→ From Krakow to the world

Control-Service and a short story about how batch manufacturing systems with process simulators help meet the most unusual needs.

» *'Imagine that you are overwhelmed by a sudden and urgent need to buy new shoes. You are unsuccessfully browsing through online stores looking for shoes that look at least a little bit like the ones which image in your head persistently haunts you. Finally, you come across a store that has a selection of colors, shapes and heel heights. You configure your ideal shoes and send in your order. From the online store it goes into the manufacturer's master factory management system, and then...'*
– about how the process goes on and other possibilities offered by process simulators (more and more often known as Digital Twin) Renata Poreda talks to Jaromir Turlej, President and owner of a Krakow-based integrator company Control-Service.

Renata Poreda, ASTOR: Polish engineering thought in the era of global industrial revolution. Does it sound proud?

Jaromir Turlej, Control-Service: Given our company's operations and the expertise of our integrator engineers, it definitely does. We execute projects in international teams whose members are people from USA, Mexico, UK and Poland of course. We provide solutions for large corporations. We have successfully completed a project in the USA, we are negotiating the delivery of two large control systems in Russia.

We also derive a lot of satisfaction from all the projects that we implement locally in small and medium-sized companies. More and more often we see that our domestic companies want to automate because thanks to this they can respond to the rapidly changing needs of consumers. Manufacturing is a big challenge today. I would compare it to the prospect of instantly adjusting the color palette of paints according to rapidly changing trends in home finishing. Similarly, the ability to quickly change the taste of beverages or ketchup, to instantly create new sauces, yogurts, shampoos, etc. seems attractive.

RP: Sounds unbelievable

JT: Right? But only for non-specialists. Thanks to so-called batch production systems, it is possible to change the flavor or color of an entire production run almost immediately.

VV Jaromir Turlej

It is possible to quickly create products and easily modify them by introducing corrections in the recipes. What is important, the changes are introduced by a technologist without the participation of programmers.

Batch production systems are suitable for all applications involving thermal, pressure or chemical mixing and processing of multiple components to produce a finished product. They are ideally suited for the chemical, pharmaceutical and food industries. The advantage of batch production is that the system itself takes care of resources, i.e. availability of equipment and raw materials needed for production.

RP: What does it look like in detail? How can such a process go from A to Z?

JT: Imagine that you are overwhelmed by a sudden and urgent need to buy new shoes. You are unsuccessfully browsing through online stores looking for shoes that look at least a little bit like the ones which image in your head persistently haunts you. Finally, you come across a store that has a selection of colors, shapes and heel heights. You configure your ideal shoes and send in your order. From the online store it goes into the manufacturer's master factory management system, and then your order enters the production process management system which checks the availability of the required components and, if not available, generates an order to the supplier

For example, an unusual paint color, which is out of stock or the original shape of the heel.

The system gets feedback from suppliers when they will send the necessary components. Based on this information and the number of orders, the system calculates when it will be able to produce the shoes and you are informed by e-mail or text message about the date of expected delivery. During the production process, individual machines responsible for making shoes communicate with the production control system, informing about possible emergencies and the system takes this into account when directing production orders to them, ignoring those that require repair or maintenance.

Of course, in the case of a serious failure or downtime, resulting in changes in production plans, you are automatically notified by email about the extension of delivery times along with an apology. Once you receive the desired package of shoes, the information from the courier company reaches the manufacturer and automatically after 3 days you receive a survey of customer satisfaction with the quality of service and product as well as thanks for your purchase. Your answer will reach the quality control, marketing and sales departments. After analyzing data from thousands of such surveys, an AI-based algorithm will generate reports, the parameters of which will be used to improve products and services.

In the world of Industry 4.0 (Industry 4.0), it is only here that the person comes into play. Of course, all data are available and integrated in a common database for all systems in a company. This makes it easy to generate reports that are tailored to your current needs. All relevant data is backed up automatically in the cloud and local servers are virtualized for quick recovery in case of failure.

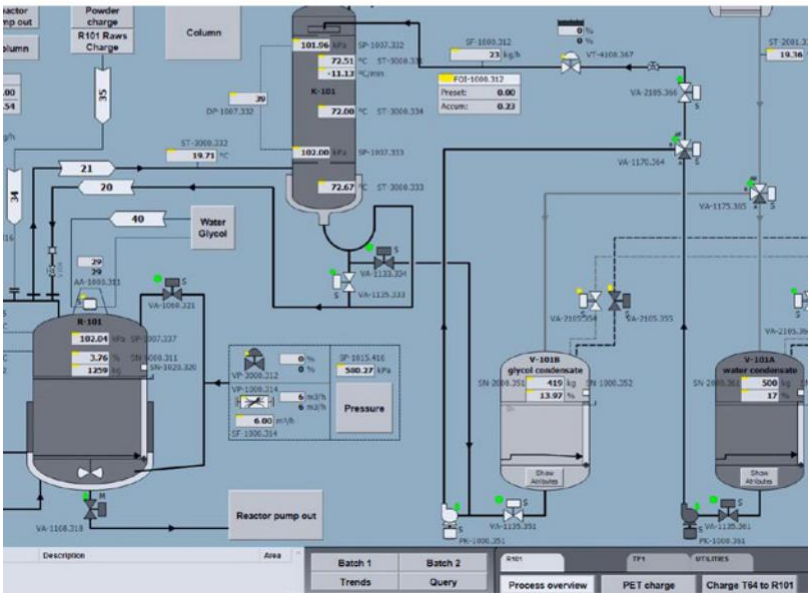
The entire production process of your shoes can be tested in a virtual environment beforehand, as the system obviously has a digital twin.

RP: A total revolution! As far as I am concerned, it is an ideal process that fits into the idea of Industry 4.0

JT: Yes, we feel that the projects we have implemented are fully in line with the assumptions of Industry 4.0. The solutions we provide for controlling production processes are integrated with superior systems, e.g. SAP. Thanks to this, production orders often go straight from order processing departments to our system.

The availability of components required for production is controlled automatically, and in case of shortage or under-supply, it is impossible to start production and information about the need to order components is generated.

VV Plant's central control room Stepan Poland, source: ASTOR



VV Screen view of the company's manufacturing process simulator in Stepan Poland, source: ASTOR

» Long-standing partnership with our Gold Partner - the Control-Service company - is not only a successful commercial cooperation, but above all mutual trust, high business ethics and joint search for opportunities for mutual development.

It is also a highly qualified engineering staff that faces the challenges imposed by the changing market. A flagship example is reaching for the attributes of Industry 4.0, such as, among others, Digital Twin - a digital twin of the installation, which allows simulation of the real process in a virtual environment.

Successful implementation of projects for customers such as Sniezka or Stepan allowed the company to gain and maintain the title of leader in the field of integration of highly specialized process, which is the batch production. Despite the fruitful past years, as the supervisor of the Control-Service company, I still hope that the best is yet to come!

Szymon Pason, Automation Systems Specialist
ASTOR Kraków
Control-Service Supervisor

VV Control-Service employees during the work on the project

Each batch production system delivered by us has a production process simulator, thanks to which it is possible to check in a virtual environment the correctness of its operation before implementation on site, test new solutions or train operators.

RP: Here comes another important aspect. 4.0 technologies give development. Is this also the case for you?

JT: Each such project is an opportunity for development. The most development-oriented project for Control-Service was the control system for chemical reactors together with process simulator implemented for Stepan company from USA. It is a corporation owning many factories all over the world, dealing with, among others, creation of extract for Coca-Cola, active substances for powder producers or ingredients for production of foams for automotive sector.

For over a year, we worked with process engineers and technicians from Stepan to develop a system that would serve as a model for other branches of the company. Specialists from the USA, Mexico, Great Britain and the Polish branch of Stepan took part in the project.

This allowed us to gain experience in work with an international team and, above all, to acquire technological knowledge necessary for the development of such systems. The result of successful cooperation on the local market was our project in the USA, where we were hired by Stepan as a supervisor for a local systems integrator. This collaboration has continued uninterrupted since 2015.

RP: This is probably not the only project that goes beyond the borders of not only Krakow, Lesser Poland, but also our country?

JT: That's right, because another project that began a productive collaboration with an international corporation, was a project of a batch production control system equipped with a simulator of technological processes, made for a corporation producing interior finishing materials, such as floor panels.

Due to our knowledge and experience in the field of chemical reactor control, we have executed the control system, convincing the investor to implement a number of our own solutions. This system turned out to be better than the existing corporate control system, on which we were originally supposed to be based. It was appreciated by the investor and resulted in another project. At the moment, we are negotiating the realization of two projects concerning the controlling of the investor's factories in Russia.

RP: And Sniezka company?

JT: Likewise. However, our cooperation lasts even longer because we have been working for eight years in the field of automation of formulation production processes with our domestic manufacturer of paints and varnishes, successfully conquering foreign markets. Over the last few years, thanks to automation of production, and the resulting improvement in the quality of manufactured products, Sniezka company has grown from a local supplier to one of the major players in the international arena. At present, it is the 22nd supplier of paints and varnishes in Europe.

We built the first recipe system for this company in 2013 at the factory in Brzeznica. Since then we have created several such systems in two more factories in Poland. We are also starting to cooperate abroad. We have already completed first projects together in Hungary in the local production plant of Sniezka company.

RP: What do you think is an indicator that an implementation will be successful?

JT: It is crucial to carefully develop a solution concept. For this you need a very good contact with the client. Understanding and willingness to meet the needs of the investor and openness to changes and new solutions is, in my opinion, the basis of every successful project.

The changes we pushed through in our customers' existing solutions later became a standard in building the next systems. Interesting solutions found at our clients' facilities often changed our point of view and contributed to development of our programming or design skills.

Finally, and most importantly. On both sides (investor and solution provider) there must be well-motivated, open to cooperation people for whom work is a passion

– people who do exactly what they want to do and striving for excellence in what they do is their daily routine.

RP: You've already said a lot about external projects, for others. And your own project? Have you always dreamed about your company?

JT: I started thinking about it during my internship after my third year of college. In the course of talking to the UR staff, I learned that they were having trouble servicing the frequency converters. I had an idea to open a local service in consultation with the manufacturer. I finished my studies, went to work where I even put the idea into practice and after six months I already knew what I wanted to do.

I wanted to create a company dealing with, in accordance with my education, automation of technological processes, which would be a friendly work environment for people who want to develop, like what they do and therefore are good at it, have a high level of motivation, possess top-class tools and whose products and services are received by customers for whom value for money, usefulness and innovation of solutions are important, not the price alone. Luckily, I managed to attract people with whom building and developing the company is a pure pleasure.

RP: Where does the Control-Service name come from?

JT: When creating the name, I wanted it to be associated with services related to control systems, and at the same time, in accordance with Polish connotations for the word 'service', to pay particular attention to the role of after-sales customer service in the company's mission. Additionally, assuming the possibility of export in the future, it would be good for the name to be understandable abroad, as well. That is how the Control-Service was born.

RP: The question I left for last is about the history of your cooperation with ASTOR. Where did it start, what was our first joint project, what does this cooperation and the title of a Gold Partner give you?

ASTOR?

JT: We started our intensive cooperation in 2013 during the implementation of a project for the above-mentioned Sniezka company. At that time, we were taking our first steps in building batch production systems. Your comprehensive technical support, high level of knowledge in the field of offered products, readiness to help and patience could not be overestimated.

If you are starting out with a product as complex as the AVEVA System Platform (formerly Wonderware), used to make software that controls the production process of an entire plant, the competent technical support offered by the vendor is extremely important.

VV Gold Parters, business meeting, Wisla 2021. From the left: Szymon Pason and Stefan Zyczkowski (ASTOR), Jaromir Turlej and Damian Majchrowski (Control-Service) and Tomasz Michalek (ASTOR)

Obviously, our cooperation is still evolving. After eight years of continuous work with AVEVA System Platform (former Wonderware), passing international exams confirming our competences, dozens of completed projects, we have already gained knowledge and experience which makes us need technical support less frequently. That is why recently our co-operation has focused more on joint marketing and sales activities. Joint visits to customers, organizing conferences, events, cooperation in creating concepts, exchange of references, make the synergy resulting from such activities more and more visible in the number of new projects to be implemented. That is why this type of collaboration with ASTOR is most valuable to us at the moment.

From a supplier of products and software tools, offering excellent technical support, you have become a very important business partner for us, with whom we would like to continue the successful cooperation, contributing to the development of our companies.

RP: Thank you for the conversation. •

Interviewed **Renata Poreda**
Communication & PR Manager, ASTOR

CONTROL-SERVICE

CONTROL-SERVICE
ul. Płk. S. Dąbka 17
30-732 Kraków
www.control-service.pl
info@control-service.pl