

To streamline the distribution network of asphalt

– a case study at Skanska Industrial Solutions AB

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This article is based on a master theses work (Bennet & Ahlqvist, 2018) where the goal was to identify potential for increased resource efficiency within a distribution network of asphalt. The master thesis was conducted at Skanska Industrial Solutions AB in Skåne, Sweden during the spring of 2018. The article present a short introduction to the master theses.

For the last decade a lot more focus has been dedicated to construction logistics both in the industry and the academia. Since every project within the construction industry is unique it forces the business to be flexible. Unlike the housing and building development the asphalt business consists of short projects with a large geographical spread. Asphalt is by nature a product that depends on JIT principles for its transportation from the manufacturing site to where it is to be processed. The reason for this is the need of sustaining a high temperature until applied on the new road surface. Thus, asphalt production needs a steady flow of asphalt being transported from the manufacturing plants to the project site.

The JIT- principled transportation in combination with the many external risks that are present within the supply chain results in high uncertainty when forecasting that leads to last minute changes to avoid a shortage at the production sites. With information sharing and communication often lacking it can create a bullwhip effect further up in the supply chain. These factors often result in trucks not being fully utilised or in contrast not contracted for a complete work day. The problems stated above led to the following purpose being devised for the thesis:

“The purpose of this master thesis is to identify the potential for more resource efficient transportation of asphalt at Skanska Industrial Solutions AB, also to evaluate solutions on how to realise this goal.”

The study achieved its stated purpose by identifying eight different potential solutions, with direct and indirect impact on the resource efficiency.

1. A new transportation planning set up – A new functions that deals solely with transportation planning, this can be done with different degrees of external involvement.
2. Route planning – Rather than only be transporting asphalt from the manufacturing

site to the production, the transport should perform more than one order per trip. This could include, after delivering asphalt, driving aggregate from the quarry to the asphalt plants.

3. Pooling – Create a pool of available non-time-critical transportation tasks that the transports can perform during production stand stills or when there is time left over to fill a full work day.
4. New ordering unit – To order transportation of asphalt by indicating ton/hour that should be delivered with a constant flow.
5. Operation focus – Focus different parts of the operations towards the strategy that suits them and their customers best, i.e. some parts need efficiency and other flexibility.
6. CRM-system – Implement a CRM-system to maintain and excel at the customer relations.
7. Flexible scheduling – make the scheduling flexible to mitigate the effects of e.g. weather and to lower the strain on the manufacturing plants during peak hours.
8. A new planning tool – Create a tool that all effected parties can interact with and create an accurate overview of the operations.

CONCLUSION

The potential solutions are of varied difficulty in regards to implementation and impact. The actions are, however often interdependent to be fully utilised. One that can be implemented separately from the others is a planning system that enhances transparency throughout the supply chain. In conclusion there are a lot of possibilities for Skanska Industrial Solutions Ab to perform with higher efficiency, however the transition will not be a sprint but rather a steeplechase.

REFERENCES

Bennet, C.W., Ahlqvist, V., 2018, *Att resurseffektivisera ett distributionsnätverk av asfaltstransporter*, Ex.arb. Lunds Universitet