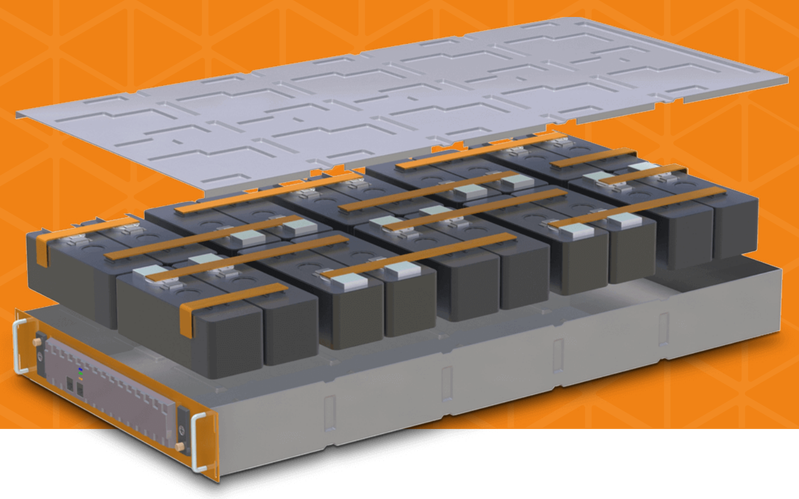


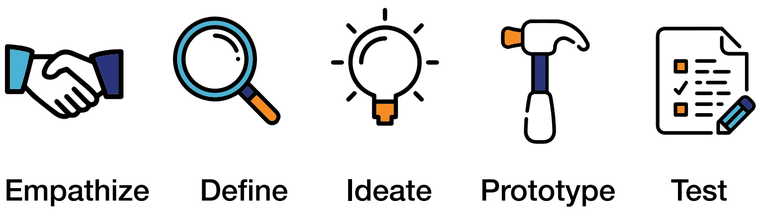
Design Thinking for Cadenza Innovation & LITHIUM-ION BATTERY TECHNOLOGY

Abstract

About Cadenza Innovation

We were presented with a series of challenges that centered around our client being unable to communicate their mission and product to prospective investors, manufacturers, and consumers. By learning about their organization we realized the three pillars of their company: ***Safety, Cost Reduction,*** and ***Energy-Density.*** These have been their focus in developing an industry changing technology for Lithium-ion batteries, and our job as Design Managers was to convey it.

The Design Thinking Process

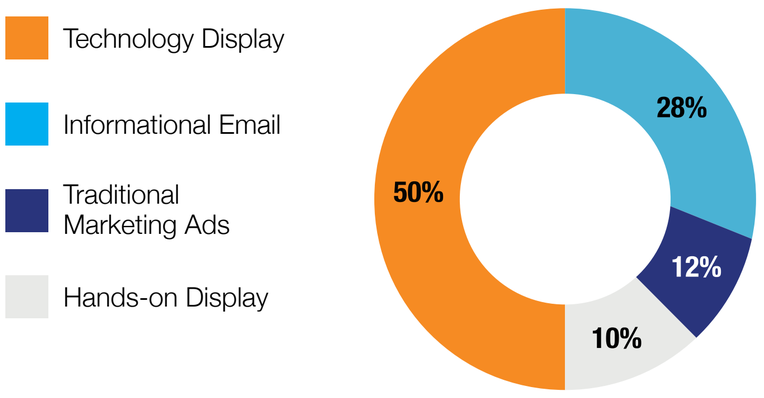


Insights

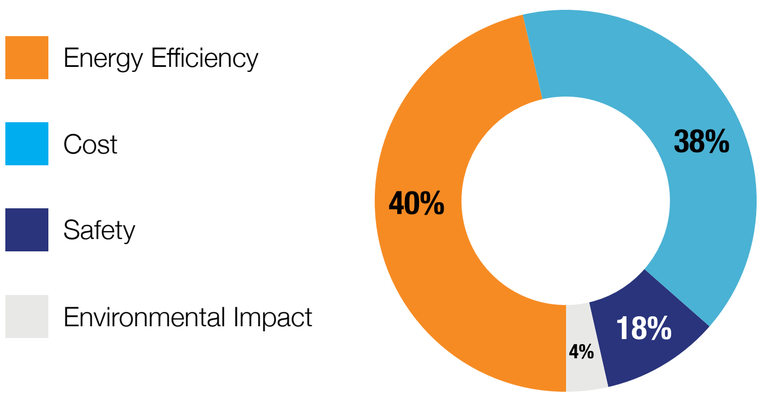
Key Problems & Research

By conducting a series of surveys, we narrowed our focus to a few areas to develop a strategy that would reach audiences and promote Cadenza's innovative technology.

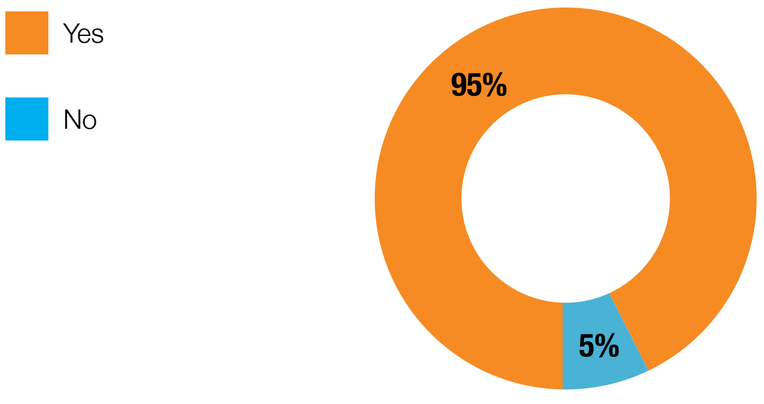
What is most attractive to you when it comes to technology advertisement?



What do you consider most important when purchasing a product?



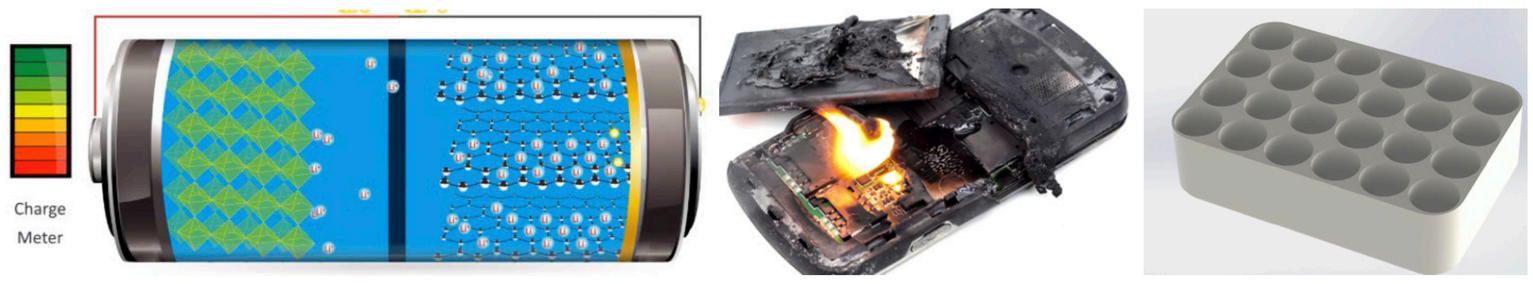
Would you spend more on an energy-efficient product that would last longer and contribute less waste?



Problems

Lithium-Ion Battery Problems

Consumer demand has forced battery developers and manufacturers to increase both energy and power-density. However, by doing this and not scaling the anode-cathode separator inside the battery to meet these new demands, many instances of defects and safety have come about. Cadenza Innovation's new design of internal packaging of cells has been proven to prevent thermal runaway and cascading short circuit, thereby minimizing the chance of material defect and safety hazards. Additionally, this new technology will enable manufacturers to create more powerful, or 'super-cell', batteries due to the high temperature and fire-resistant material used.



Proposed Solutions

Interactive Screen Wall

The highlight of Viacom's Interactive Wall is the screen. The main component is an 800lb HypeBox. It is a diorama-style enclosure with an Ultra High Definition (UHD) 84" transparent touchscreen. When empty, the HypeBox looks like a normal screen. But when you place objects inside of it, such as models or patents, and touch a respective grid it will light-up to give the audience a mixed reality experience. The only perceived drawback is the need for a large number of products and programming support to accommodate for the depth volume of the interactive wall. We found this to be an ideal addition to display Cadenza's hall of accomplishments, products, and patents to visitors and investors.

Interactive Exhibit Display

Promoting Cadenza and their innovative battery technology to target markets is essential. It is important to display the brand and product in a way that grabs attention and inspires manufacturers, investors, and individual consumers to want to learn more. One tool we found can achieve this is Padzilla. Based on information from a *Walker Sands' 2017 Future of Retail* survey, that showed nearly 80% of Americans own a smartphone, we determined this to be a factor to exploit. Padzilla is a fully functional large touchscreen tablet that looks, feels, and works exactly like a giant iPhone. Moreover, Padzilla allows you to present your product in an interactive and eye-catching way. This provides an approachable and recognizable display for trade shows, investor presentations, and conferences.

Hologram Technology

The company Kino-Mo Ltd has developed a technology known as Hypervsn. A lightweight projection unit supported by a proprietary, cloud-based management platform enables its usage in any client facing location. The Hypervsn technology is an effective visual solution for creating, managing, and displaying 3D video content with holographic effect, in which viewers can see 360 degree displays as high resolution holograms floating in free-air. The Hypervsn solution has been recognized as a Top 3 British Innovations of the Year and was among the World's 10 most impressive technologies by *Mashable* and *USA Today.*

Interactive Screen Wall - HypeBox

Interactive Exhibit Display - Padzilla

Hologram Technology - Hypervsn

Conclusion

Through our work with Cadenza Innovation we discovered new ways of disseminating important technical information in approachable and digestible ways. Our research has shown that people need user-friendly methods to engage individuals of all different levels of scientific expertise. The reality is many potential investors and scientists are not fully aware of the complexity of battery technology, therefore have provided ways for them to realize the importance. Dr. Ralf St. Clair, a leading researcher in adult literacy said, "Sociocultural learning approaches represent an attempt to understand the ways that people learn from others... The point is that learning is always social, and it is embedded in our culture and our values." Each of the previously mentioned tools engages individuals in familiar ways that has helped Cadenza to further their message and impact, including being ranked #6 in 2019 Top Tech Start-Ups in CT.

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