**S&T Sustainability by Design**

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**Key Objectives:**

Develop capability of how novel process (re)configuration and product design influence environmental impact.

**Background**

A key cause of process environmental impact occurs when a production line is stopped in order to changeover from one product variant to another. Often this activity will result in a need to fully clean the plant to remove any traces of the previous product. In addition the packing line may need to be reconfigured to pack a change in product format e.g. from a 100 ml to a 50 ml container.

This changeover takes a finite amount of time, requires chemicals and water for cleaning, energy for heating the water and generates a wastewater requiring treatment. Clearly the more often that a changeover occurs the less efficient the process is. There are a number of options available to address this problem ranging from simply speeding up the changeover process through to a radical re-design of the process.

**Novel Product Assembly**

- **Challenge** – develop a methodology to determine the optimum way to assemble a dry mix product taking into consideration constraints such as production portfolio, tonnage per sku and the need to manage allergens

  - **Category sponsor** – savoury design team (Tim Warren)
  - **S&T Learning’s** – approaches for product assembly and scheduling methodology with potential application across all Unilever category operations
  - **Status** – started in Q3 2014 and will complete during Q3 2015

**Technology Choice Tool**

- **Challenge** – provide a methodology to enable consideration of environmental impact of technology options within a process design

  - **S&T Learning’s** – improved capability regarding the selection of technologies used in category designs to achieve desired outcome with reduced environmental impact

  - **Status** – started Q2 2015 (Cranfield University)