

Sleek Consumer Design and Robust Reliability Drive Success of Retail Sampler Kiosk

The Opportunity

An industry leader in the design and provision of innovative retail kiosks identified an opportunity in the marketplace for customer facing mechatronically enabled kiosks that would dispense both health and beauty supply samples and corresponding high value consumer coupons. The firm would partner with product manufacturers and some of the largest retail chains in the USA to supply and host the eye-catching kiosks with the ultimate goal of boosting and tracking sales.

The firm's challenge was to find a product realization partner that was flexible and experienced enough to design and commercialize the sampler kiosks. They set simultaneously rigid expectations of sleek industrial design, strict unit cost restrictions and a tight timeline of less than 10 months time-to-market.

Critical to the project's success was the basic system architecture of a reliable system of picking and delivery via a 4-axis robot and gripper combined with the more subtle sound, lighting and mechanics of the product selection and reveal. The firm needed quick access to a full engineering team that could rapidly and expertly employ a non-linear Agile development process that would allow for fast-tracking the development of higher-risk components while simultaneously developing more standard parts.

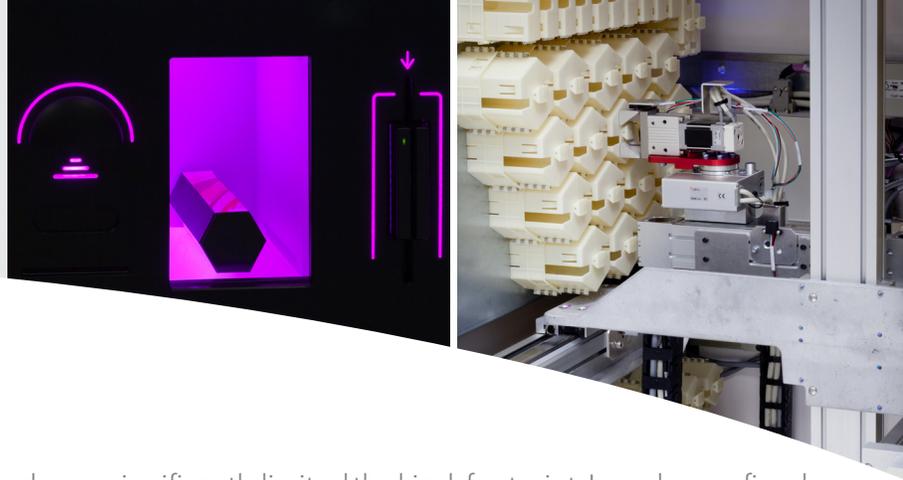
More challenges presented in the course of product development. Deadlines shifted forward for kiosk installations to be complete well before the holiday shopping season. Additionally, a third party industrial design concept was significantly reconsidered during late stages of product development.



Benefits of Working with Plexus

- + Expert teams of engineers, project managers and technicians who guide the project from concept to commercialization and beyond
- + Practitioners of Agile development processes that fully integrate the customer's vision, values and feedback
- + Carefully vetted global suppliers to rapidly source high quality materials
- + Reliability and serviceability experts who prioritize long term success in the field

From concept to retail store in ten months.



The Plexus Solution

The firm partnered with Plexus who deployed a multidisciplinary team of engineers, software experts and circuit board designers to build a proof-of-concept robot. The Agile development process was engaged to mitigate risks for more complex components while simpler subassemblies were designed and prototyped. The Plexus team was in constant communication with the customer, ensuring that each step of the product realization process was specified within two- to three-week Sprints, thus allowing the customer the opportunity to reflect on the project's progress.

As development progressed, complex and simpler subassemblies were combined and the next complex component was off-ramped to leapfrog ahead of the other steps to better ensure supply chain and time-to-market compliance. Agreed-upon kiosk component parts and materials were sourced from well-vetted suppliers who had the required volume on hand, could make timely deliveries to the target production facility, and met quality expectations and unit cost goals. Plexus integrated its manufacturing engineers during the early prototype assembly to get their feedback on design relative to manufacturability.

Issues of reliability and resupply in the field were the most important customer priorities. A key challenge was the capacity requirement of 300 samples, including the deft dispensing of different sample formats, such as bottles, cards and envelopes. Plexus engineers were working with a third party industrial design concept that

significantly limited the kiosk footprint. In such a confined space, challenges arose with cable management and robot reliability due to pick places being difficult to reach.

As working prototypes of the sampler kiosk were tested and reviewed, the aesthetics of the product reveal area - where consumers would grasp the sample after it was dispensed from the kiosk - didn't meet customer expectations. Shadows that fell across the product sample were eliminated through an intense series of customer input sessions. In the midst of competing unit cost pressures, industrial design expectations, and capacity requirements - plus a quickly encroaching deadline - the Plexus team helped lead the customer through a series of difficult choices based on a mutual understanding of their business case and hard requirements.

A total of 42 sampler kiosks were successfully tested and installed in retail centers for the 2014 holiday shopping season. Retailer satisfaction is very high. The kiosks have proven themselves to be forceful sales generators, far surpassing typical coupon redemption rates.

The customer is only beginning to explore the many possible uses for its initial investment in sampler kiosks. The external graphics panels, programmable dispensing system and interchangeable product bays all make for a robust mechanical and marketing design that can easily be tailored to future market segments and success.



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