

BATTERY POWER PRODUCTS & TECHNOLOGY

Solutions for OEM Design Engineers, Integrators & Specifiers of Power Management Products

Optimizing Power Source Selection In the Design Process

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Product development teams share many goals, from extending an existing product line to launching completely new products. However, most share a more common, unified goal: to deliver a product or application on-time, within budget and to specification. The logistics for doing so are often complex and can lead to projects within projects within projects. Oftentimes, a key element to reach this goal involves a power solution, or more specifically, a battery or battery/charging power solution.

Most companies who design and manufacture these products or applications do not have the in-house expertise in battery chemistry and technology nor the bandwidth to handle the battery or battery/charger development. In these cases they must locate a power solutions vendor capable of providing not only the right power solution for their project, but a comprehensive review of all the possible options in a very complex landscape of available solutions.

To determine the right vendor, product development teams should find a power solutions provider who can provide both the expertise in their industry or market and demonstrate a robust power development strategy or cycle. Teams must also bring the vendor in as early as possible in the design phase in order to maximize all the design options available, meaning constraints such as a predetermined battery cavity size will not prohibit options from the bucket of possible solutions. Ideally, the OEM finds a long term power solutions partner who has the breadth of expertise and product portfolio to support the OEM over many of its product development efforts. In essence, the power solutions vendor becomes part of an expanded product team for the OEM.

By working with a power solutions vendor early in the design process, the optimum solution can be identified. Not only is this critical to the user experience, but may ultimately determine the product's success or failure. While the benefits derived from early initial involvement of the right power solutions partner can't be overstated, neither can the potential penalties of late involvement, such as higher cost, extended development timelines, sub-optimized performance, or in the

end - possible market failure.

An important consideration when evaluating power solutions providers is industry or market experience. Does the vendor possess broad market experience? Do they have application experience in your particular market or other markets with similar demanding performance specifications such as medical, automotive or aviation? While some markets may not have the same performance demands as automotive, for example, a vendor with the ability to meet those stringent requirements will be able to better optimize solutions for less demanding markets, regardless of what they might be.

Along with market experience, the right power solutions vendor should be one with broad battery chemistry expertise. While some potential vendors might focus on their ability to build packs, a true contributing partner to the design team's ultimate solution brings an understanding of the leading battery and charging technologies along with the underlying chemistry that exists down to the cell level. This specific expertise will enable the vendor to produce a solution that is right for the application, not just one that is right for them to produce. The vendor may even propose a number of solutions, outlining the pros and cons of each. It is here where their true value will be demonstrated as they help you decide on the very best power solution for your product or application.

Regardless of the challenges of the markets involved, the power solutions provider must have a robust product development process or cycle in order to not only provide a quality solution but provide support throughout the entire product design phase. The vendor should be able to provide expertise in battery development, project management, rapid prototyping, test and evaluation and product/application launch support.

In fact, a full-solution power vendor should bring a complete team to each project including application engineers, electrical and mechanical engineers, program managers, quality assurance personnel, manufacturing managers and sales managers. A more experienced vendor allows the product development team to basically outsource the power solution, knowing that the vendor has the knowledge, experience and team to provide complete support toward their goal of launching the product on-time, within budget and to specification.

The first critical stage in a true problem solving approach is

the battery development stage. It is here where the vendor must consult with the product development team in order to fully understand the application and its power requirements. Often there will be multiple options to consider and again, an experienced vendor will walk you through each option highlighting the pros and cons of each, and ultimately helping you make the right decision, based on a thorough understanding of your product/application. In addition, a vendor with broad experience in a market may have already developed a solution that could meet the application performance, environmental, regulatory and safety requirements. To take advantage of the savings, it is important to contact the power solutions vendor as soon as possible in the design phase so that already developed solution can be designed-in.

Once a solution has been agreed on, a quality vendor should have the ability to offer prototypes in a timely fashion and the ability to produce low volume runs for the design team to evaluate and test. The vendor should also be able to provide design sample prototypes that will indicate what the final configuration will be. Finally, the power solutions provider should be able to quickly and easily move to low volume manufacturing in order to iron out high volume manufacturing process to ensure a smooth transition to that phase of production.

During the testing and evaluation phase, the power solutions provider will perform the testing necessary to ensure product conformance and safety. It is here where the vendor should test against the requirements put forth by the product development team in order to ensure what they are building meets all defined specifications. In addition to application specifications, the vendor should be able to perform environmental and mechanical tests as well as industry specific tests such as those outlined by medical, automotive or aviation industries.

Finally, a first rate power solutions provider should be able to provide the product development team launch support, which includes a quick transition to high volume manufacturing, supply chain management, shipping/transportation regula-

tion expertise and even marketing assistance in order to help leverage your product's power solution.

It's also important, in a global market, to choose a battery provider that has a global presence. A vendor with design, manufacturing and support locations around the globe that can further support the product development and launch phase as they can support multi-site manufacturing needs, understand international regulatory and shipping regulations, and can often provide more timely support. In addition, they can work locally with your facilities and teams, regardless of geography, to help bridge typical obstacles of remote locations.

The right power solutions provider will be there with you through the complete design phase, through launch and ultimately through revisions and the entire life cycle of the product. A quality vendor ultimately becomes your partner as you aim to reach all the goals your design team has put forth.

While product design teams have an enormous amount of responsibility on their plates, one thing they can remove with confidence, is the power solution, given they have partnered with the right vendor. The right power solutions provider should have experience in your industry or market, or at the very least, relatable experience such as an understanding of dealing with stringent specifications. A quality vendor should also have a robust power development strategy in order to provide a quality solution and support throughout the entire product design phase, including launch. A thorough review of these questions and concerns with each potential company should enable you to select the right power solutions provider to meet all the goals a demanding product design team sets for itself including delivering a product or application on-time, within budget and to specification.

*Contact Ultralife Batteries at
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