

THE VOICES OF MANUFACTURING

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ABOUT HER

Cristina is a Project Manager at IDESA, one of the pilot lines of PeneloPe project, which its core business is design and manufacturing of components for Energy sector, mainly Oil & Gas, Offshore wind, Carbon Capture, Hydrogen, etc.

About her

ABOUT PENELOPE

Can you share an example of a significant milestone or achievement you and your team have reached during the project and what impact it had on the overall manufacturing process?

Within PeneloPe, we are developing and implementing several technologies in our manufacturing process. Two good examples are automated projection of attachments on real components, adapting actual geometry with their differences with nominal one, and use of AR to assist our inspectors during their activities of dimensional control, visual examination, etc.

Could you tell us about any innovative manufacturing techniques or technologies that have been implemented in the project and how they have improved the manufacturing process?

Taking examples or question above, with automated projection our expectation is that time used for this task can be significantly reduced and human mistakes will be avoided. For the inspection assisted by AR, it will help to achieve that inspection and particularly reporting could be done faster and therefore less human resources will be needed.

What do you enjoy most about working in the manufacturing industry, particularly on projects like this one?

Each product made by IDESA is unique in design and "tailor-made", with high requirements in terms of quality, HSE and performance as our clients are top players in the Energy sector. To implement new technologies in this environment is really challenging and exciting.



What barriers need to be overcome to fully implement PeneloPe's methodology?

There are many challenges to overcome, since complexity of the components, their sizes with weights over 500 tons, variety of materials up to cultural aspects from workers that could be reluctant to new technologies

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PeneloPe gives IDESA a good perspective of partnership we can find in Europe to develop I4.0 technologies. We have a good knowledge of I4.0 partners in our area as we belong to Metaindustry4, a cluster formed by industrial companies of the metal sector and I4.0 technology companies in our region in the north of Spain. With PeneloPe, we also have access to European companies and R&D centers that we did not know previously.

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INDUSTRY 4.0

Which is for you the critical element in the implementation of a digital/4.0 factory?

Selection of partners that have real knowledge about how to implement technologies to different working environments, and training and culture of staff to be open to digitalization and new technologies.

What are the new skill sets that you are seeing being required in Industry 4.0? How does your company deal with the training of these new skills?

It is important to have a basis in IT concepts, but most important is to be open to learn and use new devices and technologies, and to be sensitive to issues such as cybersecurity. We promote training courses for these purposes, and sensibilization campaigns and messages through our organization

What will happen to jobs within manufacturing as Industry 4.0 gets rolling - will more new jobs be invented than those that are replaced by machines?

All along industrial history, each industrial revolution has invented new jobs and replaced old jobs that are diluted by new technologies, creating a balance between both. Difference is that new jobs will require more qualifications and these changes will be faster.

Is Artificial Intelligence the key to enable Industry 5.0? Which role does AI play today and above all, in the manufacturing of the future?

AI is a new step in implementing new technologies. However, generative AI growth has been exponential in the last year for applications related with text, pictures, etc., but it is not implemented in real industrial environments. This will happen in the next few years in areas such as data analysis, productivity, etc.

What 'Smart Factory', 'Digital Factory' or 'Industry 4.0' initiatives are already underway in your organization?

Our organization has started a digitalization program in 2019 which is still in place. Our engineering system has been updated to use 3D design and our PLM and ERP systems have been upgraded in this process to have a more automated process in design, engineering and procurement. We are also digitizing our production line in rolling, welding, fitting and inspection activities, and PeneloPe is playing its role in each of these tasks.

What are the current challenges/issues that you have related to Industry 4.0, augmented/virtual reality, artificial intelligence, and data management?

As commented above, selection of correct partner with industrial perspective and staff approach to be open to new developments are main challenges we find in our daily work.

What is the value-added your company provides and how does PeneloPe contribute to it?

PeneloPe consortium has a wide spectrum of partners with experience in industrial implementation of I4.0 technologies. This provides IDESA good options to develop projects with PeneloPe frame to implement these technologies in our production line

How do you see the role of workers in manufacturing in this Industry 4.0? Is training and role reorientation key?

As commented above, training and role reorientation is a key point considering Industry 4.0 implementation in manufacturing

GENDER

What advice would you give to other women who are aspiring to pursue a career in the manufacturing field or work on manufacturing projects?

In the field of manufacturing the most important thing is not to have high mathematical, physical or industrial knowledge, but a good ability to solve complicated problems or situations. In manufacturing projects, every day is a daily challenge due to the customisation of products, which avoids the monotony of a mass production line in other sectors.

How do you see the future of manufacturing evolving, and what role do you think projects like the one you're involved in play in shaping that future.

Manufacturing industry is a manual, non-serialised and customised manufacturing for each and every product. In this type of industry, the know-how of the operator and on-site decision-making is very important, which makes it difficult to standardise the different activities that make up the production process.

The high degree of competitiveness in today's market forces the industrial sector to reinvent itself, adapting to a digital, precise industry by committing to a manufacturing system with zero defects.

The PENELOPE project gives us the opportunity to learn about different technologies used in other sectors, the development or adaptability capacity.

the validation of the capacity of new systems, the development of new technologies or the adaptation of existing technologies for other sectors for our industry.