Advanced Technologies Role for Business transformation in Utilities

RP Singh
Senior Vice President, SEW
The State of Indian Power Sector

Country’s Focus

Indian Government has time & again emphasized that an efficient, resilient, and financially robust power sector is most essential for growth of the Country.

Quality of Power

Almost all investment & climate surveys point to poor availability and quality of power as critical constraints to commercial and manufacturing activity and India’s competitiveness.

Focus On Distribution

Distribution improvements have lagged, but it is now clear that they need to be a priority.

Urgent Need

Revenues originate with the customer at distribution, so subpar performance there hurts the entire value chain the most.

Pain is more likely to be spilled over to lenders & affect the broader financial sector.

Added Capacity

Lot of Government-initiated reform efforts have gone into generation and transmission segments, reflecting the urgent need for adding capacity and evacuating it.
Indian Discoms can be categorized broadly into 2 categories –

- Matured Utilities
- Fragile Utilities
## Multiple Factors At Play

<table>
<thead>
<tr>
<th>Factors</th>
<th>Matured</th>
<th>Fragile</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;C Loss Levels</td>
<td>&lt;10% AT&amp;C Loss</td>
<td>&gt;10% AT&amp;C Loss</td>
</tr>
<tr>
<td>Power Reliability</td>
<td>SAIDI &lt;60 Mins Ring + n-1 Network</td>
<td>SAIDI &gt;60 Mins Radial + Overloaded &amp; Dilapidated Network</td>
</tr>
<tr>
<td>Technology Absorption</td>
<td>Network - Automation at DT &amp; Smart Metering Process - Workforce Mobility Solutions</td>
<td>Network - Poor Automation Levels Process - Manual, paper driven processes</td>
</tr>
<tr>
<td>Customer Engagement</td>
<td>EoDB Compliant Transparent Digital Uber Customer Engagement Platform</td>
<td>No or Poor Customer Engagement Platform Non-Transparent</td>
</tr>
</tbody>
</table>
Key Pillars of Transformation

- The essence of moving from Very Fragile to Most Matured utility evolves around following **pillars of excellence** -
  - **People** - Motivated | Change Oriented | Technology Trained | Team Spirit | Performance Driven | Analytical & Statistical Mindset (*Need for Analytics Platform*)
  - **Process** - Documented | Evolving based on Customer Needs | Digitized | Automated (*Need for Workforce Mobility Platform*)
  - **Network** - Robust (n-1 compliant till LT Level) | Healthy (fault proof) | Safe (Zero Accidents) | 5S Compliant | Loss Proof (*Need for DT Energy Accounting & Revenue Assurance Platform*)
  - **Technology** - Automation - GIS (With Last Mile Connectivity), SCADA (100% Automation), DMS (>50% Automation), Smart Metering (Data to Application), Digital Customer Engagement Platforms (*New for Customer Engagement Platform*)
Technology is Ever Changing

• Utility sector undergoing rapid transformation --
  • Organic - Fragile to Matured (as explained earlier)
  • Change in Mindset - Cost Center Approach to Profit Center Approach
    - Opportunity to Cross Sell / Up Sell
  • Smart Metering - Future is Applications built on this data
  • Competition - Multi Licensee Regime
  • Expectations of Customer & Employees - Hyper Digital
  • New Opportunities - Extreme Penetration of Rooftop Solar & EV Charging

• DIRE Need for Performance on ground - More of a Compulsion than a Choice

• Role of Technology - More Important than Ever !!!!
These Changes/challenges Are Giving Birth to New Opportunities

Utilities Are Turning to Business Transformation Initiatives to –

- Improve Operational Efficiency
- Reduce Costs
- Increase Customer Satisfaction

- Next-Gen Consumer Engagement
- Loss Reduction & Revenue Assurance Solutions
- Energy Disaggregation, Marketplace, Demand Response

- EV Penetration and Adoption
- DER Management, V2G Technologies

- Mobile Workforce Solutions
- Predictive Maintenance Portal & Solutions
- Smart Metering & Data Application Solutions
Technology Evolution in the Energy and Utility Industry

- Smart Grid
- Platform Approach
- Deep Integration across products, partners and technology
- Internet of Things (IoT)
- Advanced Metering Infrastructure (AMI)
- Cloud Based with Multi Cloud Deployment
- Distributed Energy Resources (DER)
- Big Data and Analytics
- Blockchain
Why the Revenue Gap and Challenges

- Key Components of ARR – Annual Revenue requirements
  - Power Purchase Cost – 80% Contribution
  - O&M Expenses – 14% Contribution
    - Employee Expenses – 9% Contribution
    - Repairs & Maintenance Expenses – 3% Contribution
    - Administrative & General Expenses – 2% Contribution
  - Soft Costs – Working Capital, Debt Servicing, etc – 3% Contribution
  - ROE – 2% Contribution
  - Other statutory expenses – 1% Contribution

- Matured discoms have a near zero revenue gap. This means that utilities tariff realization (approved by regulator) helps cover the ARR requirement fully.

- While there’s a lot to catch up by regulators to ensure cost reflective tariffs, a huge lot also depends upon the utilities to efficiently run & improve on the cost elements.
  - Power Purchase Cost (PPC) –
    - Need to renegotiate costly PPAs with gencos.
    - Need for Day Ahead Power Scheduling Application with <2% MAPE.
    - Lower AT&C Loss, leading to either higher billing or lower PPC.
    - High Reliability, especially to low loss customers – Leading to additional billing with lower losses (High ABR Customers, leading to better contribution).
  - R&M Expenses –
    - High Reliability, with lower faults & network failures, leading to lower repairs & maintenance costs.
  - Soft Costs –
THANK YOU

SEW Headquarters
19900 MacArthur Blvd, Suite 370
Irvine, CA 92612
info@SEW.ai
(949) 409-6833