Ref. Ares(2019)3842075 - 17/06/2019
GA No. 804454

INNOCHALLENGE

Challenge-driven innovation support initiatives for SMEs

Design Option Paper

INNOCHALLENGE

HUB INNOVAZIONE TRENTINO

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Project INNOCHALLENGE: H2020-INNOSUP-5-2016 No. 804454

Deliverable 1: Design Option Paper

April 2019

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This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 804454.

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IMPORTANT NOTICE: HOW TO READ THIS DOCUMENT

This document is organized in two sections. **Section one** is dedicated at illustrating and reporting about project INNOCHALLENGE. If, as a reader, you are interested in H2020 INNOSUP projects, we advise you to read this section. **Section two** includes the actual *Design Option* for the new format of innovation support initiative for SMEs that was developed during project INNOCHALLENGE. If you are an innovation agency wishing to activate new effecting SME Open Innovation support programs based on the tenets of hackathons and innovation prizes, we highly recommend you to jump to this section, as it comes in the form of an actionable visual Guide. The Guide is also downloadable at the following URL: www.innochallenge-project.eu.

1. SECTION 1: Project InnoChallenge

1.1 Executive summary

According to the European Commission, public innovation agencies strive at keeping the pace of SME innovation support demand, and seek opportunities to implement programmes pivoted on new approaches. At the same time, in the recent years both the European Commission and various European countries made use **of innovation prizes and challenges** – otherwise called "inducement prizes" – to spark innovation opportunities to market and societal problems on a demand-driven competitive basis. However, few examples of good practices are currently available, and almost no practical implementation guidelines are accessible to innovation agencies willing to adopt such approach towards SME at a regional level.

The INNOCHALLENGE Project aimed at **building capacity** in European innovation agencies to adopt challenge-driven initiatives supporting innovation within SMEs. In particular, the project sought to allow innovation agencies to (i) become capable to acknowledge the **operating principles** of existing *Innovation Challenge* within different policy and regulatory frameworks; (ii) learn how to **design new and tailored formats** of *Innovation Challenges* that are more capable to respond to contextual and territorial specificities; iii) **get ready to activate** such initiatives to better support innovation in SMEs. Project duration was twelve months.

To reach such goals, starting May 2018 the project **collected good practices** of existing initiatives (within and beyond project partners); good practices were presented and discussed during three **peer learning workshops** hosted by project partners. Finally, all learning and know-how was captured into an **actionable Guide** designed to be utilized by professionals working at innovation agencies wishing to activate Innovation Challenges to support SMEs. This way, the Guide serves as a tool to fully understand the new support instrument and to design a variety of "Design Options", tailored to innovation agencies' specific contexts. The guide is now available at www.innochallenge-project.eu, and is also embedded in the section 2 of this Document for reporting purposes.

Innovation agencies interested in understanding all about Innovation Challenges are strongly recommended to go and download the Guide from the above-mentioned link, for a full learning experience.

1.2 Project partners

HIT - HUB INNOVAZIONE TRENTINO supports regional business innovation and development through advanced technology transfer and innovation, fostering investments in new technologies, promoting new company creation and running open innovation programmes to address industry challenges. **www.trentinoinnovation.eu**

BUSINESS OULU is an enterprise owned by the City of Oulu. BusinessOulu is responsible for implementing Oulu's industry policies, and providing growth companies with development services. BusinessOulu creates an operating environment for businesses and entrepreneurship that promotes employment and the creation, operation, growth and competitiveness of companies. **www.businessoulu.com**

Tallinn University of Technology (TalTech), the only technological university in Estonia, is the flagship of Estonian engineering and technology education. TalTech is to become one of the leading technological universities in the Baltic Sea region. TalTech run Mektory innovation centre and startup incubator and accelerator. **www.ttu.ee**

1.3 Background and rationale of the project

Innovation prizes have notoriously been utilized in history to source viable solutions to major societal technological challenges[1]. In recent years, a variety of **Open innovation Intermediaries** (many of which ran as businesses) raised on the market, making available services applying mechanisms at the basis of innovation **prizes to connect companies pursuing innovation with suppliers** of innovation (other companies, free-lancers, researchers, as well as retired professionals)[2].

Despite the availability of such innovation support initiatives and platforms on the market, the mainstream of innovation support programmes to SMEs from national and regional EU innovation agencies remain rather focussed on the **provision of subsidies**, R&D grants, and innovation vouchers[3]. Instead, according to the Annual Report on European SMEs of the European Commission, SMEs expect to be provided with connection with business support (coaching) (77%), or being helped in attracting talents and more qualified staff (77%)[4].

According to a recent study from the Inno Partnering Forum, innovation agencies are in fact bottom-up experimenting a wider set of **innovation-value adding support initiatives** to SMEs; some of these come in the form of challenge-driven and prize-oriented initiatives, such as hackathons, idea challenges, start-up competition[5]. Not only these initiatives appear to be more aligned with SMEs expectations: they also imply to a more SME-demand-led approach, and position innovation

[1] Murray, F., Stern, S., Campbell, G., & MacCormack, A. (2012). Grand Innovation Prizes: A theoretical, normative, and empirical evaluation. Research Policy, 41(10), 1779–1792.
[2] Gassmann, O., Enkel, E., & Chesbrough, H. (2010). The future of Open Innovation. R&D Management, 40(3), 213–221.
[3] TAFTIE. (2014). *Towards a comparative overview of innovation programmes in Europe Benchmark report 2012-2014 of Taftie's Structural Network on Benchmarking*.
[4] TAFTIE. (2016). *Intermediate Report Assessment of needs and existing initiatives*, 1–25.
[5] Ibid.

agencies as *innovation intermediaries* towards SMEs, and concern the delivery of *knowledge intensive business services*, as recommended by OECD[6].

Besides that, in the recent years, the European Commission itself started funding and utilizing challenges and prizes: see for instance the five pioneering Horizons Prizes[7]. However, currently these instruments are designed to address **societal challenges** or major technological gaps: at the moment their scope goes far beyond business issues faced by SMEs. Differently, research centres and universities have been activating innovation challenges targeting **industries and their problems** at a regional scale, though holding a research or educational scope, overall[8].

Existing formats supporting inbound Open Innovation in companies and governments can be adapted and improved to avoid barriers for achieving impact on SMEs. First of all, the large majority of prizes are organized to **solve a large problem** impacting the society as a whole: these are the so-called "grand challenges". Similarly, prizes are ran to source technological solutions to one beneficiary only – normally a **large institution** such as a large company or a governmental agency[9]. Furthermore, research shows how Open Innovation web-based platforms utilizing the prize format to source solutions to industrial problems from large crowds of solvers are **hardly accessible by SMEs** due to a lack of know-how, R&D structure, costs and language barriers[10].

Examples of more accessible regional-level innovation prizes, possibly targeting more than one company at time exist, but they are organized mainly by education institution: such prizes involve **undergraduates as problem solvers**, and pursue mainly educational goals. Overall quality of outputs may not meet quality standards of SMEs. Similarly, issues related to management of Intellectual Property Right (IPR) may not be appropriately addressed, therefore hindering the complete exploitation of outputs by companies[11].

Finally, many innovation prizes organized by education institutions at a regional scale may not be informed by specific industrial problems, such as challenges at a product or technology level. Rather, most of them appear to have a **speculative scope** and come in the form of idea contests, and therefore are capable of delivering business ideas, product ideas, social impact project ideas, and so forth – yet not solutions to technological challenges[12]. More has to be done to meet SMEs innovation expectations and capabilities: scope of project INNOCHALLENGE has been to **investigate and design new formats of Innovation Challenges** capable to impact on SME innovation support needs, as the below figure shows.

[6] OECD (2011). *Reviews of Regional Innovation: Regions and Innovation Policy*.
[7] Full description of Horizons Prizes is available here. More projects have been funded within INNOSUP-04-2016: *SMEs for social innovation – Challenge platform*. More information here.
[8] A notable example is the "DEMOLA" initiative. Full information is available here.
[9] Masters W. A. and Delbecq B. (2008), Accelerating Innovation with Prize Rewards: History and Typology of Technology Prizes and a New Contest Design for Innovation in African Agriculture, International Food Policy Research Institute, no. December: 1–44.
[10] Chesbrough H. W. and Vanhaverbeke W. (2018), *Open Innovation and Public Policy in the EU with Implications for SMEs*, Researching Open Innovation in SMEs, 455–92.
[11] Adamczyk S. et al. (2012), *Innovation Contests: A Review, Classification and Outlook*, Creativity and Innovation Management 21 (4): 335–60.
[12] McKinsey (2009), *And the Winner Is...: Capturing the Promise of Philanthropic Prizes,* Literature/Film Quarterly, 123.

Fig. 1: Working model of *Innovation Challenges* supporting SMEs needs.

1.4 Objectives, workplan and executed activities

We thoroughly share these information as we found the project planning underpinning INNOCHALLENGE was very effective – also considering the tight schedule and available budget. In the below table are synthetized the strategic and specific objectives of project INNOCHALLENGE, along with KPIs and targets.

Strategic objective	Specific objective	KPI	Target
1. Allow innovation agencies to **engage in effective peer-learning** activities aimed at mastering the design and execution of innovation challenges.	Sharing **good practices** covering existing *innovation challenges* and other support initiatives based on new topics and approaches via three Twinning+ face-to-face workshops.	# peer learning workshops	3
2. Allow innovation agencies to **join forces to explore and design** challenge-driven support initiatives targeting innovation needs from SMEs, and capable of sourcing solutions from research players.	Designing a **novel** challenge-driven open innovation initiative targeting high-growth-potential SMEs through one face-to-face service design workshop.	# service design workshops	1
3. Make it possible for innovation agencies to **get ready to activate** a challenge-driven SME support initiative locally, and to tailor it on the basis of existing regional specificities and policies.	Delivering a practical and **actionable guide** illustrating how to activate and manage *innovation challenges* supporting specific targets of SMEs, in the frame of Regional Smart Specialization Strategies and other existing SME-support programmes.	# Design Option Papers (DOP)	1

Project INNOCHALLENGE revolved around the three following tasks, each of which enduring 4 months:

Task 1: Tracking good practices [Start month: 1; End month: 4]: Lead: HIT; Contributors: All. Project partners arranged a template to be used to collect a selection of existing good practices of Innovation Challenges. Detailed information on the existing initiative were collected on each good practice, namely: beneficiaries, sponsor organizations, executing organization, activities, input/output and processes, involved knowledge and methods, IP policy, rewarding mechanisms (e.g. prizes), schedule, budget, KPIs and evaluation methods, and so on. Another section was

devoted to collect lessons learned and suggestions for improvement. A total of 10 good practices were collected, each of which featured many pages of texts (filled templates). We did not include the full good practice collection into this deliverable, nor in the website, for space reason. However, shorter versions of the good practice descriptions (one pagers) were made available both on project website (www.innochallenge-project.eu) as well as on the Guide, featuring more detailed information. We make available the template utilized to collect and describe good practices at this link, as we think it could be useful to other projects with a similar scope.

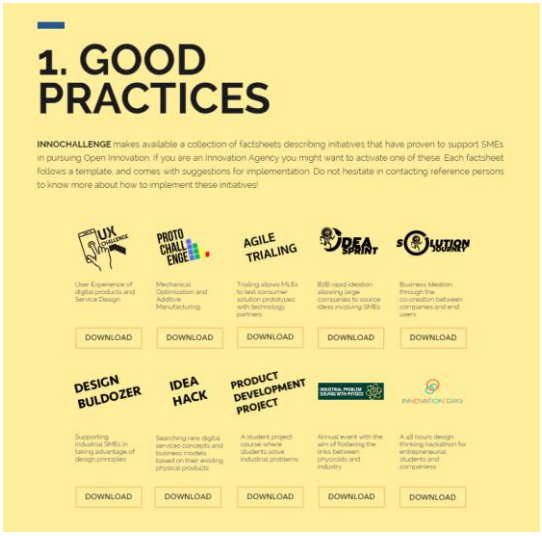

Fig. 2: INNOCHALLENGE website page featuring the downloadable good practices (www.innochallenge-project.eu).

Fig. 3: Example of one Innovation Challenge good practice available on the website: one-page description with contact information to reach out to organizers.

Task 2: Peer learning workshops [Start month: 5; End month: 8]: Lead: BO; Contributors: All. Collected good practices were presented within three peer learning workshops, each of which organized by one project partner. These workshops were designed to act as hands-on learning opportunities for members of innovation agencies, personnel from research and innovation, SME representative organizations, researchers, as well as policy makers; participants came from both hosting regions, as well as by nearby regions. Workshops were held in Oulu (FI), 17/10/2018; Trento (IT), 28/11/2018; Tallinn (EE), 11/12/2018. Altogether workshops involved about 100 participants. Printed versions of the collected good practices "one pagers" were printed and distributed during workshops.

Fig. 4: Promotional poster of one of the three INNOCHALLENGE peer learning workshops (Trento, 28/11/2018).

Task 3: Design of the new initiative [Start month: 9; End month: 12]: Lead: MK; Contributors: All. One service design workshop was finally held, involving project partners only, with the aim of crafting a Canvas to design Innovation Challenges, plus suggestions for implementation. The Canvas consisted in an evolution of the template initially utilized to collect the good practices, though with adjustments made in the light of discussions stemmed from peer learning workshops, and the service design workshop itself. The tools and know how developed during this workshop acted as the core contents of a Guide that has been crafted and produced afterwards, also with the support of an external graphic design agency. A considerable effort has been put in designing and developing the Guide in order to ensure its ease of use.

1.5 Capturing our Design Option: *Innovation Challenges* to support SME needs

Innovation Challenges are initiatives that use the operating logic of innovation prizes that can be utilized by innovation agencies to allow SMEs **to connect and collaborate with other actors** to the extent of achieving innovation, at a business, product, service or technology level[13].

In Innovation Challenges, SMEs work hands-on with students, researchers, or other companies to the extent of finding solutions to industrial needs. Solutions are intended to be very actionable and come in form of new technology or business ideas, prototypes, or insight from field testing. Challenges, like prizes, are normally featured by competitive settings: they make available incentives for "solvers" who work on developing viable solutions.

[13] Doppio N. et al. (2019), *Innovation Prizes to Implement Regional Open Innovation policies for Small and Medium-sized Enterprises: a Case Study from an Italian Public-funded Intermediary*, XXX ISPIM Innovation Conference 2019, Florence.

Innovation agencies in Europe have been experimenting in designing and running Innovation Challenges. Although these come in different shapes, research shows that Innovation Challenges – like innovation prizes – often have in common a number of **structural elements**: they aim at impacting to specific *beneficiaries* (e.g. SMEs from a given industry); they source solutions to problems from certain *suppliers* (a.k.a. "solvers"); they award prizes and make available *incentives*; and so on)[14]. Altogether, the interplay of these elements determines the **design space** of an Innovation Challenge: by changing the profile of these elements (e.g. who are the solvers? Or: what kind of problem-solving activities do we want to make available?) allows to **design new formats** of Challenges, aiming at achieving specific results and impacts towards certain types of SMEs and/or industries in given contexts.

On the basis of the analysis and discussion of the collected good practices, INNOCHALLENGE project partners identified twelve "building blocks" (structural elements) of an Innovation Challenge. These were captured into a synthetic framework that was called "**The Innovation Challenge Design Canvas**" (the Business Model Canvas[15] was taken as a benchmark reference point). The canvas represents the core of the Guide: its purpose is not only to show at a glance how an Innovation Challenge is structured, but also to act as a template to be utilized by innovation agencies to ideate, discuss and design new formats of Innovation Challenges, tailored to specific contexts. The Innovation Challenge Design Canvas is encapsulated in the Guide, which is freely downloadable at: www.innochallenge-project.eu.

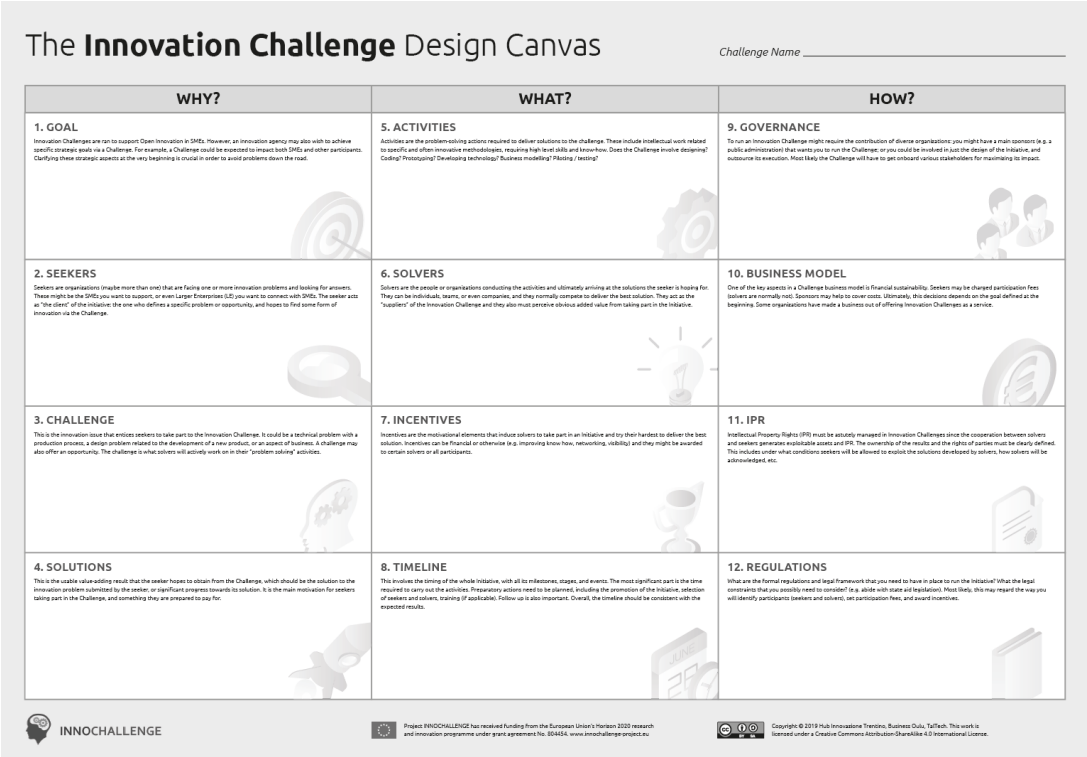

Fig. 6: The innovation Challenge Design Canvas.

[14] Murray, Fiona, Scott Stern, Georgina Campbell, and Alan MacCormack. (2012*), Grand Innovation Prizes: A Theoretical, Normative, and Empirical Evaluation*, Research Policy 41 (10). Elsevier B.V.: 1779–92.
[15] Osterwalder, A., & Pigneur, Y. (2010), *Business Model Generation*, Hoboken, New Jersey: Wiley.

Along with the Canvas, the Guide offers a thorough description of each of these twelve “building blocks”, including **examples and tips** on how to address each of these elements while designing a new Innovation Challenge.

Beside the Canvas, the Guide also provides the reader with **step-by-step guidelines** on how to plan and implement an Innovation Challenge (Challenge Implementation Journey), and useful suggestions from Open Innovation and prize experts on how to successfully run one Innovation Challenge. Finally, the Guide features the collection of 10 good practices of Innovation Challenges (this time illustrated also by means of one filled Canvas per each good practice).

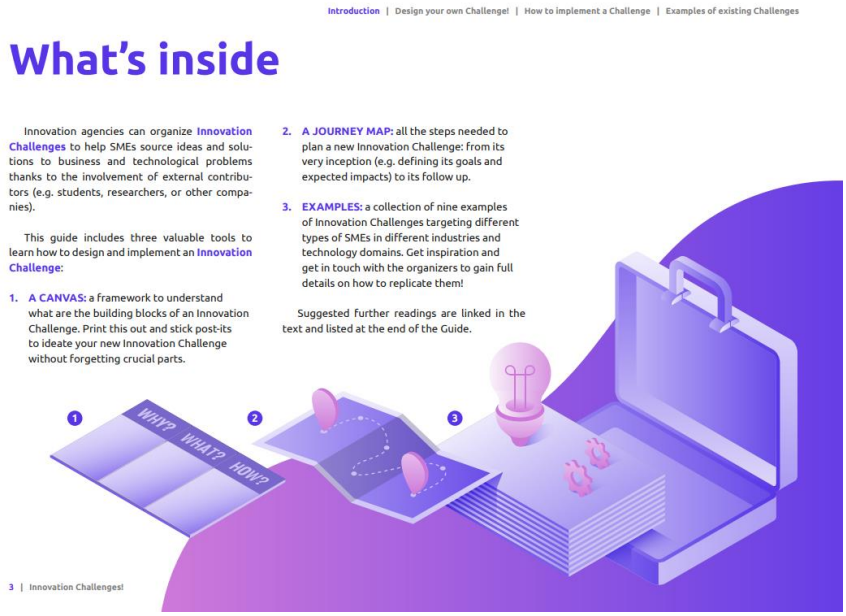

Fig. 7: Contents of the Guide: The Canvas, a Journey Map, and a collection of good practices.

Fig. 8: Example of one good practice of Innovation Challenge described by means of the Canvas.

2. SECTION 2: A guide for innovation agencies to activate Innovation Challenges

In the following pages we embedded the Guide delivered by project INNOCHALLENGE. For a better experience, we strongly advise the reader to go and download a Pdf version of the Guide at the following address: www.innochallenge-project.eu.

INNOVATION CHALLENGES!

A practical guide to design initiatives to support Open Innovation in SMEs

INNOCHALLENGE

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Project INNOCHALLENGE has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 804454

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Foreword from the authors

In recent years of increased global competition, European Small and Medium Enterprises (SMEs) have been forced to **boost their innovation capacity** to react quickly to changing market demands. The European Union, Member States, and European regions have a number of programmes to support innovation in SMEs, including grants and financing for R&D and businesses. In addition to such support, SMEs need services that help them **innovate faster and more effectively**, with improved access to skills and smarter supply chains to source ideas and solutions with an Open Innovation approach.

A variety of innovation support programmes have been tried throughout Europe. Some of these programmes are designed to leverage new and lean formats such as **hackathons and prizes**, and the regional dimension has demonstrated to be effective in fostering participation, through programmes implemented by intermediaries such as public innovation agencies.

This guide is developed in the context of **INNOCHALLENGE** (innochallenge-project.eu), a project funded by the European Commission that identifies several regional initiatives that support Open Innovation, including hackathons, prizes, and innovation challenges for the benefit of SMEs. The aim is to help innovation agencies **design and implement new initiatives** to further strengthen the innovation capacity of SMEs.

The guide provides innovation agencies with details of existing programmes in Europe, setting out the underpinning principles and the experience of good practice, with guidelines to help replicate the initiatives in other regions.

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1. Getting started

INNOCHALLENGE

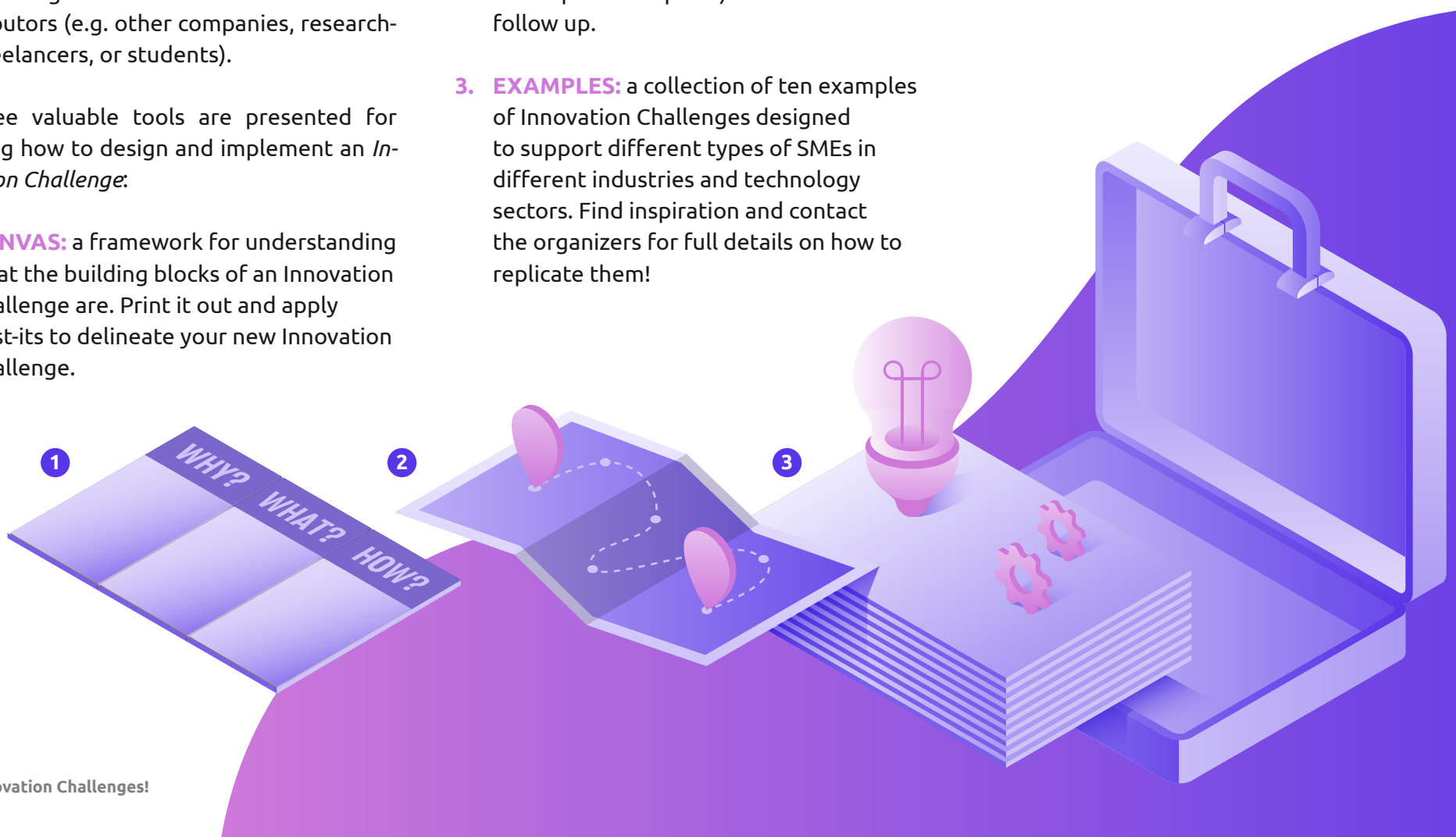
What's inside

Innovation agencies can organize *Innovation Challenges* to help SMEs find ideas and solutions to business and technological problems through the involvement of external contributors (e.g. other companies, researchers, freelancers, or students).

Three valuable tools are presented for learning how to design and implement an *Innovation Challenge*:

1. **CANVAS:** a framework for understanding what the building blocks of an Innovation Challenge are. Print it out and apply post-its to delineate your new Innovation Challenge.
2. **JOURNEY MAP:** all the steps required to implement an Innovation Challenge: from its inception (e.g. defining goals and expected impacts) to execution and follow up.
3. **EXAMPLES:** a collection of ten examples of Innovation Challenges designed to support different types of SMEs in different industries and technology sectors. Find inspiration and contact the organizers for full details on how to replicate them!

Suggested further reading references are linked in the text and listed at the end of the Guide.



What's it for?

SMALL & MEDIUM ENTERPRISES NEED ADDITIONAL SUPPORT

Current mainstream innovation policies for SMEs – on European, national, and regional levels – remain centred on traditional instruments like provision of subsidies, R&D grants, and innovation vouchers. However, according to policy documents from the European Commission, SMEs are more in need of **added value services** like business support (e.g. coaching, 77%) including innovation activities, and help in attracting talent and more qualified staff (77%) [1].

Typical traditional innovation policies targeting SMEs might include direct government funding for R&D, or patent and tax credits for companies investing in R&D, and are **rooted in the closed innovation era** since they target single SMEs as beneficiaries [2].

Nowadays companies are increasingly involved in global networks of large and small technology partners, and innovation often occurs as a result of **knowledge spillovers** between companies and within industrial clusters and agglomerations [3].

This evolution presents a challenge for the innovation bodies entrusted by national or regional governments to develop and implement innovation support programmes for SMEs: how to design and launch new initiatives and services capable of **supporting innovation in SMEs**?

OPEN INNOVATION CAN MAKE THE DIFFERENCE

Open Innovation occurs when a company finds ideas and solutions to improve and innovate products and processes by **collaborating with third parties** such as clients or suppliers. Open Innovation has become the new norm for companies seeking to innovate with excellence [4].

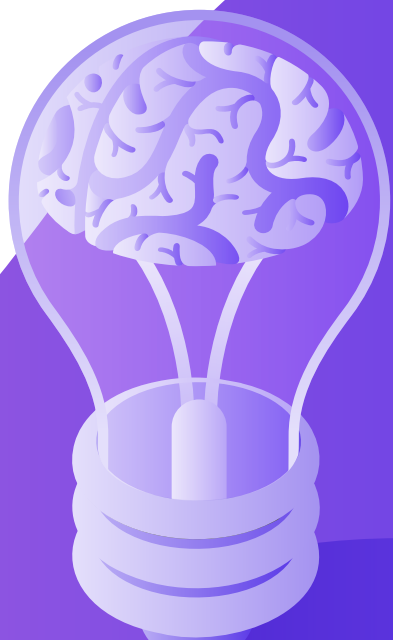
However, Open Innovation requires considerable R&D resources (facilities, skills, processes) and is therefore more common in big enterprises than in small companies. SMEs encounter numerous **obstacles to Open Innovation**, including lack of financial resources for R&D, lack of innovation management competence and methodology, more limited time frames, and difficulty collaborating with academic institutions [5] [6].

There are many measures that can positively **improve Open Innovation** in SMEs and these should be taken into account by innovation agencies.

One is improving their **"absorption capacity"**, i.e., the ability to recognize the value of new information, assimilate it, and apply it to commercial ends [7] [8]. This can be pursued through non-monetary support activities like networking and awareness raising [5] [9].

Open Innovation in SMEs is also influenced by their interactions with the **Regional Innovation Ecosystem** (RIE), regarding for example their proximity and relationships with higher education institutions [10]. Research in this area clearly suggests that innovation policy makers ought to shift support from single firms to the RIE [11].

Regional innovation **intermediaries** can play a crucial role in this by helping SMEs establish partners and providing innovation governance functions for activating initiatives on the RIE level [12].



INNOVATION PRIZES: A TOOL FOR BIG CHALLENGES

Innovation prizes are Open Innovation initiatives that offer incentives for advancing research, technology, and generally **addressing unsolved innovation problems** that often impact society as a whole [13] [14] [15].

Prizes were traditionally offered by governments for technological breakthroughs, solving major social challenges, or advancing technologies. However, over the last decade they have increasingly become **effective tools for large companies** to support inbound Open Innovation, mainly involving end customers, technology experts, and suppliers in new product development activities [3] [4] [16] [17]. Large companies also utilize prizes to identify talents and investment opportunities, or find cheaper alternatives to in-house research and development [28].

Along with prizes, a variety of Open Innovation **intermediaries** have appeared on the market (many adopting web-based business platforms). They identify new ideas or technological solutions for client companies by means of contests, making innovation prizes available "as a service" [19] [20].

Their success in supporting innovation in companies led to prizes being recognized and studied as effective **innovation policy instruments** [21]. Early guidelines for innovation intermediaries (including non-profit or public-funded agencies) were developed on how to successfully design innovation prizes for other purposes, not necessarily regarding major social or technological challenges [22] [23] [24].

THE CENTRE FOR CHALLENGE PRIZES AT NESTA.UK

Nesta is a charity funded by the UK government that pioneers the execution of innovation prizes for social innovation purposes. Nesta has launched the Centre for Challenge Prizes, providing comprehensive guidelines on how to design and execute innovation prizes [22].

NEW FORMATS ARE NEEDED TO SUPPORT SMEs

Existing formats supporting inbound Open Innovation in companies and governments can be adapted and improved to overcome the barriers to their implementation in SMEs.

The first barrier is that the great majority of prizes are organized around **solving major problems** that impact society as a whole, the so-called "next big thing". Prizes also tend to be designed to provide technological solutions for a single beneficiary, typically a **large institution** like a large company or government agency [25].

Research has shown how Open Innovation web-based platforms utilizing the prize format to find solutions for industrial problems among large numbers of potential solvers are **barely accessible by SMEs** due to lack of know-how and R&D facilities, costs, and language barriers [9].

Examples do exist of more accessible regional-level innovation prizes, possibly targeting more than one company at a time, but these are mostly organized by educational institutions and involve **undergraduates as problem solvers**, largely pursuing educational goals. Their overall output quality might not meet the standards of SMEs, and issues of Intellectual Property Rights (IPR) are sometimes not appropriately managed, hindering full exploitation of the results by companies [26].

Many innovation prizes organized by education institutions are on a regional scale and do not address specific industrial challenges for a product or technology. Instead, most of them appear to be **speculative in scope**, assuming the form of idea contests, capable of delivering business, product, or social impact ideas, but without specific solutions to technological challenges [23] [26].

More needs to be done to promote the aspirations and capabilities for innovation among SMEs.

INNOVATION CHALLENGES: A TOOL TO SUPPORT SMEs

Innovation Challenges are initiatives that apply the **logic of prizes** organized by innovation agencies to allow SMEs to connect and collaborate with other entities in order to achieve innovation in business, products, services, or technology [27].

In Innovation Challenges, SMEs work hands-on with students, researchers, or other companies in a search for **solutions to industrial problems**. The solutions are intended to be very practical and in form of new technology or business ideas, prototypes, or insights from field testing. Challenges, like prizes, are normally framed competitively, offering incentives for "solvers" who work towards viable solutions.

Innovation agencies in Europe have been experimenting in the design and implementation of Innovation Challenges. These come in different shapes and sizes, but share a number of **structural elements** (e.g. they all have beneficiaries, contributors, regulations, a given timeline, etc.). Looking closely at these elements reveals the operating logic of an Innovation Challenge, and also enables the **design of new versions** of Innovation Challenge, aiming for specific results and impacts among certain types of SMEs and industries.

This guide explains the "building blocks" of an Innovation Challenge, and how to combine their effects in order to **design your own Innovation Challenge**.

2. Design your own innovation Challenge!

INNOCHALLENGE

WHAT ARE INNOVATION CHALLENGES

Innovation Challenges are initiatives that allow SMEs to connect and collaborate with other actors to the extent of achieving innovation, at a business, product, or technology level.

Innovation Challenges may be ran to support SMEs (one or more) in sourcing **ideas and concept** (at both a product or business level), or early **technological solutions** (e.g. coding) from other professionals, researchers, students or other (normally) smaller companies such as startups.

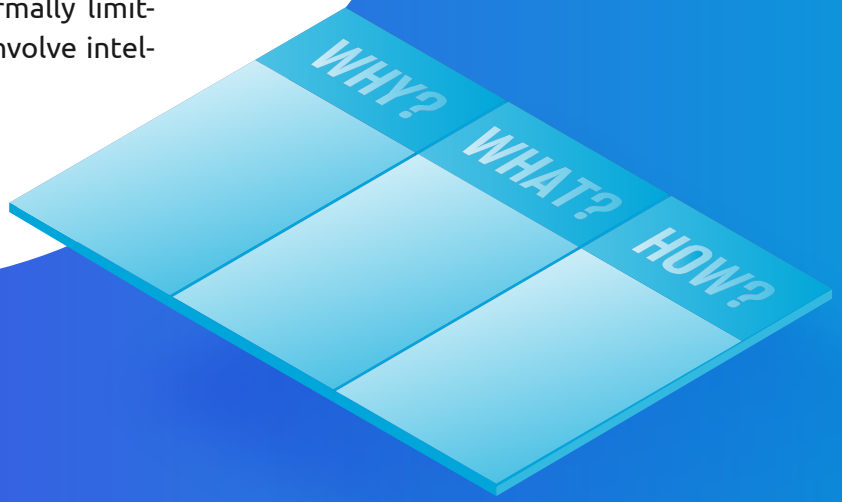
In other cases, Innovation Challenges may be designed to facilitate the contact and **initial collaboration** between the targeted SMEs and larger corporates (or even public companies) with the extent of designing new products or establishing new partnerships.

In whatever case, Innovation Challenges are complex multi-stakeholder initiatives that needs to be carefully **designed**, **planned and executed** by innovation agencies: indeed, from a management point of view, they may compare to both a service provision (they need to deliver added value to companies) and an event (they involve many people with different expectations).

RUNNING AN INNOVATION CHALLENGE REQUIRES PLANNING

Running an Innovation Challenge requires considerable effort: the problems and solutions involved are normally highly complex, often involving advanced technology and science; achieving the required results often involves numerous actors in different roles across a wide social horizon; the time, budget and knowledge available are normally limited; problems and solutions can involve intellectual property that needs to be respected. Overall, the design and execution of a Challenge requires high-level **innovation management** skills.

However: no need to panic! The task can be more easily achieved by breaking it down into smaller steps. This is the purpose of our **Canvas**, **displaying all the elements** you need to design and plan if you decide to run an Innovation Challenge.



THE BUILDING BLOCKS OF A INNOVATION CHALLENGE

Innovation Challenges consist of twelve building blocks: each one needs to be defined for a complete, customized Innovation Challenge, ready for implementation.

Some of these blocks regard the **reason WHY** you want run a Challenge: the problems to be solved, by which companies, what outputs and impacts could be delivered. Other blocks regard **WHAT will be done** to achieve these results: the problems-solving activities that the Challenge will deploy, and the kind of innovators involved. Finally, it is necessary to decide **HOW to manage** all the operational aspects of the initiative.

Each of the twelve blocks will be illustrated, along with examples and tips on how to approach one. Together the twelve blocks comprise a **design framework** for your own Innovation Challenge: the Innovation Challenge Design Canvas.

WHY?	WHAT?	HOW?
1. Goal	5. Activities	9. Governance
2. Seekers	6. Solvers	10. Business Model
3. Challenge	7. Incentives	11. IPR
4. Solutions	8. Timeline	12. Regulations

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1. Goal

Innovation Challenges are ran to support Open Innovation in SMEs. However, an innovation agency may also wish to achieve specific strategic goals via a Challenge. For example, a Challenge could be expected to impact both SMEs and other participants. Clarifying these strategic aspects at the very beginning is crucial in order to avoid problems down the road.

TIPS

- Ask yourself: why are you doing all this? What impact do you want to achieve on participants, especially in SMEs?
- Try to keep a narrow focus, e.g. target companies in specific industries, or focus on specific technologies.
- Before starting to design a Challenge from scratch, look at the nine examples of Innovation Challenge this Guide provides: can you find any with the same Goal? They might provide inspiration.

OPTIONS

- FACILITATE OPEN INNOVATION IN SMES
- RAISE SME AWARENESS ABOUT CERTAIN TECHNOLOGIES/ METHODOLOGIES
- SUPPORT MATCHMAKING AND COMMUNITY BUILDING BETWEEN SMES
- CREATE NEW BUSINESS OPPORTUNITIES BETWEEN SMES AND LARGE ENTERPRISES

2. Seekers

Seekers are organizations (maybe more than one) that are facing one or more innovation problems and looking for answers. These might be the SMEs you want to support, or even Larger Enterprises (LE) you want to connect with SMEs. The seeker acts as “the client” of the initiative: the one who defines a specific problem or opportunity, and hopes to find some form of innovation via the Challenge.

OPTIONS

- ONE OR MORE SMES FROM A GIVEN INDUSTRY
- ONE LARGE ENTERPRISE
- PUBLIC ADMINISTRATIONS

TIPS

- Address seekers who have enough innovation capacity (skills, process) to express their problems and effectively collaborate with other parties.
- It’s crucial only to address seekers with a high level of commitment: they need to allocate time and effort to fully exploit the potential of an Innovation Challenge.
- Deliver value to seekers and be lean: companies do not have time to waste.
- Select seekers before solvers if you want to prioritize their expectations.
- It might be necessary to define criteria for selecting seekers (e.g. if there is widespread demand to take part in the Challenge): if you are acting as a public agency it may be necessary to publish an open call for selection.
- If the seeker is an LE or public organisation (and solvers are SMEs) it needs to be attractive ("known and big") and provide lucrative possibilities.

3. Challenge

This is the innovation issue that entices seekers to take part to the Innovation Challenge. It could be a technical problem with a production process, a design problem related to the development of a new product, or an aspect of business. A challenge may also offer an opportunity. The challenge is what solvers will actively work on in their “problem solving” activities.

TIPS

- The challenge must regard a specific product/project/business issue of the seeker: the scope needs to be quite narrow, otherwise expectations might not be met.
- The challenge should be clearly stated not only in terms of the existing problem, but also the desired scenario that the seeker hopes to achieve (start-at-the-end). This will allow problems to be translated into specific objectives and assigned to a solver, increasing the chance of achieving viable solutions.
- The challenge needs to be attractive to solvers (must be innovative), and should open up business opportunities to all the parties involved.
- Clearly identifying a challenge requires innovation management skills: the seeker should be supported by the Challenge organizer in this process.

OPTIONS

- TECHNOLOGICAL PROBLEMS
- PRODUCT DEVELOPMENT ISSUES
- ISSUES WITH EXISTING PRODUCTS
- OFFERING NEW SERVICES (EXTENDING THE PORTFOLIO)

4. Solutions

This is the usable value-adding result that the seeker hopes to obtain from the Challenge, which should be the solution to the innovation problem submitted by the seeker, or significant progress towards its solution. It is the main motivation for seekers taking part in the Challenge, and something they are prepared to pay for.

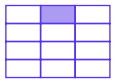
TIPS

- The solution is what solvers are expected to deliver at the end of the Initiative. It is critical that both solvers and seekers have a clear picture of what a solution might look like. Provide examples and clarify what actual deliverables are expected.
- To maximize impact, solutions should not be just speculative ideas but more mature, usable, and possibly validated innovation delivered to the seekers (e.g. prototypes).
- Solutions must be feasible and achievable by solver during the Challenge. Keep it simple: don't overcomplicate.
- Solutions should be fully exploitable and acquirable by the seeker as soon as possible after the end of the Challenge. This involves both practical and legal aspects to be taken care for in advance (see the IPR block).

OPTIONS

- NEW TECHNICAL SOLUTIONS
- PRODUCT / SERVICE / BUSINESS CONCEPTS OR PROTOTYPES
- IMPROVEMENTS TO EXISTING PRODUCTS OR PROCESSES
- INSIGHTS FROM REAL LIFE TESTS WITH USERS AND PILOT TRIALS

5. Activities



Activities are the problem-solving actions required to deliver solutions to the challenge. These include intellectual work related to specific and often innovative methodologies, requiring high level skills and know-how. Does the Challenge involve designing? Coding? Prototyping? Developing technology? Business modelling? Piloting / testing?

TIPS

- Activities should be defined in advance by the organizer, possibly indicating standard methodologies to guide solvers during the innovation work and enable them to deliver the required solutions.
- Involve experts in these methodologies in the definition of activities, as well as facilitators / mentors to support the solvers.
- Consider what skills and how much effort will be required to execute activities: solvers need to be well motivated and committed to complete them.
- Be careful not to overlook other resources that might be needed to conduct the activities.
- Consider to what extent the seeker will have to participate in activities in order to achieve the best outcome (e.g. taking part in meetings, etc.). Agree with the seeker the degree of commitment required from them.

OPTIONS

- CODING (E.G. HACKATHONS)
- IDEATION AND DESIGN (E.G. DESIGN SPRINT)
- PROTOTYPING
- BUSINESS MODELLING / PLANNING
- TESTING & PILOTING STUDIES

6. Solvers

Solvers are the people or organizations conducting the activities and ultimately arriving at the solutions the seeker is hoping for. They can be individuals, teams, or even companies, and they normally compete to deliver the best solution. They act as the "suppliers" of the Innovation Challenge and they also must perceive obvious added value from taking part in the Initiative.

OPTIONS

- STUDENTS ORGANIZED IN TEAMS
- STARTUPS
- SMES
- FREELANCE PROFESSIONALS

TIPS

- Dynamic people/companies capable of addressing the problems and succeeding in the activities should be selected. A lot of effort will be required to establish relationships, promote the Initiative, and possibly select them (if applicable).
- Solvers must be prepared and committed to the activities and also prepared to go the extra mile to achieve outstanding results.
- If students are involved, it will probably be necessary to create teams and / or provide training. Doing this yourself gives greater control over the process but is time consuming.
- Select solvers before seekers if you want to design the Challenge starting from their expectations or capabilities.
- Once solvers agree to take part in an Initiative, make sure they are fully committed and keep them engaged before it begins. Consider overbooking solvers to provide cover for drop-outs.

7. Incentives

Incentives are the motivational elements that induce solvers to take part in an Challenge and try their hardest to deliver the best solution. Incentives can be financial or otherwise (e.g. improving know how, networking, visibility) and they might be awarded to certain solvers or all participants.

TIPS

- Clearly explain to solvers what they stand to gain by taking part in the Initiative.
- The incentives should be something of real value to solvers, and this should be investigated in advance.
- Think beyond money: some solvers may be more motivated by advancing their careers and skills via networking, visibility, and new collaboration opportunities.
- Define in advance what criteria will be applied to award incentives (if applicable).
- Balance competition and cooperation. When designing award criteria, bear in mind that rewards and prizes create competition between solvers. Sometimes cooperation is preferable rather than just competition between solvers. Consider ways of enhancing it.

OPTIONS

- MONETARY REWARDS
- TRAVEL TO RELEVANT CONFERENCES, FAIRS OR EVENTS
- CAREER DEVELOPMENT AND BUSINESS CONNECTIONS (E.G. LIKELY COLLABORATION WITH SEEKER)

8. Timeline

This involves the timing of the whole Initiative, with all its milestones, stages, and events. The most significant part is the time required to carry out the activities. Preparatory actions need to be planned too, including the promotion of the Initiative, selection of seekers and solvers, training (if applicable). Follow up is also important. Overall, the timeline should be consistent with the expected results.

TIPS

- Use this block to design the overall timeline of the initiative and its stages. Allocate time for preparation and launching. Try to define a Gantt chart.
- Short time frames (e.g. 1 month) are preferable to long periods, especially for newly designed Initiatives since it allows "quick wins" to be achieved and validates the format. SMEs generally tend to prefer short time frames.
- It is difficult to schedule all the activities in compliance with the different stakeholders' agendas. The earliest actions need to be scheduled many months before their actual date.
- It is important to plan in advance for follow up activities after the end of the Initiative (e.g. measuring satisfaction and/or impact on seekers and/or solvers).
- If an Initiative takes a long time (e.g. months), it is advisable to keep seeker and solvers well informed about the next steps and state of progress.

OPTIONS

- ONE MONTH
- ONE WEEK
- ONE WEEKEND
- KICK-OFF EVENT WITH PRESENTATION OF CHALLENGES
- FINAL PUBLIC EVENT WITH PRESENTATION OF SOLUTIONS

9. Governance

To run an Innovation Challenge might require the contribution of diverse organizations: you might have a main sponsors (e.g. a public administration) that wants you to run the Challenge; or you could be involved in just the design of the Initiative, and outsource its execution. Most likely the Challenge will have to get onboard various stakeholders for maximizing its impact.

TIPS

- Involve strategic partners that allows you to reach out to seekers, solvers and mentors.
- Involve stakeholders that improves the credibility of the initiative towards seekers and solvers.
- Identify one player acting as the orchestrator (might be you or a supplier acting as intermediary) and as a reference points for seekers and solvers during operations.
- If you decide to outsource the execution of the Initiative to a specialized intermediary, be aware that you'll have to take part to its design anyway.
- All partners and stakeholders must have a buy-in in the Initiative, especially if you expect them to contribute to its effort (e.g. promoting it to solvers or seekers).

OPTIONS

- IN-HOUSE RAN BY THE INNOVATION AGENCY WITHIN A WIDE PARTNERSHIP
- DESIGNED AND RAN IN COOPERATION WITH AN INTERMEDIARY
- OUTSOURCED

10. Business model

One of the key aspects in a Challenge business model is financial sustainability. Seekers may be charged participation fees (solvers are normally not). Sponsors may help to cover costs. Ultimately, this decisions depends on the goal defined at the beginning. Some organizations have made a business out of offering Innovation Challenges as a service.

TIPS

- The business model is closely tied to the goals of the Challenge. This will determine to what extent seekers and solvers are expected to contribute the costs of the Initiative.
- Fees should be set according to the scale of the seeker.
- Normally solvers are not charged fees and instead are offered prizes and incentives.
- Consider getting sponsors to cover part of the costs. They might contribute other types of support such as mentoring or free access to resources (e.g. software).
- If a set of Innovation Challenges are implemented with the same format, but addressing different seekers and solvers in different industries, the economy of scale can offer substantial savings.

OPTIONS

- ACCESS FEES REQUIRED FOR SEEKERS, FREE FOR SOLVERS
- FREE FOR SEEKERS AND SOLVERS WITH COSTS COVERED ENTIRELY BY THE ORGANIZER OR A SPONSOR

11. IPR policy

Intellectual Property Rights (IPR) must be astutely managed in Innovation Challenges since the cooperation between solvers and seekers generates exploitable assets and IPR. The ownership of the results and the rights of parties must be clearly defined. This includes under what conditions seekers will be allowed to exploit the solutions developed by solvers, how solvers will be acknowledged, etc.

OPTIONS

- IPR OF SOLUTIONS RETAINED BY SOLVERS
- IPR OF SOLUTIONS CEDED TO SEEKERS
- IPR OF SOLUTIONS OPTIONS FOR SEEKERS

TIPS

- Define clear IPR rules. Avoid legal issues and maximize impact by clarifying who is the owner of the results of the challenge (either the seeker or the solver). This is crucial for the Initiative to be recognized as valuable and trustworthy.
- IPR could initially be retained by the organizer, to be subsequently ceded or licensed (exclusively or not) to the seeker under specific circumstances.
- Whatever policy is adopted, there must be no ambiguity in this matter.
- All IP must be shielded against illicit exploitation. Numerous parties (other seekers, solvers, mentors, and experts) may acquire sensitive information regarding both the solutions and the challenges (e.g. product issues, industrial problems, business plans). Ensure that all interested parties sign an NDA – Non Disclosure Agreement.

12. Regulations

What are the formal regulations and legal framework that you need to have in place to run the Initiative? What the legal constraints that you possibly need to consider? (e.g. abide with state aid legislation). Most likely, this may regard the way you will identify participants (seekers and solvers), set participation fees, and award incentives.

TIPS

- If needed, define clear eligibility and selection criteria for seekers and solvers wishing to take part to the Initiative.
- Design rules depending on who owns the funding and / or is responsible of the Initiative: different legislations may apply depending on that.
- Define what criteria you will use to evaluate solutions and award the incentives.
- Make sure you have sound procedures in place to support the evaluation work about applications and competing solutions. Do not underestimate the amount of work required; involve experts supporting you in doing so.

OPTIONS

- PUBLIC CALL TO SELECT SEEKERS AND SOLVERS
- APPLICATIONS OPEN TO CERTAIN BENEFICIARIES ONLY (E.G. FROM A GIVEN TERRITORY, OR INDUSTRY)
- EVALUATION COMMISSIONS TO EVALUATE SOLUTIONS AND ASSIGN INCENTIVES

How to use the Challenge Design Canvas

1. **Print** the full Canvas on a large sheet: it includes explanations of each Challenge block.
2. First design the **WHY**, then the **WHAT**, and finally the **HOW**. Follow the numbers.
3. Use post-its and **design thinking** techniques to facilitate co-creation with colleagues and stakeholders.
4. A filled Canvas will sum up your design **hypotheses** about the Challenge: these need to be validated by talking to seekers and solvers and establishing whether they would be interested to participate.
5. Start small: first **validate** WHY, then WHAT, and then HOW. Iterate.
6. Be aware that the design might not be finalized by the time you **need to start**. Define key components first, and add details later. Be flexible!

WHY?	WHAT?	HOW?
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Congratulations!

You can now start design your first Innovation Challenge!

download Canvas here:

www.innochallenge-project.eu

printable version, 100x70cm

3. How to implement a Challenge

INNOCHALLENGE

The Challenge implementation journey

Designing an Innovation Challenge is just the beginning of a longer journey. Although the most important decisions are made while drafting the canvas, **conducting a Challenge** and achieving its set goals requires thorough planning, coordinated effort between partners, good customer relations, and efficient execution of all operations.

Conducting a Challenge **requires crucial know-how** at various levels: communication and promotion, managing expectations of seekers and commitment of solvers, organizing events like workshops, monitoring the planned problem-solving activities, following up with the participants to assess satisfaction and impact.

In this section we provide **practical guidelines** on what an Innovation Agency should be doing to implement a Challenge, starting from scratch (including tips about the design stage). The implementation process is broken down into **10 steps** with useful guidance on how to approach each step. Finally, a few general tips are provided from Open Innovation experts.

We hope this section will help you get ready to run your first Innovation Challenge!

Learn

- Read this guide and explore the Canvas for a deeper understanding of the basic building blocks of an Innovation Challenge.
- See the Innovation Challenge examples provided in this Guide.
- Find out what has been done to date in your region to support innovation in SMEs.
- Map the stakeholders.

Define *WHY*

- Think about what you wish to achieve by running the Challenge (results and long term impact). No Innovation Challenge should be run just for the sake of it.
- Innovation Challenges are designed above all to support SMEs: SMEs can be either seekers or solvers.
- Define what kind of seekers you plan to support (size, industry, etc.). It's better to have a narrow scope.
- Define how many seekers and how many challenges per seeker you can support in one Initiative (one seeker may bring more than one challenge).
- Develop hypotheses on what problems seekers have, and what they would expect to obtain through an Innovation Challenge.

Define *WHAT*

- Think about what type of problem-solving work (activities) the Innovation Challenge needs to implement in order to deliver the expected solutions.
- Think about how much time or effort that would require and what resources would be needed to carry out the activities.
- Think about who could act as solvers (they need to be capable of the activities) and how they could be motivated.

Co-design

- You now have enough hypotheses about the core value-adding elements of your Challenge design: it's time to talk to SMEs or LEs that you think may act as seekers (or solvers) and check whether they would like to take part to the Challenge.
- Organize short one-to-one meetings with seekers (and possibly solvers) and learn whether they like the initiative. Be ready to update any of the WHY and WHAT elements.
- Use these meetings to learn the needs and expectations of SMEs (be they seekers or solvers): collect suggestions from them as regards the HOW.
- Adopt an iterative and adaptable approach: talk to seekers and solvers as soon as you have clear enough ideas about your design.

Define *HOW*

- Decide whether the Challenge will charge seekers fees, and how costs will be covered.
- Define whether there will be selection processes to identify seekers and solvers, and how applications will be assessed (eligibility and selection criteria).
- Define how solutions proposed by solvers will be evaluated and by whom, and the criteria that will be applied for awarding incentives (e.g. prizes).
- Define who will own the IPR of the Solutions.
- Define what partners and stakeholders you need to involve in order to conduct the Initiative.

Plan

- Freeze the design and do thorough project planning for internal approval: costs, timing, expected results.
- Share the plan with all partners and stakeholders. If you expect them to have an active role, clarify what role and the effort they will need to put into the Initiative (e.g. helping to promote the Initiative).
- Prepare the required administrative and legal documentation (e.g. public call). If you have selection processes, prepare detailed application forms capable of collecting all the info you need to select the applicants.
- Prepare a thorough marketing and communication plan. Start this in good time and do not forget to leverage other partners and stakeholders.

Promote

- It is unlikely that anyone knows about your Challenges, and a lot of effort will have to put into actively promoting the initiative.
- Depending on the design, it might be necessary to establish connections and promote the Initiative to both solvers and seekers. These can be very different audiences and may require different communication strategies.
- Set up dedicated and up-to-date contact points like web pages, social media channels.
- Provide support for seekers and solvers as they go through the application process (if there is one).

Brief

- Before starting the actual problem-solving actions (activities), collaborate with the seeker to add details to the challenge and the kind of solutions they expects. Make sure the challenge translates into clear objectives to set for solvers.
- Brief the solvers about the challenge, the expected solutions, and the objectives. If this is done by the seeker, be there to assist.
- Consider training solvers how to perform the activities, if this is necessary (e.g. students).
- If necessary, create teams of solvers and pair them with selected seekers and challenges.

Perform activities

- Performing the activities is what allows the initiative to deliver the expected solutions. The activities are normally conducted by solvers but the organizer should closely monitor them, facilitating (e.g. with experts and mentors) and providing support if needed.
- Make sure seekers are aware of the ongoing activities and interim results.
- Solvers should be fully capable of performing activities before starting: consider providing them with training, if required.
- Consider ending the Challenge with a final event (including the award ceremony). Depending on the Initiative goal, inviting institutions and getting media coverage may be a good idea.

Follow up

- Keep in touch with the seekers (and possibly the solvers) to understand how they implemented the solutions and turned them into actual innovation.
- Assess satisfaction levels and request feedback on the Initiative to improve future project quality.
- Upload some examples of challenges and solutions on the website for promotional and reference purposes.
- Revise the design if necessary.

What is key to a successful Innovation Challenge

by Open Innovation and Prize experts

Andy Zynga

CEO EIT Food; former CEO NineSigma

It is important to help the innovation seeker to make a clear and concise challenge statement. It can be hard for experts in companies to make a simple statement all by themselves: they may look at the problem from an overly fixed and possibly too complex perspective.

Marco Zappalorto

Chief Executive Nesta Italia

The most important thing to understand is that each Innovation Challenge is unique and in order to get the desired outcome it is essential to deeply understand the problem you are trying to solve and communicate it right across communities of innovators.

Federico Frattini

Full Professor, School of Management Politecnico di Milano

The most important thing for a seeker is to understand that not all innovation problems can be solved through a Challenge. Innovation Challenges are very effective for problems that can be well delimited, that are not highly confidential, to avoid risk of knowledge spill-over, and for which the seeker has internal knowledge to quickly screen the suggestions from the solvers.

Nicola Doppio

Innovation Officer, HIT - Hub Innovazione Trentino

You can run an Innovation Challenge with the aim of improving the awareness of SMEs about the benefits of emerging technologies. Solutions obtained via the Challenge will represent a first step on a longer journey of innovation that the company will pursue with solvers or other partners.

Satu Väinämö

DigiHealth Hub, University of Oulu

The importance of marketing and communicating the Challenge is often underestimated, therefore put sufficient effort into it. To promote creativity take an adaptable approach. A competent facilitator fosters the success of Challenges, therefore involve them right at the beginning of the journey.

Katre Purga

Startup Hub Manager, Mektory, TalTech

One key factor to ensure high impact in Challenges is to make sure the seeker is highly committed: not only to take part to the planned activities, but also to change current business practice to pursue real innovation. Make sure to involve the right people from the seekers (e.g. sitting on board or CXO level).

4. Examples of existing Innovation Challenges

INNOCHALLENGE

Innovation Challenges ready for implementation

This section presents a collection of Innovation Challenges that have proven to successfully support SMEs in achieving Open Innovation in different phases of the New Product Development (NPD) cycle. If you are an innovation agency you might want to implement one of these. The innovation Challenges are divided to three categories based on the product development cycle phases they involve the most.

Innovation Challenges to **create ideas** of new products/services or technology applications:

1. **IdeaSprint:** to rapidly ideate new solutions
2. **Smart Industry Idea Hack:** to find new digital service concepts and business models for manufacturing companies.
3. **Industrial problem solving with physics (IPSP):** to foster the links between physicists and industry

Innovation Challenges to **co-create and design** concepts or prototypes:

4. **PROTO Challenge:** to nurture the adoption of additive manufacturing technologies within SMEs.
5. **BIC Open Challenge:** to put SMEs in touch with one LE in need of technology development
6. **SolutionJourney:** to co-create concepts with SMEs, corporate and users.
7. **Design Buldozer:** to improve business through design
8. **Product Development project:** to solve companies problems and to work in multidisciplinary team

Innovation Challenges to **test and validate** prototypes with users:

9. **UX Challenge:** to test and improve digital products' user experience.
10. **Agile Trialing:** to experiment and test a prototype with users in an authentic setting

IDEATION

IdeaSprint

The IdeaSprint is a rapid **ideation B2B initiative** allowing corporations or organisations to scout for new ideas.

On one hand, a large company presents challenges and opportunities it would like to tackle regarding **innovative customer experiences** (with new or improved products or services). On the other hand, SMEs, startups, and possibly teams of young talents compete by developing solutions that include new product ideas and business plans.

One IdeaSprint is based on a **three-day schedule**, featuring briefing meetings, sparring sessions between companies, pitches, and final awards. The results for the seeker company are new product and service concepts, including business plans. The SMEs / startups that develop the winning solutions are destined to become **new business partners** with the seeker company.

WHY?	WHAT?	HOW?
1. GOAL PROMOTE NEW BUSINESS OPPORTUNITIES FOR THE SMES AND STARTUPS	**5. ACTIVITIES** LAUNCHING, SPARRING, PITCHING	**9. GOVERNANCE** MANAGED AND FACILITATED BY INNOVATION AGENCY
2. SEEKERS CORPORATE OR ORGANISATION	**6. SOLVERS** SMES, STARTUPS, PRE-STARTUP TEAMS	**10. BUSINESS MODEL** FREE
3. CHALLENGE EASILY SCOUT NEW PRODUCT/SERVICES IDEAS AND NEW PARTNERS	**7. INCENTIVES** POSSIBILITY OF A BUSINESS DEAL, FEEDBACK FROM CORPORATION	**11. IPR** FREE EXPLOITATION
4. SOLUTIONS SOLUTION IDEAS WITH BUSINESS MODEL	**8. DURATIONS** 3X0.5 DAY WITHIN ONE WEEK (+ PREPARATION 2 WEEKS)	**12. REGULATIONS** PUBLIC SELECTION CALLS FOR SOLVERS

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Full documentation is available to support your agency adopt this initiative.
To know more about this initiative please contact:
pirjo.koskiniemi@businessoulu.com
www.businessoulu.com

IDEATION

Smart Industry Idea Hack

<tark/tööstus>

Smart Industry Idea Hack is an **8-hour event** during which participants search for new digital service concepts and business models for manufacturing companies, based on their existing physical products. People with different profiles from different industries team up to hack the **Industry 4.0 related challenges** of different manufacturers. The aim is to **design innovative solutions** where physical products supported by digital services enable the creation of new business models and revenue streams.

WHY?	WHAT?	HOW?
1. GOAL DESIGN INNOVATIVE SOLUTIONS IN A ONE-DAY HACKATHON	**5. ACTIVITIES** PRESENTING THE CHALLENGE, IDEATION, TEAM FORMATION, MENTORING, PITCHING	**9. GOVERNANCE** ORGANISED BY TECHNOLOGY PARK, PUBLICLY PROCURED BY ENTERPRISE ESTONIA
2. SEEKERS MANUFACTURERS	**6. SOLVERS** STUDENTS, PROFESSORS, INDUSTRY EXPERTS DESIGNERS	**10. BUSINESS MODEL** FREE EVENT FOR SEEKERS AND SOLVERS (PUBLIC INTEREST)
3. CHALLENGE SOLVING PROBLEMS IN PRODUCTION	**7. INCENTIVES** WIDER PERSPECTIVE, RECRUITING, SMALL PRIZES	**11. IPR** DISCUSSED BETWEEN THE FORMED TEAMS
4. SOLUTIONS NEW INTERFACES, WIREFRAMES, SOLUTIONS, CONCEPTS	**8. DURATIONS** 8H	**12. REGULATIONS** PUBLIC PROCUREMENT

Tehnopol

Full documentation is available to support your agency adopt this initiative.
To know more about this initiative please contact:
kadi.villers@tehnopol.ee
www.tehnopol.ee

IDEATION

IPSP

INDUSTRIAL PROBLEM SOLVING WITH PHYSICS

IPSP - **Industrial Problem Solving with Physics** is an annual event organized by the Department of Physics of the University of Trento in collaboration with the Research Support and Knowledge Transfer Division of the University of Trento, Confindustria Trento and Polo Meccatronica-Trentino Sviluppo. The initiative aims at fostering **links between physicists and industry**.

Manufacturing companies apply for the initiative with industrial problems that may entail the study and **modelling of the mechanical or thermodynamic behaviour** of elements, the optimization of a production process, or the creation of devices and prototypes. Problems are addressed by **teams of students** over one week, during which they are given access to university instrumentation and facilities, as well as those from the participating companies, in order to carry out tests or collect field data. The IPR of the results are owned by the inventors (students). In order to proceed with **industrialization of the solutions** companies need to reach an agreement with the University.

WHY?	WHAT?	HOW?
1. GOAL LET COMPANIES KNOW HOW APPLIED PHYSICS CAN SOLVE INDUSTRIAL PROBLEMS	**5. ACTIVITIES** PROBLEM MODELLING, SOFTWARE SIMULATIONS, LAB TESTING, EXPERIMENTATIONS	**9. GOVERNANCE** ORGANIZED BY THE DEPT. OF PHYSICS IN COOPERATION WITH THE TECH TRANSFER OFFICE OF THE UNIVERSITY
2. SEEKERS 3 COMPANIES (BOTH SMES AND LARGE) USING HIGH-TECH MACHINERY AND PROCESSES	**6. SOLVERS** UNIVERSITY UNDERGRADUATES, PH.D. STUDENTS, AND POSTDOCS UP TO 35 YEARS	**10. BUSINESS MODEL** € 1000 FEE IS CHARGED TO THE SEEKERS; SMALL ACCESS FEE TO SELECTED SOLVERS (E.G. € 20)
3. CHALLENGE MECHANICAL, CHEMICAL, ELECTRICAL, OR TECHNICAL PROBLEMS REGARDING AN EXISTING PRODUCT OR MANUFACTURING PROCESS	**7. INCENTIVES** NO PRIZES FOR SOLVERS, JUST NETWORKING WITH COMPANIES AND IMPROVED INDUSTRIAL KNOW-HOW	**11. IPR** SUBSEQUENT AGREEMENTS ARE REACHED BETWEEN INVENTORS (SOLVERS) AND SEEKERS - MEDIATED BY THE TTO
4. SOLUTIONS BETTER UNDERSTANDING OF AN INDUSTRIAL PROBLEM (MODEL); PROTOTYPE	**8. DURATIONS** 1 WEEK OF ACTIVITIES; 4 MONTHS OF PREPARATION	**12. REGULATIONS** PUBLIC SELECTION PROCEDURES FOR BOTH SEEKERS AND SOLVERS

UNIVERSITÀ DEGLI STUDI DI TRENTO

Full documentation is available to support your agency adopt this initiative.
To know more about this initiative please contact University of Trento:
df.supportstaff@unitn.it
event.unitn.it/ipsp2018/

CO-CREATION & DESIGN

PROTO Challenge

PROTO Challenge is an initiative implemented by HIT - Hub Innovazione Trentino aiming at promoting the adoption of **additive manufacturing** technologies within SMEs. Companies apply for the PROTO Challenge through a public call notice and five **mechanical elements and products** are selected based on specific challenges regarding their practical manufacture.

The PROTO Challenge lasts for one month, during which teams of students utilize advanced software for **CAE – Computer Aided Engineering** to analyse and redesign products in order to achieve improved structural performance, as well as practical manufacture applying added value processes. At the end of the Challenge, the companies receive a new **3D CAD design** that can be freely exploited to pursue prototyping. Companies also gain crucial know-how to help shift to more advanced manufacturing, and the opportunity to identify and possibly hire new talents.

WHY?	WHAT?	HOW?
1. GOAL PROMOTING THE ADOPTION OF ADDITIVE MANUFACTURING TECHNOLOGIES WITHIN SMES.	**5. ACTIVITIES** USE OF ADVANCED SOFTWARE TO OPTIMIZE TOPOLOGY AND STRUCTURAL FEATURES OF MECHANICAL ELEMENTS	**9. GOVERNANCE** MANAGED BY HIT – HUB INNOVAZIONE TRENTINO WITH SUPPORT FROM REGIONAL PARTNERS
2. SEEKERS 5 MANUFACTURING COMPANIES	**6. SOLVERS** UNIVERSITY STUDENTS MENTORED BY PROFESSIONALS	**10. BUSINESS MODEL** SEEKERS PAY SMALL FEE
3. CHALLENGE OPTIMIZE THE DESIGN OF MECHANICAL ELEMENTS TO MAXIMIZE BENEFITS OF ADDITIVE MANUFACTURING	**7. INCENTIVES** ADVANCED TRAINING FOR SOLVERS, EXPENSE VOUCHERS FOR TESTERS	**11. IPR** SEEKERS OWN IPR OF SOLUTIONS
4. SOLUTIONS 3D CAD DESIGNS OF MECHANICAL ELEMENTS READY FOR 3D PRINTING	**8. DURATIONS** 2 MONTHS OF ACTIVITIES, 4 MONTHS OF PREPARATION	**12. REGULATIONS** PUBLIC SELECTION CALLS FOR SEEKERS AND SOLVERS

HIT HUBINNOVAZIONETRENTINO

Full documentation is available to support your agency adopt this initiative.
To know more about this initiative please contact HIT - Hub Innovazione Trentino:
tech@trentinoinnovation.eu
www.trentinoinnovation.eu/proto-challenge-eng/

CO-CREATION & DESIGN

BIC Open Challenge

BIC OPEN CHALLENGE 2018 is an initiative by Trentino Sviluppo (Regional Contact Point of the Enterprise Europe Network in Trentino) aiming to facilitate collaboration in technology and product development **between large, small, and micro businesses**. The Challenge is designed to help a large company, hosted in one of the Business Innovation Centres run by Trentino Sviluppo, to identify the best partner to **design and pursue a technology development** project starting from an unsatisfied need.

The organizer and the seeker jointly select the partner (solver). The solver is then **granted a cash prize** plus other free services to execute the project, provided that it is based in the innovation centre for the duration of the project. The seeker and the organizer each cover 50% of the cost (including free services). The 2018 edition of the Challenge involved the development of IoT (internet of Things) technologies.

WHY?	WHAT?	HOW?
1. GOAL FACILITATING COLLABORATION BETWEEN LARGE, SMALL, AND MICRO COMPANIES WITH THE AIM OF ENHANCING THE CAPACITY OF THE LATTER	**5. ACTIVITIES** TECHNOLOGY DEVELOPMENT	**9. GOVERNANCE** ORGANIZED AND MANAGED BY TRENTINO SVILUPPO
2. SEEKERS A COMPANY HOSTED WITHIN BIC - BUSINESS INNOVATION CENTRES (INCUBATORS) RUN BY THE ORGANIZER	**6. SOLVERS** SMALL AND MICRO ENTERPRISES	**10. BUSINESS MODEL** COSTS ARE COVERED BY THE ORGANIZER
3. CHALLENGE CO-DEVELOPMENT OF TECHNOLOGY	**7. INCENTIVES** THE SELECTED SOLVER IS GRANTED A CASH PRIZE AND SOME FREE SERVICES	**11. IPR** ORGANIZER OWNS 50% IP OF RESULTS AND HAS A 1-YEAR NON-EXCLUSIVE RIGHT TO LICENCE IT (MOST LIKELY TO THE SEEKER, IF THE PROJECT IS COMPLETED)
4. SOLUTIONS CUSTOMER TECHNOLOGY (E.G. IOT)	**8. DURATIONS** 4 MONTH PROJECTS EXECUTION + SELECTION + PREPARATION	**12. REGULATIONS** CALL FOR SELECTION OF SOLVERS. THE SEEKER IS DIRECTLY CHOSEN BY THE ORGANIZER.

TRENTINOSVILUPPO
IMPRESA INNOVAZIONE MARKETING TERRITORIALE

Full documentation is available to support your agency adopt this initiative.
To know more about this initiative please contact Trentino Sviluppo Spa:
andrea.morvidoni@trentinosviluppo.it
www.bicopenchallenge.com

CO-CREATION & DESIGN

SolutionJourney

The SolutionJourney is a **business ideation initiative** involving companies and end users in the co-creation of new product and service concepts.

In the SolutionJourney a corporate (seeker) scouts new business and product ideas from competing SMEs. The initiative occurs in **two stages**: a first stage – typically lasting three days and involving around 15 SMEs – entails the **ideation and presentation** of early product concepts. A second stage (normally one month) is reserved to only five selected SMEs who further **co-develop** concepts with end users. This stage is supported by **expert user researchers**. Finally, the seeker company selects the best solutions and the SMEs go on to become business partners.

WHY?	WHAT?	HOW?
1. GOAL PROMOTING NEW BUSINESS OPPORTUNITIES FOR SMES BY CO-CREATING SOLUTIONS TOGETHER WITH LE, SME, AND USERS	**5. ACTIVITIES** IDEASPRINT ACTIVITIES + CO-CREATION WORKSHOPS + ONLINE USER INVOLVEMENT	**9. GOVERNANCE** MANAGED AND FACILITATED BY INNOVATION AGENCY AND LIVING LAB
2. SEEKERS CORPORATE / ORGANISATION	**6. SOLVERS** SMES, STARTUPS	**10. BUSINESS MODEL** FREE
3. CHALLENGE FIND A NEW BUSINESS PARTNER WHO WILL EXTEND THE CORPORATION'S OFFER	**7. INCENTIVES** POSSIBILITY OF A BUSINESS DEAL, FEEDBACK FROM USERS & CORPORATE	**11. IPR** FREE EXPLOITATION (+ NDA)
4. SOLUTIONS EARLY SOLUTION PROTOTYPES	**8. DURATIONS** 3 X 0.5 DAY OVER ONE WEEK + 3 X 0.5 DAY OVER 3-6 WEEKS (+ PREPARATION)	**12. REGULATIONS** PUBLIC SELECTION CALLS FOR SOLVERS

OULU | BusinessOulu

Full documentation is available to support your agency if adopting this initiative.
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CO-CREATION & DESIGN

Design Bulldozer

EESTI DISAINI KESKUS — ESTONIAN DESIGN CENTRE

The Design Bulldozer is a development programme for businesses. Running the programme with an **experienced design manager** helps companies exploit design in the best possible way. The programme consists of two main stages:

1. Design audit and establishing the terms of reference. The design manager performs a **design audit in the company** by talking to the key company employees, and – if possible – with its customers and collaborators. The aim of the audit is to establish the company's options for developing its use of design. The results are used to set the terms of reference for initial design purchases and to find a suitable cooperation partner for the work.

2. Design process. The chosen collaborator **conducts the design brief**, and the design manager supports the company throughout the process. The role of the design manager is to promote the company's interests and interface with the design agency from start to finish.

This gives companies the chance to work with experienced design managers – finding them for cooperation is not easy under normal circumstances. The key to the success of the programme is the company's readiness to use its resources, both financial and HR, to notice good ideas and make them come true.

WHY?	WHAT?	HOW?
1. GOAL TO IMPROVE BUSINESS THROUGH DESIGN	**5. ACTIVITIES** TRAINING AND COOPERATION WITH DESIGNER AND DESIGN AGENCY	**9. GOVERNANCE** DESIGN PROMOTION ORGANISATION AND ENTERPRISE ESTONIA
2. SEEKERS MANUFACTURING COMPANIES	**6. SOLVERS** DESIGNERS	**10. BUSINESS MODEL** PUBLIC PROCUREMENT AND COMPANY CONTRIBUTION
3. CHALLENGE FIND NEW PRODUCTS/ SERVICES	**7. INCENTIVES** NEW OR IMPROVED PRODUCTS AND PUBLICITY	**11. IPR** OWNED BY COMPANIES (SEEKERS)
4. SOLUTIONS NEW AND IMPROVED PRODUCTS	**8. DURATIONS** 4+6 MONTHS	**12. REGULATIONS** PUBLIC SELECTION CALLS FOR SEEKERS AND SOLVERS

EESTI DISAINI KESKUS — ESTONIAN DESIGN CENTRE

Full documentation is available to support your agency adopt this initiative.
To know more about this initiative please contact:
info@disainikeskus.ee
www.disainikeskus.ee/en

CO-CREATION & DESIGN

Product Development Project

pdp | PRODUCT DEVELOPMENT PROJECT

The Product Development Project (PdP) **course** is primarily aimed at students of design, business, engineering, and anyone interested in the development of new products. It gives post-grad students an opportunity to **solve real company problems** and to work in multidisciplinary teams. For a company, a PdP project can be a very stimulating and inexpensive way to bring new ideas, technologies, or business plans to life.

This very special whole-year course is aimed at students in the final stage of their studies. After many years of study, the students have the opportunity to apply all their academic knowledge in practice.

WHY?	WHAT?	HOW?
1. GOAL SOLVING INDUSTRY CHALLENGES WITH INTERDISCIPLINARY STUDENT TEAM	**5. ACTIVITIES** PROBLEM BASED LEARNING, RESEARCH, PROTOTYPING AND TESTING	**9. GOVERNANCE** UNIVERSITY
2. SEEKERS ONE MANUFACTURING AND SERVICE COMPANY	**6. SOLVERS** INTERDISCIPLINARY STUDENT TEAMS FROM AALTO AND PARTNERING UNIVERSITIES	**10. BUSINESS MODEL** THE COST IS € 20,000 FOR THE SEEKER
3. CHALLENGE FUTURE ORIENTED PRODUCTS/SERVICES	**7. INCENTIVES** STUDENTS SELECTED TO THE TEAM GET CREDITS	**11. IPR** BELONGS TO THE SEEKER
4. SOLUTIONS NEW PRODUCTS/SERVICES	**8. DURATIONS** 9 MONTHS	**12. REGULATIONS** CONTRACT BETWEEN UNIVERSITY AND SEEKER

Aalto University

Full documentation is available to support your agency if adopting this initiative.
To know more about this initiative please contact:
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www.pdp.fi

TESTING

UX Challenge

The UX Challenge is an initiative implemented by HIT - Hub Innovazione Trentino aiming at supporting SMEs in **testing and improving the user experience with digital products**. Companies apply for the UX Challenge through a public call notice and five products are selected based on specific UX innovation challenges such as improving usability, interfaces, or re-designing user flows. Products may include mobile apps, web apps, or other software.

The UX Challenge lasts two days and is based on the **Design Sprint methodology** applied to products and challenges by teams of students mentored by UX professionals. Each team focuses on a specific product/challenge. Groups of **appropriately selected end users** are involved in testing products and solutions proposed by teams, consisting of prototypes for information architectures, improved interfaces, usability improvement suggestions, and evidence from user testing.

WHY?	WHAT?	HOW?
1. GOAL IMPACT ON SMES AWARENESS OF USER-CENTRIC DESIGN	**5. ACTIVITIES** DESIGN SPRINT INCLUDING THOROUGH TESTING WITH SELECTED REAL USERS	**9. GOVERNANCE** MANAGED BY HIT - HUB INNOVAZIONE TRENTINO WITH SUPPORT FROM REGIONAL PARTNERS
2. SEEKERS 5 DIGITAL COMPANIES	**6. SOLVERS** UNIVERSITY STUDENTS MENTORED BY UX PROFESSIONALS	**10. BUSINESS MODEL** SEEKERS PAY SMALL FEE
3. CHALLENGE FIX USER EXPERIENCE ISSUES IN APPS AND SOFTWARE; DESIGN NEW EXPERIENCES	**7. INCENTIVES** ADVANCED TRAINING FOR SOLVERS; EXPENSE VOUCHERS FOR TESTERS	**11. IPR** SEEKERS OWN IPR OF SOLUTIONS
4. SOLUTIONS NEW INTERFACE MOCKUPS, WIREFRAMES AND PROTOTYPES	**8. DURATIONS** 2 DAY EVENT, 4 MONTHS OF PREPARATION	**12. REGULATIONS** PUBLIC SELECTION CALLS FOR SEEKERS AND SOLVERS

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Full documentation is available to support your agency if adopting this initiative.
To know more about this initiative please contact HIT - Hub Innovazione Trentino:
tech@trentinoinnovation.eu
www.trentinoinnovation.eu/ux-challenge-2/

TESTING

Agile Trialing

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Agile Trialing is an initiative allowing corporations (including public organizations) to engage with technology partners to **test new consumer solution prototypes** in a controlled deployment environment.

Partners are mostly selected in a **procurement process**. Selected companies (normally about three to five) are granted access to the company/organisation's experimentation site to deploy and test the prototype solution. **Trial costs** are covered by the corporate/organisation. Before running trials (normally lasting one month) partners co-develop and plan the pilot with the seeker company. At the end of the trial **audio feedback** is collected from both end users and the testing environment.

It should be noted that the seeker purchases the trial and its results, not the test prototype.

WHY?	WHAT?	HOW?
1. GOAL FAST EXPERIMENTATION WITH AUTHENTIC USER IN THE REAL ENVIRONMENT	**5. ACTIVITIES** CALL FOR PROPOSALS, EXPERIMENTATION/ TESTING, FEEDBACK WORKSHOPS	**9. GOVERNANCE** MANAGED AND FACILITATED BY THE INNOVATION AGENCY AND THE TEST ENVIRONMENT OWNER
2. SEEKERS PUBLIC ORGANISATION, CITY ORGANISATION, CORPORATION	**6. SOLVERS** SMES, STARTUPS	**10. BUSINESS MODEL** TRIALS PURCHASED BY PUBLIC ORGANISATION / CORPORATE
3. CHALLENGE FIND NEW SERVICES/ PRODUCTS AND GET FEEDBACK FROM USERS	**7. INCENTIVES** POSSIBILITY OF A BUSINESS DEAL, FEEDBACK FROM USERS AND SEEKER	**11. IPR** SOLVERS OWN IPRS
4. SOLUTIONS PROTOTYPES TESTED WITH USERS IN REAL ENVIRONMENT	**8. DURATIONS** 1 MONTH FOR CALL, 1 MONTH FOR TEST PLANNING, 2-4 MONTHS FOR TESTING	**12. REGULATIONS** PUBLIC SELECTION CALLS FOR SOLVERS

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Full documentation is available to support your agency if adopting this initiative.
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5. About this guide

INNOCHALLENGE

INNOCHALLENGE

This Guide was developed in the context of **project INNOCHALLENGE**, a European Project aiming at improving the capacity of innovation agencies to design and implement Open Innovation initiatives such as hackathons, prizes, and Innovation Challenges for the benefit of SMEs.

The partners of project **INNOCHALLENGE** are HIT - Hub Innovazione Trentino (IT - coordinator), Business Oulu (FI), and TalTech (EE). Between 2018 and 2019 INNOCHALLENGE collected good practices, investigated the working model of Innovation Challenges, and organized peer-learning workshops for innovation agencies, policy makers, and stakeholders whose mission comprises supporting innovation in SMEs.

www.innochallenge-project.eu

HIT - HUB INNOVAZIONE TRENTINO supports regional business innovation and development through advanced technology transfer and innovation, fostering investments in new technologies, promoting new companies creation and running open innovation programmes to address industry challenges.

www.trentinoinnovation.eu

BUSINESS OULU is an enterprise owned by the City of Oulu. BusinessOulu is responsible for implementing Oulu's industry policies, and providing growth companies with development services. BusinessOulu creates an operating environment for businesses and entrepreneurship that promotes employment and the creation, operation, growth and competitiveness of companies.

www.businessoulu.com

TAL TECH Tallinn University of Technology (TalTech), is the flagship of Estonian engineering and technology education. TalTech runs Mektory Innovation Centre with startup incubator and accelerator programs.

www.ttu.ee

Project INNOCHALLENGE has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 804454

ACKNOWLEDGMENTS

INNOCHALLENGE project partners are strongly thankful to the following organizations for having provided examples of Innovation Challenges: University of Trento, Trentino Sviluppo, Tehnopol Tallinn, Design Centre Estonia, AAlto University. A special thanks also to Andy Zynga from EIT Food, Marco Zappalorto from Nesta Italia and Prof. Federico Frattini from Politecnico di Milano School of Management for having added crucial know how to the Guide.

DISCLAIMER

The information and perspectives set out in this publication are those of the authors and do not necessarily reflect the official opinion of the European Commission or the project partners' regions. Neither the European Commission institutions and bodies nor any person acting on their behalf may be held responsible for the use that may be made of the information contained therein. The information is provided without assuming any legal responsibility for correctness or completeness.

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