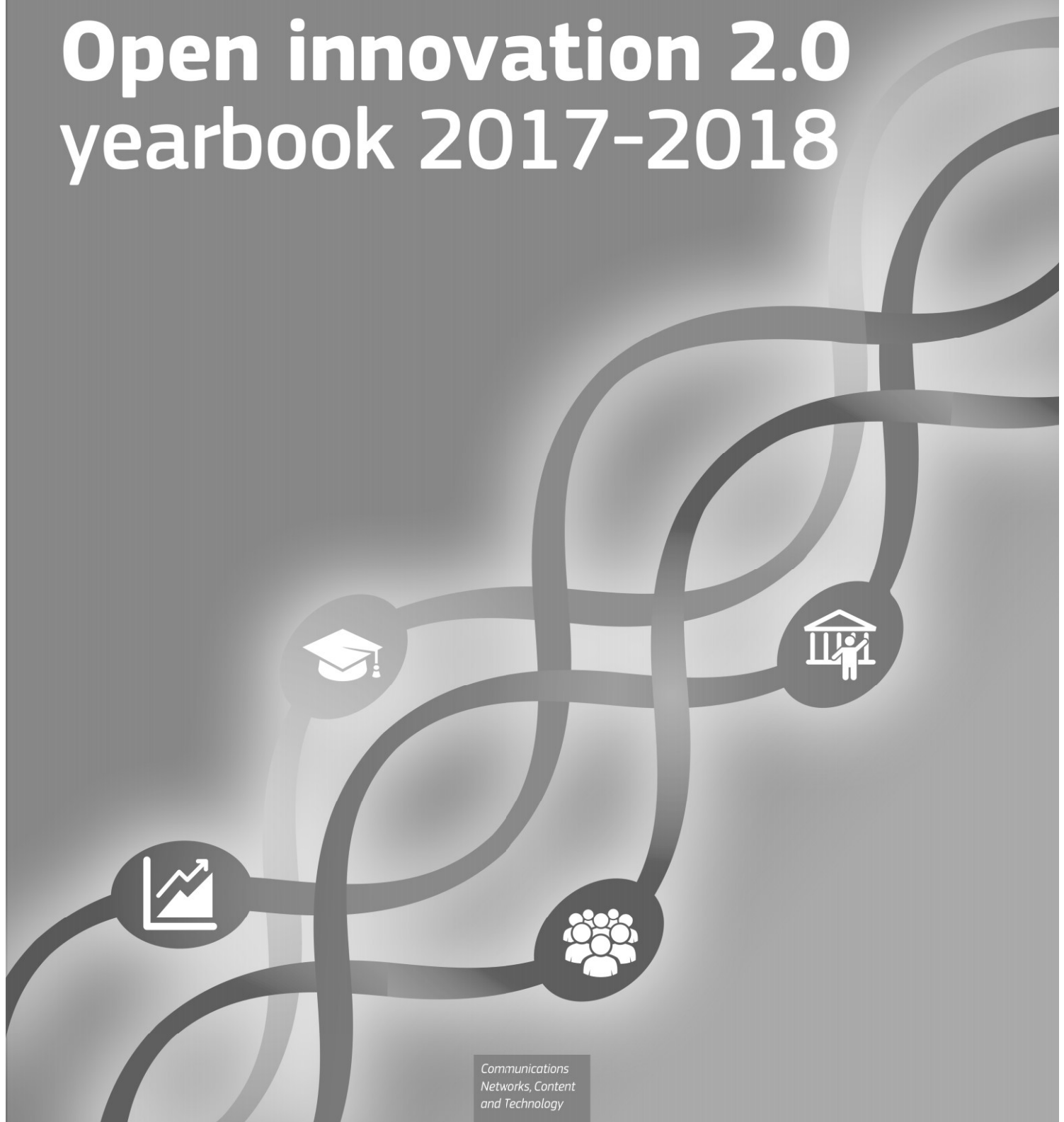




European
Commission

Open innovation 2.0 yearbook 2017-2018



*Communications
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PART IV

Industry and transformation

Article 13

Open innovation: the transition from OI to OI2 ⁽¹⁾

Abstract

Several approaches have been implemented by companies to elaborate open innovation (OI) 2.0 strategies. In this contribution we focus on the factors and the conditions of success that lead companies to formulate OI2 strategies starting from OI. Specifically in this study we note that three key factors enable the transition from OI to OI2 strategies: (1) technological pivot as a result of OI; (2) the presence of a clear appropriation strategy; and (3) the ability to orchestrate a rich ecosystem. Additionally, we observe four key managerial approaches, relevant for OI strategy, that are also important in the transition to an OI2 strategy: (1) carefully balancing internal and external resources; (2) leveraging organisational culture; (3) developing a sound business model; and (4) human resources management.

Introduction

The rise of the OI paradigm in the last decade has encouraged the emergence of cross-organisational innovation networks and ecosystems involving a variety of partners: universities, governments, users, citizens, suppliers, customers, start-ups and large firms [1].

In recent years, the interests of scholars, managers and policymakers have been increasingly converging upon the centrality of communities and ecosystems innovating together as a new emerging innovation mode. The OI2 paradigm is based on principles of wide networking and co-creative collaboration among all the actors of modern society, in generating and enabling innovation and creating 'shared' competitive advantages [2].

Ecosystem-centric, cross-organisational innovation involves both technical and societal aspects: actors involved in OI2 ecosystems collaborate and innovate based on common purposes, aligned efforts, shared vision and shared value co-creation. As a result, organisations evolving from OI towards OI2 business models are experiencing a shift from delivering products and services towards the development of distributed product/service systems [3].

Zappar Ltd, a company that we had the pleasure to study, provides a fascinating example of an OI2 strategy resulting from this evolution. The company develops augmented reality (AR) applications for digital devices through a proprietary-enabling technology, the Zapcode, an evolved version of the traditional QR code [4] completely developed in-house to maintain the firm's competitive advantage. In its first stages, Zappar used to work on a service-based, closed innovation model, but it soon realised the need to integrate its technology and systems into larger platform-based solutions in order to expand and scale the business. In a second stage of evolution of its innovation strategy, Zappar started to work on its project base, closely co-creating with its partners in an open business model, licensing the services based on its technology and embedding it in third-party AR applications. This led the company to a third evolution of its innovation strategy and business model, which is currently in progress. Zappar is investing in becoming the orchestrator of an external AR ecosystem and community of AR content creators. The company is developing an OI2 strategy, aiming at market leadership in a 'democratised' and distributed AR ecosystem in which its Zapcode represents the technology standard.

This article focuses on the transition from OI to OI2 strategies in European companies. Drawing lessons from five out of 13 case studies collected during previous research we compare and contrast the factors and the conditions of success that appear to be relevant to this shift [4, 5].

¹ Author names are displayed in alphabetical order.

From OI to OI2

We build on the results of a previous study conducted within the European innovation policies for the digital shift (Euripidis) project, a 3-year research programme launched by JRC's Institute for Prospective Technological Studies and DG Communications Networks, Content and Technology in 2013 to advance comprehension of innovation in the ICT sector [4]. We collected 13 case studies of European companies, including large, medium-sized and small enterprises, adopting OI in the ICT sector.

The results of our study revealed an evolution from an OI to an OI2 strategy in five out of the 13 companies in our sample. Analysing the companies' OI strategies throughout their evolution, we noticed that:

- multiple different reasons underlined the shift, ranging from scaling up their business to introducing a new business model or breaking into a new market;
- some of the conditions of success that were significant for OI strategies are also significant for OI2 strategies.

We identified three common features acting as enabling factors and four key managerial approaches (which we call conditions of success) in the shift from OI to OI2. We discuss each of these enabling factors and key conditions of success in the following sections.

Enabling factors

The first factor enabling the transition from OI to OI2 is the presence of a **technological pivot**. Specifically, companies in our sample have anchored their OI2 strategies to a previously developed technology, often resulting from an OI strategy that embraced strategic partnerships, participation in large R & D consortia and/or grants awarded through the small and medium-sized enterprises instrument in the eighth EU framework programme, Horizon 2020.

However, the evolution from an OI to an OI2 setting requires a balance between openness and control (i.e. 'you share what you have better control over'). Hence, the second factor enabling the transition towards a community-centric innovation model was the presence of a **clear appropriation strategy** [6]. We observed that European companies managing the shift towards the creation of distributed ecosystems of partners, users, customers and/or suppliers faced a critical balance between the opportunities and the risks of an OI2 approach (high levels of community engagement vs loss of technological control). These companies had to clearly identify the mechanisms (selective knowledge revealing, formal contracts, effective IP protection mechanisms) that guaranteed the alignment of the community

incentives and appropriation of the value created through their technological pivot. Such a balance between appropriation strategies and community involvement represented a critical governance choice that led to adequate returns on R & D investments.

Regarding the development of successful OI2 strategies, companies in our sample contributed to mutually beneficial interactions playing crucial roles: they were able to orchestrate the varied interests of the different involved stakeholders/communities in order to guarantee the creation of a shared vision, a shared value and therefore the success of the OI2 for the entire ecosystem [1]. Being part of an OI2 ecosystem provides significant benefits to the companies: high visibility and good reputation, easy access to complementary assets and the flows of knowledge and information on R & D priority setting that stem from the communities in which they are actively involved. Hence, the third and last factor that characterises the transition from an OI to an OI2 strategy relates to the **ability to orchestrate a rich ecosystem**.

Summing up, analysing the results of our previous study of the OI cases in the ICT sector, we noted that three main factors — (1) technological pivot as a result of OI strategy; (2) the presence of a clear appropriation strategy; and (3) the ability to orchestrate a rich ecosystem — enable the transition from OI to OI2 strategies.

Key conditions of success

Having identified the three factors enabling the shift from an OI to an OI2 strategy, in this section we discuss the key managerial approaches that were relevant in the transition, acting as conditions of success. Drawing on the results of the study conducted within the Euripidis research project, we identify four key conditions guiding the successful transition from OI to OI2. As such, these factors appear to be relevant in both types of settings (see Table 1): (1) carefully balancing internal and external resources; (2) leveraging organisational culture; (3) developing a sound business model; and (4) managing human resources.

First, one of the conditions driving OI effectiveness is the **balance between external and internal resources**. Successfully managing strategic inflows and outflows of knowledge in an OI setting requires the ability to select and nurture relevant and synergic internal capabilities to benefit from a joint development with external partners. Companies that fail to pay attention to the development of internal know-how may lack the relevant absorptive capacity to engage in fruitful OI strategies. In the transition towards an OI2 setting this balancing acquires a crucial role for the success of the strategy because companies need to adequately allocate their assets.

When OI2 strategies are approached companies need to effectively distribute their resources between their traditional business and the activities openly conducted, and in collaboration with the different communities of stakeholders. An appropriate balance of internal and external resources allows companies to avoid the risk of failing and losing control over core competencies and to pursue the evolution and adaptability of their business model.

Second, **leveraging organisational culture** is one of the most important managerial tasks when companies implement OI. To begin with, the diffusion of an 'open innovation culture' within the organisational boundaries (e.g. shared vision, shared values, common language) is essential to set out the incentives to collaborate beyond 'business as usual' and, therefore, guarantees the success of the open strategy. Furthermore, the culture of openness needs to be disseminated among the actors involved in open projects. Indeed, selecting complementary and compatible partners and sharing with them the companies' values, languages and organisational routines is fundamental. This condition of success becomes increasingly meaningful in the transition towards OI2, a setting in which the number of the actors and, subsequently, the interests multiply and diverge even more than in other collaborative strategies. A shared culture and the definition of clear measurements of success remain vital between partner institutions for the fruitful implementation of OI2. Trust building becomes a crucial issue in dynamic OI2 environments, enabling fast and frictionless knowledge flows among partners and, therefore, fast scalability of the business model.

Third, **developing a sound business model** is a well-known condition for success in the implementation of OI strategies [7]. The evolution from a closed to an open business model strongly supports OI effectiveness, allowing the alignment between the company's own objectives and those of the

partners in the value network in the long term. The evolution of the business model is even more important for companies managing the transition from an OI to an OI2 setting, in which collaborative communities and competitive markets co-exist [8]. We observed that companies managing the transition towards an OI2 business model have stretched their focus beyond the needs and interests of single partnerships; OI2 business models aim at aligning the incentives and the interests of communities involving several actors ranging from their industrial and research partners, to other sector stakeholders, to their users.

Finally, yet importantly, **human resources management** is a recognised crucial factor driving the successful implementation of OI. Companies that have implemented OI have paid great attention to setting up a system of incentives that could align the interests of their partners and human resources involved in OI projects. In cases in which we observe a transition from OI to OI2, the active participation of citizens and users as communities of external innovators is relevant. Specifically, we observe that these companies have increasingly boosted their offer and developed new and scalable business models by setting up a system of incentives that could work not only for their partners but also for the community of users. Promoting crowdsourcing mechanisms and rewarding users' contributions are two key initiatives that support the notable efforts of engaging with communities of external innovators. Large companies implementing OI2 are also developing new interaction channels. For example, intraorganisational knowledge-sharing platforms are increasingly used in order to map skills and share experiences. Moreover, several companies are investing in training human resources to interact with other actors in the ecosystem that often possess different types of knowledges. Moreover, they are increasingly involving 'external innovators' (e.g. clients and/or suppliers) in seminars and workshops

Table 1: A comparison between OI strategy and the transition from OI to OI2

Key Conditions Of Success	Reasoning
	OI Strategy
1) Carefully balancing internal and external resources	Balancing outsourcing of R&D processes and development of internal knowhow
2) Leveraging on organisational culture	Sharing companies' values, languages and organisational routines to complementary and compatible partners
3) Developing a sound business model	Setting up a business model that takes into consideration the partners' needs and interests
4) managing human resources	Setting up a system of incentives that could work for partners and collaborators

aimed at shaping future scenarios. Finally, they interact with universities and public institutions in human resources training programmes (e.g. through the development of industrial PhDs).

Implications

First, drawing on our study conducted within the Euripidis project we have identified three key factors that enable the transition from OI to OI2: (1) technological pivot as a result of OI; (2) the presence of a clear appropriation strategy; and (3) the ability to orchestrate a rich ecosystem. Further analysis is necessary to explore other factors that may characterise this transition. However, to what extent can we generalise that these three factors characterise this transition? Could we maybe argue that these three enabling factors may not exist?

Second, we have also recognised four conditions of success that are relevant in the transition from OI to OI2: (1) carefully balancing internal and external resources; (2) leveraging organisational culture; (3) developing a sound business model; and (4) human resources management. Interestingly, we have noted that these four conditions of success are usually relevant in the implementation of OI2. Hence, the main message we ought to communicate in this article is that companies that evolve their innovation strategy from OI to OI2 should take into account that the conditions of success that were relevant in OI are also important in an OI2 strategy. However, their mind frame is different: it shifts from partnerships to community of partners and users. Companies clearly need to be well aware of the elements that are critical in securing them a strategic advantage in their OI strategy. Nonetheless, our contribution suggests that when companies shift to an OI2 they need to re-elaborate their entire approach to innovation, reconfiguring their strategy. This implies further issues to be explored: did companies develop the right approach to internally face this reconfiguration debate? Could industrial policy facilitate such a debate?

Third, the cases that we have analysed show an evolution of company strategy towards more competitive implementation of the business model.

Having identified these factors, policymakers and managers should keep these in mind as impeding aspects or favourable elements in order to facilitate the implementation of OI2.

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