



CASE STUDY

Assessing and Reducing Economic and Environmental Impacts of Changeover Operations

Altro is a leading UK manufacturer of safety flooring and wall cladding systems. Driven by a continuous improvement spirit, the company already had notable achievements in waste recycling and process improvements.



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The Challenge

As a growing company Altro provides a variety of flooring options to its customers. While this large product range is beneficial for business it brings a significant burden to its manufacturing operations through changeover impacts. Furthermore, market trends are moving towards more customized products at smaller quantities which increases the number of changeovers Altro has to manage. They described the situation; "When we looked at our downtime over the past few months, the largest downtime was in the month with the highest number of changeovers." As the number of changeovers increases the environmental and economic impacts associated with the changeovers will lower Altro's sustainability performance. Therefore, it was a key objective to improve changeover performance by targeting these impacts.

Our Approach

Doctoral researcher Ergun Gungor visited Altro's production facility to observe several changeover operations. Data gathered as a result of these non-participatory observations was coupled

with interviews with the management team. This data was analysed to identify and understand high impact points during a changeover process. Once we combined the data gathered from the site visits with our experience from previous visits with other companies, it was possible to put forward suggestions that would reduce the changeover impacts by taking short and long term actions both in practice and technology.

Outcomes

Our findings suggest that Altro could improve their changeover performance drastically by following several short-term low cost solutions and a few medium-high cost long term solutions. Most of the short term solutions were practice related and could be implemented fairly easily. These include applying a SMED methodology to their system and externalising as many steps of the changeovers they can. Better information management also takes their performance one step further. A large portion of impacts occur as a result of the everyday decisions made by operators. Reviewing and upgrading the changeover standard operating procedures will allow

Altro to cut its changeover times by almost half. Furthermore, operational changes will also help to reduce solid waste and material losses, throughout the entire changeover process.

Next steps

In order to improve changeover performance, Altro will pursue the suggested changes, while building on this preliminary study. Changeover operations require embracing a continuous improvement approach and consideration of changeover processes within the product and process innovation.

Wider Lessons

After visiting many factories producing a wide range of products, we have learnt that changeover impacts are clustered around knowledge, design and management causes. While the factors affecting each impact type may change, the improvement should start by focusing on these root causes. For more information contact doctoral researcher Ergun Gungor, zeg21@cam.ac.uk.