



## Zoom-in I

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# Renewing the industry in the era of digitalisation

How Bilbao's AS-Fabrik project connects and develops competences through collaborative entrepreneurship

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Interviewee: Eduardo Castellano



## Introduction

Bilbao is still an industrial city, despite the fact that many industries had to close their doors during the wave of de-industrialisation of the last decades. The industrial firms that are still around are highly competitive, knowledge-intensive firms, many of them operating on world markets. But the current wave of digitalization poses momentous challenges to them. Digital technologies open up avenues for new types of business models, going beyond the traditional industrial/engineering tradition of first doing R&D, then manufacture the product, and then recoup investments from selling it to the client. “Servitization” is the new keyword, allowing industrial firms to enhance their offer in the form of after-sales intermediate and advanced services with higher margins than the original industrial product. This can be an important source of recurring income during the product’s lifecycle, and a way to increase customer loyalty. Also, digital and sensor technologies can make production processes more efficient, allow for remote performance monitoring, preventive maintenance, etc.

Industrial firms face the challenge to make a deep transition. If not, others will do it, and they will lose out. Hence, firms need to renew their own in-house competences, but also work in new ways with external partners that bring in specific knowledge: engineering companies, service providers, technology institutes, management expertise. Moreover, they need to change their culture from being a producer of goods (or machines) towards becoming a service provider with long term relations with customers.

The stakes are high: the competition is international and very fierce. This zoom-in goes deeper into the question how in Bilbao, the AS-Fabrik project helps local industrial firms to make this transition towards a future-proof and digitally empowered industry. Interestingly, they took a collaborative approach, trying to match existing competences in the region, and develop new ones where needed.

To better understand how it works, I conducted an interview with Eduardo Castellano, one of the architects of a highly innovative approach towards industrial modernisation. Together with Luis Berasategi and other colleagues from Mondragon University, he developed this new method.



## The interview

### What is your role in the AS-Fabrik Project?

I work at Mondragon University, one of the key partners in the project. Jointly with the Bilbao Local Council, we developed a focused approach to modernize the regional industry, in the face of the digital transition. We were convinced that new types of partnerships and networks are needed to achieve that. In an earlier project, we had learnt that you cannot leave this transition to the market, it is important to develop new skills & competences, but also, to find out how to bring existing companies, knowledge and competences in the region together in new ways.

### You developed a “road mapping exercise”: can you explain how that works?

Technology is really changing fast, with big implications for our industrial companies. They need new skills, competences, and partners to make the change; they have to redesign their organisational models, production processes, business models and customer relationships. It’s an immense challenge, especially for the many smaller and medium sized firms that do not have all the knowledge in-house. With the road mapping exercise, we brought them together, we invited experts, and then

discussed in-depth, and systematically, about new technological and market trends, and the particular challenges for each firm. In ½ day sessions, we discussed which new technologies are emerging, how they will affect industrial companies, and what that implies for their operations, for their business models, the skills of their staff, the education programmes of the universities, and new types of collaborations. By the end, this exercise revealed their needs for the medium and long term. Now, we had much better and detailed insights about their needs in terms of new competences, technologies partnerships, etc.

### **What does it help if you know their needs?**

It was the first step. The second was to look to the supply side: we set up another session to see what knowledge and competences we have here in our region to address these needs and demands. Here in the Basque country we have a lot of strong engineering firms, technology institutes, service providers, with deep knowledge on digital technology, business models, service models etc. We wanted to know more precisely what we have in house here in the region, and how they see the development of new technologies. So we also brought them together, and systematically “mapped” the offer that they provide.

For the individual participating companies, this road mapping exercise helped immediately to gain a clearer view on the challenges ahead, with implications for their business. But on the collective level, it also created valuable insights into common challenges that might ask for collective action, and, even more interesting, new matches for collaboration between companies in the ecosystem, and “white spots” where start-ups might have a good chance to address unfulfilled needs in the local market.

### **How did the firms react to the exercise?**

Very positively. Many of them are struggling to find a new place in a digitalising world; it is not easy. The exercise helped them to get a clearer view on trends and how they affect their company; also they could see that they are not alone: their colleagues/competitors have the same issues. Also, they liked the fact that the exercise was very focused. There are many events and networks around innovation - we are quite good at that here in the Basque country- but most of the time the information you get there is quite generic, and so are the exchanges and discussions. In this case, during half day sessions, firms discussed in-depth about their own, very specific problems, challenges and opportunities, together with peers and experts. They appreciated this very much, it brought them new insights, and in many cases also concrete solutions, in a very short time frame. The latter is important, because these people are very busy, and time is money!

### **You gained a lot of insights into demand and supply. What did you do with the outcomes of the analysis?**

The road-mapping was the key building block to create partnerships and start new business development. First of all, we discovered that some industrial companies faced questions or challenges that could immediately be addressed by firms or institutes in our region. In other words: there was an answer to their question, right next door! So we brought them together, let them partner up, and develop the solution.

It also happened that an industrial firm had a challenge that could not be immediately “matched” with one single local supplier. But we knew that if two or three of them would join forces, they could do it. For example, a machine-tool manufacturer looked for a way to improve its after sales services using real-time data, so it could monitor better the performance of its machines at the client’s premises. For

that, it needed a system to capture data, in real-time, about the machine's performance, predictive analytics to interpret the data and base actions on it, and an augmented reality human-machine interface. We found no single firm here that could deliver that solution. However, based on our detailed road mapping, we identified three small technological suppliers that could do the job together as they already had an extensive expertise in machine-tools applications. We brought them together with the industrial company, and they started to collaborate towards a solution.

### **What is your role after firms have found each other?**

We keep helping them, because collaborative innovation sounds easy but to do it well you have to set the right conditions. For example, when two or more firms develop a solution together, who owns the intellectual property? So after matchmaking, we help them with the management of the background and foreground issues, intellectual property rights, licensing agreements, royalties etc. We also provide them with organisational advice: we have toolkits (tools and templates) for the co-ordination of activities, or incorporation (if they decide to create a joint venture). We have developed a toolbox to create innovative collaborations. Also, as part of the AS-Fabrik project, we have funding for mentoring, so we can actually help these new coalitions to develop further.

### **What if there is no match?**

It can happen that we find no local company, or group of companies, that can address the specific need of an industrial firm. In that case, a new venture (or a "start-up") can fill the gap. The interesting thing here is that we know there is a local demand, early adopters, for a certain solution that is not yet met with supply. Hence, there might be a very interesting business opportunity, especially when other industrial companies have the same demand or problem. What we do in this case is help to assemble competences and resources, and create a start-up. It works: we already are developing eight start-ups, four started in February, another four last May, and more are in the pipeline. In some cases, start-ups are created by smaller tech providers or freelance experts that believe that together they can deliver a solution; it also happens that a larger firm (for example an engineering consultant) creates a new business unit to do it.

In AS-Fabrik, we help these start-ups to develop themselves. For example, we assist them in defining their key business assumptions, to create a minimum viable product (MVP) and prototypes, to do product-markets fits with industrial early adopters, to analyse wider market demand, and eventually to incorporate industrial and financial partners for the scaling up. The project funds 250 hours of mentoring per project to do this.

### **How does AS-Fabrik help to transform the urban economy?**

The examples show that through AS-Fabrik, we can effectively help to speed up the transition of the industry, and also create new collaborative innovations and new start-ups. We help industrial firms and at the same time develop new knowledge-intensive business sector in our region. We can already show many concrete results: based on the roadmap exercise we identified 27 new business opportunities, and many of them are being elaborated as we speak; every three months we launch four new ventures/start-ups. Also, a key aspect of AS-Fabrik is the training of company professionals – I did not mention it yet but it's important-: we had 70 participants in the first editions of AS-Fabrik's technological and business training courses for professionals, what help employees and owners of companies to get new competences to tackle the challenges they face. In our view, AS-Fabrik brings in a new type of much focused collaboration, something that is needed badly in the economy that we currently live in.

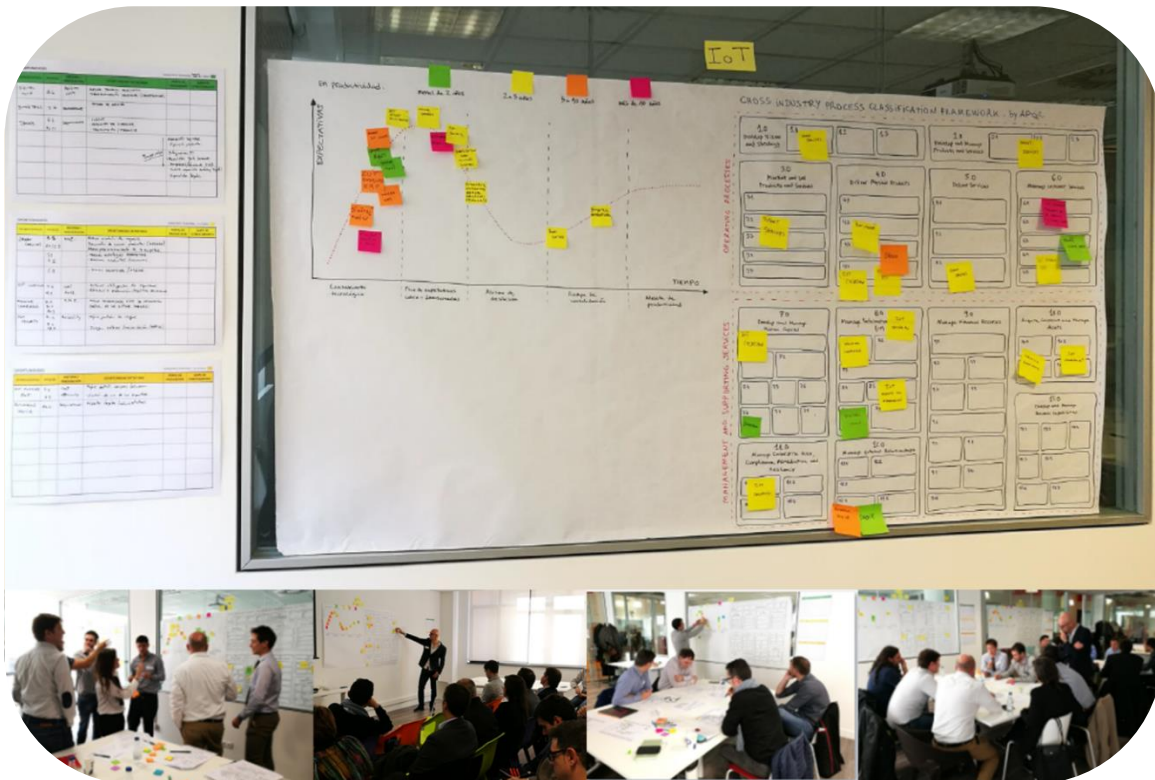
## What would be your advice for other regions? Could they do the same as you?

Yes and no. Our approach can be relevant, in my view, for industrial regions with a technological culture; it is really industry 4.0-focussed. For regions without an industrial and technological base it would need a rethought taking into account specificities other economic sectors as well as cultural dynamics. But for regions with a similarly strong industrial sector, like the industrial belt of North-West Europe, our approach could work as well. You need to have a critical mass of advanced industrial firms and technological service providers. Also, there must be a certain level of trust and co-operative spirit. We are strong in that here in the Basque region, but it's not like that everywhere. When firms are put together in this way, they must be willing to be co-opetitive.

## What if the funding for AS-Fabrik ends?

The project runs for 3 years; each year, we do a cycle of road mapping, matchmaking, professional training courses, and it provides us with time/funding for start-ups mentoring. We see already now that the value added for local technology service providers and industry is so large that we will organise private funding for this after the project ends. We do not want to depend too much on public money in the long run. In my view, this is a business-driven approach and that should be reflected in the funding model. Of course we will partner with the Bilbao local council and development agencies like Bilbao Ekintza as well as other partners. We are already thinking about how to go on with that after 2020.

Also, helped by funding from AS-Fabrik, we will open a specific location, on Zorrotzaurre Island (a redevelopment area of the city), where all AS-Fabrik processes, activities and dynamics with local technology service providers and industry will be located. It will be the hotspot for industry 4.0 in Bilbao and its wider region. Having a physical place like that will help to make our approach stronger.



Images from the road mapping sessions

## The AS-Fabrik project

Considering the challenge faced by manufacturing industries in the Bilbao area that are moving towards a 4.0 dimension, the AS-Fabrik project seeks to increase the competitiveness of the advanced services sector of Bilbao (Knowledge intense Business Services – KIBS), that will prepare current or future workers of the KIBS sector, to acquire the needed skills, in order to supply digital transformation demands.

Bilbao City council is therefore leading a strategic alliance between leading businesses and universities, local service providers and entrepreneurs, in order to shape a collaborative pilot ecosystem based on innovative pillars and hosted in a tailor made space for experimentation and incubation of new services. New education programs for university students, entrepreneurs and professionals addressing the new challenges of the industry 4.0 and the digital economy will be tested, while networking actions among the main stakeholders, supported by tailored IT tools, will ensure a good match between demand and supply. New business models will be prototyped to support specialised start-ups that will benefit from a Minimum Viable Product (MVP) test Fab Lab for the market validation of new products/services.

At the end of the project, KIBS providers from Bilbao will have access to AS-Fabrik, the “factory for the creation of advanced services for industry”, that will gather in a physical space an integrated kit of tools in order to shape new products and services for the new industry needs, and to reinforce their competitiveness. This new model will lead to create a new generation of young and advanced service providers able to supply the challenging digital transformation demands the manufacturing sector is growingly facing.

The project partnership:

- Ayuntamiento de Bilbao
- Bilbao Ekintza - Public Agency
- Mondragon Goi Eskola Politeknikoa J.M.A. S.COOP - Research Centre
- Mondragon Unibertsitatea Enpresagintza S.COOP - Research Centre
- MIK S. COOP. - Research Centre
- GAIA - Association of Electronic and Information Technologies in the Basque Country - NGO
- Deusto Foundation - Basque Institute of Competitiveness - Research Centre
- Asoc. Cluster Audiovisual de Euskadi - EIKEN BASQUE AUDIOVISUAL - NGO
- Mondragon Centro de Promocion, S.COOP - Business Support Centre
- IDOM Consulting, Engineering, Architecture, S.A.U. (IDOM) - Private Company



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Urban Innovative Actions (UIA) is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges. Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020.

UIA projects will produce a wealth of knowledge stemming from the implementation of the innovative solutions for sustainable urban development that are of interest for city practitioners and stakeholders across the EU. This Zoom-in, written by a UIA Expert, captures and disseminates the lessons learnt from the project implementation and the good practices identified. It is part of the capitalisation and dissemination activities of the UIA – Urban Innovative Actions Initiative.