

# AS-FABRIK project in Bilbao

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*Author: Willem van Winden*



*This zoom-in focuses on the topic of co-creation. In the framework of AS-FABRIK, a physical location is being developed, that should become the beating heart of the Industry 4.0 ecosystem in the Bilbao region. The new building in Zorrotzaurre must develop as the place where the collaborations will physically take shape, where new prototypes can be developed, and where new start-ups will be incubated, but also for education. Bilbao AS-FABRIK plays the role of intermediary and curator (connector, broker, facilitator or configurator). What should the new concept look like, in relation to the wider ecosystem? How can it truly become a place for innovation and co-creation? This zoom-in highlights several aspects of co-creation, based on insights from the literature and cases from other European cities. We identify under what conditions co-creation can flourish, and provide a number of cases of co-creation concepts, systems and buildings from other EU cities. This zoom-in concludes with a checklist: a set of questions for co-creation spaces in relation to the wider ecosystem. Answering them might help to co-design the AS-FABRIK building and its ecosystem successfully.*

# 1. Introduction

Digitalisation and servitization are challenges that can no longer be addressed on the level of the individual company or university; even large multinational companies with vast resources realise that innovation requires collaboration, knowledge exchange, and a community of co-creation and shared learning. A key goal of AS-FABRIK is to foster new types of alliances between regional firms, in order to grasp synergies and complementarities. In the framework of AS-FABRIK, a physical location is being developed –the Beta Building, in the new city part called Zorrotzaurre- where the collaborations will physically take shape, where new prototypes can be developed, and where new start-ups will be incubated. It will become the home of Industry 4.0 and knowledge-intensives business services (KIBS) in the Bilbao region, and take a central place in the innovation ecosystem.

What should such a building look like? How can it truly become a place for innovation and co-creation, a beating heart of a bigger ecosystem? This zoom-in highlights several aspects of co-creation, based on insights from the literature and cases from other European cities. Section 3 gives the context, explaining the main aims of AS-FABRIK and the role of the co-creation building. Section 4 provides insights from the literature: what is co-creation, why it is important, and what trends can be observed. Section 5 discusses under what conditions co-creation can flourish. As inspiration, section 6 provides a number of cases of co-creation concepts, systems and buildings from other EU cities. Finally, section 7 contains a set of questions; answering them might help to co-design the AS-FABRIK building, its organisation and its wider ecosystem successfully.

## 2. AS-FABRIK as co-creation concept for knowledge-intensive business services

The AS-FABRIK project is a coin with two sides: on the one side, it promotes “smart specialisation”, aiming to make manufacturing –a traditionally strong sector in the city- and related knowledge intensive business services (KIBS) more competitive. But also, it is an instrument to improve the spatial conditions of the local economy, through the regeneration of the Zorrotzaurre area, a former industrial peninsula that will be turned into an innovation district: a knowledge-based new part of the city, with a mix of residential areas, R&D, and leisure. For the city of Bilbao the redevelopment of Zorrotzaurre Island is a priority for the next decades. It is a multi-million Euro programme, to be developed in stages, with a large number of stakeholders, public and private, and with involvement of the citizens that currently live there. The AS-FABRIK project is one piece of this big puzzle, part of a portfolio of other projects (European, national, regional and local) that should contribute to the revitalisation of the area.

Innovation activity in advanced manufacturing and services will be one of the economic engines of Zorrotzaurre. The island will be the home for many of the innovative activities of AS-FABRIK, and play a role of animator of the innovation ecosystem. To achieve that, the city acquired a building (named BETA II) in Zorrotzaurre, and decided to refurbish rather than demolish it: the costs would have been similar but the building has authentic features that are worth preserving. It is to become the beating heart of the innovation ecosystem around industry 4.0 and knowledge-intensive business services. During the first months of the project, the building quality was analysed, and the process of the functional design of the building was initiated. According to the original plan, around 2 floors (4000 m<sup>2</sup>) of the building would be dedicated to (and co-funded by) the AS-FABRIK project.

However, the interest to use the building was bigger than expected. By September 2017, it was decided to allocate additional funding to develop 4 floors of the building (totalling 10,000 m<sup>2</sup>), to house the industry 4.0 ecosystem. There are plans to acquire also a plot surrounding the BETA II building; that would allow to develop a public plaza, to give the building an open and welcoming character, connected with the neighbourhood.

So far, progress has been substantial in the development of BETA II. The work is divided in two tenders: one for the part of the roof and structure of the building (already finished); and another for the interior of the two first floors, that will be ready by September of 2020. From then on, AS-FABRIK's activities can take place in the building, and a number of other tenants have announced they set up shop there.

BETA II should develop as a "living room" for the Industry 4.0 community in Bilbao and the Basque Country. It should become a venue for partnership building, showcasing good practices, hosting innovative start-ups, and also a location for professional training and all sorts of events related to smart manufacturing and knowledge-intensive business services. The building should also help to show the added value of partnering: by making the results of partnerships more visible, it could induce reluctant companies to take new steps in this direction.



*The BETA building*

### 3. Theories & concepts of co-creation

The BETA building will soon become a central hub for co-creation and innovation, where the interaction between partners will hopefully do the magic. But what is co-creation? There are many terms and concepts around:

*Open innovation:* Open innovation refers to a situation where an organisation does not only rely on its own internal knowledge, sources and resources (such as their own staff or R&D) for innovation, but also uses multiple external sources such as customer feedback, published patents, competitors, external agencies, the public etc. to drive innovation. Two types are discerned: inbound innovation (sourcing and acquiring expertise from outside the organisation, and scanning the external

environment for new information to identify, select, utilise and internalise ideas), and outbound open innovation: the purposive commercialisation and capture of internally developed ideas in the organisation's external environment<sup>1</sup>.

*Triple helix collaboration*: this concept focuses on dynamic network arrangements between the overlapping institutional spheres of industry, government, and academia. Each sphere relates to the other two, with an emerging overlay of communications, networks, and organisations among the helices. Innovations emerge in this network of relations, in a subdynamics of intentions, strategies, and projects. Favourable environments for innovation emerge at the intersections of the spheres, evoking creative synergies, new venues for interaction and new organisational formats, where individual and organisational actors not only perform their own role, but also 'take the role of the other'<sup>2</sup>. In the case of AS-FABRIK, a fourth sphere or "helix" will be added: professional communities, defined as professionals, makers and another lead users in education, technology and business development. They will participate not as employees of institutions or organization but as individuals that share a common field of practice.

*Co-creation*: In the economics and management literature, the term co-creation often refers to the inclusion of the consumer/end user in the development process of innovations. However, in recent years, more encompassing definitions have been developed. Wierdsma and Swieringa<sup>3</sup> define co-creation as a form of co-operation between two or more parties that creates added value for them and where the shared objectives are predetermined, but where process is not. For Prahalad<sup>4</sup>, co-creation is a management initiative, or a form of economic strategy, that brings different parties together, in order to jointly produce a mutually valued outcome.

In this zoom-in, we focus on co-creation in the spatial context of Zorrotzaure (the urban area) and the BETA building, and analyse the need for new types of facilities and facilitation of co-creation. ***The policy question is how the concept can facilitate emerging types of innovative collaboration between its tenants, and also with partners from outside.***

With this in mind it makes sense to adopt a relatively wide definition of co-creation, as a time and space bound collaboration, in which two or more partners work together to develop and create new technologies, products, services or solutions. It is the project orientation and temporary nature of co-creation that poses challenges, because it creates a fluctuating and at times unpredictable demand for space that can be difficult to facilitate. A further distinction can be made between internal and external co-creation. Internal co-creation occurs between players that are located in the building itself; In the case of external co-creation, also external players are involved. And this will surely be the case in the AS-FABRIK concept: AS-FABRIK will play the role of facilitator and mediator, fostering business development in the wider region. Hence, the commitment of AS-FABRIK is not only with the tenants in the building.

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<sup>1</sup> Chesbrough, H., & Bogers, M. 2014. Explicating open innovation: Clarifying an emerging paradigm for understanding innovation. In H. Chesbrough, W. Vanhaverbeke, & J. West (Eds.), *New Frontiers in Open Innovation*: 3-28. Oxford: Oxford University Press. Page 17.

<sup>2</sup> Etzkowitz, Henry. 2003. "Studies of Science Etudes Sur La Science Innovation in Innovation: The Triple Helix of Innovation in Innovation: The Triple Helix of University-industry-government Relations University-industry-government Relations." *Social Science Information &.* Vol. 42. SAGE Publications. <http://journals.sagepub.com/doi/pdf/10.1177/05390184030423002>.

<sup>3</sup> Wierdsma A. and Swieringa J. (2011) *Lerend organiseren en veranderen*. Groningen: Noordhoff Uitgevers

<sup>4</sup> Prahalad, C.K.; Ramaswamy, V. (2004) "Co-Creation Experiences: The Next Practice In Value Creation". *Journal of Interactive Marketing*. Volume 18; Number 3.

What are relevant trends and developments regarding collaborative innovation and co-creation?

First of all, companies and knowledge institutes are increasingly opening up to the outside world, and are developing a plethora of relations with external stakeholders. This is something which is actively encouraged by government policies and/or institutional strategies. Universities engage with industry and society to access funding, to access research facilities, to exploit/commercialise research findings, to test theories/concepts, to benefit from relevant knowledge in the private sector, to increase the relevance of the curriculum and to expose students to real world problems/challenges.

Companies, especially science-based or knowledge intensive ones, have become increasingly interested in engaging with universities: to access scientific knowledge, to remain alert for new technologies, to recruit talent, to exploit scientific knowledge commercially, to develop human capital (training), to solve specific problems or address challenges together, to enhance their corporate image, or to achieve cost savings<sup>5</sup>. Also, governments and non-profit organisations increasingly seek to collaborate with knowledge institutes, to address societal challenges.

Co-creation between firms and universities helps companies in their R&D, and lead to publishable research results for universities at the same time. Bjerregaard<sup>6</sup> notes that in the last years, the gap between university researchers and science-based firms is closing. He observes a cultural convergence around shared norms and role expectations. Firms in science-based industries are adopting publishing norms of the university, and are increasingly prepared to share knowledge.

#### 4. Under what conditions can co-creation flourish?

What drives or hinders co-creation? Several observations can be made here.

Co-creation is complicated when partners have different “institutional logics”: profit making vs publishing; different time horizons; scientific perfection vs applicability; knowledge sharing vs confidentiality/protecting. For example, within academia, resource allocation principles and career paths are based on publications and citations; R&D in firms is primarily guided by a commercial profit-making logic. To solve tensions, participants in co-creation projects must actively reflect upon and confront the conflicting logics on which their interaction and respective R&D practices were based. Effective co-creation requires that partners can rely upon common knowledge about their respective R&D practices; they need to have ‘a shared language’, as a basis for mutual understanding and communication. In the case of AS-FABRIK, this logic or language gap between university and industry is not too big. The logic of the University of Mondragon from its very beginning is 1) to develop practical knowledge in action (that means knowing real needs of firms and organizations) and 2) with the aim to “package” and transfer it in early stages.

The better partners understand, know and trust each other, the less they need formalised contractual agreements to underpin their collaboration; high trust leads to lower levels of formalisation in written contracts, and facilitates ad hoc coordination, something supportive of co-creation.

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<sup>5</sup> Huhtelin, M., & Nenonen, S. (2015). A Co-creation Centre for University–Industry Collaboration – A Framework for Concept Development. *Procedia Economics and Finance*, 21(15), 137–145. [https://doi.org/10.1016/S2212-5671\(15\)00160-4](https://doi.org/10.1016/S2212-5671(15)00160-4)

<sup>6</sup> Bjerregaard, T. (2010). Industry and academia in convergence: Micro-institutional dimensions of R&D collaboration. *Technovation*, 30(2), 100–108. <https://doi.org/10.1016/J.TECHNOVATION.2009.11.002>

Co-creation requires relevant experience-based collaboration skills, the more so in complex situations in which the partners have different institutional logics and lack prior relationships or common project experience.

Physical proximity is important for the exchange of tacit knowledge a key aspect of co-creation. Experimental research hints that co-innovation is more fruitful when participants are within thirty meters of one another<sup>7</sup>.

In many cases, intermediation and curation is needed to drive the co-creation process. An intermediary player or curator can play a role to bring actors together, to facilitate the collaboration, or to offer physical facilities (rooms, equipment) that support the co-creation process. Four roles can be discerned<sup>8</sup> for intermediators:

- Connector: bringing actors together
- Broker: communication and negotiation between the involved parties represented by the intermediary, to align and decide on multiple issues related e.g. to contracts, technology functionalities, implementation
- Facilitator: creating opportunities to others and new environments to ignite innovation),
- Configurator: adapt, arrange, or adjust innovations and products with a view to specific applications or uses

The notions listed above have implications for the design and management of a co-creation/co-innovation space. First of all, one cannot expect co-creation to just “happen” as a result of co-location in the same area or building. While physical proximity is an important supporting condition for co-creation, the evidence is mounting that interaction between actors with different stakeholders will not take place on its own. In AS-FABRIK, the aim is to invite the various agents to meet there, in the expectation that the dynamic will attract them. The essential construction of trust is not necessarily built in the building, it works in multiple scenarios such as projects or networking initiatives in other places.

Based on the considerations above, three key aspects will impact the prevalence and success of co-creation in a building or area:

- Content: The tenant/user mix and activities that take place there
- Design: the physical design/layout of the space; the availability of specific rooms, amenities and facilities that enable co-creation
- Orgware: The presence and quality of intermediation and curation; the ability of the space management to co-create common identity and to enable knowledge sharing.

Each of the three aspects can be influenced, albeit to a varying degree, by the management. We will elaborate each aspect below.

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<sup>7</sup> Olson, Gary, and Judith Olson. 2003. “Mitigating the Effects of Distance on Collaborative Intellectual Work.” *Economics of Innovation and New Technology* 12 (1): 27–42. <https://doi.org/10.1080/10438590303117>.

<sup>8</sup> Stewart, James, and Sampsa, Hyysalo. 2008. “Intermediaries, Users and Social Learning in Technological Innovation.” *International Journal of Innovation Management* 12 (03): 295–325. <https://doi.org/10.1142/S1363919608002035>.

**The mix of tenants/users** sets the margin for internal co-creation. Knowledge sharing happens more easily when the actors belong to the same sector<sup>9</sup>. This fits with studies showing that people are more likely to collaborate when they are close to each other not only physically, but also cognitively<sup>10</sup>. The tenant mix also marks the identity and reputation of the space as a “place to be” for specific types of firms or organisations. This synergetic effect has been reported in the case of Arabianranta, Helsinki<sup>11</sup>, a knowledge location built around the theme of art & design. The concept acted as a “lighthouse”, making the location very attractive for national and international companies. Conversely, when a space has tenants with very different profiles and interests, the concept’s clarity is low.

The **physical design and layout of the space** matters, as it helps to connect players. The interconnection of knowledge workers –the very basis for co-creation- resonates with certain characteristics of the day-to-day urban environment; this touchable scale of place is where personal and social life happen, is the soul of the dynamic interaction between people and their routine/environment. A real challenge in the island of Zorrotzaurre is the need to design the spaces jointly with other actors in Zorrotzaurre.

Place quality relates to the personal experience at street level, where knowledge workers enjoy different types of entertainment—e.g., music, food—as well as different ways of socialising. Offering an appealing ambiance will empower competitive advantages for attracting and retaining knowledge workers and industries<sup>12</sup>. Co-creation as such does not need a dedicated space; it can be –and often is- hosted at the premises of one of the co-creation partners. However, this might give rise to various tensions and problems. First, not all organisations are empowered to facilitate and fund flexible project-like environments that allow external partners to enter into the buildings in a co-creation process. Second, some co-creation activities might benefit from a more neutral environment, rather than being hosted –and perhaps dominated- by the host organization. Furthermore, it is important that flexible spaces are available that are easily able to adapt to fluctuations in demands for (types of) space. In terms of building design, Wagner & Watch<sup>13</sup> developed design principles for neutral and effective co-creation environments, and make a number of suggestions for the design of the atrium, staircases, corridors and various gathering spaces.

**Orgware** refers to the presence and quality of intermediation and curation, and also the ability of the space’s management to co-create a common identity, to enable knowledge sharing and create the right conditions in terms business models. Huhtelin & Nenonen<sup>14</sup> state that “campus management has a major role in the facilitation of multidisciplinary interaction between students, scientists and entrepreneurs... one significant tool to support open innovation with diverse stakeholders is to provide supportive spaces with relevant services”. It is a question of navigating the balance between organic and intentional.

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<sup>9</sup> Kocak, O. and Can, O. (2013) ‘Determinants of inter-firm networks among tenants of science technology parks’, *Industrial and Corporate Change*, doi: 10.1093/icc/dtt015 (online first).

<sup>10</sup> Boschma, R. (2005) ‘Proximity and innovation: a critical assessment’, *Regional Studies*, 39: 61-74.

<sup>11</sup> W. van Winden, L. de Carvalho, E. van Tuijl, J. van Haaren and L. van den Berg (2012), *Creating Knowledge Locations: innovation and integration challenges*, Routledge, London

<sup>12</sup> Esmaeilpoorarabi, N., Yigitcanlar, T., Guaralda, M., & Kamruzzaman, M. (2018). Evaluating place quality in innovation districts: A Delphic hierarchy process approach. *Land Use Policy*, 76(December 2017), 471–486. <https://doi.org/10.1016/j.landusepol.2018.02.027>

<sup>13</sup> Wagner, J., & Watch, D. (2017). *Innovation Spaces : The New Design of Work*, (April).

<sup>14</sup> Huhtelin, M., & Nenonen, S. (2015). A Co-creation Centre for University–Industry Collaboration – A Framework for Concept Development. *Procedia Economics and Finance*, 21(15), 137–145. [https://doi.org/10.1016/S2212-5671\(15\)00160-4](https://doi.org/10.1016/S2212-5671(15)00160-4)

Merkel<sup>15</sup> emphasises the importance of curators in enabling interaction between users of the space. Curation can be seen as the “intentional creation of interconnections between people, ideas, objects and places within a new context and narrative” (pp. 131). Curators can be seen as cultural entrepreneurs, who leverage social and cultural dynamics to manufacture meaning and reduce uncertainties inherent in the process of co-creation. Two different types of curators can be discerned: (1) The service provider: focuses on the facilitation of a compelling work environment and associated services; (2) The visionary host: is more concerned with community aspects of co-working, such as organising events, meetings, communications and introductions amid the co-creating organisations.

In AS-FABRIK, in general, maintaining a high level of dynamics is critical to maintain the interest of actors. It will need a very unique and sustainable narrative to set it apart of the many other new initiatives (also involving the creation of new buildings) in the entrepreneurship field, where there is a growing inflation and hype.

## 5. Co-creation models: some insights from other cities

This section briefly reviews some co-creation models adopted in other cities. They could serve as inspiration for the future development of the AS-FABRIK building in Zorrotzaurre.

**Kampus Arena, Tampere (Finland)** is a central building at Tampere University of Technology, with shared facilities, companies and open spaces. It has become the centre of the campus of the Tampere University of Technology, and functions as a platform where business meets research and education, and where new collaborations can take shape. The lower floors contain shared functions: a library, open work spaces, restaurants, a space for startups, and a maker lab where students can make prototypes. The Kampusklubi (Campus Club) brings together business and researchers/students to jointly conduct research and product development; they aim for 50 member companies. The higher floors are more business-oriented (although always with a link to research and education), and on the top floors, a real estate company (Regus) rents out flexible offices to more than 40 companies.



*Cross-section of Kampusarena*

<sup>15</sup> Merkel, J. (2015). Coworking in the city. *Ephemera.Critical Dialogues on Organization*, 15(1), 121–139. <https://doi.org/10.1057/ip.2011.10>





*Image of the library*

**Creative, Linköping, Sweden**<sup>16</sup> is an open innovation space, owned by the science park and co-sponsored by companies. It has 750 m<sup>2</sup> for meetings, projects and events. Creative is open for business, students at university, projects, research, and public actors. There are always study spaces, sofas or creative spaces open for everyone. During the opening hours, people can check in for a cup of coffee, to meet a friend or colleague, sit in an inspiring environment to study or work, participate in exciting events and meet new people. There are smaller rooms (28m<sup>2</sup> and 16m<sup>2</sup>) for smaller group work.

**Holst Centre**<sup>17</sup>, Eindhoven, The Netherlands is located at the High Tech Campus in Eindhoven, organises longer term future (3-5 y) oriented research of broad commercial interest but where you don't know yet what the applications will be. They have bilateral contracts with a lot of firms, globally. Members (can be companies or research institutes) pay an annual fee, and members then can join collaborative research programmes. The idea is to have cost sharing of expensive research and development projects among firms. Companies that participate in a project then have the right to use or license the technology that was developed. Holst Centre owns the IP, with some exceptions if one company has been very active in the development process. 55% of the budget comes from industrial projects, 15% from EU projects, 30% from public funds (national, regional, local).

**Innovation Factory**<sup>18</sup>, Aachen, Germany. At the new Melaten Campus of RWTH university, an "Innovation factory" has opened its doors on 1 January 2019, where companies and university work together in new ways, in a single location, on their own or as part of a consortium. The innovation process is based on five phases: Ideation, Customer Focusing, Development, Prototyping and Industrialization. Innovation Factory experts configure the individually required competences –drawn from the university and beyond- to create a project team. Developer teams in the Innovation Factory generate creative ideas outside the constraints of their company hierarchies and day-to-day business concerns. Coaches and moderators offer hands-on support with a variety of methods. The developers start from a customer perspective right from the start. All relevant machinery, technologies and test

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<sup>16</sup> <https://mjardevi.se/creative/>

<sup>17</sup> <https://www.holstcentre.com/>

<sup>18</sup> <https://rwth-if.com/en/>

processes are available on campus. The project teams also have access to machine park experts and factory planning professionals working with the Lean Production method in order to facilitate the jump from prototype to series production. The success of the Innovation Factory has already become apparent in the development of initial lighthouse projects: the affordable e.GO Life electric car, the e.GO. Mover, an electric minibus with autonomous mobility concept and the Silent Air Taxi, a small electro-hybrid airplane.

## 6. Conclusion: A checklist for co-creation spaces

This zoom-in focused on the development of co-creation spaces, providing insights from the literature and case studies. Based on that, here we present a checklist with questions; discussing them explicitly with the relevant stakeholders might help to make the building a success.

### **Tenant mix & facilities**

Who can locate in the building, what are the admission criteria

What is the pricing strategy (variation in rent levels, cross-subsidies?)

Is there an exit strategy

Who can use temporary/project spaces, and under what conditions

What facilities/equipment will be there, and who owns it

Who can use facilities/equipment, and under what conditions

### **Curation & activity programming**

What is the core purpose of the collaboration

What methods are used to promote the collaboration

What activities/events are programmed in the building, and who is responsible for that

How to promote internal and external networking (events, joint sports/cultural activities, lectures, seminars)

Who is the “community manager” to do all this

How to connect with relevant external players outside the building

How is the programming/curation/community management funded and managed

How do you know if the programming/curation/community management is successful

### **Marketing & communication:**

How to make sure that companies and other partners can find the building, use its facilities, or come to events

How to inform and engage citizens of Bilbao (and Zorrotzaurre in particular) in the further development and design

Should the building have a public function (i.e. as visitor centre, educational role)

### **Strategic economic and spatial context**

How do the activities in the building fit with the strategic aims of the city and the region?

How does the building fit in the urban neighbourhood in which it is located

Can some facilities be shared with the neighbours?

