PRODUCTION NETWORKS FOR LEGO PRE-PACKAGING

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ABSTRACT

LEGO System A/S produces bricks with a high variety and volume, all though they reuse many of the brick-types in multiple LEGO boxes, which allows them to create a large but also a finite product portfolio in terms of the boxes. Approximately 60 % of the LEGO boxes on the market are introduced within the same year, which makes the innovation on their boxes very high. Even so, the variety in LEGO's bricks makes it possible to create an even bigger solution space, and therefore LEGO has a vision of letting customers customize their own or already existing LEGO sets. LEGO suggests that the customization should be handled in the pre-packaging process, where the bricks are put into transparent plastic bags.

The current pre-packaging process makes use of old hardware and software, and it is stated that these are not suited for one-of-a-kind packaging. Counting machines are put in a line layout which is ideal for mass production. However, this line layout might not be well suited for mass customization, and therefore, LEGO would like an analysis of the current line layout with a focus on limitations regarding mass customization. Furthermore, it is expected that new pre-packaging layouts suited for mass customization will be conducted and evaluated with discrete event simulation software.

Figure 1: Example of the current line layout setup.

Collaboration with LEGO and literature study on machine layouts and mass customization will be used for conducting new pre-packaging layouts. Constraints of the pre-packaging process will be considered and help setting up criteria for success for the conducted layouts. By these criteria, the layouts will be evaluated by the discrete event simulation.

Acknowledgement

REFERENCES

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