





















In terms of dollars and fuel savings, implementation of the winning bracket will reduce the weight of a GE LEAP aircraft engine by 1.7 kg (3.76 lbf). If similar weight reductions were to be applied to all flying aircraft worldwide, annual fuel savings from 12 to 22 million gallons of fuel (at a current value of \$37M - \$71M) could be realized.

As a result of the success of the experiment, GE announced in May 2014 the activation of its global co-creation community FirstBuild.com<sup>vi</sup> – an online community dedicated to conceiving, engineering and building the next generation of major appliances for use in the modern home. Engineers, designers, scientists and home enthusiasts will participate in the development of breakthrough major appliances and solve engineering challenges. Participants will identify market needs, directly participate in the product development and watch via social media as ideas speed from mind to market at the FirstBuild™ micro-factory<sup>vii</sup> in Louisville, KY. GE opened the community to the public on May 15 with two challenges already in place.

- Developing a micro-kitchen: FirstBuild is participating in the NYC Economic Development Council's annual "BigApps" challenge that started May 7. FirstBuild will engage existing online communities as well as the FirstBuild.com community to help solve a growing problem in many metropolitan areas across the globe: increasing urbanization and population growth, which are driving the size of homes down and mortgages up. The challenge is to solve the design and engineering hurdles in creating a micro-kitchen that will maintain the style and functionality, but in a significantly smaller footprint than traditional kitchens.
- Indoor grilling: Grilling is a major part of the American lifestyle. A 2013 study shows that 80 percent of U.S. households own a grill or smoker. Yet, grilling can be dependent on the weather. FirstBuild is asking the global community of makers, designers and aspiring chefs to take the weather out of the equation by designing and engineering the ultimate indoor grill.

In addition to these challenges, GE has more than 40 challenges under consideration for future engagement via crowdsourcing.

## **References**

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<sup>i</sup> Brian Yanoff, et.al., Open Innovation in Precision Additive Manufacturing with Refractory Metals, RAPID 2014 Conference and Exposition, Detroit, MI, June 9-12, 2014.

<sup>ii</sup> Wikipedia, the free encyclopedia.

<sup>iii</sup> Southwest Airlines Co., 2012 Annual Report to Shareholders, p.43.

<sup>iv</sup> [http://en.wikipedia.org/wiki/Jet\\_fuel](http://en.wikipedia.org/wiki/Jet_fuel)

<sup>v</sup> <http://grabcad.com/>

<sup>vi</sup> <https://firstbuild.com/>

<sup>vii</sup> Microfactory, Inc. is a wholly owned subsidiary of GE, and FirstBuild is a registered trademark of Microfactory, Inc.