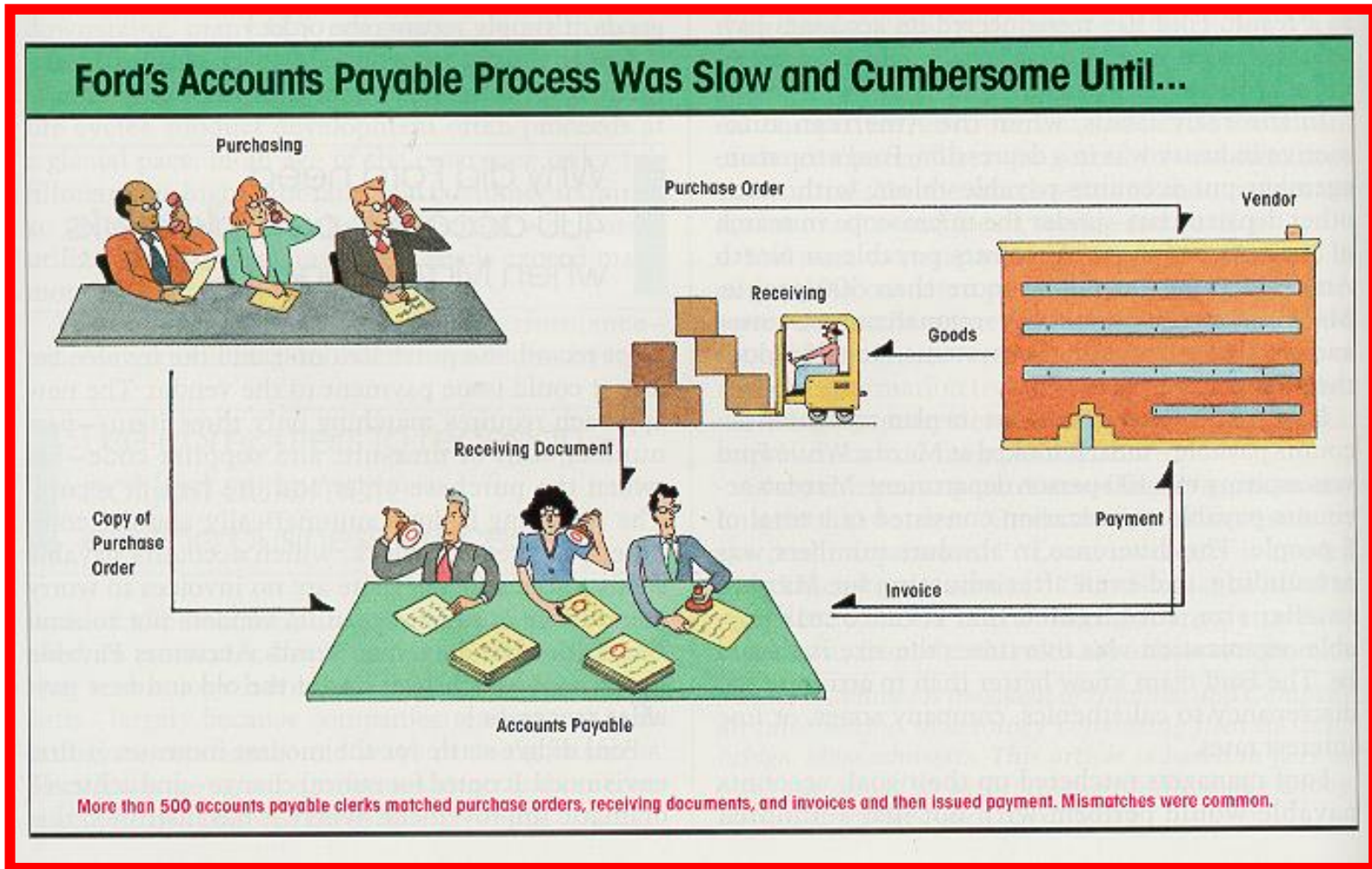
But for BPR process changes are mandatory

# CHALLENGES IN BPR IMPLEMENTATION

- Process Simplification is Common - True BPR is Not
- Desire to Change Not Strong Enough
- Start Point of the Existing Process Not a Blank Slate
- Commitment/reliance on Existing Processes Too Strong
- Quick Fix Approach
- Process under review too big or too small
- The Costs of the Change Seem Too Large
- BPR Isolated Activity not Aligned to the Business Objectives
- Allocation of Resources
- Poor Timing and Planning
- Keeping the Team and Organization on Target

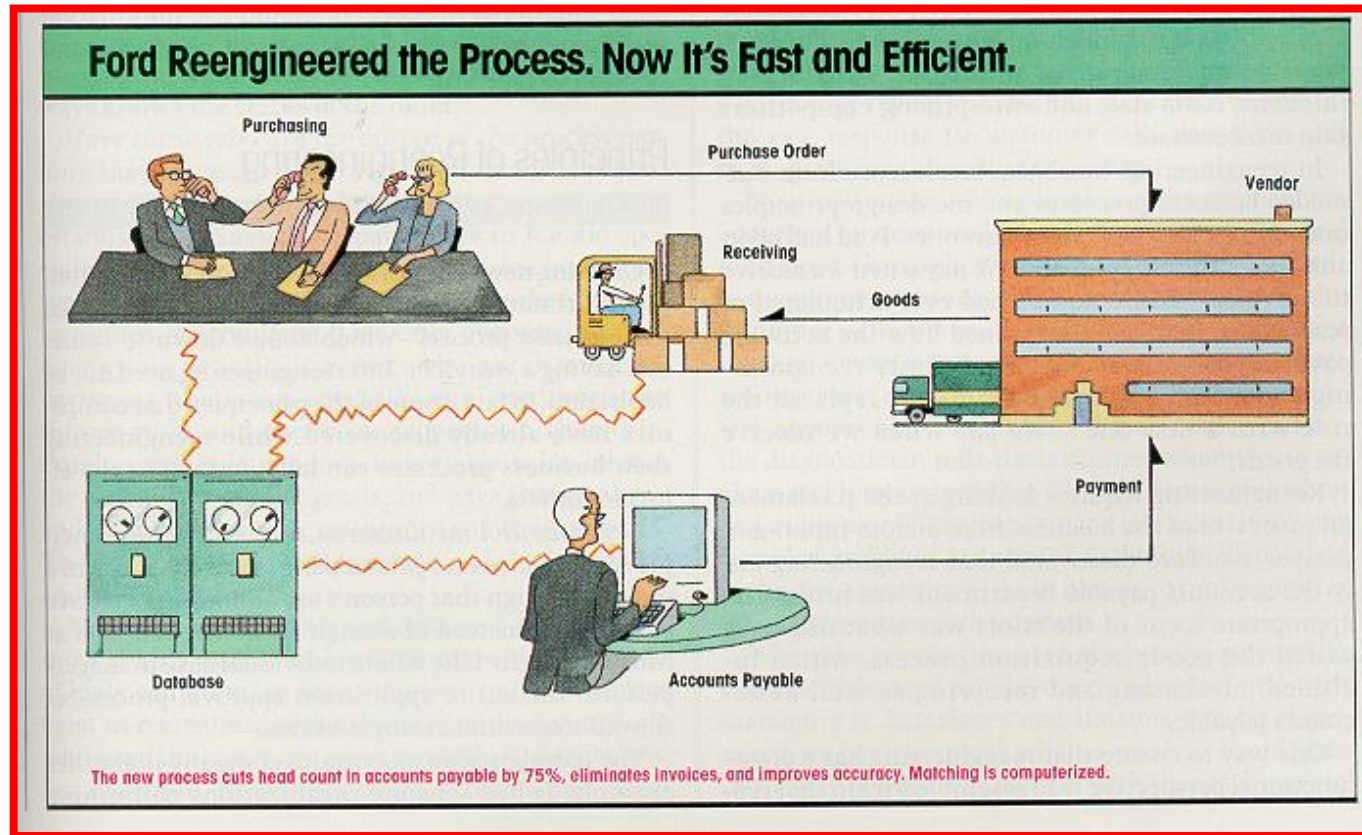
# EXAMPLE OF BPR (FORD MOTOR COMPANY)

Ford Motor Company: Accounts Payable Process – 500 employees, most cumbersome process, lots of mistakes, competition from Mazda (5 employees)





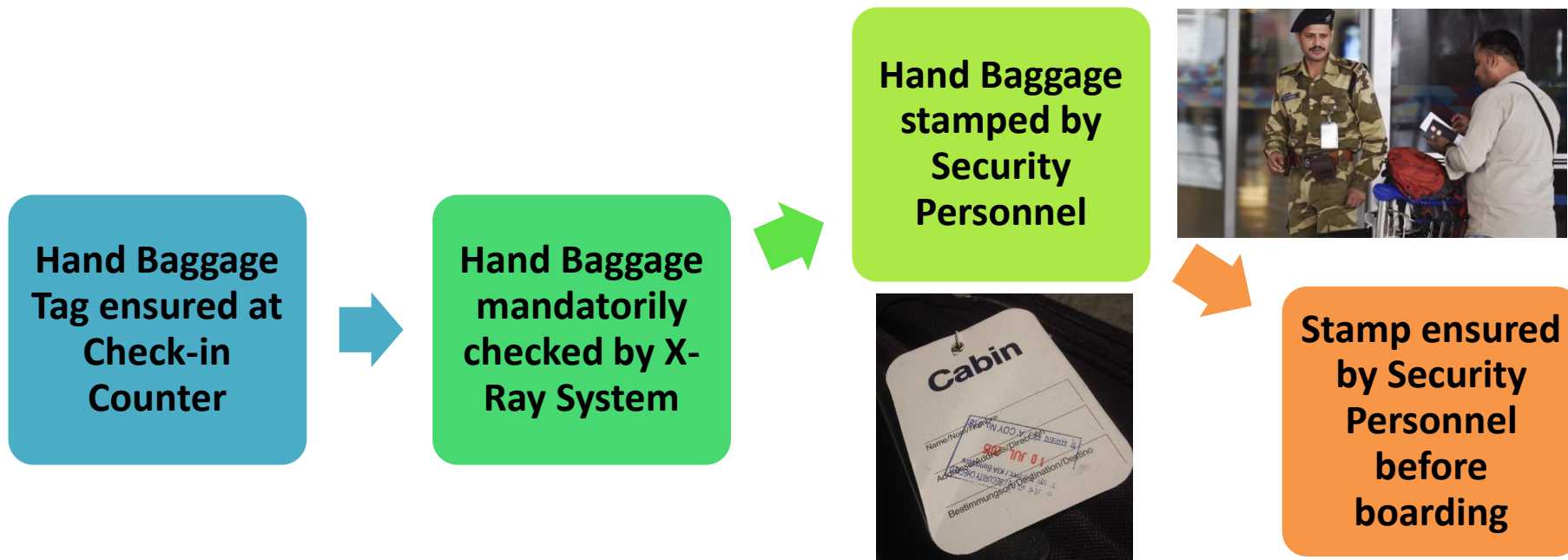
# EXAMPLES OF BPR (FORD MOTOR COMPANY)



**Matching of P.O., GRN computerized - Cut down 75% of employees, accurate invoice free processing**

# EXAMPLES OF BPR (AIRPORT SECURITY)

## HAND BAGGAGE TAG SYSTEM – Previous Process



**Redundant Processes – If all handbags are mandatorily scanned by X-Rays what is the value added by stamping and again ensuring that stamping??**

# EXAMPLES OF BPR (AIRPORT SECURITY)

## HAND BAGGAGE TAG SYSTEM – Re-engineered Process

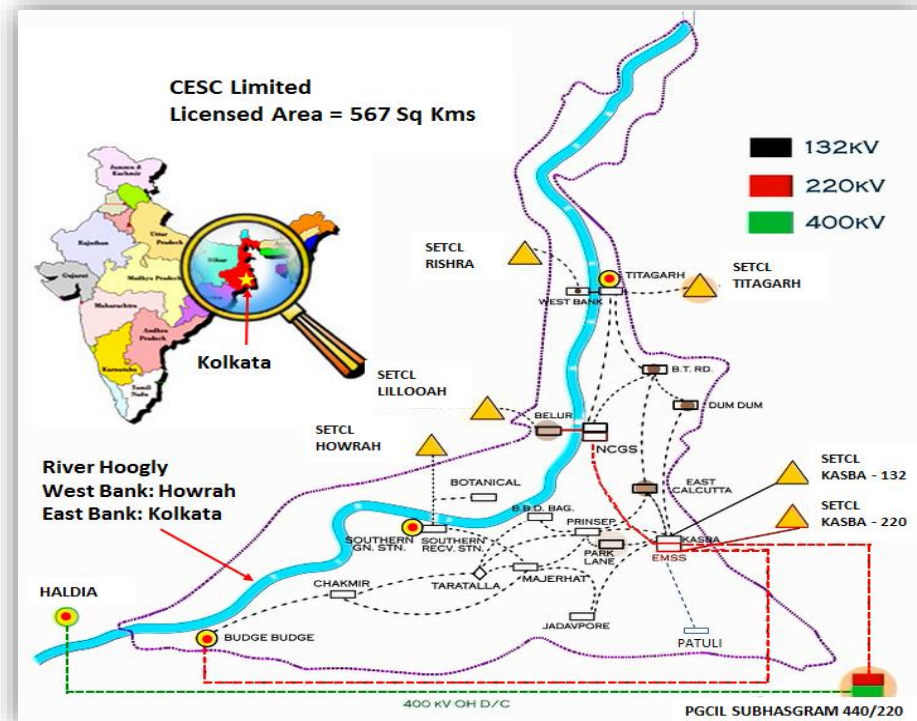


# CESC DISTRIBUTION PERSPECTIVE

# CESC Limited – Profile

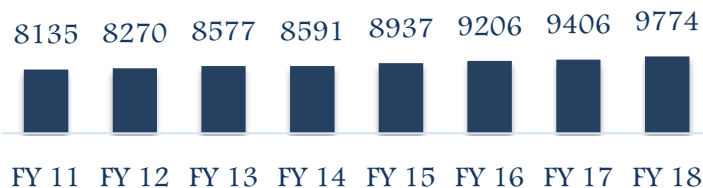
Fully integrated electricity utility, generating and distributing electrical power in Kolkata and Howrah.

- **Installed Generation Capacity:** 1125 MW
- **Peak Met:** 2159 MW on 19-6-2017
- **Consumer Base as on 31.03.2018:**
  - HT Consumers: 1828, Sales-31%
  - LT Consumers ~ 3.2 Mn, Sales-69%
- Budge Budge Generation Station amongst **Top 5 performing power plants** in the country
- Flagship company of the **USD 3.5 Bn Revenue RP-SG Group** that has Pan-India presence.

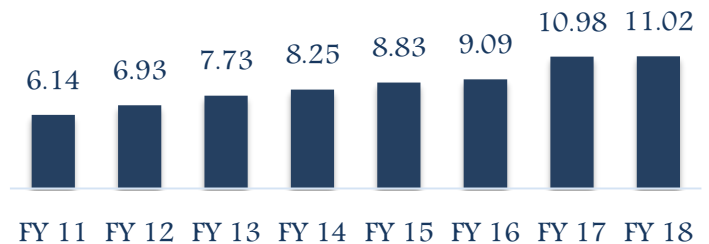


## ...some key Business Highlights

Sales (MU)

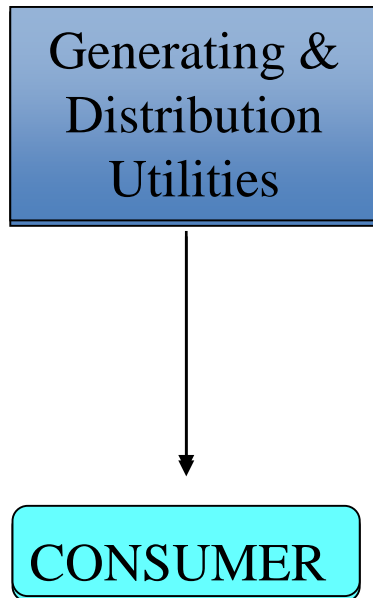


PBT(Rs. Bn)



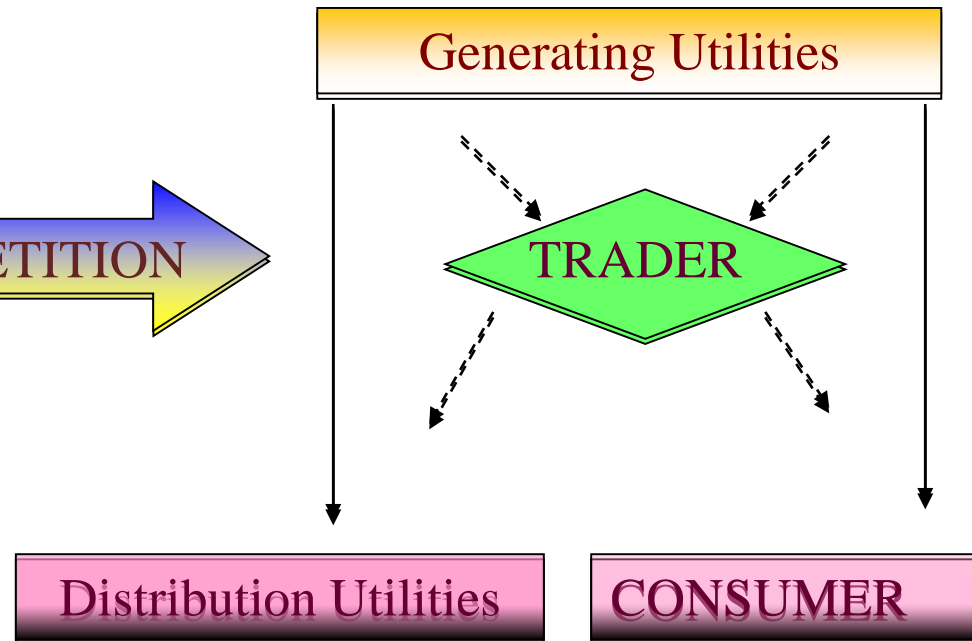
# CHANGING BUSINESS ENVIRONMENT

## MONOPOLISTIC



COMPETITION

## COMPETITIVE



## STANDARD OF PERFORMANCE

- Standard set for several performance parameters like – “ Time taken to restore supply following HT fault”, “ Time taken to release new connection”, “ Time taken to resolve billing complaints” etc.
- Regulatory Commissions – Quasi Judicial Bodies
- Non adherence of performance parameters means paying out compensation to consumers.
- Thus DISCOMs need to enhance efficiency many fold very rapidly
- The fittest strategy – Business Process Reengineering

## CESC's Areas of FOCUS with changing business landscape





# Supply Reliability

# Adopting a 2 pronged strategy to achieve quicker turnaround

...one having a Prevention Module

Load Management

Proactive Maintenance

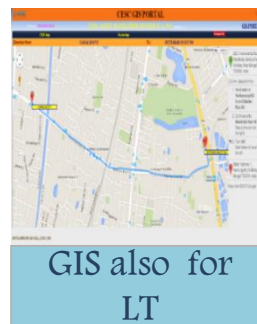
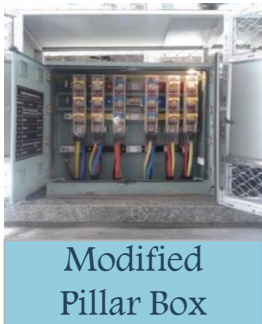
Enhanced Specs

## HT Network

- Detailed evaluation and ranking of Distribution Stations based on Load transfer capacity, Losses & SAIDI impact
- List of under loaded Distribution Transformers that can take load from overloaded Distribution Transformers based on distance between Distribution Transformers
- Large scale HT network reinforcement, Gas Insulated Substation, condition based monitoring and maintenance
- Better management thru HT Command Centre

## LT Network

- Setting up of LT Control room for monitoring
- Replacement of old Pillar Box by modified Pillar Boxes



# Adopting a 2 pronged strategy to achieve quicker turnaround

...other a Restoration Module

Automation

Quick Turn Around

## HT Network

- 3 shift HT maintenance
- Remote restoration through RMU

## LT Network

- LT Automation
- Field force Automation for remote coordination and monitoring



'Power on Wheels'  
for swift supply  
restoration

## RMU Automation on Optical Fibre



RMU cluster at Writers Building area - communication using Fibre Optics



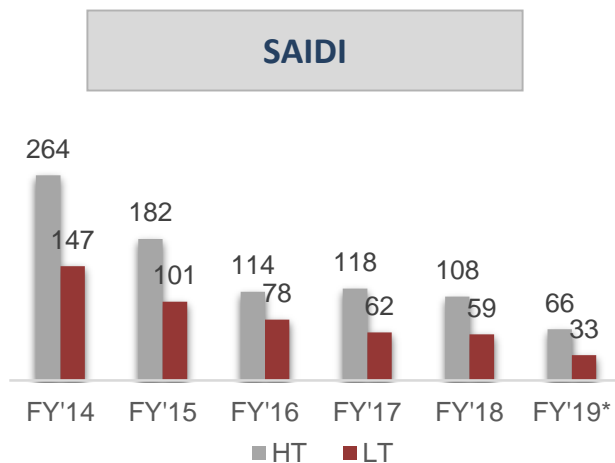
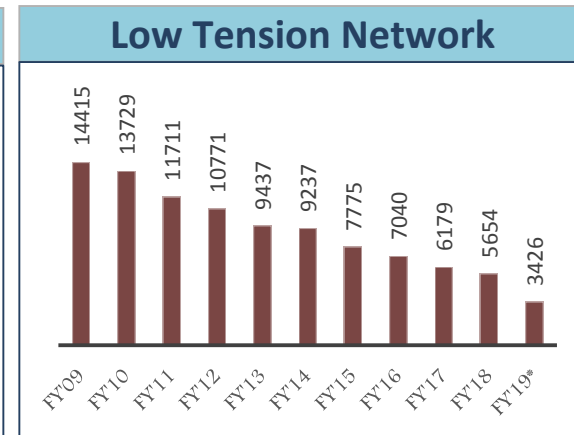
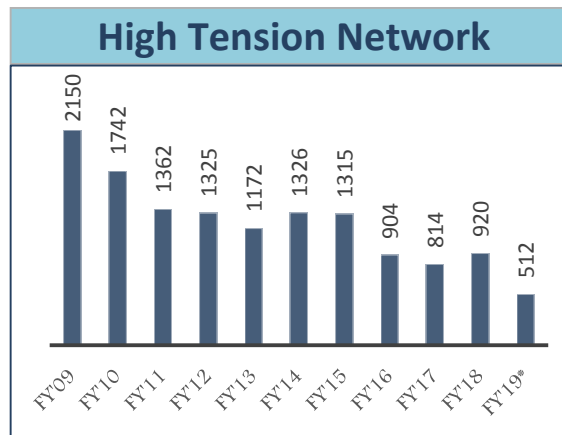
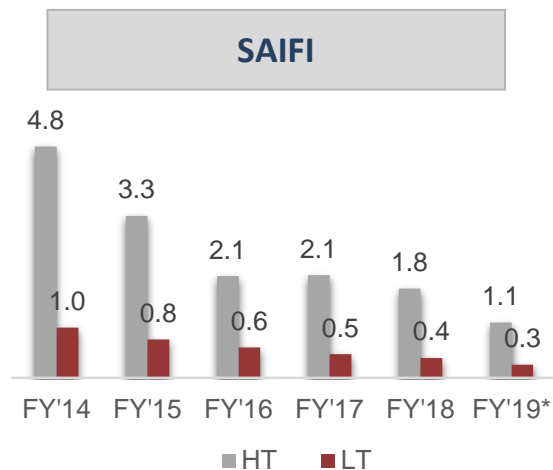
LT Change-Over



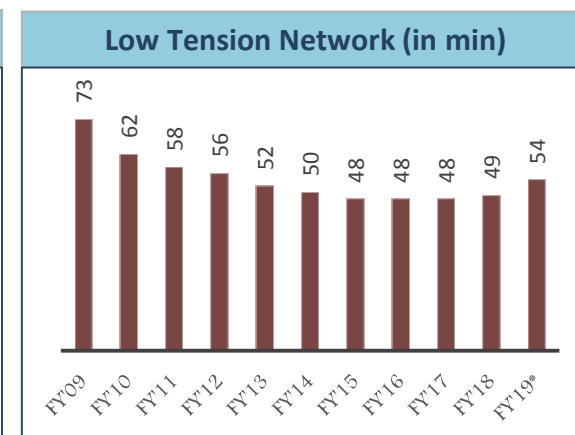
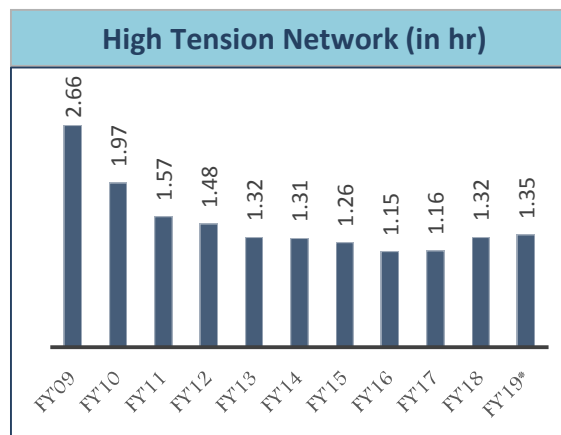
PB Fuse Failure SMS

# Operational excellence resulting in robust system reliability

## HT & LT Faults (Nos)



## Average Restoration Time



\* FY19 represents YTM Sep'18 figures

# Benchmark Performance in...

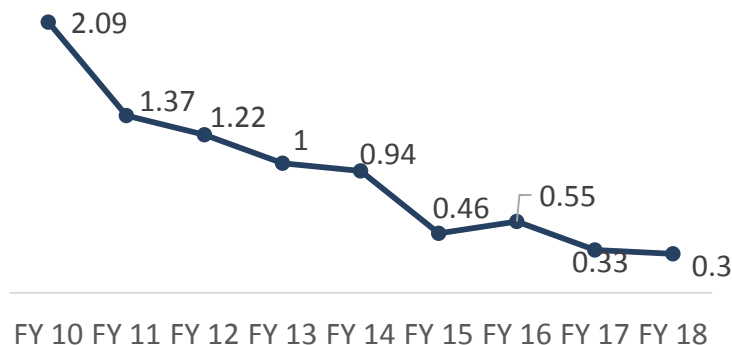
...Distribution Transformer Failure Rate Reduction ( ~ 0.3% )

HRC Fuses-HT & LT

Load Balancing

- ✓ Usage of **HRC fuses on both LT & HT sides** of Distribution Transformer to prevent high fault current.
- ✓ **Dynamic load management of DTR** on a daily basis utilizing Distribution Transformers AMR readings plotted on GIS map identifying Distribution Transformers with load shifting requirement
- ✓ **Scientific tool based Distribution Transformers CAPEX Planning & Rationalization** by identifying under-loading/over-loading/recurrent fusing problems
- ✓ **Load balancing in phases** based on morning/evening/seasonal loading cycle
- ✓ **Procurement of Distribution Transformer from reputed manufacturers** and deployment after rigorous testing with interactive feedback flow on quality issues ensuring better procurement
- ✓ **Immediate attention to minor defects**, such as oil leaks and preventive and condition based monitoring

% Distribution Transformer Failure




GIS based Distribution Transformer Load Management Tool




# Loss Reduction

# Loss Reduction Initiatives are manifold and in the areas of...


- 1


**Awareness Generation**


Generate awareness in public regarding loss control activities through campaigns
- 2


**Data analytics & Energy Audit**


Identification of 'suspect consumer groups'
- 3


**Equipment prioritization**


addition/replacement (meter replacement, MCB, pillar box, HVDS, co-axial cable)
- 4


**Operating model re-alignment**

Organization structure and operating practices revamp
- 5


**Technical suspects identification/Other**

Tools/measures to generate technical suspect list - feeders, Distribution Transformers etc.
- 6


**Social Engagement**

Engagement with local community  
Setting up Training Centre, school, etc. for sustainable development

## ...Outreach Programmes



Mass Awareness



Campaigns

## ...Regular Monitoring



Analytics



Energy Audit

## ...Equipment Replacement



HVDS, ABC



MCBs

T&D Loss < 10% (one of the best in country)

# Customer Centricity & Digitization



# Service Provider of Choice...

## Benchmark...First Utility with 1 Day New Connection

This is carried out through a Four-pronged process re-engineering approach:

No Outsourcing  
No Additional  
Manpower

### TAT over the years

Financial Year	Time Taken (in day)
FY'10	19.9
FY'11	16.2
FY'12	14.7
FY'13	14.4
FY'14	8.5
FY'15	1*
FY'16	1**
FY'17 #	1***

**\*61% within 1 day after payment (rest within 3 days)**

**\*\*94% within 1 day after payment (rest within 3 days)**

**\*\*\*98% within 1 day after payment**

- 1 **Online electronic payment matching:** Integration of Treasury and New Connection Application system and online payment collection using computerized bar-coded bills
- 2 **Automatic scheduling and customer notification:** Scheduling directly from the Integrated System followed by notification to applicant by tele-calling from Call Centre.
- 3 **Resource management through multi-skilling and incentives:** Own employee capacity building to do additional jobs to reduce employee cost per new connection.
- 4 **Field Force Automation:** Meter Fixing team equipped with TABS to get allocated jobs electronically thus improving turn around time.

## Strongly committed to our HT consumers...

...to better suit the convenience of consumers



Single-window prompt service for all HT consumers



Real time display of half-hourly consumption:



RMUs with FPIs & their Automation to isolate HT faults and restore supply rapidly



Key Account Managers for each HT consumer



Online HT Services like Billing & Payment, Account History, Applications, Complaints etc.



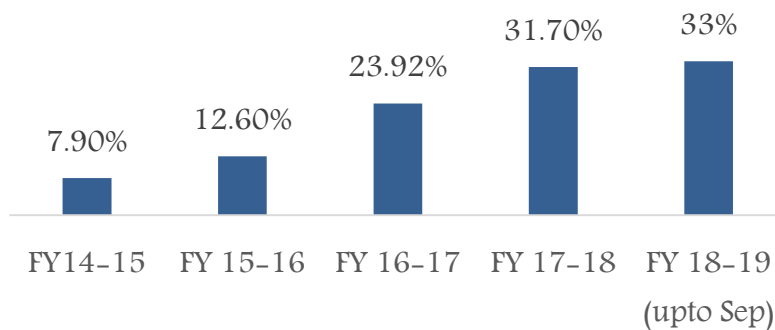
Smart Meters for fault free reading

## Increasing **Digital Adoption** is akin to capturing customers in a competitive environment

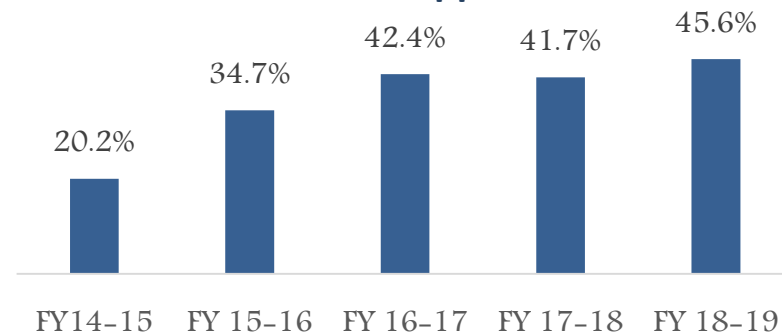


# Digital statistics

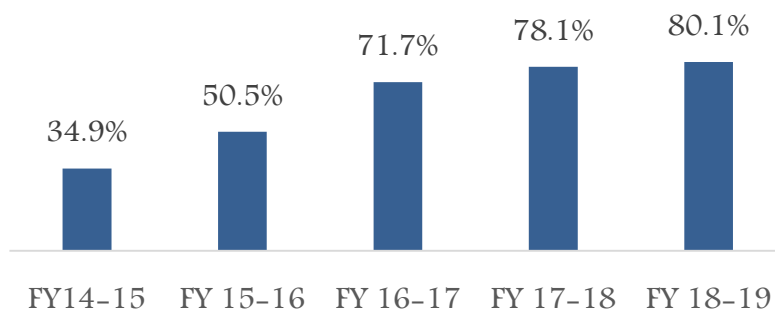
## % Online Payment



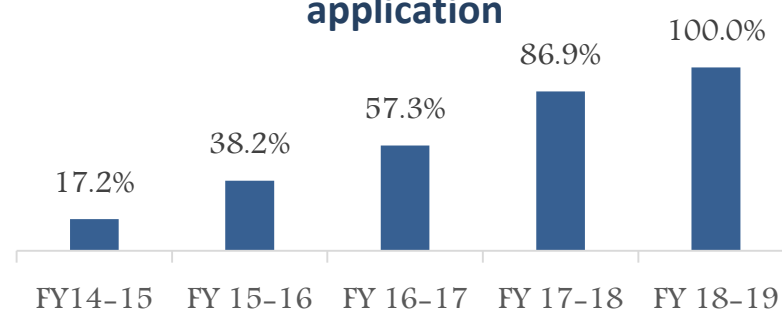
## % Online AC Applications



## % Online Name Change application



## % Online New connection application




*GoWB has set guideline to make all new connection application online under the EODB initiative from 1-Aug-17*

# New Technologies & Innovation


# Cost optimization through continuous innovation.....

- 1


**Fuel Procurement  
Optimize Gen Cost**

Comprises about 30% cost of business


Initiative spans around doing the right sourcing, optimizing transportation cost, managing the right portfolio of fuel mix
- 2


**Power Purchase &  
Sale**

Shift from dependency on single source to market


Exploring options of Power Banking leveraging complementary portfolio

Utilizing Captive resource to leverage benefit from market
- 3



**Process Change &  
Workforce Mgmt.**

Process re-engineering, re-defining job description, modification of organization structure, revise manpower norms

Create a model organogram & implementation of SBU Structure for Mains Function
- 4


**Value Engineering**

Change in material specification, introduction of new technology, process re-engineering, etc.
- 5


**Recovery of Service  
Charge**

Regular review & interpretation of Regulation

Benchmarking with peer utilities

Evaluate consumer mix, capacity to pay & propensity to pay

# Thank You

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