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Innovation Networks for Cork, Resins & Edibles

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Authors: Jacopo Giacomoni, Nicola Andrighetto (Etifor)

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Contents

Reference

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List of tables and figures

List of abbreviations

The following acronyms have been used across this document:

- **IP** Intellectual property
- **NWFP** Non-wood forest products

Summary

This document aims to present innovative examples of open innovation platforms and approaches for NWFP that are currently available at the international level. In the first part of this document, the concept of "open innovation" will be analysed in detail, and it will be pointed out that adoption of an open innovation strategy is now recognized as being fundamental to innovating and reformulating company business models.

In the second part, the document will describe 10 different examples, developed to facilitate interactions between innovators, companies and investors, with a specific focus on the NWFP sector. However, it is necessary to recognize that the NWFP sector is niche, characterized by a lack of innovative initiatives. For this reason, the examples identified not only relate to the NWFP sector but also, more broadly, to the agrifood sector. Probably, the Incredible Open Innovation Challenge (developed in the context of task 3.2 of the Incredible Project) constituted one of the first initiatives developed to identify innovative solutions that can help address gaps and challenges associated with the NWFP sector.

1. Introduction

1.1 The concept of open innovation

Innovation can be considered as the main mechanism through which companies grow and create a sustainable competitive advantage (Schumpeter, 1934; Wang and Ahmed, 2007). In fact, companies are constantly searching for ways to improve their innovation strategies in order to increase their performance.

Traditionally, companies mainly operate according to a closed innovation model, based on their internal innovation process. However, **globalization and the velocity of markets and technological developments have forced companies to transform this traditional model**. In fact, resources for innovation are becoming increasingly widespread, and technological changes indicate that single company cannot innovate by themselves anymore (Davis and Eisenhardt, 2011). **In order to respond to this development, in recent years, companies have been forced to open up their boundaries** (Chesbrough, 2006), **combining internal and external knowledge in their innovation processes** (Dahlander and Gann, 2010). In this context, the role of "open innovation" is rapidly expanding. However, there is more than one definition of "open innovation", and several authors have proposed their own versions. Chesbrough (2003) described this phenomenon as "*the process [through which] companies make greater use of external ideas and technologies in their own business, letting unused internal ideas and technologies go outside for others to use in their business*". According to this definition, a strategy based on open innovation assumes that companies can utilize external ideas as well as internal ideas in order to improve their processes. Certainly, a set of networking capacities (necessary in order to absorb and transfer knowledge) and openness towards different actors (e.g., academics and young entrepreneurs) should be considered as the driving forces of any strategy based on open innovation.

1.2 Different open innovation approaches

As just described, open innovation is a strategy which can be used to explore new commercial opportunities that would be more difficult to achieve in a traditional way (Albano, 2015). Literature usually distinguishes between three different typologies of open innovation approaches: an inside-out approach (outbound), outside-in approach (inbound approach) and coupled open innovation approach.

In the outbound approach, **organizations take under-utilized ideas developed in-house and pursue external means of commercialization and development** (Deporter and Nemell, 2019). Companies that decide to focus on this outbound approach externalize their knowledge and innovation in order to bring ideas to the market faster than they could through internal development. The decision to shift exploitation of proprietary knowledge outside company boundaries can generate profits by out-licensing IP and technology, spin-outs, joint ventures, alliances and all manner of corporate external innovation strategies, including accelerators and incubators (Chesbrough and Bogers, 2014).

On the other hand, in the inbound approach, **organizations scout out useful knowledge externally to promote and enhance internal innovation.** The inbound approach enriches the company's own knowledge base through integration of suppliers, customers and external knowledge sourcing (Gassmann and Enkel, 2004). Companies can adopt this approach through many mechanisms, including scouting, in-licensing IP and start-up funding. Other popular mechanisms are crowdsourcing and innovation prizes, which invite wide and previously unknown audiences to solve specific challenges.

The third approach (coupled innovation approach) links the outbound and inbound approaches and is based on alliances with complementary partners, in which give-and-take is crucial for success (Gassmann and Enkel, 2004). Organizations adopting this process co-create via alliances, consortiums or joint ventures for the purposes of developing and commercializing innovation (Canyk *et al*., 2017).

2. Best cases of platforms used to implement an open innovation strategy in the NWFP sector

The web constitutes the most versatile and appropriate "environment" in which to share and promote an open innovation strategy. In fact, in recent years, many specific platforms have been developed facilitating interactions between innovators, private companies and investors. These online platforms can be created by private actors or a consortium, or the development of such a platform could be one of the goals of some EU project. These platforms aim to be a perfect "*space*" for companies to adopt their open innovation strategy. In fact, private **companies can access these platforms to find ideas or other actors for partnership and alliance, and thus implement the three different open innovation approaches** (inbound, outbound and coupled).

In order to scout out the best innovative solutions for solving specific challenges, these platforms can implement innovation challenges among innovators (single-handedly or in partnership with other interested actors). However, similar challenges can also be implemented directly by private companies through a typical inbound approach. The type of reward granted to the winner of these challenges can be monetary or in the form of benefits in kind, which could consist of an acceleration service or mentoring activities.

The 10 examples described on the following pages represent entities that, in recent years, have tried to facilitate interactions between innovative ideas, private companies and investors in NWFPs and the agrifood sector. The first seven of these entities have launched challenges to find the best solution to specific problems (Table 1), whereas the other three platforms presented (Table 2) are more like large virtual meeting rooms, dedicated to hosting a huge number of innovators and start-ups, and capable of promoting many different challenges.

Type	Platform/Promoting organization[1]	Name of the challenge launched
Platform and related challenge promoted by public entities	Orizont	Match Point
	WoodCircus	3W Factor
	Ecostar Hub	The Nature-Accelerator
Platform and related challenge promoted by private companies	Amorim Cork Ventures	The Cork Challenge, Barcelona
	FiberStar	Citri-Fi Student Innovation Contest
Platform and related challenge promoted by consortiums	Aroma Innovation Hub	1st Greek Innovation in the Production and Exploitation of Aromatic and Medicinal Plants
	FoodNexus	European FoodNexus Start-Up Challenge

Table 1. Examples of platform and related challenges.

[1] The name of the promoting organization can also correspond to the name of the platforms.

Type	Name of platform
Platform promoted and managed by private companies	Agorize
	F6S
Platform supported by public funds	Climate innovation window

Table 2. Examples of platforms that host a huge number of innovators.

In the case of the first seven entities presented, a description will be given of the platform and main properties of the challenges launched.

2.1 Platforms and challenges promoted by public entities

ORIZONT

Logo

The promoting organization
Orizont **Orizont has been Created by the Sociedad de Desarrollo de Navarra (SODENA),** the instrument of the Government of Navarra (Spain) to capture and develop value-added business projects for promoting the implementation of disruptive innovation in the agri-food sector. **Orizont supports entrepreneurs and start-ups with development of their ideas/projects through collaboration with leading companies in the sector.**
The challenge launched
Match Point In order to facilitate the connection between start-ups and large agrifood companies, Orizont, **every year since 2015, has launched its annual open innovation challenge, called Match Point.** For its fifth edition (launched in October 2019), seven leading private (local) companies from the agrifood sector identified specific challenges which they were facing and looking to address using innovative solutions (such as new techniques to improve waste recovery or the sustainability of packaging). The fifth edition of Match Point received more than 380 applications, 82 of which completed the entire selection process. The winners of the challenge will be supported with development of their ideas (both financial and in-kind support).
Reward type
Monetary: The start-ups selected in this annual challenge receive a minimum contract worth 25,000 € for development of their project, and the chance to access financing up to 400,000 €; **Benefits in kind:** Selected start-ups attend an accelerator programme carried out by top-level experts in collaboration with technicians of the Centro Europeo de Empresas e Innovación de Navarra (CEIN)[2]. The main topics covered in the training course are (i) business model analysis, (ii) business leadership and (iii) development of a proprietary business model. For the duration of this phase, the teams are given co-working space.

[2] CEIN website: https://www.cein.es/tag/orizont/

Link
Promoting organization: https://www.orizont.es/que-es-orizont/ **Challenge:** https://www.orizont.es/match-point/

WOODCIRCUS

Logo

The promoting organization
The WoodCircus Project The WoodCircus project (2019–2021), funded by the EU Horizon 2020 programme, aims **to increase knowledge, raise awareness and improve conditions for resource-efficient processing in wood-based value chains**, fostering increased competitiveness in the European woodworking sector. The main focus of the project is the connection between challenges and opportunities to improve process efficiency, wood waste collection, management and recycling in European wood value chains. The **project consortium includes research institutes, private companies, industrial associations and other interest groups**.
The challenge launched
3W Factor In Autumn 2019, the WoodCircus project launched its open innovation contest (3W Factor), focusing on identification of small and medium-sized enterprises (SMEs) capable of supplying innovative, high-efficiency solutions applicable to wood processing, recycling or reuse. The challenge addressed companies capable of implementing advanced solutions in Wood processing, Wood recycling and Wood reuse, in order to promote resource efficiency and value chain optimization
Reward type
Benefits in kind: The three most innovative solutions[3] will be awarded a golden label, and the best one will also be awarded a special WoodCircus label. Furthermore, **these three applicants will have the opportunity to present their innovative solution for wood processing**, recycling or

[3] To date (as of 10th May 2020), the winners of the 3W Factor contest have not yet been announced

reuse applications at the project's final conference (2021), taking advantage of the project network.

Link

Promoting organization: https://woodcircus.eu/

Challenge: https://woodcircus.eu/index.php/3w-factor/

ECOSTAR

Logo

The promoting organization

ECOSTAR project

The ECOSTAR project (2016–2018), co-funded by the EU Erasmus programme, aimed to promote entrepreneurship and innovation skills in the forestry sector and, more specifically, in the markets and economics of ecosystems and biodiversity services. The project was the first "impact hub" for the promotion of new business initiatives, with a positive impact on the environment and society. The project has a strong focus on research-business alliances between academic actors and private companies.

The challenge launched

The Nature-Accelerator

In the context of the ECOSTAR project, in 2018, a challenge was launched to select impactful start-ups that are creating sustainable solutions to innovate the agriculture, forestry, natural resources and ecotourism sectors. The best applicants were accelerated through a two-month Nature-Accelerator training course, aimed at improving the revenues and financial sustainability of their projects. The Nature-Accelerator was developed by the ECOSTAR project and powered by Fledge[4], which is a global network of company accelerators and investment funds. The Nature-Accelerator is an example of a hybrid initiative that relies on both public funds (EU project) and private funds (Fledge). More than 250 start-ups had applied to participate in the Nature-Accelerator, and eight were selected, covering various thematic areas: sunflower oil, honey, charcoal, edible insects, green crypto values, web platforms for natural recreational services and recycled wood furniture.

[4] Fledge website: http://fledge.co/

Reward type
Monetary: Each start-up received 15,000 € in cash, and this investment could be structured in two different ways: - **As redeemable equity,** where the start-up would give 6% of its shares in exchange for the seed investment. The shares would then be bought back using 4% of future quarterly revenues. **- In the form of a loan,** where the start-up received the seed investment as debt financing, to be paid back using 4% of future monthly revenues **Benefits in kind:** The eight selected start-ups had the chance to participate in eight weeks of accelerator service, including one-to-one mentoring sessions, workshops and seminars, scientist and business mentors, social events, a demo day and follow-on investments.
Link
Ecostar project: https://www.ecostarhub.com/ **The Nature Accelerator:** https://www.ecostarhub.com/nature-accelerator/

2.2 Platforms and challenges promoted by private companies

AMORIM Cork Challenge Barcelona

Logo

The promoting organization
Amorim Cork Ventures Amorim Cork Ventures was established in 2014 by Amorim, one of the world's leading cork companies, to support entrepreneurs and start-ups with implementation of their innovative projects and ideas related to the cork sector. Amorim Cork Ventures was founded to foster the creation of new cork products and businesses, mainly oriented towards external markets. To date, this incubator has received and analysed 340 applications, and it has supported 20 projects, which were at different stages of development and were related to different phases of the cork supply chain.
The challenge launched
The Cork Challenge Barcelona In 2016, Amorim Cork Ventures, in partnership with Beta-I,[5] launched t**he Cork Challenge, Barcelona, to select 14 start-ups and boost their projects through a specific acceleration programme** (eight weeks of individual coaching and pitch practice sessions). The challenge aimed to identify the best projects related to innovative cork products and cork applications. Overall, 93 start-ups applied to the Cork Challenge, Barcelona: 35% from Portugal (the country of origin of Amorim) and the remaining 65% from 23 different countries, including Argentina, Brazil, Egypt, the Ivory Coast, Singapore, Sweden and the Philippines, in addition to more natural markets for cork, such as Spain, France and Italy. In addition to this challenge, the **Amorim Cork Ventures platform is open to receiving any innovative ideas/projects related to the cork sector for future partnerships and shared projects**.
Reward type
Benefits in kind: Selected teams were given **the opportunity to attend eight weeks of individual coaching and pitch practice sessions**, and access to the Amorim Cork Ventures and Beta-I networks, which included more than 200 international mentors and 500 start-ups.
Link

[5] Beta-I website: https://beta-i.com/

Promoting organization: https://www.amorimcorkventures.com/about-us/

The challenge: https://www.amorim.com/en/whats-new/news/Amorim-Cork-Ventures-presents-Cork-Challenge-Barcelona/1519/

FIBERSTAR

Logo

The promoting organization

Fiberstar

Fiberstar is a US biotechnology company that manufactures and sells plant-based ingredient solutions, such as natural citrus fibre, for the food and beverage industry. Currently, Fiberstar owns 23 issued patents, and the citrus fibre produced as a by-product of the citrus juicing process represents its flagship brand. Citrus fibre provides a high level of functionality and can be used to replace starches, gums, chemical emulsifiers and/or stabilizers to improve food labelling.

The challenge launched

Citri-Fi Student Innovation Contest

In 2017, in order to look for a new use for a specific natural citrus fibre (Citri-Fi 125), the company decided to use a traditional inbound open innovation approach. As a consequence, an international open innovation competition was launched to collect as many ideas and options as possible. The innovation challenge was especially focused on students enrolled in any US University programme. The best ideas were awarded money and given the opportunity to start a collaboration with Fiberstar.

Reward type

Monetary: The contest had a total prize pool of **$** 25000 and, in detail:

- for the winner a prize of $10,000;
- for the 2nd classified a prize of $5,000;
- for the 3rd thru 6th place winner at $2,500 each.

A separate $5,000 award will be selected for the top industrial, construction, or energy application submission that is outside of food and beverage industry.

Link

Promoting organization: https://www.fiberstar.net/

The challenge: https://www.fiberstar.net/2017/03/02/fiberstar-announces-winners-citri-fi-125-citrus-fiber-student-innovation-contest/

2.3 Platform and challenges promoted by consortiums

Aroma Innovation Hub

Logo
AROMAHUB START UP COMPETITION 1st Innovation Contest
The promoting organization
The Aroma Innovation Hub The Aroma Innovation Hub in Patras Science Park (Greece) represents a partnership of companies and academic institutions supporting innovation, entrepreneurship and successful business developments in the production lines of aromatic and medical plants. The main goals of this initiative are as follows: (i) promotion of entrepreneurship in the field of aromatic plants; (ii) opportunities for small companies to collaborate with national and international experts and research infrastructures; and (iii) establishment of strong and well-structured links between academic laboratories and industries
The challenge launched
1st Greek Innovation in the Production and Exploitation of Aromatic and Medicinal Plants In 2018, the Aroma Innovation Hub organized the "*1st Greek Competition Innovation in the Production and Exploitation of Aromatic and Medicinal Plants*". This challenge aims **to identify individuals or groups with the most innovative business ideas related to production and exploitation of aromatic and medicinal plants (cultivation, standardization, production of health products and nutrition).** The competition was divided into three categories, depending on the "level of development" of the project proposed: • Innovative entrepreneurial ideas (not a start-up nor a company yet) • Start-ups (active for up to five years) • A company (five to seven years). Overall, 17 valid applications (all from Greece) were submitted to the contest
Reward type
Benefits in kind: Rewards were differentiated according to the category of the applicant and included scientific and technology consultancies, incubation services, licences for software, brand identity consultancies and partnerships with company and project consortiums.

Link
Promoting organization: https://www.aromahub.gr/ **The challenge:** https://www.aromahub.gr/1st-innovation-contest/

FOODNEXUS

Logo

The promoting organization
FoodNexus FoodNexus, founded in 2011, is a participatory consortium whose partners are involved in the development of strategies and activities promoting food innovation, education and entrepreneurship that can transform the European food sector. Currently, FoodNexus is supported by 43 industries and 28 academic institutions and it sets three main interconnected challenges: (i) food security and sustainability, (ii) food quality and safety, and (iii) food for health and well-being. In order to create bridges between innovators and companies, FoodNexus regularly organizes challenges (as described below) and other activities, providing, for example, a list of five common "*ready to go*" innovative solutions for common challenges in the EU food sector.
The challenge launched
European FoodNexus Startup Challenge In 2017, FoodNexus launched the "European Food Nexus Start-Up Challenge" to create innovative collaborations among the most promising start-ups and leading European companies in the food and agribusiness sector. This challenge received more than 400 applications from across Europe.
Reward type
Benefits in kind: The best 15 innovative start-ups (the finalists) had the chance to pitch their ideas to a jury of corporates, investors, and other leading corporate partners. **Monetary:** The winner of the whole competition will be awarded a cash prize of 50,000 €.
Link
Promoting organization: http://www.foodnexus.eu/ **The challenge:** http://www.foodnexus.eu/foodnexus-projects/european-foodnexus-startup-challenge/

2.4 Platforms promoted and managed by private actors

AGORIZE

Logo

About
Agorize, founded in 2011, **represents one of the world leaders of open innovation platforms. Agorize aims to help innovators** (students, researchers, and start-ups) turn ideas into real business opportunities. Furthermore, it aims to help businesses identify and recruit the best talent available. Currently, the Agorize platform hosts more than 5 million innovators and start-ups. **The platform proposes different challenges, such as challenges for students and start-ups, and an online hackathon**. Anyone can enter this challenge/contest, and also NWFP-related challenges can be created and promoted on the platform. Hundreds of open innovation challenges have been promoted so far on this platform, and numerous challenges are currently running or are already scheduled.
Link
https://www.agorize.com/en

F6S

Logo

About
F6S, founded in 2011, is one of the world's largest online platforms developed **to facilitate interactions between young entrepreneurs, start-ups, investors, accelerators and incubators**. Currently, F6S hosts more than 800,000 start-ups and more than 10,000 programmes (training and incubators) for young entrepreneurs. F6S works **as a sort of social network for entrepreneurs, start-ups, companies, mentors and, generally speaking, anyone interested in innovation.** As with the majority of these online platforms, most of the challenges and acceleration programmes hosted by F6S relate to the tech sector, but an increasing number of

initiatives have also been launched related to the NWFP sector. The INCREDIBLE Open Innovation Challenge (part of the INCREDIBLE project) has also been promoted on this platform.
Link
https://www.f6s.com/

2.5. Platform supported by public funds

Climate Innovation Window

Logo
Climate Innovation Window
About
The CLIMATE INNOVATION WINDOW (CIW) is a platform developed in the context of the EU's BRIGAID Horizon project (https://brigaid.eu/), which aims to **be a reference portal for innovations in climate change adaptation. The platform aims to facilitate market uptake of climatic resilience innovations.** The portal is targeted at different types of actors involved in climate change adaptation, such as innovators, public and private risk managers, policymakers, industry and investors. Currently, the platform includes more than 100 innovations. Each of these is linked to a specific type of hazard, such as coastal flooding, river flooding, droughts, heatwaves, heavy precipitation, windstorms, wildfires and multi-hazards, whereas innovations are related to different topics, such as agriculture, disasters and ICT, energy, forests, nature-based solutions, urban areas, water availability, water quality and water safety.
Link
https://climateinnovationwindow.eu/

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