

JOURNAL
PROJECT

AS-Fabrik - Bilbao
Alliance for smart specialisation in advanced services towards the digital transformation of the industry (Closed)
📍 Bilbao, Spain

TOPIC

Jobs and skills in the local economy

EDIT 07 OCTOBER 2021
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The AS-FABRIK project Journal n 6 Project led by the city of Bilbao

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One year after the UIA funding ended, the AS-Fabrik project is standing on its own feet. In his 6th and final journal, the UIA Expert Willem van Winden focuses on the legacy of the project, the lessons learnt, and what can other cities and regions learn from the project to promote the digitalisation and modernisation of the manufacturing industry and advanced services. Check out the details in Journal 6!

1. Executive summary

AS-FABRIK is now standing on its own feet, one year after the UIA funding ended. What is the legacy of the project, which lessons were learnt, what can other cities and regions learn from the project? These are the key topics of this final journal of the project.

The UIA-funded AS-FABRIK project was set up from the strong awareness that the local and regional economy is affected by significant changes due to digitalisation. It is evident that the pervasive influence of digital technologies and servitization requires a strategic re-orientation of manufacturing firms, urging them to invest in new skills and competences within their own company; The rapid pace of change in so called technologies 4.0 and related application fields may leave obsolete the present-day skills of professionals and jobs. At the same time, it opens new avenues for connections between manufacturing firms on the one hand, and companies that offer knowledge intensive business services (KIBS) on the other. The latter include IT and software firms, consultancies, marketing firms, but also financial service providers. Their knowledge and expertise can be very valuable for manufacturing. Also, new market niches open up for start-up companies that develop digital technologies and solutions.

In the last few years, the project has initialised a lasting infrastructure to promote the digitalisation and modernisation of the regional manufacturing industry and advanced services. The landmark AS-FABRIK building will remain relevant as hub for industry 4.0 education and as meeting point/network venue for industry, services, education and startups, where members of the industry 4.0 and advances services community will find a homebase and a joint R&D hub. The leadership team of AS-FABRIK -now in the hands of Mondragon- has made progress in various respects; It elaborated a membership model, detailing various types of membership of AS-FABRIK (for large players and smaller ones), including conditions under which members can use the facilities.

Key lessons learned during the UIA project:

- To boost industry 4.0, it makes sense to connect complementary regional actors that otherwise might not find each other.
- Innovative & interactive workshop templates help to facilitate the matching process between industrial firms and service providers.
- New forms of digital / industry 4.0 education are needed (also in the form of life-long learning) to make the regional industry ready for the digital age.
- Startup boosting is not only (and not even mainly) about young people starting business from scratch: it also includes the development of ventures from within existing companies.
- Startups have a much better change when they are linked to the wider industry 4.0 ecosystem.
- Digital hubs succeed when the organisation of the integrated activities is in the hands of a strong main (lead) partner that has a network and a reputation among businesses. In Bilbao, Mondragon University played this role; but other cities will have to find their own anchor organisation.

Partnership/membership models are needed to engage a wider stakeholder community and provide access to start-up boosting, partnership brokering.

2. Project's progress

2.1 What has happened with the project since its end date

Since the end date of the project, COVID-19 posed critical restrictions to the activities of AS-FABRIK; Due to lockdowns meetings were not possible, people worked from home, and most student and other activity in-situ stopped. After the summer, some activities resumed -with important restrictions- but since late autumn/early winter new lockdowns put a brake on activity in the AS-FABRIK building.

Nevertheless, the construction work in the building has continued, facilities are up and running, and everything is ready to receive students, companies and events. The new building has a number of facilities that enable innovations: 3d scanners and printers, IOT spaces with Arduino equipment, sensors, actuators; a “transmedia fabric” to create narratives around new products; cloud services; and a material bank with all sorts of (new) materials to make prototypes. These facilities are to be used by startups, education, and companies. As agreed in the project, the building and the facilities have been handed over to Mondragon University, that now takes care of its management and operations. Lately, some startups have been located in the building; also, teaching is now taking place in the building.

Behind the scenes, the leadership team of AS-FABRIK -now in the hands of Mondragon- has made progress in various respects; It elaborated a membership model, detailing various types of membership of AS-FABRIK (for large players and smaller ones), including conditions under which members can use the facilities. Also, they developed the local ecosystem, making sure that AS-FABRIK does not become a closed shop but is more an open beehive for the wider environment. As an example, it has built a strategic collaboration with a neighbouring education institute with art students, who are now also welcome in the building and can use the facilities under some conditions.

Moreover, the dissemination of the AS-FABRIK experience and lessons is in full swing. In March 2021, a new project has been started to share the lessons learned of the UIA AS-FABRIK project with other European cities. The name of the new project is AS-TRANSFER, and it is funded by URBACT. It is a network of four medium-sized industrial cities (Bilbao, Timisoara, Bielsko-Biala and Tartu). Through this network, the practices and results of AS-FABRIK will be shared with the other three cities, that have similar ambitions (and projects in place) around digitalisation & industry 4.0. But also, this network will enhance the sharing of the lessons with the wider (and quite large) URBACT community.

2.2 What is the project's plan for long-term sustainability

AS-FABRIK is here to stay, the first 2 floors of the building are ready and in use; AS-FABRIK has a solid basis in Mondragon university that will use the building for its educational activities close to business. Concretely, this concerns Bachelor and Master courses in the field of Industry 4.0/digitalisation; some more technical (IoT, big data, AI etc), and some more economic (new business models, servitisation etc), thus, it is an interdisciplinary approach. This link shows the courses now on offer: <https://mukom.mondragon.edu/mondragon-unibertsitatea-learning-from-reality/2020/04/02/mondragon-unibertsitatea-se-afianzara-el-proximo-curso-en-bilbao-con-la-imperticion-de-16-titulos/>

The building will be further extended in the future; Mondragon will develop the next floors. A membership model is being elaborated, in which companies and other organisations can become a paid member of the community,

and have access rights to the facilities in AS-FABRIK. The aim is to make optimal connections between companies that develop innovations (alone or in partnership), students and researchers that contribute through thesis work, internships, or joint research projects, and start-ups that might emerge out of that. On top of that, many events will be organised in the broad topic of digitalisation/services/industry 4.0.

3. Generated Knowledge

3.1 Lessons learned

A number of lessons have been learned during the AS-FABRIK project period. Below, they are categorized in the main lines of activity developed in the project; partnership brokering, education, start-up boosting, and miscellaneous.

Lessons on partnership brokering:

To boost industry 4.0, it makes sense to connect complementary regional actors that otherwise might not find each other. Through well-designed workshops, AS-FABRIK has shown that it is possible to connect players that might be complementary. But it remains difficult to engage with manufacturing companies, especially when their order books are full and there are staff shortages.

New types of partnerships (between manufacturing and KIBS) are needed for companies to remain competitive. AS-FABRIK's strategy was to explore and develop new local/regional partnerships in a systematic way; first, by looking how existing local/regional firms could combine their complementary resources and team up, and second, by analysing which type of knowledge/expertise is still missing and could be developed by start-ups or new ventures.

Apply innovative workshop templates. In AS-FABRIK, innovative workshop templates were set up to organise these matching processes. The project has shown that partnership brokering is 1) time consuming -hence expensive- 2) relies strongly on the credibility of the actor who organises the process -otherwise companies will not participate- and the quality of the workshop templates and 3) it remains a challenge to engage busy companies with little time because of full orderbooks for which future innovation may not be a priority. This implies that partnership brokering will only work when organised by a strong and credible actor who understands the business (as was the case with Mondragon in Bilbao); Also, public funding in whatever form is needed to sustain the brokering activities, as businesses tend to be not prepared to pay for it because the eventual benefits are unclear and unpredictable. The mentoring activities were important to support the development of new initiatives; but here also, they rely on paid mentors that could be largely funded out of the UIA subsidy. Without subsidy, a mentoring system is difficult to maintain.

On education

Use digital / industry 4.0 hubs to renew education and make it ready for the digital age. New master courses in the field of digitalisation (technical and more business-oriented) have been developed, they will be sustained by Mondragon.

To boost industry 4.0, it is key to establish permanent/lifelong learning. Digitalisation is a pervasive trend, it develops fast, and it affects all aspects of the business. This has two key implications: 1) that (higher) education must work hard to keep their curricula updated and 2) that lifelong learning concepts are more needed than ever. AS-FABRIK caters for both.

On startup boosting

A key lesson from AS-FABRIK is that startup boosting regarding industry 4.0 should not follow the Silicon Valley model of digital startups. Startup boosting is not only (and not even mainly) about young people starting business from scratch: it also includes the development of ventures from within existing companies. Most companies do have many good and viable new business ideas, but for all kind of reasons they do not come to fruition. An important role of startup boosting is to discover these ideas within companies and set the conditions to develop them in new business lines -not necessarily new companies.

A second lesson is that startups have a much better change when they are linked to the wider industry 4.0 ecosystem. They will certainly have a market when they develop products or solutions for existing companies in the region. A key challenge is thus to articulate and discover the needs and holes within existing (industrial or service) companies, as a basis for start-up development. Here, the start-up boosting connects with the partnership brokering.

On governance/management

The governance of AS-FABRIK is in the hands of Mondragon university; This has the benefit that a large player, with strong interest in the further development of knowledge-intensive services and industry 4.0, is now firmly in the driver's seat. It also means that the influence on AS-FABRIK of other players in the city/region (other universities, local development agencies, cluster organisations, public institutions etc) will be limited, despite the fact that the development direction that AS-FABRIK stands for is relevant for the city and the region as a whole. It might have been better to give some type of formal role to such institutions, for example in an advisory board or steering committee.

On the building and its location

The AS-FABRIK building is located in a new urban development area, outside the city centre, that is still under construction. It may work as a catalyst to develop the area. On the downside, putting such a digital hub on a not-so-central location makes it more difficult to attract crowds and facilitate unexpected visits from curious bypassers. At the same time, such a building can become an anchor in the urban regeneration when it manages to develop strong connections with other institutions and people in the area. Time will have to show if this will be the case or not.

3.2 Recommendations to other urban authorities who wish to implement similar innovative projects

Related to the lessons learnt described above, the following recommendations can be drawn:

Connect startup boosting, talent development and network brokering to each other; do not organise it in silos but take an integrated approach in a single "hub concept" such as AS-FABRIK.

Put the organisation of the integrated activities in the hands of a strong main (lead) partner that has a network and a reputation among businesses. In Bilbao, Mondragon University played this role; but other cities will have to find their own anchor organisation.

...But at the same time actively involve all players in the ecosystem. Make a governance set-up that includes all the relevant players in digitalisation/industry 4.0, and give the main ones a substantial role. The stakeholders should minimally include cluster organisations, local development agencies, employers from advanced business services and manufacturing, and educational institutes.

Make sure that your concept is open, for instance by organising meetups for wider audiences.

Find a funding model for activities that are more difficult to finance, such as partnership brokering; public subsidies might be needed

For partnership brokering, make use of the guidelines and templates (for meetings, contracts, methods etc) developed in AS-FABRIK

Create separate working groups for start-up boosting (involving incubators), talent development (involving educational institutes), or other activities, but always make sure they are connected and work under one umbrella.

Closely follow what new trends and developments there are, and what other cities/regions are doing in this very dynamic field, and try to learn from them collectively. For this, it might make sense to develop an observatory, as was done in AS-FABRIK

4. Conclusions

4.1 The expert's final reflection and "evaluation" of the project

The digitalisation of the industry means that new competences are needed, and hence, education and training are affected. Fresh graduates from universities and other educational institutes must be prepared to work in this new environment, and current staff in companies may need retraining. All in all, massive educational and training efforts are required to make the transition to a more digital economy. At the same time, new business concepts are needed, as well as more networking between industrial firms and digital service providers to boost modernisation. AS-FABRIK is a successful venture to address all these issues.

Content wise, the project takes on a key topic, and this topic will be on the agenda for the years to come. Its

integrative approach, combining start-up boosting, partnership brokering and talent development should be considered as innovative. And also using the concept of AS-FABRIK as catalyst for urban development is a plus. The management and leadership of the project have been good, with clear structures and working methods. Delays were mainly due to difficulties in the procurement of land, and cannot be attributed to poor leadership.

When it comes to ownership of the project, Mondragon has played a dominant and constructive role. The sustainability of the project is partly ensured because the building and management of AS-FABRIK are handed over to Mondragon. This will make it lasting, in particular the educational activities that will continue to take place, but also the startup boosting that will continue. At the same time, the more innovative aspects of AS-FABRIK, especially the partnership brokering, is more fragile. These activities take up much time and resources from the side of the organiser and the participants. Already during AS-FABRIK, with 80% EU funding, it was not always easy to engage companies.

With regards to communication, the project was somewhat inward oriented, mainly directing the communication efforts to the main stakeholders (from education, industry and services); more peripheral audiences, such as residents of the surrounding area or citizens of Bilbao in general, were less addressed. As such, this approach is understandable, but casting a wider communication “net” from the beginning could have been good. First, the AS-FABRIK building is located in a newly developed urban zone, that needs to be embraced by the Bilbao citizens; and second, industry is the heart of the DNA of the region; it is part of the bigger story of Bilbao’s history, and hence it makes sense to involve the population at large in the important next steps of industry digitalisation.

Likewise, regarding participation of stakeholders, the project has always strongly focused on the key stakeholders: KIBS companies, industrial companies, education institutes, policy makers, and local development organisations/cluster organisations. There has been less engagement of citizens, which could have helped to increase the local support for the redevelopment of Zorrotzaure. But in the last two years, significant steps have been taken to engage neighboring educational institutes in the development of AS-FABRIK, to make sure that it does not become a Mondragon-run closed shop.

4.2 The main legacy of the project, both in terms of knowledge generated and the solution implemented

The project has initialised a lasting infrastructure to promote the digitalisation and modernisation of the regional manufacturing industry. The landmark building will remain relevant as hub for industry 4.0 education and as meeting point/network venue for industry, services, education and startups, where members of the industry 4.0 and advanced services community will find a homebase and a joint R&D hub.

The project has not, as such, generated much new codifiable knowledge. Rather, its value lies in the application of existing and recent knowledge (technical and managerial) to industry 4.0 related applications and challenges, and its creation of “new combinations” between education, industry, and advanced services.

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