

KSE Webinar: How to use data to optimize your throughput and quality

Q&A Summary

Question 1: Are there any rules of thumb for the usage of multiple weighers? When do you recommend a movable hopper? For instance, I have 2 weighers now, when should I decide to install a third one?

If your weigher is the bottleneck, you have excess capacity in your mixer. So, if your mixer is not utilized fully, you should focus on the dosing of the ingredients or transports before the mixing process. In the event that the mixer is not fully utilized, it might be useful to add another weigher. It is always a matter of finding the right balance between an investment and what that investment will gain you in terms of throughput or quality. Finding that right balance is not easy. It's all about optimizing that line until you reach the right point, and not so much a rule of thumb.

Question 2: To develop a digital twin of a plant with a fully automated solution, what would you need from a customer in terms of data and how long would this exercise take in general?

First of all, you want to know what the customer predicts he will produce in the future. Customer orders and recipes are the least amount of data that is needed. Preferably with some variety for different scenarios. Do you want to make more ingredients, more different end products and to have more variability in the batch sizes or stick to one batch size? And of course, are you talking about a greenfield or brownfield project? Budget is also an important question. The length of time it takes to develop a digital twin depends highly on the level of detail that you need. For instance, if you have a relatively simple plant layout with, let's say, a premix production with one mixer, one sacking line and two weighers, then you can build a digital win in a matter of days and run experiments on it. The designing of a digital twin is done quite quickly. Validating it, which is also very important if you want to base your investments on it, will take several weeks. If you have a rather complex factory layout such as you saw in the animations with container transport systems, the design will take a couple of weeks. The conclusion is that it's very useful because it can save you a lot of mistakes, but it is also a bigger pre-investment.

In the event of a greenfield or large brownfield site this often has a direct payback. For instance, you would invest 50,000 USD (?) to do a simulation study but save a floor, or a single machine or optimize routing to get a 10% higher throughput each bring >50k in results. We have even had projects where we simulated for a new facility and shaved off >1mil of investment or phased the investment out in a better way.

Question 3: Can a digital twin be used for any type of plant?

It can be used for any type of plant, whether it's a feed, premix or petfood plant. It really depends on what do you want to use it for and what level of detail you want to build in to validate your case. If you are building a new greenfield site and you want to validate the overall operations, that is quite easily feasible within a couple of weeks. In case you want to build a digital twin that you want to use throughout the lifespan of the factory, then you need to build in a much higher level of detail where you can build in every single step of the process and really validate that process, and this will take much longer, but will reap benefits for years to come.





Question 4: If there would be an optimization in an existing facility would there be a certain margin for the customer for a no cure no pay agreement?

It really depends on what is the case that you want to validate. If it's a greenfield site, the validation is much different than from an existing facility where you want to test a certain investment. Executing certain investments based on simulation for say an automation change or adding some equipment that is validated upfront, there you can work with some guarantees when you do a simulation up front. If it is a yet to be build facility, the biggest value is optimizing the design and avoiding costly mistakes. Often the payback is either instant or in a future phase. The question the other way around would be if you would be willing to pay based on the saving as well?

It's a joint effort and must be treated case by case. We can't just say it's possible or not, it really depends on the customer case, level of detail in the simulation and other influencing factors.

Question 5: Do you record this webinar?

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