



Attracting and retaining top talent in the foundry industry

Perspectives on the industrial situation and challenges for metalcasting

World Foundry Organization - March 2021

Part of the future of the foundry sector relies on its ability to encourage new professionals to join it, along with its capacity to enhance the technical and leadership skills of young people within its companies and organizations. In addition, a special focus can be set on women, who still represent a low percentage of the total labor force, even lower than the figures in Manufacturing as a whole. In a context where the pandemic crisis is accelerating some of the challenges for this sector, a true global cooperation to promote its image as an advanced and technological industry seems to be key for these actions. Talking with some top global female leaders allow us to shape the way our industry is being challenged and highlight some of the solutions that the international industry is developing to face the actual complexity.

Encouraging new talent and enhancing leadership skills of young women in Foundry

We have seen in the last decades an increase in the number of women leading foundry technical organizations or presiding their Boards, along with the ones directly involved in management of foundry companies. The adoption of tools like mentoring or the spread of new platforms to create effective networks among them seem also to be part of the change mechanism in some metalcasting producing countries. Despite this, women continue to be a low percentage of the global workforce in manufacturing industries, which is making companies reflect on how they can attract this segment as well as help the young foundry women to enhance their leadership skills and to advance in their careers in our industry.



From left to right, Diana Bogic (Swedish Foundry Association), Lizeth Medina (Neenah Foundry), Marina Giacopinelli (Fundigex) and Lynn Postle (Foundry Trade Journal), leading a discussion around challenges of Foundry

Awarded with the 2019 Step Ahead Award (Manufacturing Institute) and the 2020 Cast Iron Division Individual Service Award (AFS), Lizeth Medina (USA) is also the Senior Manager - Quality Assurance and Technical Services in Neenah Foundry and part of the Board of Directors of the Ductile Iron Society, so showing a new leadership is making its way into the foundry industry. On several occasions, she has mentioned the importance of mentoring and the existence of advocates for women in manufacturing. *“In the United States there is a 30% of women in Manufacturing and there is a 20% in Foundry. We are closing that gap, but this is not going in an exponential base,”* highlights Medina.



In a context where women are still a small percentage of manufacturing workforce, where role models and mentoring seem such important ways to promote a career, the industry as a whole may be missing some tools or actions to strengthen the role of women in the foundry business. Medina has been working close to some proposals with the aim to reduce that gap, like the creation of Employee Resource Groups, former groups that are led by the HR department and that focus on minorities and diversity. As she explains it: *“In order for this to have an impact, for having a big impact, it needs to be part of the company’s culture. That’s what other manufacturing sectors are starting to do.”*

The expert points out a reason behind the 10% lower percentage of women in labor force in comparison with other manufacturing industries: *“We have so much competition, with Aerospace, Chemical industry... there are a lot more “sexier” industries and that perception is probably not allowing us to bring more people, not only female but younger talent to this industry.”*

Mentoring has been a useful tool for Medina in her own adaptation for the metalcasting industry: *“For me, finding a mentor was a little bit difficult until I understood that I needed advice, to listen... The idea is great, and it was when I learnt that I needed this that I realized about its importance,”* explains the expert.

Lynn Postle (UK), the Publisher of Foundry Trade Journal, a world's leading English language publication for the global foundry industry, highlights the importance of connecting mentoring with the younger people accessing this sector: *“This is something that our industry needs to develop more so we can bring new people in and plug the skills gap that we know we have.”* The Editor also remarks that it is also good to see that our professionals use this mentoring tool as a way to give something back to the industry.

“This is about encouraging people into the sector, but it is also about having more women in senior positions and at Board level”

Around the question of how to encourage young women to enter the industry and looking into the examples present in Europe, we find that Foundries in Sweden have a good number of role models, with women developing their careers as general managers or production managers, among others. The new General Secretary of a well-known and established metalcasting organization like the Swedish Foundry Association, Diana Bogic, explains one of the problems to encourage new careers even with this positive situation: *“We are failing on communicating internally and externally that these women exist and what they actually are doing in the industry.”*

The Swedish Foundry Association tries to be a driving force for this improvement in communicating the actual role models from women in our industry. *“In our Foundry Days we try to have equal representation on the stage, having female moderators, or 2 out of 3 female keynote speakers. By showing this representation of women on stage, we are sending the right message to the attendees, but also that we as an industry acknowledge their skills and competence,”* Bogic affirms. A really good step forward, in the words of Postle: *“For people that want to enter the industry, they need that the industry reflects how they look.”*

We have to change our way of thinking about women as leaders, as Bogic points out: *“In the end we have to encourage women to go into leadership positions and also give women the opportunity to take on those roles.”* Postle concurs with this idea: *“This is about encouraging people into the sector, but it is also about having more women in senior positions and at Board level.”*



As the Managing Director at Fundigex, the Castings & Foundry Suppliers Association in Spain, Marina Giacopinelli is directly involved in promoting the sector in the international market, and she has a first-hand vision on possible differences in how this situation is affecting different countries. *“Within the Foundry industry, the Marketing departments are more representative for women than other departments. I honestly haven’t seen very much difference in international trade fairs between countries: in general, the foundry industry is still a men’s industry, as for example we can see in those fairs where only 25% of people travelling are women,”*, explains the manager.

There is a certain change, there are improvements, but there is still a lot of work to do. From the point of view of the long-term international experience of Postle: *“There are certainly more opportunities in the industry and Engineering in general for women.”* *“This industry might not be as attractive as other industries at a first glance. On the other hand, when people enter it, they just remain,”* highlights positively Bogic. As Postle enthuses: *“It just gets under your skin.”*

Global business and connections in the Covid19 era

Foundry is a global industry, where international leadership has a strong effect. One of the common ideas appearing in an analysis carried out by the World Foundry Organization (WFO) with its members in 2020 was that the actual lack of international contact and the restrictions to travel were a risk for the creation of business in this industry. Companies are adapting their global business to a situation where the participation in different international Trade Shows, visits to possible clients or organisation of B2B meetings are restricted. This is an era where these companies are learning something new every week, using new technologies and looking for the most relevant aspects or tools to be developed to keep connecting and promoting themselves in a global basis, when the uncertainty of traveling and contact is still present.

“When you are not allowed to travel, to display your product at different shows, there is actually only one way to promote yourself and this is strengthening your presence online,” notes Giacopinelli, based on her first-hand experience accompanying metalcasting businesses through this forced journey along the last months. As she indicates, when the pandemic broke out the foundry companies did not even know if they would be allowed to produce, so the priority during the first moments was not set on promotion. After the first months, the situation evolved. Organizations like Fundigex have been

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creating courses and webinars to increase the consciousness in their companies about the importance of using these tools. On the other hand, as the manager remarks: *“We are in a very complicated industry where the client wants to see how you produce and that’s not possible now. We also have to find a solution for audits.”* Highlighting this situation, Giacopinelli indicates: *“Our foundry companies say that it is not difficult to find new clients now, it’s difficult to place an order.”*

One of the connectivity areas on which there has been an increase on its use by the foundry companies is Social Media. This is something that our industry has slowly embraced, and which now seems very important, as Postle remarks. In the direct experience of Bogic: *“With the presence online of our foundries, we have noticed how they have increased their engagement in social media, and also the good webpages they are using now to communicate.”*

The pandemics has also affected the way our companies are connecting with young students, as remarked by Medina: *“When the pandemic hit us, a lot of the students were not able to attend classes.*

We needed to act fast or we would be losing a generation of people connecting with the industry. We had to get creative, to think outside the box to continue the connections.” “Attracting new talent is hard. If they don’t hear about you, they will forget about you. You need to keep them interested,” emphasizes Medina.

In general, we could say that we all embrace this new way of working, but for Manufacturing this sets a different challenge than in other industries. *“As soon as this situation is under control, we will need again the connection with other humans, as the chemistry with other people is a key factor when you are deciding between equal suppliers,”* concludes Giacopinelli. This actually work and has worked well for the last months, but in the end our businesses need people to interact with.

Forecasting a change in the foundry supply chains

These are times of change also for our access to the markets. We see how this crisis is already affecting the sharing of the metalcasting markets, and that new reshoring initiatives, as well as some possible redesigns of the supply chains from some manufacturers, can come in order to reduce risks, like the ones suffered with the global market stop created by this pandemic crisis.



The discussion focused also on the impacts that the actual pandemic crisis is having on the metalcasting sector

Some forecast a strong change in the global supply chain in the Foundry industry, while others predict that the chains will evolve to shorter and more local ones. Anyhow, the foundry companies will need to adapt to this new situation. Bogic analyzes the impact in this direction in the case of her country: *“We noticed in Sweden that when it comes to production, a lot of the products that were bought previously abroad actually returned to Sweden. It has been a slight change in how we produce in the country. We will see if this continues.”* Postle remarks this idea: *“It will be interesting to see how different countries will benefit from this and still remain in a global marketplace.”*

In times where it seems we are forwarded to rethink everything in the sector, we can also see the different impact in the national industries where the local supply is stronger. That’s the case of the United States, as explained by Medina: *“In our case, there are enough local suppliers, so the impact has been less, we just needed to be proactive looking for partnerships and possible strategies”.*



How the pandemic crisis is accelerating the adoption of Industry 4.0 technologies

Along with the discussion on the markets, the developments that industry 4.0 is introducing in our sector have transformed the way we see the foundries of the future, a vision that has been accelerated by the effects of the pandemic. New concepts within the Smart Foundry, like digitalization, Data Science or Artificial Intelligence, among others, are shaping the way these companies can face the flexibility requirements for a more complex context.

“We are a technological industry, we are part of this digital revolution”

The pandemic context can be playing a role as a driving force for this change, as explained by Medina: *“We were considered an essential business so we continued operating, but many of the customers depending on their location had to stop and that affected us. We had to take shutdowns, and this created the necessity on us to be better and faster, with less waste.”*

“We focused in two aspects: zero scrap and zero breakdowns. In the zero-scrap goal, it was relatively economic to start getting connections from the processes, and we have seen fantastic results and approached other departments to do the same. We increased efficiency by 10%, while we were expecting a 5% improvement,” details the Data Science expert.

For this expert, automation can be seen as intimidating for a small foundry, but digitalization can be approached as just getting access to data and thinking on what you do with that data. The final stage can be the implementation of AI, with other previous steps. As explained by Bogic, the Swedish Foundry Association is developing projects where they learn from the industry as a whole, as the members learn themselves something to use in their own production facilities.

These advances can definitely make our industry move forward and potentially show savings, creating also some exciting technologies that can help attracting new people, as Postle says.

Global promotion of Foundry as a technological and attractive industry and connection with young students

In terms of image and promotion of our industry to attract people, a lot of work is still to be done, as defined by Giacopinelli: *“Cast parts are everywhere but I don’t think people and Administration are aware of it. Foundries are investing more and more in AI and Digitalization and this is something they could use for promotion.”*

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“We are a technological industry, we are part of this digital revolution.

Foundries have understood that and adopted the idea. We need to mentor the small foundries to make them conscious that this technology is accessible also for them,” adds the manager. The gap between the reality of the foundry sector and its public perception is also highlighted by Postle: *“There is a disconnection from the exciting and complex things the foundries are doing and the working environment as it has been portrayed. We need to promote how exciting it is to work in a foundry environment.”*

The picture that is promoted about Foundry is also connected with some solutions on which we can work globally to disseminate the message globally, from which training is a powerful one. *“In Sweden*



we have the Foundry Master, that is actually international. Online courses, webinars and magazines are other useful tools,” says Bogic. Recruiting well-educated employees is set to be one of the big challenges for our industry. Connected to this, the Swedish Foundry Association has been involved in developing the mentioned online master program that focuses on implementation and development of cast metals and processes. The program, which is a part of the educational catalogue at Jönköping University, is also open for international students. Other countries are also sharing globally their own training programmes.

International cooperation in this field can be the driver that can help the industry facing the global shortage for skilled people. For Bogic, the existence of available training needs to be balanced with the effort to promote the correct image of the industry: *“Some people will not apply for this industry because of the image they have received of it. This is something we can improve on a global level.”* The WFO is working in this direction through some initiatives with its Training and Professional Development working group, sharing some best practices internationally available, as remarks Postle. *“We need to increase the entire pool of people that can work in our industry, and create interest for young girls in technology, and we could do that globally,”* adds Bogic.

Bringing students into the industry is a global need. We need to work to help today's students to become tomorrow's foundry professionals, who will need to be able to cope with the complex challenges of this industry. An ongoing initiative set up in the United States in 1940, and which is called Foundry Educational Foundation, is strengthening the metal casting industry by supporting unique partnerships among students, educators and industry. Neenah Foundry is also active in this engagement with the community. *“You need something like FEF as a continued pipeline of students. Every year, a conference in Chicago is held for 2 days, with industry people talking to young people about their experiences in Foundry. We work to make it active and fun, targeting what this generation want to do,”* details Medina about this interesting project. *“FEF is good at attracting talent. It is up to the companies to come up to the strategies to retain it,”* stresses Medina.

The discussion with the global experts from Sweden, United States, Spain and UK was part of a business encounter offered to the industry by the WFO



Realizing that these connections have been promoted in this country from the 1940's, it is easier to understand that the American industry is booming and solving this skills gap, and something to learn from, as highlighted by Postle, who also remarks the idea about the importance of talking to the people in their own language. Reinforcing this necessity, Bogic says: *"We promote our industry as a sustainable one through Instagram and Facebook, while sharing possibilities for applying to high-schools and colleges. You need to be where the people that you want to talk to are."*

Another difference when approaching new talent is also mentioned by Medina: *"We are not anymore in those times where we were expecting newcomers to adapt to us, now the demand for young talent is high so we need to be able to change ourselves and listen."*

Definitely, we have to be better about telling people what's good within the foundry industry, while providing a roadmap to show career progression and promotion.

Evolution in the foundry industry with the Automotive electrification

Talking about the exciting things happening in our sector, it is necessary to discuss Automotive and its electrification. As Automotive is a main driver to our industry, we have seen in the world that the disruption created in this sector by the pandemic crisis has had a strong and negative influence in the metalcasting production. With this industry still struggling to cope with this situation, the revolution to be introduced by the electrification of vehicles seems to accelerate. How should our foundries be acting to prepare themselves for this big game-changer?

"This is a real challenge, and of course an opportunity depending on the perspective. In the Swedish industry we have presented an Industry Agenda where we work on how we tackle with these issues in the short and the long term. We focus on 3 areas: Advanced products, Competitive and sustainable production, and Attractive industry," says Bogic from the experience of her Association. Some of these challenges, like sustainability or new and lighter materials, are absolutely linked to the needs coming from the manufacturing of e-cars.

The specific influence of the Automotive sector as a main customer for the Foundry industry is strong in Sweden, as it is in general in Europe. The presence of relevant actors, like Scania and Volvo, and their plans with their new foundries reinforce also this connection. *"We have a low carbon footprint, but we still see the possibility of doing better, developing huge projects looking at how to be more energy efficient, creating more resources with better material flow, with products that can be reused,"* expresses the General Secretary.

Research in new alloys, lighter materials... as well as cooperation, will be key to cope with the future needs for producing electrical vehicles. The industry will also need skilled workers for this and showcasing a sustainable industry with a conscious and ethical attitude can also be a powerful message to attract new talent to it. This sector is full of opportunities for those who are willing to enter the manufacturing industry, and there is a global challenge for the foundry companies and organizations to promote them.

Acknowledgements





About The World Foundry Organization

With over 30 member countries from all regions of the world, the World Foundry Organization (WFO) has access to a network of vital foundry knowledge that is gathered and shared to enhance the worldwide foundry industry.

The World Foundry Organization is comprised of national foundry organisations or associations representing foundries, suppliers and academia from around the world, creating a representative global network.

One of the main functions of the WFO is to unite the industry and disseminate appropriate information in a standardised and systemised manner at annual events.

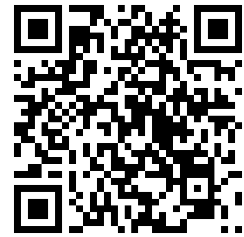
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