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The Urban Lab of Europe !

The AS-FABRIK project Journal N° 5

Project led by the City of Bilbao



**JOBS & SKILLS
IN THE LOCAL ECONOMY**



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The AS-FABRIK project

The **AS-FABRIK** project seeks to increase the competitiveness of the advanced services sector of Bilbao (Knowledge Intense Business Services – KIBS) through a collaborative process that will prepare them to supply the digital transformation demands of the manufacturing sector (Industry 4.0).

A strategic alliance with the city, businesses, universities, local service providers and entrepreneurs will be set up in order to create a new 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, supported by dedicated 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 and services.

Partnership:

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

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1. EXECUTIVE SUMMARY

This journal summarizes the activities that took place in the last months in the AS-FABRIK project. It outlines how the partners will continue their activities after the UIA funding will come to an end by July 2020, and signals some key challenges.

The project is well on track, it delivers more results than planned, and it is well-managed. Importantly, the key activities of AS-FABRIK (partnership brokering, specialised education, start-up boosting) will continue in the future without UIA support, albeit in a modified form. Hence, the piloting and experimentation funded by the UIA project will be mainstreamed. After the summer of 2020, the AS-FABRIK activities will leave their temporary space in the city centre (Mondragon University) and move to a renovated building at the heart of the Zorrotzaurre district, which is an industrial area (including residential and retail functions) that is turned into a mixed innovation quarter in the coming decades. The AS-FABRIK building is conceptualised as an innovation hub for the industry 4.0/KIBS community, not only for Bilbao but for the wider region. When finished (early autumn 2020), the first two floors of the building will be the home of all the activities. It should become a place where companies meet each other, where they can explore and develop new partnerships, where start-ups are supported and incubated, and where training activities take place, all under one roof.

Aside the good progress, mainstreaming and prospects of the project, some key implementation challenges remain:

- 1) Communication and branding. The location of the new building is currently relatively peripheral, poorly accessible, unknown, and there are few amenities around. This will change only gradually with the further redevelopment of Zorrotzaurre. In the meantime, to attract firms and wider audiences (as is the ambition), pro-active communication and branding efforts will be needed.
- 2) Starting while “still under construction”. The centre is supposed to run from September 2020 on, when the first two floors should be ready for use. But by that time, still a lot of construction work will be going on, in the building (the higher floors) and around it. There is a risk of a “false start” when this is not handled properly. Careful environment management and close alignment with the builders will be needed to avoid disturbances.
- 3) Embeddedness in the neighbourhood. The building and its activities serve as a landmark in the environment and a catalyser for further development. The opening of the building must be seen as an important early step in the much larger long-term redevelopment of

Zorrotzaurre into an urban innovation district, with strong repercussions for the current inhabitants. The City of Bilbao and Mondragon University (that will own the building and run the concept) should consider how to engage more deeply with them; not only by providing information, but also by actively inviting them to take part in activities and perhaps offer specific facilities that benefit them too.

- 4) Elaborate the business model. After the completion of the project, it is necessary to develop the business model that allows the

continuity of the provision of services linked specifically to the activities of the start-up boosting, partnership brokering and the observatory. The deployment of this new business model should serve to make those services as effective, efficient and sustainable as possible maintaining the integrative perspective of the value proposition of Bilbao AS Fabrik as a whole. It should also take into account the participation and collaboration with public-private intermediary agents.

2. INTRODUCTION

The AS-FABRIK project is reaching its final stage. By July 2020, the UIA funding ends, and the concept must stand on its own feet. This journal highlights several activities that took place in the last months in the AS-FABRIK project. Section 3 recalls the rationale of the project: why was it started, what was it supposed to achieve? Section

4 summarizes the project's progress, focusing on recent developments in the last 9 months. Section 5 looks ahead: how will the activities continue after the UIA project comes to an end? Section 6 discusses a number of implementation challenges, and section 7 concludes with some more fundamental challenges that lie ahead.

3. WHY AND HOW IT ALL BEGAN

It's good to look back at the question why AS-FABRIK seemed like a good idea in the first place.

The AS-ABRIK was set up from the strong awareness that the local and regional economy is affected by significant changes due to digitalisation. The region has a strong industrial tradition of making high-quality products. But making a good industrial product and selling it to a (business) customer is no longer enough. Digital technologies offer scope for new business models, in which manufactured products (such as machines) are not sold, but leased or rented out; manufacturing firms then effectively become service providers, with radical repercussions in all aspects of the business: customers service, marketing, operations, logistics, and finance. Moreover, digital technologies offer scope to closely monitor the performance of products, machines and production processes (using sensors, actuators, algorithms and dashboards), which can improve reliability and predictability.

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.

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.

One may ask the question what is really fundamentally new here: technological change has always been there, and it is the core business of companies and universities to adapt smartly to the new situation. Poor adapters will lose out, strong ones will survive, and new players will enter. But this was not the way stakeholders in Bilbao wanted to go. In the Basque Country there is the conviction that keeping industry alive is a must (as well). The region around Bilbao has preserved a very vibrant industrial sector, hitherto facilitated by through "Industry 3.0" recipes. It became increasingly clear that to maintain this part of the economy healthy, though, it has to step up modernization and digitalization, and the development of an industry-oriented KIBS fabric is an important ingredient for that purpose. Hence the main mission of AS-FABRIK: to endow the Basque Country with a stronger industry-oriented KIBS fabric and to strengthen Bilbao's role as a provider of KIBS support to the surrounding industry.

The key stakeholders decided, in line with a very long Basque co-operative tradition, that

developing collective and co-ordinated action was needed. A number of stakeholders from public, private and knowledge sector, led by the city of Bilbao, developed a brand new concept to bring together regional industry and service firms, linked to old and new forms of education. In the end, they should be united under one roof, in a compelling new concept where innovations could be co-developed. This should in the end sustain the competitiveness of the industry sector, and boost the development of knowledge-based intensive services (KIBS).

4. WHAT HAS BEEN ACHIEVED SO FAR?

Summarizing, several lines were followed in the AS-FABRIK project:

- Forging innovative alliances
- Promote and support start-ups
- Develop education and training programmes
- Create a building where it all comes together

These activities were backed up by analyses to understand the competitive context in which firms operate, by monitoring activities, and by workshops to identify new business opportunities together with the relevant players in the region. Also, lessons were drawn from good practices of other city regions where KIBS are being promoted as an input for the design of support measures at the level of Bilbao. The remainder of this section summarizes what progress has been made in the four key domains.

Forging innovative alliances. Bringing potential co-innovators (from various industries) together is not straightforward; it requires a targeted and professionally moderated matchmaking process, and firms must be convinced that they spend their precious time well. During the last two years, three rounds of moderated matchmaking seminar series (in various forms) were organised, aimed to bring companies together and see if new partnerships and alliances could be developed. By 2020, this process has resulted in 32 Partnership Agreements (between collaborating businesses), and 6 educational agreements (business-university partnerships). Moreover, about 90 hours of mentoring were provided to firms that want to partner with other firms or with a university, by seasoned advisers,

knowledgeable in the field of industry 4.0. An important deliverable is a dedicated “Guidebook” with tools for partnership creation.

Promote and support start-ups. The start-up boosting process aimed to create new companies (or new intra-company ventures) in the field of industry 4.0 and advanced business services. The project distinguished 5 boosting stages, from early ideas to advanced/mature: ideation (pitching the idea), prototyping (developing a first prototype), piloting (do a first market test), and incubation (making connections to industrial and financial partners to get the venture off the ground). Projects were carefully mentored by a team of experts, to let them make the transition from idea to viable business modal. In total, so far 31 new ventures have emerged in this activity (where only 12 were foreseen) in seven rounds.

Education & training programmes. A number of training programmes for professionals have been developed and run by Mondragon University, and they were attended by 210 professionals so far. They include technical courses (on topics such as Data Science, Embedded Systems and Advanced Services Design), and more managerial ones (on servitization, finance and management). Ten participating companies received an in-company training, dedicated to their needs, and a webinar was held, attracting 190 participants. On top of that, 3 PhD students have started their research project. A quite innovative action in this regard was the setup of specific training sessions for policy makers, about rather technical topics such embedded systems, data analytics, servitization, innovation alliances and industry 4.0. These people make big decisions affecting the future of

the local/regional economy, and the training prepared them to do a better job.

Create a building where it all comes together.

A crucial part of AS-FABRIK is the creation of Centre for industry 4.0 and KIBS. It should become a physical hub where companies meet each other, where they can explore and develop new partnerships, where start-ups are supported and incubated, and where training activities take place, all under one roof. It should become a hotspot for the industry 4.1/KIBS community, not only in Bilbao but the wider region. The centre is being built in the heart of the Zorrotzaurre district, a former industrial area (including residential and retail functions) that is being transformed into a mixed innovation quarter in the coming decades. A dilapidated heritage building named BETA II was bought by the local government, and is currently renovated towards its future destination as heart of the AS-FABRIK community, that will occupy the lower two floors. In October 2019, phase II of the reconstruction began with an estimated costs of about 6,5M€ in 12 months. The reconstruction process had some hickups, first due to complex ownership structures, and later because the

reconversion proved more difficult than expected; the old brick walls turned out to be too weak to maintain. After all, the costs increased substantially, carried by the city. By September 2020, the first two floors of BETA II are expected to be ready to use for the activities mentioned above; the spaces will be transferred to Mondragon University, that will be the main responsible partner for the exploitation and programming in the building. It is hoped and expected that the centre can become an important catalyst for the broader development of Zorrotzaurre, it will attract more students and professionals and create liveliness in an area where now not many people come. The first floor is designed to host the educational activities; it will become a centre of interdisciplinary education for students from Mondragon University, coming from 3 different faculties. The ground floor is set to become a home to other AS-FABRIK activities, such as a dedicated space for incubation/start-up support, and the formation of partnerships and communities. There will be a demonstrator, an event space, and a fablab.



Beta II under reconstruction

5. AS-FABRIK 2.0: WHAT'S NEXT?

Looking back over the past few years, one can conclude that the UIA co-funded development of AS-FABRIK has generated a lot of pioneering activity to boost KIBS and industry 4.0, and made it possible for the city and its partners to develop the new space at Zorrotzaurre.

The building is there to stay, and it will be further developed in the next years by Mondragon as a centre for showcasing, experimentation and community, and a learning/training ground for all actors linked to Industry 4.0 and KIBS. Luis Berasategi from Mondragon likens the building to an “open contemporary space”: a landmark place where good new stuff is displayed, debated and created, and that is attractive not only for insiders and specialists but also for a more general audience; a place where you are supposed to be active rather than a passive beholder.

A key question is to what extent the AS-FABRIK activities pioneered in the last 2,5 years continue in the future without UIA funding? Let's again have a look at the key activities, and see how they will be sustained.

- The forging of innovative alliances: In a different form, the AS-FABRIK partners will continue to develop new partnerships and alliances, as this is the heart of the project's philosophy. In the future, the partnership development will be continued, but in a slimmed down version; a collaboration platform is to be developed, but its shape is yet unclear. Mondragon will be the main driver.
- The promotion and support of start-ups: Start-up promotion is part of the city's economic promotion policy, but the uniqueness of AS FABRIK lies in the specificity of start-ups and new ventures in the fields on industry 4.0 and KIBS, and their embeddedness in the industrial community. The new building will obtain a number of facilities that enable their development: 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. Startups will be able to use them, Mondragon will provide support for that.
- The development and running of education and training programmes. Mondragon University will continue to offer the educational programmes (both technical and managerial) that were developed; three faculties will relocate to the second floor of the BETA II building from September 2020 on. In AS-FABRIK, some trainings for companies were offered for free; in the new situation, this will be no longer possible. Some of the business training modules will continue (if enough paying participants), but new forms might be needed, this is still under consideration.

Also, as part of its regular activities, Orkestra (one of the knowledge partners) will continue the monitoring of the supply and demand situation, the benchmarking of Bilbao/Basque Country with other places, and the transfer of good practices from elsewhere.

6. KEY IMPLEMENTATION CHALLENGES

This section summarizes the main types of implementation challenges as identified by UIA (summarized in table 1).

Table 1. Mapping AS-FABRIK against the established UIA challenges

Challenge	Risk level	Observations
1. Leadership for implementation	Low	The leadership (city of Bilbao) is clear, consistent, accepted by all partners, and it delivers results.
2. Public procurement	Low	The building was procured by the city and is now under reconstruction. Costs proved higher than expected due to weak structures; the additional investments are carried by the city. When ready, the building will be transferred to Mondragon.
3. Integrated cross-departmental working	Medium	There is an ongoing strong “triple helix” collaboration between city, knowledge institutes and cluster organisations/firms; also, there is a good collaboration between the main public agencies involved, namely Bilbao Ekintza and the City (Mayor’s Office and the department for Public Works).
4. Adopting a participative approach	Medium	Participation of the private sector and higher education/knowledge institutes is well developed, and key players are partners in the project. In the development of BETA II the participation of local citizens has been largely absent;
5. Monitoring and evaluation	Low	At project level, the lead partner (the city) closely monitor progress in frequent technical and steering committee meetings in which the partners come together. On the level of actual results and impacts in the local economy, the “observatory”, founded as part of the project monitors and evaluates the project’s impact. Almost all indicators have been met, and on some dimensions (for instance the number of alliances and start-ups created) the project has achieved much more than planned.
6. Financial Sustainability	Medium	So far, there are no indications of financial concerns. There are elaborated plans to continue and mainstream the key elements of the project (start-up boosting, partnership brokering, education) in the daily activities mainly of Mondragon and Bilbao Ekintza.

Challenge	Risk level	Observations
7. Communicating with target beneficiaries	Medium	The communication with the beneficiaries –companies in manufacturing, KIBS, start-ups, students- is in full swing and will continue. A concern is still how to reach industrial firms, and also to communicate to the business community what the new AS FABRIK building will be about and what is in it for them. Likewise, attracting broader audiences to the new building will be a challenge. A strategic approach is needed for this.
8. Upscaling	Medium	As such, upscaling of the concept will be limited; it is rather a case of mainstreaming, where many of AS-FABRIK’s pioneering activities will become permanent in the BETA II building. Upscaling might apply in the form of replication, when other regions develop a similar concept (and there is interest from various cities and regions).

The **leadership** of the project is strong, overall and on work package level. The work packages are strongly interrelated functionally; frequent contacts and briefings make sure that the leaders are well informed about the progress in each domain, and can play on that.

The **public procurement process** had some initial delays. The procurement has been traditional; no specifically innovative types of procurement were applied in this case. In October 2019, phase II of the reconstruction began with an estimated costs of about 6,5M€ in 12 months, but the costs turned out to be higher. When finished, the building will be transferred to Mondragon, a formal agreement for that is in the making.

Concerning **integrated/cross-developmental working**, the development of the physical space of AS-FABRIK is part of a wider and longer term challenge to regenerate Zorrotzaurre Island; for this, an intensive interdepartmental collaboration is in place (uniting departments responsible for environment, planning, transport, economic development agency). Other funding sources are used to develop the building and its surroundings. The Mayor’s Office and the department for Public

Works co-ordinate their actions well. Moreover, AS-FABRIK is fostering a deep collaboration between the city (Mayor’s office) and arms-length economic development agency Bilbao Ekintza, and this works well.

A **participative approach** is a red thread throughout all activities of AS-FABRIK, where the focus, naturally, is on the participation of industry 4.0, KIBS firms and start-ups as beneficiaries of the project. With regard to the development of the BETA II building, citizen participation has so far not been part of the script; this needs improvement because the development activities will affect local inhabitants directly. This challenge is recognized, but more action could be taken. In the further process of building/restructuring and programming the BETA II building, efforts are needed to engage more actors in its design, development and programming. Currently, it is mainly a co-production of city and Mondragon. Currently –and understandably-,the energy of the people engaged in the construction and planning is focused on getting the practicalities done, to complete the building, to host the new tenants in time.

Monitoring and evaluation takes place at three levels. At the project level, the lead partner (the city) closely monitor progress in frequent technical meetings (where the WP leaders share their progress) and steering committee meetings in which top level leaders of the partners meet. On the level of actual results and impacts in the local economy, the “observatory”, founded as part of the project, plays a key role to systematically monitor and evaluate the project’s impact. There are no specific challenges in this field.

Concerning the **financial sustainability**, there are no direct concerns either. The reconstruction of the building turned out to be more expensive than expected, but the city can and will cover the additional costs. It is now evident that most of the activities of AS-FABRIK will be able to be effective without EU support. There is a strong commitment from Mondragon to update courses, to maintain start-up support, and to continue the brokering/networking activities.

The **communication with the target beneficiaries** – companies in manufacturing, KIBS, start-ups, students- is in full swing and provided by all partners. A continuing concern is

how to reach industrial firms, especially the more traditional ones. Also, an improvement is needed in the communication about the new AS FABRIK building: what will happen there, and how will it benefit the local/regional business community and the citizens. It is located in a relatively remote and unknown location, so strong efforts will be needed to draw audiences there.

Upscaling, finally, will be a challenge in two respects. The first task, locally and regionally, is to sustain the level of participation of industry 4.0 and KIBS firms & beneficiaries in the city and region. The AS-FABRIK project developed a good reputation but continuous awareness and marketing efforts will need to be in place. Second, the project might be replicated by other cities, nationally or internationally; there is interest in the concept from industrial regions abroad, significantly amplified by the project’s visibility in the UIA community.

7. IN CONCLUSION

This journal summarized the key activities that took place in the last months in the AS-FABRIK project, and focused on the future outlook of the project after the UIA funding ends. We can conclude that the project has delivered on its promises. The activities as foreseen in the project are all on track, and in some aspects even more was achieved than planned. What is even more important, most of the activities that were started, tested and piloted during the UIA project will continue in the future. Mondragon University, in collaboration with the city and Bilbao Ekinza, will take responsibility to continue specific training, partnership brokering and start-up support, aiming to further elaborate a regional ecosystem in which industrial firms, universities and services/IT will work together to develop innovations.

When finished (early autumn 2020), the first two floors of the new BETA II building will be the home of all these activities. It should become a hub where companies meet each other, where they can explore and develop new partnerships, where start-ups are supported and incubated, and where training activities take place, all under one roof. It should become a hotspot for the industry 4.0/KIBS community, not only in Bilbao but the wider region. The centre is built in the heart of the Zorrotzaurre district, which is an old industrial area (including residential and retail functions) to be converted into a mixed innovation quarter in the coming decades.

In this connection, three key challenges can be identified:

1) Communication and branding: The location of the building is currently relatively peripheral, poorly accessible, unknown, and there are

few amenities around. This will change only gradually with the further redevelopment of Zorrotzaurre. In the meantime, to attract firms and wider audiences (as is the ambition), proactive communication and branding efforts will be needed.

2) Starting while “still under construction”. The centre is supposed to run from September 2020 on, when the first two floors should be ready for use. But after that, still a lot of construction will be going on, in the building (the higher floors) and around it. This may hamper or disturb the activities, and there is a risk of a “false start” when this is not handled properly. Careful environment management and close alignment with the builders will be needed to avoid disturbances.

3) Embeddedness in the neighbourhood. The opening of BETA II must be seen as an important early step in the much larger long-term redevelopment of Zorrotzaurre into an urban innovation district, with strong repercussions for the current inhabitants. So far, there have been few efforts or activities to engage local citizens and take them on board in the (re)development of the building as centre for KIBS and Industry 4.0; Therefore, it should be considered how to engage more deeply with them; not only by providing information, but also actively inviting them to take part in activities and perhaps offer specific facilities that benefit them too.

4) Elaborate the business model. After the completion of the project, it is necessary to further develop the business model that allows the continuity of the provision of

services linked specifically to the activities of the Startup boosting, partnership brokering and AS observatory. The deployment of this new business model should serve to make those services as effective, efficient and sustainable as possible maintaining the integrative perspective of the value proposition of Bilbao AS Fabrik as a whole. It should also take into account the participation and collaboration with public-private intermediary agents.

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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 journal is a paper written by a UIA Expert that captures and disseminates the lessons learnt from the project implementation and the good practices identified. The journals will be structured around the main challenges of implementation identified and faced at local level by UIA projects. They will be published on a regular basis on the UIA website.



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