IT Infrastructure & Data Security

Scalability

Customizable

Integration With Various Metering Solutions

Complete Grid Analytics (Electricity, Water, Gas)

High System Security

It is not enough to acquire advanced meters, flexible communication and state-of-the-art meter data management systems only to stumble and fall when your backend infrastructure can't handle the 4Vs (Volume, Velocity, Variety and veracity) of data. Many Utilities have underestimated the importance of planning for Scalability during the initial stages of a project only to face problems that start to manifest as the amount of data stored increases.

Another important factor is having a strong Disaster Recovery contingency plan in place through the use of a secure Physical Location hosted by an established and reliable entity to limit risk and guarantee service and NOT with a virtual or unknown entity that can't be monitored or held accountable.

Personal data security designed in at an early stage as part of the architecture of the network through the use of reliable internationally standardized encryption Methods is extremely vital. Prevent Hacking by avoiding the use of outdated encryption algorithms such as MD5/SHA1 which are irrevocably broken.

Choosing the right Partner

Capabilities of service provider

Domain Expertise

Strategic Consulting

End-to-end Development

Proficient Systems Integration

Choosing the right technology mix

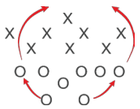
Meter Choice

Best-fit Communication

Open Standard Communication

Interoperability & Integration

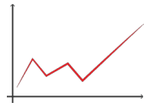
High Security



Excellent Deployment Flexibility

Scalability

Future Upgradability



Fastest ROI

Flexible Financing Models

Saving Time from Planning to Deployment

Cutting Costs

Improving Customer Service

When selecting a Service Provider for such a project, it is important to ensure they have the history & expertise in implementing similar type complex systems, the availability of different financing models as well as the innovative development capabilities that would allow them to customize solutions directly solving your region's adaptive future problems. However, a clear benefit of outsourcing this service is that the Service Provider would be bounded by clearly defined KPIs.

Another important issue is a Strong Regional Presence to swiftly act when needed as this system is considered critical national infrastructure.

Bundling or Unbundling the Services is an interesting choice as there is no doubt that getting parts of the System from different vendors would be cheaper, but the trap door is that these vendors are only interested in their applications rather than focusing on the end-results.

ELSEWEDY ELECTROMETER®

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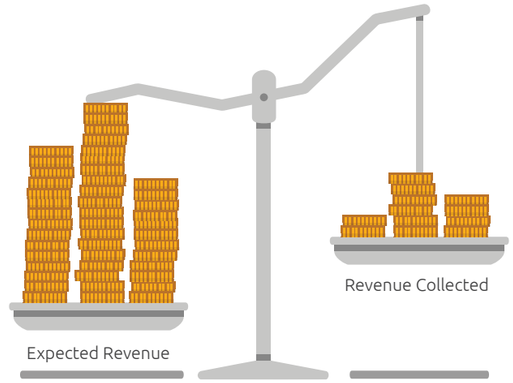
ELSEWEDY ELECTROMETER®

OPTIMIZING ENERGY EFFICIENCY & ENSURING REVENUE PROTECTION

Redefining Revenue Protection

Many Utilities all over the world have started to realize that it isn't simply enough to improve Revenue Collection methods through the use of Prepayment and Automatic Meter Reading (AMR) in order to ensure Revenue Protection.



Irregularities with Billing

Equipment Malfunction

Error & Anomalies

Theft & Fraud

Asset Losses

And Much More …

Revenue Protection is actually an elastic term which in its essence incorporates issues related to Load Management, Losses Reduction and Revenue Collection.

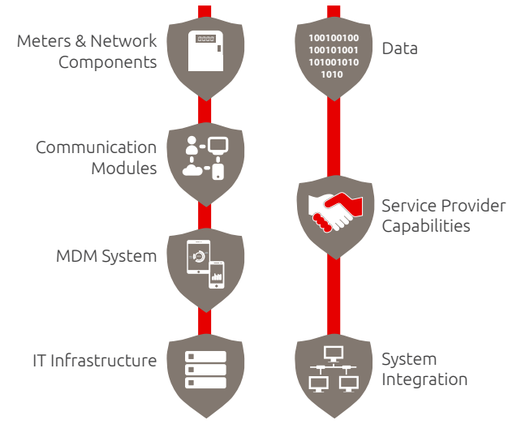
Even the most advanced countries in the world have energy losses of 6-8% in the transmission and distribution network. In some international markets, Losses cut into a utility's revenues by 10% or more each year.

Furthermore, increased consumption and decaying power stations are causing power outages across the world and establishing new power plants to compensate is a very costly endeavor and would require up to 5 years to build. It is estimated that power outages cost the European Union €150B and the U.S. up to $180B a year.

Finally, irregular Payments leads to delay in the money cash flow for the Utility and Manual Collection which results in human error e.g. (collecting incorrect amounts, losing the money, risk of theft, etc…).

So any Utility considering Revenue Protection has to factor in the security of its Tangible & Intangible assets.

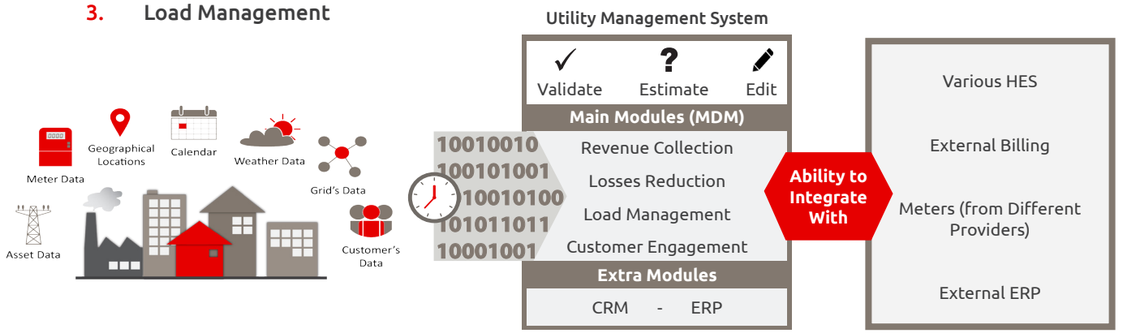
Securing the Revenue = Securing (**Tangible** + **Intangible**) Assets



What are Tangible & Intangible Assest?

The Electricity Distribution Sector in many countries around the world is undergoing massive changes and Utilities are actively seeking innovative, technologically advanced and cost-effective solutions that would facilitate in their harnessing of the various capabilities introduced with the advent of the Smart Grid and the internet-of-things. The modular nature of current and next generation smart meters as well as the flexibility and massive advancements in communication networks means that Utilities are expected to receive a great tidal wave of data which if utilized correctly would hold the key to achieving their KPIs and overcoming three key challenges, namely:

1. **Revenue Collection**
2. **Losses Reduction**
3. **Load Management**



Any investment in Smart Metering has to put in to consideration the Tangible and Intangible Assets highlighted previously.

Meters & Network Components

Smart meters have to be flexible in design serving various billing purposes for application in AMI systems for monitoring, checking and governing of electricity consumption. These meters have to be easily field-upgradable to support the newest features and cover up-to-date customer requirements. The meter's modular design supports existing as well as future communication technologies.

Securing the Metering Assets in Tamper-proof boxes and Keeping the Meter away from Consumers by using Customer Interface Units (CIU) or through mobile phone applications are excellent options to help prevent consumers from tampering with their meters.

- Accurate Reading of Meter Consumption
- Advanced Tampering & Fraud Detection Capabilities
- Remote Connection & Disconnection
- Automatic Meter Diagnostics
- Modular Meter

Communication

Choosing the right Communication topologies to be deployed as part of your Network has to be based on a number of factors such as cost efficiency, geography, service unit density, etc...

It is also vital to select communication technologies that are fully interoperable with different meters and back-end management systems based on open standard protocols e.g. (DLMS-COSEM). The risks involved with selecting the wrong communication topologies or proprietary standards is that you would be stuck with a closed technology for the lifetime of the meters installed i.e. (approximately 20 years!)

GPRS PLC RF RS-485 RFID

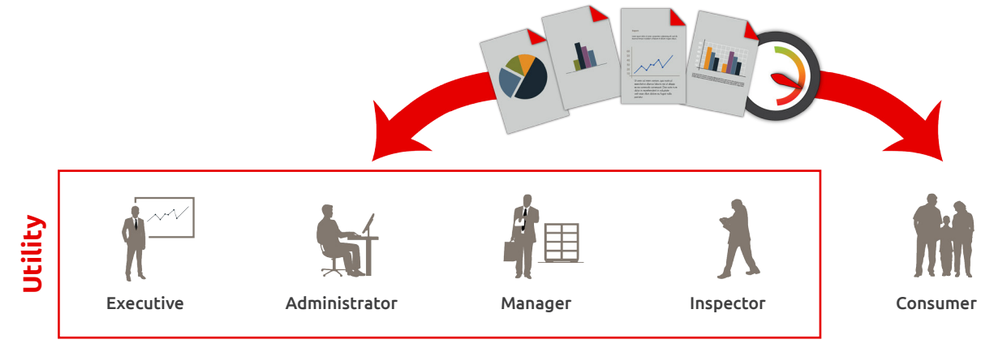
Open Standards Interoperability

Meter Data Management System

The term data-driven decisions has a new meaning and value as more and more utilities use the information provided through data analytics to optimize their operational efficiency & reliability as well as increase consumer interaction & satisfaction with the level of service provided.

Data Analytics helps utilities in near real-time monitoring and predictive maintenance of metering infrastructure as well as accurate planning and implementation of their ambitious expansion and upgrade projects.

The key challenge for the new technology adopted by Utilities is to deliver the right information to the right person in a format they can understand and make use of.



Our MDM System will Validate, Estimate and Edit the valuable big data received from the Grid to present the Utility with detailed reports, forecasts and recommendations utilizing highly sophisticated graphical charts and mathematical tools that allow them to monitor their KPIs and make informed decisions.

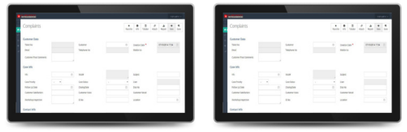
Notifications Reports Forecasts Recommendations Actions

Our MDM consists of several customizable modules tailored to help fulfill the needs and KPIs of Utilities around the world and to assist them in providing topnotch services to their customers, achieving maximum performance levels and results within the shortest period of time.

Main Modules (MDM)

Revenue Collection Losses Reduction Load Management Customer Engagement

Extra Modules



CRM ERP

- **Dynamic Tariff Plans**
- **Remote Connect \ Disconnect**
- **Set Load Limit**
- **Remote Meter Configuration**
- **Fraud Management**
- **Remote Firmware Upgrade**