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# SmartBridge: AI for Bridge Design Led by a Young Entrepreneur from Asturias

**Marco Bermúdez**  
Founder of SmartBridge

“ It’s important to feel supported,  
especially when we are young

”

With this reflection, Marco Bermúdez sums up one of the values that have shaped his journey: the importance of support along the entrepreneurial path.

At just 14 years old, this young Asturian leads **SmartBridge**, a startup that applies artificial intelligence to transform **bridge design**. His proposal aims to provide engineering teams with a tool that speeds up processes and optimizes technical decision-making.

SmartBridge **develops software capable of generating functional designs in a matter of minutes, reducing costs and eliminating repetitive tasks**. Its key differentiator lies in assisted decision-making, which makes it possible to explore multiple alternatives and select the most efficient one. As its founder explains, *“SmartBridge doesn’t decide which bridge you have to build... it selects the best bridge, and the specialist decides whether to build it or not.”*

The project was created with the goal of bringing greater efficiency and technical rigor to infrastructure design by combining technology with expert knowledge. As Marco notes, *“We could design an effective bridge in 15 minutes—a bridge that truly works”*. This statement reflects the transformative potential of the solution, backed by collaboration with **Dr. Luis Javier Sanz, the project’s CTO**, who contributes scientific rigor and technical expertise to ensure the reliability of the software.

**SMARTBRIDGE**

Marco's story highlights **how curiosity, perseverance, and continuous learning can become drivers of innovation.** Leading a startup at such a young age involves challenges and learning experiences, as well as the importance of having guidance and role models along the entrepreneurial journey.

This case shows that innovation does not depend solely on resources, but on the ability to question the status quo and build impactful solutions.

**If you want to learn all the details, keep reading.**



# INDEX

- | **01** | Resumen ejecutivo
- | **02** | De la curiosidad a la innovación: el camino emprendedor de Marco
- | **03** | Cómo nace SmartBridge y qué problema resuelve
- | **04** | Innovación técnica y valor diferencial
- | **05** | Aprendizajes y retos al emprender
- | **06** | Consejos para personas emprendedoras
- | **07** | El papel de las iniciativas públicas

## Executive summary

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### Founders

Marco Bermúdez and Luis  
Javier Sanz

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### Website

[www.smartbridge.es](http://www.smartbridge.es)

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### Year founded

2025

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### Location

Oviedo, Asturias

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### Employees

2

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### Product / Service

*Software that automates  
bridge design using AI*

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### Sector

Civil engineering

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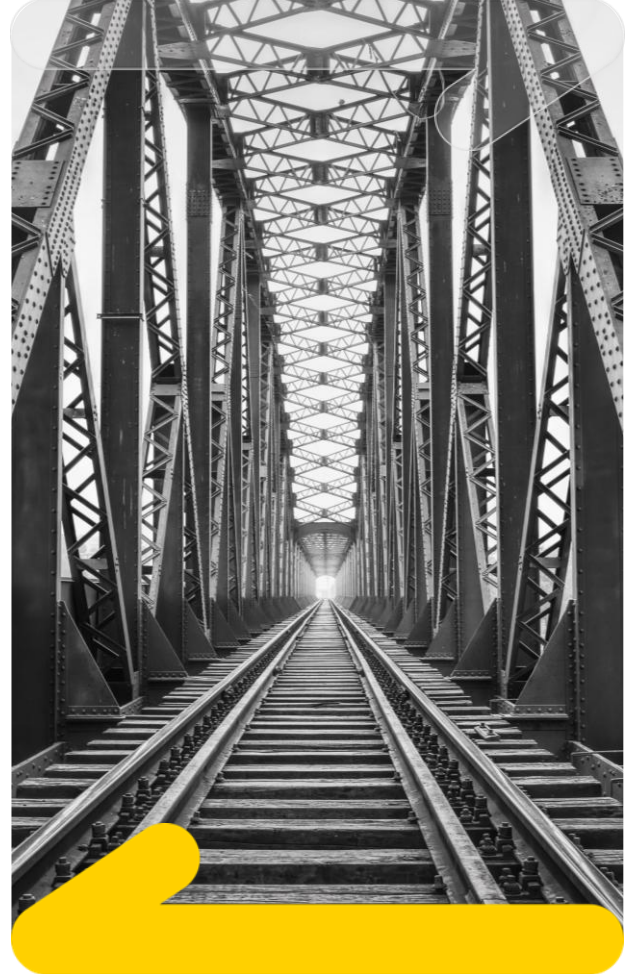
### Technology

Artificial intelligence applied  
to structural design

## From curiosity to innovation: Marco's entrepreneurial journey

Marco's entrepreneurial vocation began when he was eight years old. His parents took him to try a class at Genyus School, a space designed to spark entrepreneurial curiosity in childhood. That experience was decisive: *"I realized everything I could create and I started to become an entrepreneur,"* he recalls. From that moment on, his interest in creating solutions became a constant passion.

Today, that same curiosity continues to guide his vision. *"I think entrepreneurs are very curious because we look for solutions to our questions,"* he says. For him, entrepreneurship is not just about creating companies, but about exploring, experimenting, and turning ideas into real solutions. His story shows that an entrepreneurial vocation can emerge early and grow with every challenge, as long as there is a willingness to learn and a passion for innovation.



*I realized everything I could create and I started to become an entrepreneur*



After several attempts—such as an AI-based robotics project and an app to locate products in supermarkets—he learned that a good idea is not enough without validation and resources. Marco explains this honestly: *“At the beginning, I created two projects that didn’t work out at all.”* Instead of getting discouraged, he turned every setback into an opportunity to learn and improve.

His third venture was a business based on a 3D printer. He started by making keychains for people close to him, and later evolved toward commissions for companies, competitions, and creative projects. **It was a simpler initiative in concept, but a key step in his journey,** as it allowed him to acquire **essential basic management skills for any business:** dealing with clients, issuing invoices, managing income and expenses, and maintaining cash flow. **This demanding and formative process became a fundamental practical foundation on which he would later build SmartBridge.**



## How SmartBridge was created and the problem it solves

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The idea for SmartBridge emerged from an everyday situation that became a source of inspiration. During a family conversation, Marco watched his uncle, an engineer, designing bridges and dared to ask a question that seemed simple but hid a major challenge: *“How do you know this design is the best one?”* That curiosity opened the door to a deeper reflection on two recurring problems in civil engineering.



*Engineers always start from a question: we have a problem, how do we solve it? But many times they don't know whether the solution they design is really the best possible one.*



The first is uncertainty about **optimality**. **Designs** are based on assumptions and accumulated experience, but there is not always certainty that the chosen solution is the most efficient among all possible options. The second problem is related to the **repetition of processes**. Many tasks are repeated project after project, consuming time and resources that could be optimized through technology.

SmartBridge was created to address these limitations. The tool uses artificial intelligence to analyze multiple alternatives and propose the most efficient option, without replacing human judgment. Marco sums it up in a phrase that reflects the project's origin: *“Engineers always start from a question: we have a problem, how do we solve it? But many times they don't know whether the solution they design is really the best possible one. SmartBridge was created precisely to answer that question and turn curiosity into more efficient solutions”.*

With this premise, the project aims to transform the way infrastructures are designed, bringing agility and technical rigor to every decision.

# Technical innovation and differentiating value

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SmartBridge is not just software; it is a tool designed to **enhance the decision-making capacity of engineering teams**. Its proposal is based on **integrating artificial intelligence to reduce time and costs, while always keeping control in the hands of the technical team**. This combination allows technology to act as an ally rather than a substitute, making decision-making faster and more precise without compromising design quality.

Scientific rigor is ensured by the project's CTO, **Dr. Luis Javier Sanz**, a civil engineer specialized in roads, canals, and ports. Meanwhile, Marco leads the strategic vision, relationships with investors, and market analysis. This collaboration between complementary profiles strengthens the solidity of the project and its potential impact.

The differentiating value of SmartBridge is reflected in three key aspects that transform the way infrastructure is designed:

- First, **AI-assisted decision-making**, which offers optimized alternatives without displacing professional judgment. On this point, Marco clarifies: *"SmartBridge doesn't decide which bridge you have to build; it selects the best bridge and the engineering team decides whether to build it or not."*
- Second, **process acceleration**, which makes it possible to go from days of work to minutes: *"We could design an effective bridge in 15 minutes—a bridge that truly works,"* Marco explains.
- Finally, **cost optimization**, which opens the door to building bridges in communities where it was previously not feasible due to budget constraints. Marco highlights the social impact of his project: *"This can make bridges reach places where it wasn't possible before, where people used to have to go around a river just to buy bread."*

# Lessons learned and challenges of entrepreneurship

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Starting a business at a young age involves unique challenges. Marco acknowledges that at first he was not taken seriously: *“Nice idea, but come on, you’re not going to do anything,”* he remembers being told. Today, after participating in events such as South Summit and the Mobile World Congress, he has gained visibility and credibility.

From every failed project, he drew valuable lessons: **validate before investing, manage resources, and learn to negotiate.** *“Shutting down three projects has given me lessons that I now apply at SmartBridge,”* he explains. His approach is clear: **iterate, improve, and keep moving forward.**

## Advice for entrepreneurs

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Entrepreneurship requires courage, but also judgment. Marco expresses it clearly: *“Not everything has to go wrong. If it goes wrong, it’s a learning experience.”* **Taking risks is essential, as long as the idea is well thought out and validated.** It’s not about jumping in with any random idea, but about making sure it responds to a real need and has the potential to grow.

Another key aspect is early validation. **Before investing time and money, it’s important to test the proposal with potential users and with the market** so that it *is “a truly well-thought-out idea, one that is genuinely validated,”* Marco notes. This step makes the difference between an attractive idea and a viable project.

**Building a strong team is also essential.** *“I’m lucky to have found my partner, Luis Javier Sanz; he takes care of the more technical side of the software, and I handle the more visual side, market analysis, and pitching the project to investors,”* he emphasizes. This collaboration reflects his belief in the importance of complementary profiles that bring together technical expertise and strategy. In addition, diversity of knowledge and life experience makes it possible to tackle challenges from different perspectives and ensure a robust product.

Entrepreneurship is not a solo journey. **Building networks, attending events, and participating in communities open doors to collaboration, learning, and funding opportunities.** Marco highlights the importance of his participation in different ecosystem events: *“For a few years now I’ve been attending events—the South Summit, the Mobile World Congress in Barcelona, Startup Olé in Salamanca... I’ve been to almost all of them.”* These relationships are a strategic resource for moving forward.

Finally, **technology must be used with purpose.** Artificial intelligence, for example, offers enormous potential beyond trivial tasks. *“I think artificial intelligence should mainly be used by people my age not just to summarize a class... you can get so much more potential out of it,”* Marco insists, convinced that innovation should be put at the service of solutions that have a positive impact on society.



## The role of public initiatives in supporting entrepreneurship

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Marco values the support provided by public platforms and funding schemes but points out two areas for improvement: **less bureaucracy and greater involvement of entrepreneurs in program design.** *“It’s super important to feel supported, especially when we’re young,”* he says.

These initiatives not only provide resources but also **showcase real stories** and foster an entrepreneurial culture in environments where it was not previously considered a professional option.



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