

NovaCast – technical innovation for a greener future

Originally written in Swedish by Lotta Larsby, Editor at Gjuteriet*

Translated by NovaCast's Marketing Department

At NovaCast in Southern Sweden, one live by the motto "every casting counts". For Martin Hagbyhn, Håkan Fransson and their colleagues, it is a motto they make true every day. They want to make sure that only what is actually needed is cast. NovaCast's products are targeted towards the entire foundry industry and help take control over all steps in the process chain. At the head office in Ronneby, an exciting project is under development, a software called GGI (Good Guys' Index). Initially intended only as a support tool for NovaCast's existing products, but which is now starting to fly by its own wings.

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Photo by David Elg, Gjuteriet. Håkan Fransson, Technical Manager Simulation, and Martin Hagbyhn, CEO.

NovaCast was founded in 1982 by Rudolf Sillén, who had established himself in the nearby town of Kallinge, when Kockums was still active there. When Martin came in as CEO six years ago, after many years of experience as managing a number of industrial companies, he immediately noticed that it was a company that certainly has metal casting in its blood.

- Rudolf Sillén and his innovation-driven mindset are still in the company, the core here is casting. NovaCast is a powerfully dedicated group of people with a passion for simulation and metallurgical process control. The foundry industry is the industry we know and mainly target. Many of our team members come from the foundry industry in one way or another, and understand that world.

Håkan, who is technical manager within simulation and has worked at NovaCast since 1997, is such an example. He is essentially a foundry engineer and has worked in the industry since 1988, a total of nine years, at various foundries and in various positions. With cutting-edge expertise in simulation, he initially managed both the role as CEO and product manager at NovaCast. But when Martin was recruited to the company, he had the opportunity to focus fully on technical development.

A "new" NovaCast

Almost seven years ago, with the launch of GIFA 2015, NovaCast chose to embark on the brand journey that led the company to what it is today, with about 30 associated employees in offices in Ronneby, Chicago and Bangalore, as well as about twenty partners worldwide who sell their products. As Martin describes the company, it invests in technology and services to optimize castings all the way from start to finish. He himself works to ensure that NovaCast's customers sleep well at night. This is done by reducing scrap, material consumption, energy consumption and enabling the use of sustainable materials and alloys.

For GIFA 2015, a completely new communication approach was embraced with a new logo and website, to convey a message about responsibility and sustainability. Back then, seven years ago, they were comparatively early in the industry to make such a clear stand for a reduced environmental footprint. With 800 licenses for their software in over 50 countries and with Europe as the largest market, they saw the opportunities to influence on a wide front.

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NovaCast's new logo, symbolizes that through their work they want to make the footprint from the foundry industry greener and smaller.

NovaCast sells products and services that help optimize castings. The range can be divided into two legs; simulation and advanced thermal analysis systems. In addition, they assist with service, maintenance, consulting and training. By the entire chain, NovaCast means everything from casting design, simulation calculation of stresses, thermal analysis and process control, to optimization of the composition of the melt and consumables.

NovaCast is constantly at the front of developing its products, which Martin says is a way to be in the Foundry 4.0 game. NovaCast's systems, unlike many other products, are compatible with other manufacturers' systems. He describes it as a type of future-proofing to apply dynamic inoculation. It benefits more foundries, as not everyone has the opportunity to invest in all completely new systems.

Good Guys' Index

Håkan says that even though it is obvious that NovaCast's products are meant to reduce the need for materials and energy consumption, they still wanted something that more clearly shows what they are doing. That's how he came up with the idea for the GGI (Good Guys' Index) program. A program that links NovaCast's simulation tool to the NovaCast brand and that calculates the environmental impact of a casting throughout the process in a smart and user-friendly way. It will be a powerful tool for EPD (Environmental Product Declaration), something that many people talk about but do not really know how to work with in practice.

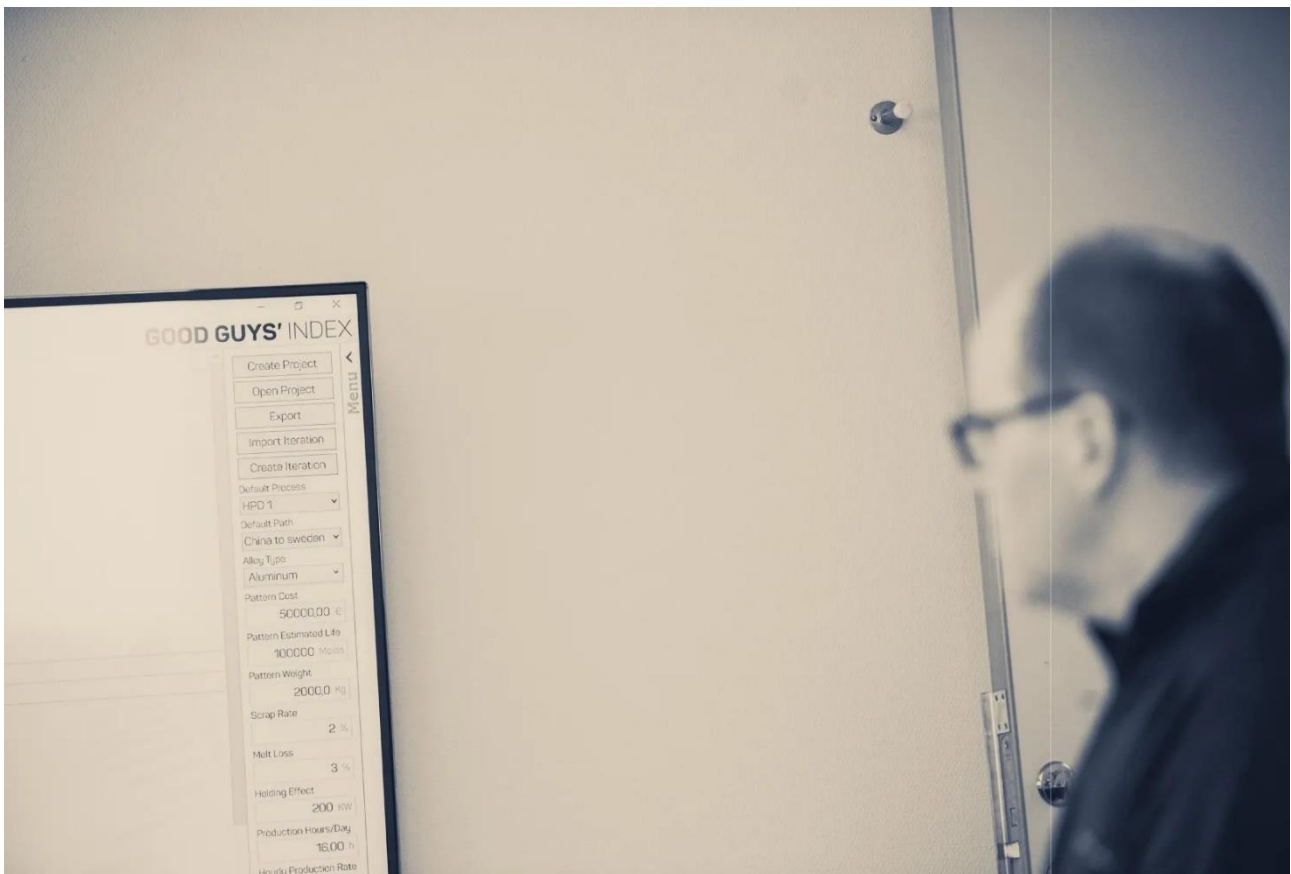


Photo by David Elg, Gjuteriet. Good Guys' Index, NovaCast's latest exciting project.

From the beginning, the idea was not to sell GGI, but only to support NovaCast's other software. Håkan developed the program by entering parameters in an Excel sheet, but Martin says that they quickly saw opportunities for greater potential and a program began to emerge.

- In the beginning, none of us really fully understood how useful it could get and what a fantastic instrument it has become today.

During the work of creating GGI, Håkan and Martin have noticed how the industry's involvement in the issue has increased. NovaCast's incentive to create the program was to see how they could use their software to make the foundries better. Martin emphasizes that GGI is for those who want to make a greater contribution than what environmental legislation requires. In other words, the customers who really have a commitment to make a difference, which is an ambition he sees that many Swedish foundries have.

Håkan explains that the software simply described consists of different tabs. In the main tab, enter the various data needed to calculate the environmental impact. These can be factors such as energy type, furnace type, type of transport, raw material, detail weight, feeder weight, casting system, total weight, mold weight, melting temperatures, how many details per mold and so on. With that input, it is possible to see how the factors affect CO2 emissions. In addition, it is also possible to enter parameters such as energy price. This means that both technicians who are interested in yield improvement measures, economists and those who want to reduce the environmental impact, benefit from one and the same program.

Håkan says that it is one of the parts that he finds extra interesting. That it is possible to enter data about the entire process, including the ancillary processes.

- This is what is a bit cool about the program, that the consequences of the choices that are made are shown so concretely. We can get the emissions from each individual part of the process, instead of just getting pretty blunt figures on a total cut per kilo of all the castings a foundry produces.

Martin agrees and explains that by measuring at the level of detail how much emissions a certain detail has, it is possible to concentrate efforts where it really makes a difference.

- Two different details of a foundry can have enormous differences in emissions, so it is relevant to find out where it is worth making changes. Many companies make promises to reduce their carbon dioxide emissions to varying degrees to specific years. It's great, but it's important to ask, how much do we have today, how is it measured and in the next step, how do we improve? It is not always easy to measure absolute values, but it is quite easy to see differences after efforts.

Something Håkan and Martin see as a current challenge, is to ensure that the figures entered into the program are verified. Emission values can vary greatly depending on the source. In addition, the environmental impact from, for example, wind power can vary greatly depending on whether it is on land or at sea, trains can be powered by diesel or electricity, trucks can be of different ages and so on. The figures NovaCast has currently found most reliable are those obtained from IPCC (Intergovernmental Panel on Climate Change) reports.

- It is up to the users of the program to verify and declare the values that they consider relevant.

How much is good enough?

Another challenge has been knowing how big they would make the program. It would be possible to research into parameters indefinitely, but the purpose would be lost if the user-friendliness disappeared. Today, the program is designed so that all data is added together on a results page. There, the outcome is divided into "upstream", "core" and "downstream". In other words, what is supplied into the foundry, what happens at the foundry and what leaves the foundry.

The program is fully possible to use presently and already has users, says Håkan. He believes that the number of users will increase in line with the requirements in the industry, but says that NovaCast is currently in the phase of verifying and adapting to the needs of the industry to be able to use the program commercially.

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- We have created a tool for calculating environmental impact, but it is also a process tool for visualizing improvements. We have high hopes of being able to develop GGI in the same way as we develop and add new products within our other areas.

Martin agrees that the future of GGI in combination with NovaCast's other range looks bright.

- Currently, we sell GGI as a license, simply for the reason that it is the business model for our other software. But in the future, I can imagine that the market needs a different type of model. Probably some form of user billing, so that our customers can use GGI when they need emission values on their products. We want as many people as possible to use GGI. This is how we can make the biggest contribution to the environment!