Innovation Radar

Problem Definition Card

Headline Problem Description

How can the LEGO Group reduce the likelihood of static in the production atmosphere all year round, regardless of weather conditions?

Who does it affect?

Front line staff / Line Managers / Production Executives / All production facilities and processes (moulding, decoration and packing) / Suppliers / Consumers

Why is it a problem?

Increased scrap rates / Increased cycle time / Reduced quality / Discoloration of bricks / Electrical shocks of staff / Elements sticking / Safety due to elements on floor / Lost productivity due to injured staff / Safety (employees getting hurt) / Mistakes going to the customer (elements not present in the final product) [or additional elements going to consumer] / Efficiency (production speed / stops) – output / number of employees in production / Waste of elements – end up on the floor / Customers don't get the pieces they need / Mistake in packaging – missing elements / Product quality (all elements into the packaging) / Need to clean containers (of stuck particles / pieces) / Low output: on counting machines caused by elements sticking together; due to elements sticking to the machinery; due to high reject rate on the control scales / Risk of wrong content in prepack bags / Complicated to clean equipment / Risk of colour contamination or discoloration in moulding

Why has it not been addressed?

"We've learned to live with it" (comes with the territory) / Lack of countermessure knowledge / Workaround solutions in factory not being joined up or standardized / Seasonality – winter (dryness increases static) / Disparate problem (lots of static all over the place) / Location in factory

Additional detail that may help quantify the problem

Rejects up to 20% (when bagging at moudling machine) on very small light parts / 1 hour down time per shift (= 3hrs lost per 24 hours per packing line) / Static can cause up to 10 stops per day – staff apply glycerine to counting machines once per hour to reduce

Constraints to solving this problem

There must be a bag as part of the packing process / The bag must be of good quality (feel, looks etc.) / The bag must be easily opened by children / Preferably a bio-material

Expert domains, Analagous industries & Key words to consider

Antistatic additives / What about other industries where powder & static mix pose a threat (gun powder / custard powder, aluminium powder - highly explosive and static a risk) / Electronics: all components in anti static packaging / Operatives wear wrist bands / Microelectronics / Hearing aid industry / Clean packing / Use fabric softener?

Innovation Radar

Problem Definition Card

Headline Problem Description

How can the LEGO Group increase the use of environmentally friendly alternatives to current production materials such as ABS while maintaining the perceived quality of the finished product?

Who does it affect?

Environmentally conscious consumers / The Media / All production facilities / Suppliers

Why is it a problem?

Global corporate social responsibility / Reputation / Competition / Contributes to the longevity of our business / Oil prices are rising (need to find an alternative eventually) / Lack of oil = no plastic / It's an open loop and needs to be closed / Regulations / An untapped market / Environmental impac

Why has it not been addressed?

"It's complicated" / "We're locked into a system" / No urgency / Needs an alternative that won't kill what we do today / There is no burning platform / Bio is not necessarily eco-friendly / Victim of our own success re quality / No business case / Not good enough quality

Additional detail that may help quantify the problem

Of the products that reach the shops, 60% of the CO_2 emissions happened before the LEGO Group processed the plastic + 20% happens during processing / 50k tones of material used annually

Constraints to solving this problem

None captured thus far. We are open to suggestions on new materials but would also like to understand the consequences of any use (for example if new tooling were required, or other changes to production techniques) in order for the material to be successfully implemented at scale.

Expert domains, Analagous industries & Key words to consider

No specific examples captured thus far but we are interested to learn from any industries where one primary material has been replaced by another and the overall experience for the consumer has been maintained or improved.