



2016 PepsiCo/Society of Women Engineers STUDENT ENGINEERING CHALLENGE

“New technologies are reshaping the way in which we have historically interacted with retailers, shoppers and consumers.” – Indra Nooyi, Chairman and Chief Executive Officer, PepsiCo

“We are in the business of discovery, but discovery is not about what you discover in the lab. Discovery is about wherever the idea comes from; embrace it! That is discovery. Look inside, outside, in developing markets or emerging markets.” – Dr. Mehmood Khan, Vice Chairman and Chief Scientific Officer, PepsiCo

Who We Are

PepsiCo products are enjoyed by consumers one billion times a day in more than 200 countries and territories around the world. PepsiCo generated more than \$63 billion in net revenue in 2015, driven by a complementary food and beverage portfolio that includes Frito-Lay, Gatorade, Pepsi-Cola, Quaker and Tropicana. PepsiCo's product portfolio includes a wide range of enjoyable foods and beverages, including 22 brands that generate more than \$1 billion each in estimated annual retail sales.

To have the right beverage dispensing, vending or cooling equipment is key to drive sales and consumer's engagement with our products. We at PepsiCo Global Equipment Development are continuously looking for innovative solutions to improve our equipment and deliver optimal solutions for our customers while maintaining excellent product quality for our consumers. One of our recent equipment breakthroughs is the Pepsi Spire® – a full portfolio of beverage dispensers helping our customers to engage with their consumers and allowing consumers to explore the vast range of beverage choices.

Challenge Statement & Requirements

In the tradition of PepsiCo/SWE Engineering Challenge, we are calling for your innovative ideas on how to improve our equipment performance. This year's Challenge will focus on beverage dispensing equipment.

In order to deliver a consistent, high quality beverage to our customers, our trade qualities (i.e. carbonation volume, syrup ratio, chlorination level) as well as our equipment parameters (i.e. flow rate, fluid temperature and pressure) must be within specifications identified by the PepsiCo team. However, with existing technology, these qualities and parameters can only

be monitored and adjusted when service personnel is onsite and are performed manually leading to substantial labor cost and equipment downtime.

Implementation of cost effective, in-situ, analytical technologies (i.e. lab on a chip) to measure and provide feedback for automatically adjusting trade quality and equipment parameters in our fountain machines would allow PepsiCo to further improve the consistent quality of dispensed PepsiCo beverages, reduce machine downtime and labor costs.

Challenge Requirements:

- Identify technologies for further improvement of trade quality and increase productivity of our beverage fountain machines.
- Do your research and be creative!
- Provide details around how feasibly your solution can be executed in terms of but not limited to, the following:
 - Cost of implementation
 - Scale (size of impact)
 - Time required to implement the technology
 - Resources required
- Provide details on the projected outcome or impact that your innovation has on PepsiCo business and/or customers & consumers.
- Read full terms and conditions for submissions in the 'Terms and Conditions' section at <http://www.PepsicoStudentChallenge.swe.org>

References

1. Spire Home URL: www.pepsispire.com
2. PepsiCo Global R&D College: *Fountain Equipment Principles of Operation (exert)*, 2015.