Exide Industries: Improving Lives by Helping Ensure a Reliable Power Supply to Millions of Homes

In India’s crowded storage battery market, market leader Exide Industries Ltd. needed to differentiate itself from the competition. To achieve this, the battery manufacturer developed a smart battery service based on technology from SAP. As a result, homes and businesses across the country now have a backup power supply they can trust, and customers provided with an enhanced service are staying loyal to the Exide brand.
Transforming the Customer Experience to Stay Ahead of the Competition

Before: Challenges and Opportunities
• Improve customer experience by launching a smart battery service
• Diagnose battery failure faster and resolve issues quickly
• Reduce warranty claims and related costs
• Get insights into operating conditions to inform future product development

Why SAP
• Existing relationship with SAP as a trusted advisor
• Exploration of use cases during an SAP® Design Thinking workshop
• Managed cloud environment using SAP HANA® Enterprise Cloud

After: Value-Driven Results
• Faster issue detection and resolution for 20,000 connected batteries, with alerts that pinpoint faults
• Improved customer experience and loyalty, thanks to a more reliable power supply and longer battery life
• Reduction in warranty claims and improved job satisfaction for engineers
• Optimized development cycles, thanks to in-depth analysis of usage

“Enabled by SAP technology, we are transforming the battery storage industry, improving customer experiences, and gaining significant competitive advantage.”
Gautam Chatterjee, Chief Executive Officer, Exide Industries Ltd.

Executive overview  |  Objectives  |  Solution  |  Results  |  Future plans

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Exide Industries Ltd.
Kolkata, India
www.exideindustries.com

Industry  |  Products and Services  |  Employees  |  Revenue  |  Featured Solutions
Automotive – battery  |  Lead-acid storage batteries for home, automotive, and industrial use  |  3,900  |  Rs 91.86 billion (US$1.3 billion)  |  SAP HANA Enterprise Cloud, SAP S/4HANA®, SAP Cloud Platform, SAP Leonardo technologies, and SAP Analytics Cloud solution

15%  |  Longer anticipated battery life
25%  |  Improvement in customer retention expected
Standing Out from the Crowd in the Home Market for Uninterruptible Power Supply

Accounting for 30% of its total revenue, the market for uninterruptible power supply (UPS) units in the home is a key market for storage battery manufacturer Exide Industries Ltd. However, with intense price-based competition from numerous companies replicating the firm’s innovative technology, the Kolkata, India–based manufacturer must stay ahead of the curve.

Seeking to differentiate itself by improving the customer experience for people buying its home UPS batteries, Exide decided to launch a smart battery service. This involves using technology based on the Internet of Things (IoT) to give customers and Exide technicians insights into the status of individual battery units.

Improving reliability
Gautam Chatterjee, CEO of Exide, explains how cloud solutions from SAP help the company meet its objectives. “By remotely monitoring battery health, we can identify performance issues at an early stage,” says Chatterjee. “We can then offer appropriate maintenance services to resolve the issues, prolonging battery life and improving the reliability of customers’ power supplies.”

Another key objective of this connected battery approach is to reduce costs associated with warranty claims. “Warranty costs accounted for 2.3% of our total revenue from home UPS systems last year,” says Chatterjee. “If we can reduce this figure through early intervention by our technicians, we will significantly improve our profitability in this market.”
Establishing a Digital Core to Support Innovative Technologies

As an existing customer of SAP, Exide asked the company to help develop its smart battery concept. “Through an SAP Design Thinking workshop, we explored use cases for connected batteries,” explains Chatterjee.

The first stage of the project saw Exide deploy SAP S/4HANA® on SAP HANA® Enterprise Cloud. “We chose a managed cloud environment because data security is key,” says Chatterjee. “In addition, a cloud-based solution is faster to implement and easier to scale than an on-premise solution.”

**Integrating processes enterprise-wide**
Using SAP S/4HANA as a digital core, the project team integrated software that enables the collection and real-time analysis of data from connected batteries. These solutions are based on SAP® Leonardo technologies; the SAP Cloud Platform Internet of Things service; the SAP Cloud Platform, SAP HANA service; and the SAP Analytics Cloud solution. In addition, using the SAP Cloud Platform Integration service, these solutions are integrated with sales, service, and warranty management processes.

**Creating user-friendly apps**
Next, the team used SAP Cloud Platform Mobile Services to develop mobile apps for use by Exide technicians as well as battery owners. The apps use the intuitive SAP Fiori® user experience to help users quickly access battery status information.
Earning Customer Loyalty and Improving Profitability

With the first phase of the project completed, Exide can offer faster issue detection and resolution for up to 20,000 connected batteries, enabling users to have real-time access to battery usage, availability, and performance information. Thanks to SAP S/4HANA and SAP Analytics Cloud, Exide technicians are able to pinpoint faults precisely so that they can resolve issues faster. Meanwhile, sales teams can see which batteries are nearing end-of-life status so they can contact customers about supplying a new unit.

SAP S/4HANA helps Exide to identify and fix issues before they result in battery failure, helping ensure a more reliable power supply. Chatterjee says, “A more reliable power supply leads to happier customers – and we expect at least a 25% improvement in customer retention thanks to our smart battery service.

Timely maintenance can also help keep batteries working for approximately 15% longer and reduce warranty claims. As a result, Chatterjee says, “We anticipate a 30% to 40% drop in warranty returns, which represents significant savings for our business.”

**Informing product design**
With a single digital core, Exide can rely on a smooth flow of real-time information across the company, streamlining processes. One area that benefits from invaluable insights is Exide’s research and development department. “By analyzing data on product operating conditions and usage, we can develop products that better meet the needs of our customers,” explains Chatterjee. “We anticipate that this information will help speed up development cycles by up to 10%.”
Rolling Out the Smart Battery Concept

Looking forward, Chatterjee notes that Exide plans to further roll out its smart battery concept. “At the moment, we’re primarily using analysis of battery status data to help our maintenance services and R&D teams,” he says. “However, during the SAP Design Thinking workshop, we identified numerous areas across the value chain where these insights can also deliver value. These include sharing information with our dealer network.”

Exide is currently working with SAP on developing a retrofit that would provide an Internet-based connection to any type of battery. In addition, the company is looking at introducing smart batteries to its industrial battery business. One example of this is the use of sensors and IoT technology to develop an anti-theft mechanism in battery banks that are used in telco towers. By helping avoid thefts of these battery cells, the smart batteries could significantly improve reliability of power supplies.

Exploring power as a service
“Thanks to the technology provided by SAP, and the intelligent processes it supports, we can revolutionize the storage battery market by exploring new business models of selling power as a service,” says Chatterjee. “In this way, Exide is well positioned to gain a larger share of a highly competitive market.”
Solution Architecture for the Smart Battery Service

The figure shows the solution architecture that enables the smart battery service provided by Exide. Based on SAP HANA® Enterprise Cloud, SAP S/4HANA® integrates with solutions that enable the collection and analysis of data from connected batteries. These solutions and services include SAP® Leonardo technologies; the SAP Cloud Platform Internet of Things service; the SAP Cloud Platform, SAP HANA service; and the SAP Analytics Cloud solution. In addition, this information is integrated into processes for sales, service, and warranty management, using the SAP Cloud Platform Integration service.

Figure: Solution Architecture for the Smart Battery Service