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Navigating EU Projects

Communication, Dissemination
and Exploitation Tools for Success



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Navigating EU Projects. Communication, Dissemination and Exploitation Tools for Success

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Summary

Navigating EU Projects

Communication, Dissemination and
Exploitation Tools for Success

The guidelines for communication, dissemination and exploitation ‘Navigating EU Projects’ have been developed in the frame of the [Industry4.E Lighthouse Initiative](#), conceptualised and supported by the Electronic Components and Systems for European Leadership (ECSEL) Joint Undertaking. This booklet provides an understanding and the motivation to build and implement a quality communication, dissemination and exploitation strategy and helps deciding which tools to use for your EU projects.

This booklet presents an efficiently searchable [catalogue of tools for communication, dissemination, and exploitation](#) in accordance with the current requirement of your project. This resource provides real-life success stories, best practice implementation, and notable project results from the European Commission’s Horizon 2020 Framework Programme (2014-2020) for Research and Innovation, including examples from the Industry4.E Lighthouse Initiative.

The practical examples and tailored recommendations listed in this booklet will enable project managers to improve the impact (societal, economic, environmental) of their EU project by providing methods and [success stories to improve knowledge transfer and exploitation of results](#), to targeted and non-targeted audiences.

The information in this booklet has been condensed from expert input over a 2-year period through the activities of the Industry4.E Lighthouse Initiative and further improved through the long-standing experience from Steinbeis2i and AquaTT in the discussed fields. Through the Industry4.E Lighthouse community the authors have co-opted the knowledge, lessons-learned and best practice from a variety of experts in the field to [improve the impact associated with outreach activities](#) in EU projects.

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Introduction

Navigating EU Projects

Communication, Dissemination and
Exploitation Tools for Success

The digitalisation of industry – **Industry 4.0** – is rapidly transforming all stages of the production value chain of goods globally, bringing with its enormous challenges as well as opportunities. Advances in robotics, data collection, cybersecurity and other technologies are creating increasingly efficient, flexible, and tailored manufacturing processes. The explicit aims of this development are longer and healthier lives, a cleaner environment, safe and flexible mobility while assuring security, safety, and privacy for everyone. If exploited, these technologies could create huge growth in European industries.

The **European Commission enables industries and research institutes** to stay at the forefront of increasingly complicated technologies including all its economic, political, environmental, and social factors. The complexity of the products and services means that no single company or country can master all technologies on their own. To support this initiative, it is crucial to communicate and collaborate between projects, companies and across borders. The individual and communal benefits of sharing results, processes and lessons learnt are an important asset to strengthen the European innovative momentum, bringing prosperity for its member states and an economic advantage on an increasingly digital global market.

ECSEL JU

Electronics Components and Systems for European Leadership Joint Undertaking (ECSEL-JU) is an **EU-driven public-private partnership**, funding innovation in electronic components and systems. Through the ECSEL-JU, European industry, SMEs and Research and Technology Organisations are supported and co-financed by ECSEL participating states and the European Union. ECSEL-JU has created “Lighthouse Initiatives” as they identified the need to better coordinate and link Research, Development and Innovation (RD&I) activities taking place to **help European industry achieve digital transition** and strengthen Europe’s competitiveness and leadership. It is more important than ever that European companies and countries join forces to share and incorporate each other’s R&D resources. Three Lighthouses have been launched to date; Industry4.E, Mobility.E and Health.E Lighthouse Initiatives lead the way for private-public collaboration guaranteeing safety and security and establishing common standards and regulations yielding real benefits for industry and citizens.

Industry4.E Lighthouse Initiative

The Industry4.E Lighthouse Initiative aims to increase the impact of RD&I projects by promoting and facilitating continuous collaboration and knowledge transfer within the ECS ‘Digital Industry’ community as well as between the ECS community and technology users, decision-making bodies and society so that technologies and innovations have a real impact on business, the economy and consumers. The Industry4.E Lighthouse provides domain-specific [guidance in the field of microelectronics and ICT for Digital Industry](#) to the ECS community and to the Digital Industry entities dependent on ECS technology. This supports the European ECS sector to be a strong leader and remain at the forefront of a globally competitive Industry 4.0, constantly strengthening innovation capabilities, and creating economic and job growth. Operating across project, funding, and national boundaries, Industry4.E is expected to bring together relevant RD&I projects across various funding programmes. The Industry4.E Lighthouse Initiative aims to overcome the traditionally fragmented structure of individual projects and activities, serving as a community communication platform for all stakeholders [facilitating cooperation as well as advising, and sharing best practice](#), in order to achieve impact and exploit project results.

CSA Industry 4.E

To support the implementation of activities in relation to the Industry4.E Lighthouse, ECSEL JU via Horizon 2020 have funded a Coordination and Support Action (CSA) from October 2018. Bringing together a select team of experts from across Europe, this EU-funded project aims to support the [Industry4.E Lighthouse Initiative Advisory Service \(LIASE\)](#) in promoting greater interaction and cooperation between digital industry stakeholders. The CSA-Industry4.E project also provides for strategic planning initiatives in raising public awareness and stakeholders' outreach to the general public. Approaches include a mix of mapping work, expert groups, workshops, campaigns and online tools to be expanded throughout the project. This holistic approach aims to fully realise, develop and expand project impacts and enhance European capability, capacity and competitiveness for the future digitalisation of industry. The CSA-Industry4.E aims to:

- Support the Industry4.E LIASE in establishing the Industry4.E Lighthouse;
- Actively assist in enabling successful execution of the Digital Industry roadmap;
- Engage research communities – coordinate the relevant stakeholders, project consortia and policymakers;
- Facilitate, support and assist Industry4.E Lighthouse projects in effectively exploiting project results;
- Promote the Industry4.E Lighthouse visibility; and
- Develop and implement a public engagement and outreach strategy to raise the visibility of Industry4.E Lighthouse to the broader public and related initiatives.

How to interact with this Booklet

Navigating EU Projects

Communication, Dissemination and
Exploitation Tools for Success

This booklet is not meant to be read cover to cover. Instead the Navigation of EU Projects has been designed to:

- provide a Communication, Dissemination, and Exploitation (CDE) induction for the reader;
- provide the reader with the tools to carry out the daily tasks concerning CDE activities in research and innovation projects funded by the European Commission; and
- provide a list of links, recommendations, references and checklists.

The first section of the booklet covers an **introduction to the fields of CDE**. It describes the importance of a well-designed CDE strategy, how to do it and the benefits and obstacles to be aware of.

To correctly identify the appropriate course of action, it is important to understand one's goals, one's current position and the necessary steps to get from one to the other. The booklet helps build an **understanding of the different concepts as well as an inspiration** for the benefits of collaboration, how to maximise impact and to develop the joint venture to its highest potential.

Once the basics have been established, the booklet is structured like a catalogue to support the daily CDE tasks. **The Tool Compass** supports the appropriate tool selection from the catalogue based on your needs, without knowledge of the supports available, providing an overview of commonly applied tools, a comprehensive guideline on what to consider and a pool of established resources to dig deeper. This will give the reader the chance to jump right into the desired tool and gain the required basics.

The Tool Compass

Use the compass as a guide to select the most appropriate CDE tool for your project implementation. If your project is starting, focus on the tools listed in the 'North' of the compass. If your project is coming to an end, but you still need to engage public stakeholders focus on the tools listed in the 'Southeast' of the compass. Tools have been selected to be either inwardly focussed (private) or outwardly focused (public).

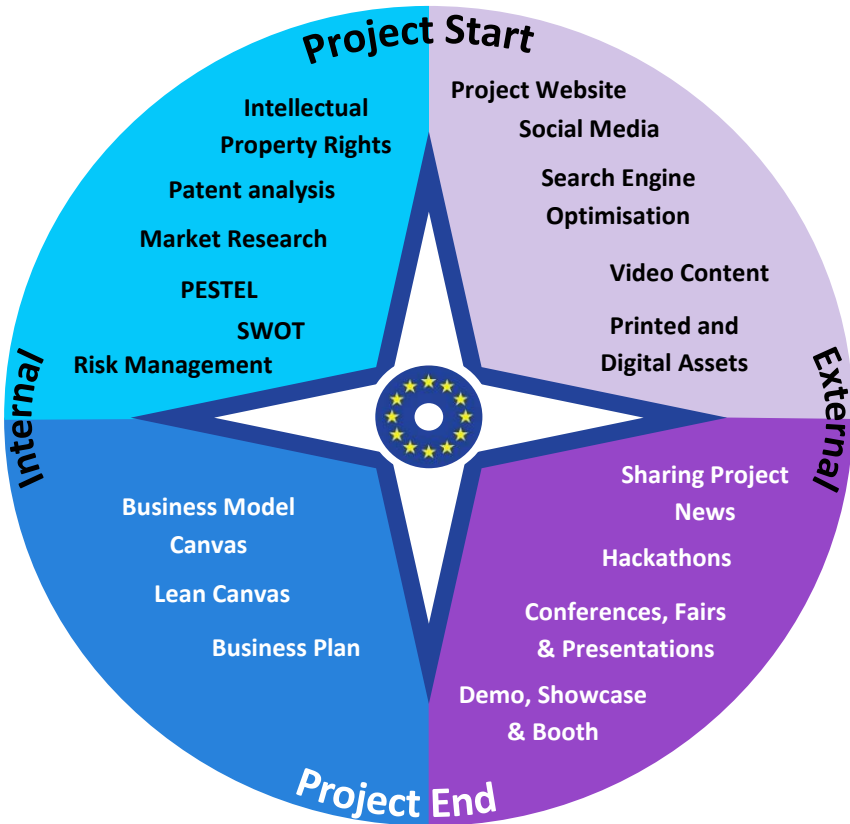


Figure 1: CDE Tool Compass | Source: Steinbeis 2i

Communication, Dissemination & Exploitation

Navigating EU Projects

Communication, Dissemination and
Exploitation Tools for Success

A well-defined communication, dissemination and exploitation strategy and Plan is crucial to effectively raise awareness of the projects aims and objectives, disseminating its scientific results as well as facilitating the uptake of new technologies, and communicating the project story to the general public demonstrating the impacts and benefits of strong EU support of Industry4.0 projects to EU citizens. This chapter gives an overview on some definitions and describes the main elements to build a communications, dissemination and exploitation strategy and plan.

Communication, Dissemination and Exploitation Activities

CDE are closely intertwined and explained and further explained as follows:

- **Communication activities** aim to give visibility to the project and its results to a broad, general audience, including the interested public. The target groups of communication activities are therefore not only the scientific and industrial community, but include potential end-users, local authorities, policy makers and the general public. They complement the dissemination efforts as they add a public value to the achievements of the project by ‘translating’ the sometimes-complex scientific results into easy to understand media resources emphasising mainly the impacts and benefit. Communication includes the mass media and general public to inform and engage with citizens and society showing the benefit and potential social impacts of leading-edge research projects.
- **Dissemination activities** focus on sharing the project results, once they are available, with specialist audiences. Dissemination can be performed through scientific publications, conferences or briefings to transfer knowledge and results to enable their uptake. The dissemination workflow focusses on informing researchers, industry, potential customers and other professional stakeholders (e.g. device end-users) about the technical project achievements and the benefits from the implementation of new technologies/products/services for different applications.

- **Exploitation and market uptake measures** target knowledge transfer, with the aim to exploit the project results to potential technology adopters at a scientific level. Dissemination activities foreseen include the project relevant scientific and economic groups in order to add value to the project's development and implementation. Exploitation activities aim at successfully implementing the project results in research and industry, whereas the market uptake measures aim to ensure the market adoption of the products developed in the project.

Communication

Taking strategic and targeted measures for promoting the action itself and its results to a multitude of audiences including the media and the public, and possibly engaging in a two-way exchange:

- demonstrates how EU funding contributes to tackling societal challenges,
- reaches out to society as a whole,
- is strategically planned with communication objectives and not only ad-hoc efforts, and
- uses pertinent messages, right medium and means.

What has been done?

Dissemination

Making the results of a project public by any appropriate means, including scientific publications in any medium:

- circulates the knowledge and results to the most appropriate target audiences,
- enables the value of results to be wider than the original focus,
- Essential element of all good research practice and vital part of the project plan,
- Strengthens and promotes the profile of the organisation.

What came out of it?

Exploitation

The utilisation of results in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities.

- Makes use of the results: Recognising exploitable results and their stakeholders,
- Specifies the value and impact of the R&I activity for social challenges,
- Can be commercial, societal, political or for improving public knowledge,
- Project partners can exploit results themselves, or facilitate exploitation through others.

What will we do with it?

Figure 2: Communication, Dissemination and Exploitation overview | Source: Steinbeis21

Development of a Project Dissemination and Exploitation Plan

A project dissemination and exploitation plan serves the purpose to jointly plan, monitor, assess and report on dissemination and exploitation activities. It represents a living document, evolving during the project lifetime. The figure opposite shows activities and interconnections between CDE activities along an exemplary timeline of three project years. The development of the project communication, dissemination and exploitation plan should be an integrated approach, where strategic aims, activities and applied tools work hand in hand to support each other.

While communication activities are performed from the very start of the project, to raise awareness on its objectives and aims, building up the relevant target audience, and network with related communities above others, dissemination and exploitation activities develop when project results become available. With this, **target groups will evolve** during the project's lifetime. Optimal channels may vary, and communication and dissemination materials need to be constantly adapted. Moreover, it is highly advisable to collect feedback and analyse the outcomes of activities (hits on website and page views, followers on social media, feedback on workshops, referencing publications, etc.), to flexibly adapt and fine-tune the approach during the project duration.

A first **draft is usually described within the EU Project proposal** and then updated early in the project. For the early phase of the project, the overall objective of communication and dissemination will be to raise awareness on project aims and expected results within the public, scientific community and the manufacturing industry.

This **dissemination and exploitation plan should be a living document** and therefore updated regularly considering the assessment of activities performed and planning for the upcoming period. For an effective dissemination and exploitation plan, it is essential to get a clear picture of the dissemination aims and messages, identify the suitable dissemination channels, analyse the project's target groups and tailor the communication and dissemination material to them. Moreover, the expected impacts of the activities should be clear and measurable.

The development of the **exploitation strategy is a flexible process** that must be tailored to the need of the project and project partners. In order to build the strategy efficiently, the projects' exploitation strategy and the partners' individual strategies must be considered in parallel. It is highly recommended to build the exploitation strategy and plan together with the partners included in exploitation workshops to be organised by the exploitation manager. This will provide the necessary transparency to allow partners to get the understanding about each other's expectations. The individual methodologies and tools to create the overall dissemination and exploitation plan are described in more detail within the coming chapters.

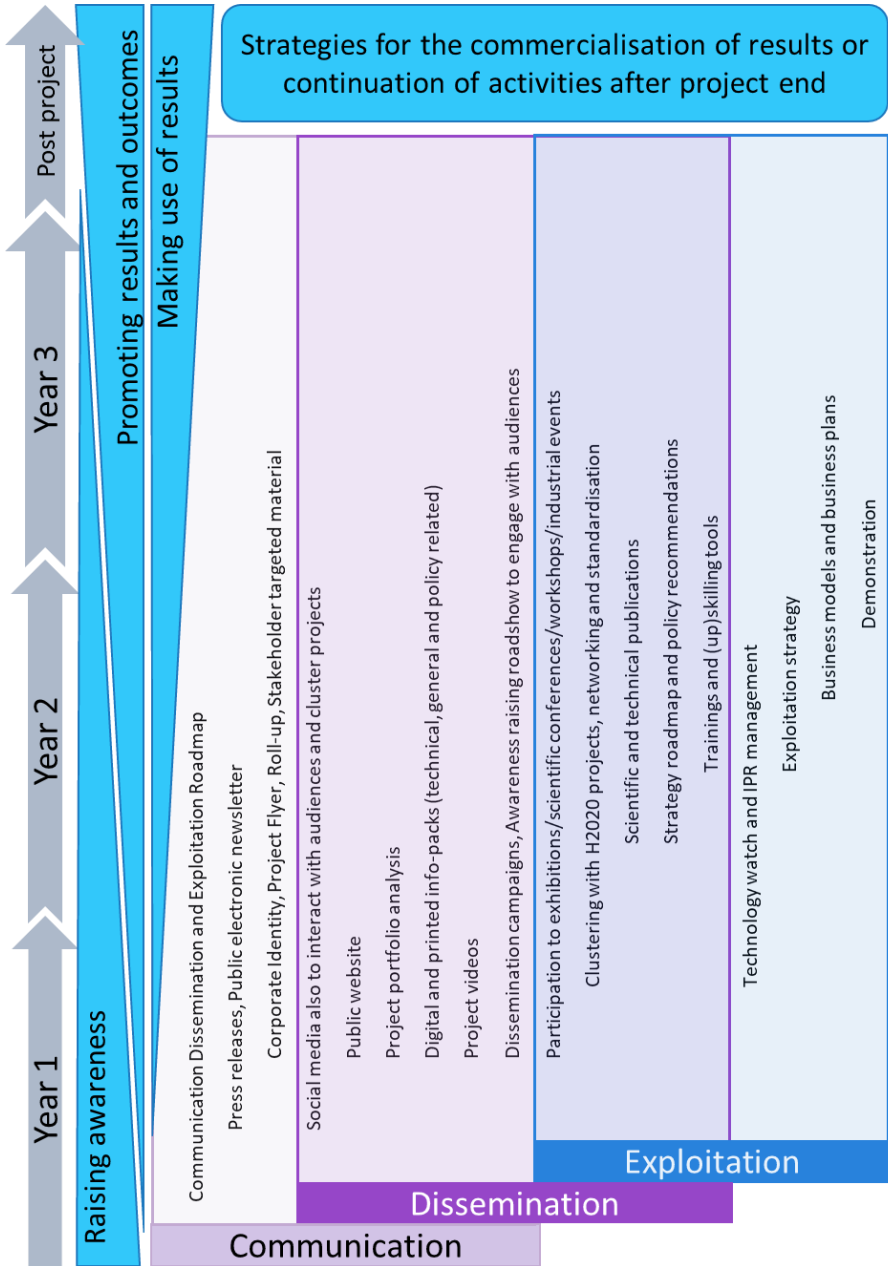


Figure 3: Communication, Dissemination and Exploitation Strategy overview | Source: Steinbeis 2i

Development of the Dissemination Strategy and Approach

As not all data can be disseminated and shared, because some innovations should rather be protected and exploited commercially, the consortium is recommended to include a **Data Management Plan (DMP)** into its strategy. Such a DMP defines what data the project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved. The Communication, Dissemination and Exploitation as well as the Data Management Plan detail which results should be disseminated and where protection is needed to exploit them commercially.

For the results to be disseminated, it is essential to identify the aims of such dissemination, analyse the project's target groups and tailor the communication and dissemination material and messages to them. The aims of dissemination (**WHY** are we performing dissemination activities?), should be brought in line with the planned activities (**WHAT** dissemination activities do we perform?) and the planned implementation (**HOW** and **WHEN** do we implement these dissemination activities?). Activities should already be planned having specific Key Performance Indicators (KPIs) in mind (e.g. number of peer reviewed publications, number of participants in events, European coverage, and number of investors addressed).

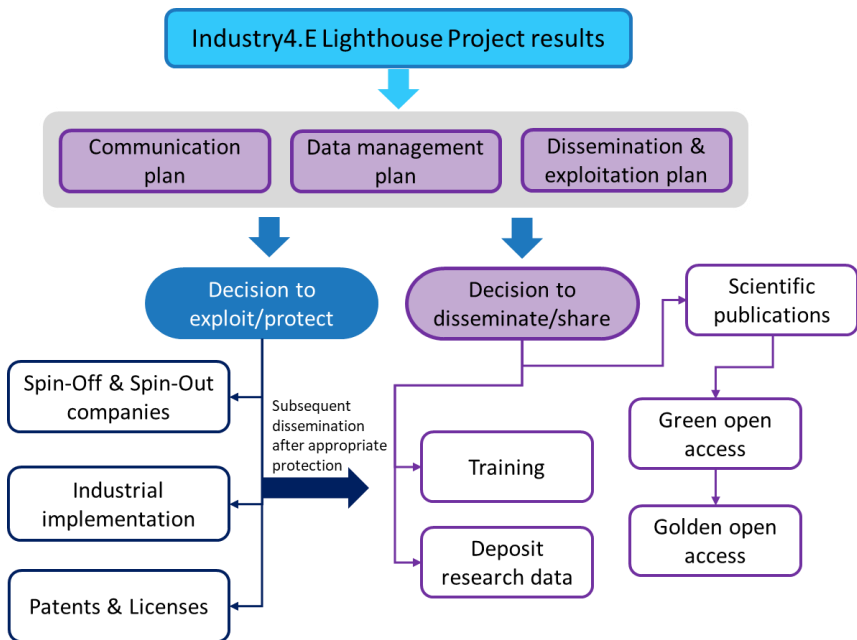


Figure 4: Project results usage plan | Source: Steinbeis 2i

The **target groups** can include a variety of stakeholders. It is important to check who exactly should be addressed according to the project needs. Projects on lower Technology Readiness Level (TRL) scales will usually disseminate their disruptive findings to the scientific community. Projects working on higher TRLs might already address the manufacturing industry or investors with their newly developed products or services. It is very helpful to already define contact points within the consortium at an early stage. Target groups may include any person or group who can affect, or be affected by, the achievements of the project objectives, or influence these objectives.

Activities funded under the Europeans Union's H2020 Programme can 'pay back' to the overall community by publishing and sharing their results. Publications must be open access (green or gold) and meta-data associated to the publications are suggested to be shared in open access repositories like [OpenAire](#).

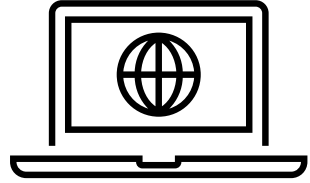
Methods and Tools for Project Communication and Dissemination

With respect to the Industry4.E Lighthouse projects' aims, size, duration and consortium size and composition among other factors, the communication, dissemination and exploitation plans can vary enormously from one project to the next. It is of utmost importance to tailor the strategy to the projects' needs and the possible users of the project results. Nevertheless, there are several useful methodologies and tools, which can be applied in a varying composition to best suit a project. Some of the methodologies and tools are described within this booklet. To ensure the highest EU Project success, a concerted communication and dissemination strategy is considered an essential factor. It is essential to clearly define the communications and dissemination aims and messages, analyse the projects' audience and target groups and identify the suitable channels, to approach and engage them with tailored materials and information. To constantly improve activities, the impact of activities should be monitored, and feedback integrated in updates of the strategy, communication and dissemination plans.

Project Website

Why have a Project Website?

A website representing your EU project is essential and is one of the most important forms of communication for the life of your project, and possibly beyond. Websites are often the first-place users turn to for information. If the website is clear, user-friendly, intuitive, with up-to-date information and posts, viewers will have a positive impression about your EU project, and you're likely to see your audience and outreach grow. In contrast, if a website is out-of-date and confusing to navigate, you run the risk of alienating your target audience.



The aim of the EU project website is to have a public-facing asset, serving as the main communication platform for all activities in your EU project

How to Do It

There are several points to consider to have a project website up and running:

- **Start early.** After your project contract has officially been signed, it would be a good idea for the communication and dissemination partner to brainstorm website needs with the coordinator.
- **Find a professional.** Most project budgets should include funds specified for the creation of a website. Costs can vary greatly depending on your location but do some research and build a list of web development firms to contact. Looking at past examples of their work gives you a good idea of what to expect.
- **Ask for multiple offers.** Asking about 3-4 firms for a quote for a website design will give you a clear range of options to narrow down to the best one.
- **Select the best offer.** The 'best' does not always mean cheapest. Be sure to look at what other supporting services beyond website design will be provided (web hosting, SEO, subscribers etc.). Speak with the firm to clarify your expectations and needs and get familiar with how they treat customers.
- **Look at examples.** Visit [CORDIS](#) and check the websites of other EU projects to get an idea of the 'look & feel' and how to present your information.



HELPFUL TIPS!

Project Website

- ✓ Integrate posts from your social media feeds to provide easy access to your network activities
- ✓ Integrate videos as a simple way to present content and break up text
- ✓ Include interactive elements to actively engage the visitor
- ✓ Do not over-clutter the website with text
- ✓ Make sure the site is adapted for mobile devices
- ✓ Be aware of loading speed by monitoring the size of images and videos
- ✓ Use high-quality graphics - a picture is worth a thousand words
- ✓ Regularly update contents with relevant posts to appear in top search results

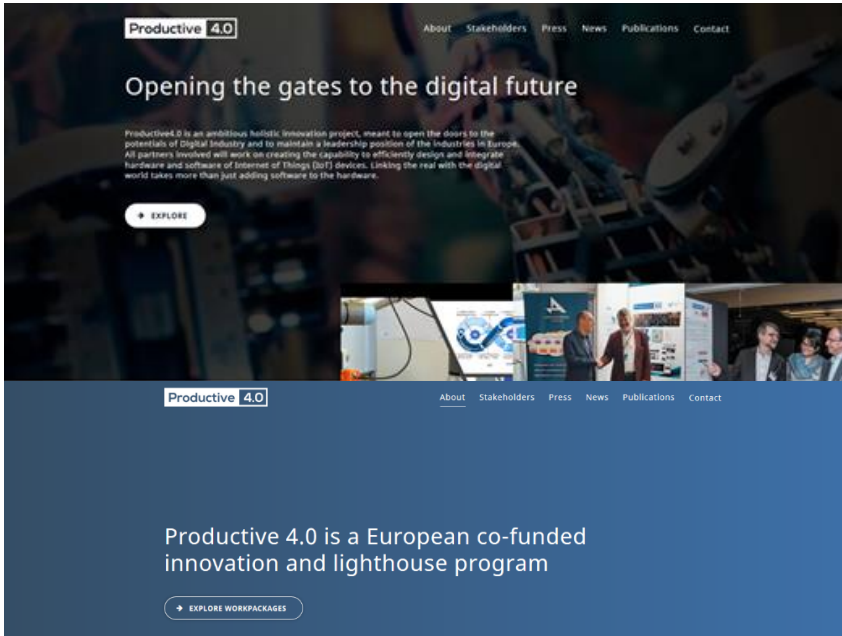
- **Layout your content.** Creating a mind map or simple graphic will help the website developer understand how to place things on your website. Draft the text content yourself to make sure it sends the right message and is mistake-free.
- **Be open to changes.** Even though you probably had a certain colour scheme and logo in mind, be open to other suggestions from the selected web design firm.

Special Considerations

A very important requirement of an EU project website is that the **EC is properly acknowledged**. Include the EU flag and official funding statement at the footer of all website pages. With an EU project website, it is always important that the consortium agrees upon how long the website should remain live, even after the project close. It is also vital to clarify the webhosting and domain hand-over with the web design firm at the early stages of considering an offer. Unless you or your company are specialised in web design, it is not recommended that you take on this task by yourself. A professional designer's touch will make all the difference with clarifying your project's branding and corporate identity.

Success Story

There are several great websites from the Lighthouse Initiatives of the Industry4.E program, but one great example is the Productive4.0 website. This project's website has a sleek, clean colour scheme, and easy-to-navigate pages, as well as modern features like a moving header image. This website captures the attention of the viewer and has a well-planned, effective design.



IMPROVING THE DIGITAL INDUSTRY

A user platform optimizing industrial processes

The aim is to create a user platform across value chains and industries, thus promoting the digital networking of manufacturing companies, production machines and products.

The participating partners will examine methods, concepts and technologies for service-oriented architecture as well as for components and infrastructure in the Internet of Things. Other aspects are standardization and process virtualization, in other words, simulating manufacturing processes to optimize real workflows. The platform can be used in the three interlocked process pillars for managing the supply chains, the product life cycle and digital production.



Source: <https://productive40.eu> | Accessed 2020

Another good example of an exemplary website layout from an Industry4.E Lighthouse Project is from **iDev40**. They included a clickable consortium map and a clear, interactive navigation bar with a uniform colour scheme.



Source: <http://www.idev40.eu> | Accessed 2020

Online Resources



- EU project website best practices
- European Commission: Communicating your project
- The ultimate guide to web design 2019
- Web design for beginners



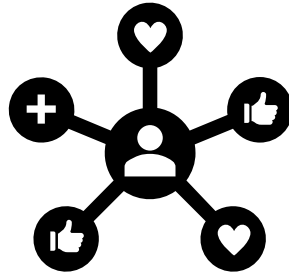
Social Media

Why use social media? How effective can it be?

Using a relevant social media channel (such as **Twitter**, **LinkedIn**, **Facebook**, **Instagram**, **Reddit**, **YouTube**, **TikTok** etc.) allows project teams to reach a wide and targeted audience both for project communications and dissemination. Social media helps to maximise reach, impact and successful exploitation of research results. Channels can be used to post original content, short comments, and announcements, as well as to share and comment on relevant content from other sources. Regular activity on a social media channel enables your project to build a community of like-minded individuals, projects, and organisations who will potentially be interested in your results.



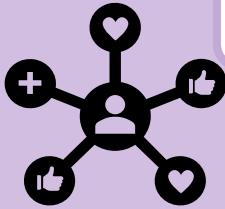
The aim of social media is to create a following on relevant channel(s) and use it to maximise reach, making your project and results more visible to target audience group(s)



How to do it:

When designing and regularly reviewing your social media strategy:

- **Align goals with project objectives** – project and EU funding visibility, team reputation, results visibility and uptake.
- **Know your target audience** – the language to use, the keywords and interests.
- **Identify key metrics** for measuring success.
- **Build a community** including connecting with individuals as well as already established groups for wider reach.
- **Select key messages** for your channels and craft posts accordingly – paid/organic/mix, videos/images/text/#tags.
- **Take a digital marketing approach** – identify brand personality, tone of voice, key content pillars.
- **Follow the 80/20 rule:** 80% value adding content with 20% promotional content. Value-adding content includes for example:
 - ✓ Expert commentary – retweeting relevant content while adding comments adds value.
 - ✓ Free resources, competitions, related relevant news.
 - ✓ Related STEM education and careers promotion.
 - ✓ Engage your audience with interesting statistics, visuals, personal insights and stories.



HELPFUL TIPS!

Social Media

Consider people working and spending most of their day online, and how to make your posts appeal to them.

- ☑ Clear, concise, honest messaging
- ☑ Acknowledge challenges but focus on solutions: celebrate your good news
- ☑ Link content relevant to current affairs
- ☑ Be human: show how your project/company/staff are handling challenges
- ☑ Offer free resources or supportive materials, processes and solutions
- ☑ Test and adapt content during the project to see what is most effective

Special Considerations

Messaging through social media channels is more instant than writing project articles or blogs on news or events. While this cannot replace full articles, it can help gain traction and visibility by being topical and in the moment and can link to more detailed information available on other platforms.

Paid content does not show up on your followers' timelines unless that follower was specifically targeted and is not visible in search results.

Acknowledge funders by including their logos and official funding statement (as specified in your contract). In some channels where this is not possible due to character limits (e.g. Twitter), pin a tweet with funding acknowledgement or put it in your profile description.

You can also tag or include #tags of funders in your posts (e.g. [@ECSEL_JU](#), [@EU_H2020](#) or using [#ECSELJU](#) [#H2020](#))

Success Story

The **Industry4.E Lighthouse Citizen Engagement Social Media Campaign** was run by the communications partner in CSA-Industry4.E and was very successful in attracting a lot of engagement with its posts. Effectively using hashtags, relevant, high-quality images, being timely and 'on trend' with news, together with an appropriate blend of organic and paid posts, led to millions of impressions online.

The campaign was run over two phases, with the team monitoring and reviewing the progress of each phase and fine-tuning the content and the strategy accordingly. The campaign statistics show that the target audience was reached. On Facebook, student age groups 13-17 and 18-24-year-olds made up most of the audience reach (~71%).

The number of impressions on Facebook was over 5 million, with posts reaching over 4.6 million people. The cost per 1000 video impressions was €0.48, a great achievement compared to the usual industry average of around €6.

- Audience:** Students, parents and teachers
Channels: Twitter, new Facebook and Instagram account
Goal: Awareness of Industry 4.0 to help fill skills gap, build new audience
Metrics: Reach and engagement
Approach: Mix of organic and paid content
 Test and adapt content according to what is most effective
 Value-adding for audience (interesting statistics, engaging visuals)
 Content calendar, original content three times per week
Budget: €10,000 for 3-month campaign

Image 1:

Twitter post 15 April 2020

Twitter impressions: >3000

Total engagements: 76



Figure 5: Industry4.E STEM Career
 Source: <https://twitter.com/Industry4E>
 Accessed 2020

Image 2:

Twitter post 19 May 2020

Twitter impressions: >5000

Total engagements: 88



Figure 6: Industry4.E Women in Tech
 Source: <https://twitter.com/Industry4E>
 Accessed 2020



Industry 4.0
INITIATIVE FOR EXCELLENCE IN DIGITAL LEADERSHIP

Industry 4.0 needs you!

Digitalisation of industry – Industry 4.0 – is opening many exciting opportunities in Europe.

From factories to farms and everything in between, digitalisation will make operations more efficient and sustainable, creating huge benefits for our society.

HELP FILL THE SKILLS GAP - JOIN THE INDUSTRY 4.0 REVOLUTION

Follow your passion and see where it could take you with Industry 4.0!

Would you like to be on a team of creative problem solvers in-tune with societal challenges, and coming up with innovative solutions?

For more information, visit industry4e.eu/careers

Skills areas: Data analysis, Software and applications development, Digital ethics, Collaborative robotics, Product innovation and materials, AI and machine learning, Big data, Augmented & Virtual reality, Digital modelling and simulation.

Social media icons: Instagram, Facebook, Twitter

Figure 7: Industry 4.0 Career opportunities | Source: AquaTT

The social media campaign highlighted the growing skills gap among graduates and workers who need to up- or re-skill to fill emerging, automated job roles. These new roles require people with a mix of digital competencies and soft skills, which include innovation, creativity, communication, imagination and emotional intelligence. This skill gap has highlighted both the need for changes throughout early education systems and the need for lifelong learning.

Campaign summary

Facebook: Reach: >4.6m Impressions: >5m

Instagram: Reach: >3.4m Impressions: >3.8m

Twitter: Impressions:>300k Video views:>79k

Overall: 18-24-year-old audience made up almost 50% audience reach. The second audience category was 13-17 (21%), the most engaged group was 25-45.

Online Resources



- H2020: Social media guide for EU funded R&I Projects
- NCCPE Guide: What works – engaging the public through social media
- Engaging with scientists and the public on social media
- How to develop a social media science plan



Search Engine Optimisation (SEO)

What is Search Engine Optimisation?

Search Engine Optimisation (SEO) is the process of improving your website so that it attracts more visitors from search engines. By using digital spiders that crawl through pages and content, search engines look for the most relevant, useful, and trustworthy results and rank pages by popularity, authority and quality of the website. In the frame of SEO, 'keywords' are words and phrases that searchers enter into search engines to look for information. Optimising pages around a keyword increases the chances of ranking higher.



The aim of SEO is for a website to rank among the top organic search results. Optimising pages around a keyword increases the chances of ranking higher

How to do it

There are several easy steps that can be taken to optimise a website:

- **Create a list of relevant keywords** based on your target group: use natural language and variations of one keyword.
- **Optimise your pages** based on keyword research: choose one primary keyword per page.
- **Keyword variations** should appear in the URL, headings, body text, meta-title /description and alt-text of images.
- **Text should be clearly structured** and easy to read: one major heading per page, short sentences, bullets, and relevant links.
- **Add images**, use trust elements like certificates / testimonials, eliminate error pages and optimise page speed.
- **Regularly update your content**: consider adding a blog or other content formats such as videos, whitepaper.
- **Promote your content**: e.g. on partner websites, in social media, in newsletters.
- **Track your success**: use tools like [Google Analytics](#) to monitor KPIs like visits, bounce rate, time on site.



HELPFUL TIPS!

Search Engine Optimisation

- ✓ Optimise your page around a longtail keyword
- ✓ Use natural language searchers would use
- ✓ Mix up content formats
- ✓ Adapt content according to what works
- ✓ Optimise your website for mobile use

videos for various EU projects, improved the visibility of their website from 16% to 94% through simple SEO measures.

Special considerations

SEO is a useful, free tool to improve the visibility of your project website. It acts as inbound marketing, allowing potential customers to find you when they want to. As such, it connects you to highly promising leads looking for your service. Additionally, it is received more positively than traditional out-bound advertisement. However, there is a lot of competition on the web and depending on the popularity of a keyword, it can be very difficult to achieve a top position in the search results pages without making use of paid Google advertisements.

Success Story

kambeckfilm, a German film production company which has produced



FILMPRODUKTION

Online Resources



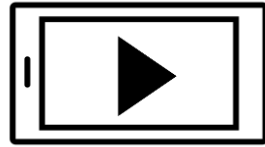
- Keyword tool
- Answer the public search insights
- Google trends
- Google page speed insights



Video Content

Why use video content?

The statistics speak for themselves: a website is 53 times more likely to reach the front page of Google if it includes video. Social media posts with video generate 48% more views and 1200% more shares than text and image content combined. (Source: [Biteable](#))



The aim of videos in CDE is to present your message in a visually appealing way to your target audience

How to do it

When creating a video to communicate about a project, the following points are worth considering:

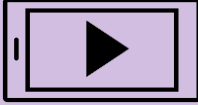
- **The CDE Strategy** should be considered when choosing video content.
- **A clear message and target audience** should be known when choosing video content.
- **Content should be adaptable** to perform when being viewed on any device (smart phones, tablets, laptops, PCs).
- **Subtitles should be considered** so video content can be watched without sound.
- **A clear call to action** should be considered so the audience can connect.
- **Understand your KPIs** such as views, comments etc. as they serve to monitor success.

Special Considerations

Videos generate considerable engagement and can increase traffic to, and time spent on a website. However, if the aim is to create a professional high-quality video, it takes time, skill, and resources. For a video highlighting the project to the public, this certainly is a worthy investment. If you are looking for content for social media that is interesting and readily available, consider taking short videos such as an interview with project team members talking about their role and results in the project. Even if the 'self-made' video is not a professional production, it will still serve its purpose.

Note however that creating a great video (one that stands out from the crowd/noise) and putting it online is only half the work! You also need to get people to watch the video! Consider that everyone has a camera these days. For example, ~300 hours of video are uploaded to YouTube per minute. You need a strategy to get people to find and watch your video – target groups, where they hang out/what online groups they are in and join the groups etc. Consider also using paid advertising to get to them where necessary.

HELPFUL TIPS!



Video Content

- ☑ Keep it short: about 2 min is enough, especially if the video is meant to be posted on social media
- ☑ Promote your video: upload it to your website and social media channels or include it in presentations
- ☑ Do not invest a lot of money without advertising the result
- ☑ Upload the video directly to social media platforms

Success Story

MANTIS provides a great example of a professional video highlighting the project. This clear message and catchy content have more than 1700 views on the **Mantis YouTube** channel.



Source: www.mantis-project.eu
Accessed 2020

For an example of shorter, more spontaneous, and less complex videos, check out the **Productive 4.0 YouTube** channel, which contains a series of short partner interviews on project results.



Source: https://youtu.be/oH-j_Ka2aqq
Accessed 2020

Online Resources



- 10 Quick tips for creating compelling videos for social media
- Visme video tips
- OpenShot: Open source video editing software
- Cordis: Videos from H2020 EU funded projects



Printed and Digital Assets

Why consider printed and digital assets?

Engagement is key for project exposure and exploitation activities. Knowledge Transfer (KT) and successful uptake is dependent on 2-way exchange between knowledge owners and end-users. Printed and e-products are assets within an exploitation strategy. Rarely can assets alone achieve successful KT, rather they are assets to support a communication, dissemination and exploitation plan.



The aim is to aid and enhance engagement with the project, providing clearer or more effective communication, saving time and/or providing baseline knowledge to frame a discussion

How to Do It

When creating printed and digital assets for your EU project, the following points are worth considering:

- **Bespoke assets:** Decide on the purpose of your asset and how it will be used. Make an asset to suit the channel – social media, website, physical or digital event.
- **Build capacity:** Make sure your team is familiar with the assets created for the project and how to use them to engage, and feedback on, the stakeholder uptake.
- **Ensure engagement channels:** Ensure there is a clear easy way for interested stakeholders to engage with the project team and a follow-up action, especially with online material.

Special Considerations

When using infographics to highlight key project achievements, they should be designed to be standalone, attractive, peak curiosity, fit for purpose, and link to more information. Have clear communication objectives to create purposeful videos. See [video](#) for more tips. Look at tailoring your website for end-users towards the end of the project to filter and organise the content for different target audience(s): industry, policy, science, society.

Online Resources



- **Scientific illustrations/graphical abstracts: Mind the Graph**
- **5 tips for making the most of your print marketing materials**
- **Paper beats digital in many ways, according to neuroscience**
- **EASME: Communication toolkit**





HELPFUL TIPS!

Printed & Digital Assets

- ☑ For electronic format: make your asset user-friendly, multiple-device-friendly
- ☑ Include content links and make content findable/searchable with hyperlinks
- ☑ Ensure that all graphics are uploaded in high-resolution

Success Story

The Industry4.E Lighthouse Project **SMARMS** produced detailed infographics to showcase their work on autonomous underwater and surface vehicles for maritime and offshore operations and missions on the seafloor.

Infographics are a great way to display strategy, workflow, and processes in a concise and intuitive manner.

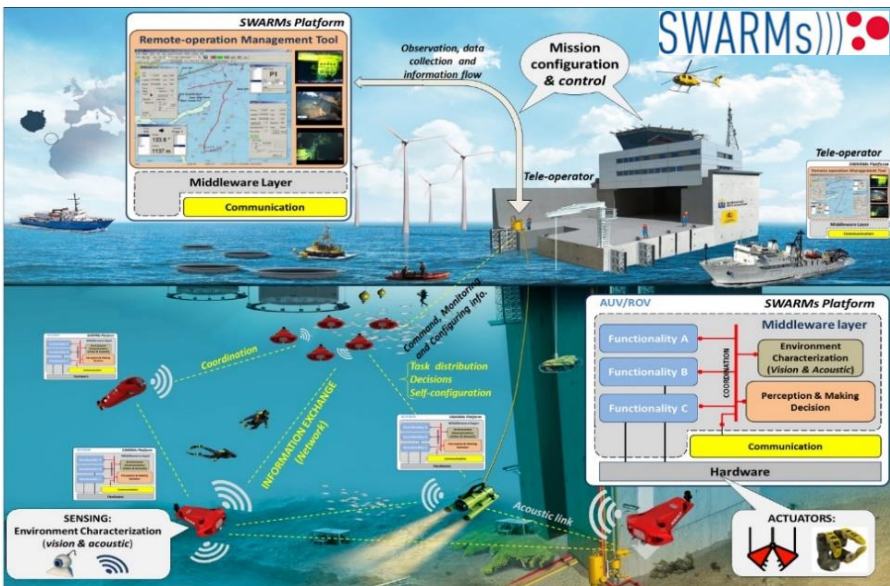


Figure 8: Swarms technological overview | Source: <http://www.swarms.eu> | Accessed 2020

Sharing Project News

How can we share project news effectively?

There are many ways to share project news throughout the project (website news articles/posts, email newsletters, press releases, opinion articles, printed project flyers or brochures for physical events). The type of news and content depends on who you are aiming for and the platform type. You need a strategic approach for sharing project news for each target audience group.



The aim of sharing project news is to engage stakeholders in your project's expected outcomes, results, outputs, or messages to meet your strategy goals

How to do it

When designing and regularly reviewing your strategy ask yourself the following question:

- What are your goals for sending out news?
- Who are you trying to reach; why, and how are you engaging them?
- What messages, results, outputs and expected outcomes are you sending out?
- How? When? What tool? How are you going to measure the impact?

Promote
Project Results

Build project brand
awareness

Engage stakeholders

Demonstrate impact

Target
new audiences

Launch new
service/product

Aim	Target Group	Dissemination Tools / Channel	Implementation & partners involved	Timeline	Impact
Why?	Who?	What?	How?	When?	KPI?



HELPFUL TIPS!

Sharing Project News

Consider people remote working, spending most of their day online, the statistics around content viewing preferences, and how to make your news appealing:

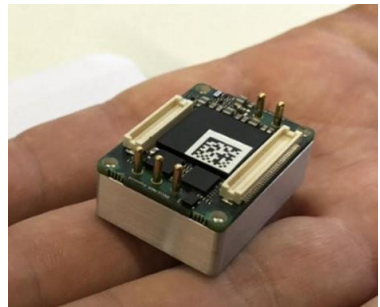
- ☑ Website: the average person only reads 20% of text in a regular webpage. Take this into consideration when preparing news articles for the web. Consider ratio of text to visuals, and use of infographics, videos, and images
- ☑ Images and Videos: Visual content gets more interactions (94% more total views and is 40 times more likely to be shared) see video section tips
- ☑ Customise content for your target audience and typical devices they use
- ☑ Engage: Add value – comment and add discussion on posts, interact with social media debate and followers, build relationships with key stakeholders

Special Considerations

In advance of upcoming news, try to increase subscribers and followers through activity in your social media channels

Success Story

A picture paints 1000 words! Use high/quality visuals to communicate about your project, such as the approach taken by **I-MECH BBS** (high current amplifier) prototype designed by INGENIA drives. The miniature size of this ultra-compact smart high-performance drive allows it to be easily integrated inside machines where it is needed.



Source: www.i-mech.eu
Accessed 2020

Online Resources



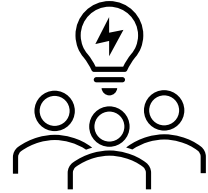
- Visuals: Canva (also Unsplash, Pixabay)
- Medium blogs with Industry 4.0
- NCCPE guide: How to work with digital media
- NCCPE guide: How to work with news media
- NCCPE guide: Examples of successful public engagement (UK)
- AAAS toolkit: Using multimedia visuals



Hackathons

What is a Hackathon?

Hackathons are community events in which a specific technical challenge is posed, and innovators are invited to solve those challenges. The name comes from two words: **hacking** & **marathon**, where ‘hacking’ means creative problem-solving. This process can be set up as an online or in-person event, and attendees can participate in small groups or solo. Many companies use this process as a tool for fostering **Open Innovation (OI)**, often resulting in new business ideas. Hackathons also often include a jury, and a prize for the team or individual with the best idea awarded at the end of the event.



The aim of a hackathon is to bring together innovators to use or trial your technology in novel ways, or to create prototype solutions for a major challenge in a focus area

How to Do It

There are several things to consider in order to run a successful hackathon:

- **Discuss and educate** your consortium about the potential uses of hackathons and benefits to your project needs. Discuss if this is the right tool to meet the objective.
- **Define the challenge.** The best hackathons have a clear ‘grand challenge’ and supportive materials for participants to use during the event. Be clear about expectations and guidelines and take time to organise all materials.
- **Decide on a format.** Hackathons can be held in-person or online, both having pros and cons. Several websites offer support for hosting a hackathon online.
- **Select a prize.** Whether monetary or otherwise, it is important to have a good incentive to award creative ideas and attract a good number of participants.
- **Advertise to participants.** Reach out across a variety of channels. Combine traditional communication means with social media posts to effectively find young talent. Consider also posting on Instagram or TikTok to try to gain more followers and attention.
- **Put together a jury.** Consortium members can bring in external jury members from other companies to judge outputs in the hackathon. Make sure each judge understands their role and has a clear scoring rubric.
- **Wrap-up and showcase.** Don’t forget to share the results of your hackathon and success with the world! Take videos and photos during the event and share in newsletter and social media posts after in order to boost your visibility.



HELPFUL TIPS!

Hackathons

- ☑ At an in-person event, make sure there is free Wi-Fi with good connectivity and enough electric plug-ins
- ☑ Food and accommodation for participants at an in-person event also needs to be managed
- ☑ Online hackathons involve fewer overhead costs and allow for a larger and more diverse audience with no geographical restraints
- ☑ Pick the right date and make sure no other major competing hackathon events are overlapping
- ☑ Welcome newcomers to the community, and make sure to organise diverse teams, as this has been shown to lead to the most creative outputs
- ☑ Use a clear registration platform (like Eventbrite) and have a formal schedule ready ahead of time so participants know what to expect

Special Considerations

Advertise early! Students (especially those in STEM programs) are usually the most highly sought-after group to participate, and they are often flooded with several requests per week to join hackathons. Think about what makes your event stand out and incentivize participants to come by offering a worthy prize. This does not necessarily need to be a monetary prize, but could also be a career-advancement prize, such as an internship placement.

Make sure there is budget for a prize. Several EU projects get started with the process of implementing a hackathon as one of their activities, only to find out later that they did not allocate any of their budget towards prize money. Do not make this mistake! Be clear in the proposal process that hackathon prizes will need to be budgeted for from the start.

Be aware that most industrial companies are not usually prepared to host a hackathon themselves and may have concerns about IP issues or cybersecurity issues being exposed if it is their own technology/ system that is the focus of the hackathon. Address these concerns ahead of time.

Success Story

The Industry4.E Lighthouse project **SCOTT** (Secure, Connected Trustable Things) hosted a hackathon event in cooperation with its partners and other industry leaders. The topic 'Novel Ideas for Vehicle Data' was hosted as an online event, attracting mostly students interested in the areas of Big Data, cyber security, and automotive sciences. After the event, the top 3 teams present their ideas to the jury, and the winning team was awarded a €1250 prize. Through this hackathon, project partners achieved their aims of having an open innovation approach through integrating external stakeholders along the value chain from different domains.

During the Hackathon

Participants who have developed prototypes before may reuse things (e.g. white labelled solutions) and focus more on details, giving them an advantage over other teams. Often participants have a 'ready mobile app with backend', 'ready VR app with backend', 'ready web app with backend' they use as their basis. Think about whether this is supported, how the re-use of things can be prevented or monitored, and it can be considered in the evaluation.

Develop novel service ideas based on vehicle data for a smarter society

Vehicle Data HACKATHON
 May 2 – June 2, 2019

Find out more at
<https://goo.gl/mUhaar>

How to participate

- To register a team of up to five people, send us your team name and the name and email address of the team representative at vehicle-data-hackathon@v2cz.at
- On May 2, 2019, we'll publish CAN bus vehicle data and give you access
- You have 1 month to
 - Investigate the data
 - Come up with a novel idea for a service
 - Develop a mockup / demonstrator
 - Submit your idea (e.g. video, slides, etc.)

Selection process

- Pre-selection of 3-5 teams based on novelty and impact of service idea
- On June 5, 2019, the selected teams will present and defend their ideas at a teleconference with a jury of industry experts, which will choose the winning teams
- Prizes:

€ 500	1	€ 250
2	3	

Join in and win!

Contact: Christian Kaiser
 VIRTUAL VEHICLE Research Center, Graz, Austria
christian.kaiser@v2cz.at
 +43 316 873 9827

<https://scottproject.eu/>
 grant agreement no 737422

<https://www.v2cz.at/>

Figure 9: Exemplary invitation to Vehicle Data Hackathon | Source: <https://scottproject.eu> | Accessed 2020



Source: Max Duzji on https://unsplash.com/@max_duz

Popular Types of Hackathons

- **Data Science Hackathon** or **Coding Competition**: Find the best algorithm for a given data science problem. The winner usually is decided by the comparison of the algorithm performance.
- **Data-Hackathon** (sometimes called Datathon): Try to find insights and an application based on a dataset. Usually a prototype or a Minimum Viable Product (MVP) is presented at the end of the contest.
- **Hackathon**: The general term for IT-focussed business solutions including the backend development, design features and the business plan.
- **Business Case Competition**: Based on information of a company, find a new business case by submitting a proposal or presentation deck to illustrate the solution.

Advantages from the viewpoint of idea seekers (e.g. industrial companies, SMEs)

- Receive input from people who can approach the topic freely and think outside the box.
- The rules can be defined in any way, e.g. to use a specific language or framework.
- Hackathons can be used very selectively when you need them. Despite preparation, support and follow-up, hackathons are relatively inexpensive.
- Often participants/teams have been working on the topic of the hackathon for some time and use existing white labelled solutions (e.g. ready mobile/web app with backend) for the prototype. This way very mature, partly functional results are created in 1-2 days.

Advantages from the viewpoint of idea providers (e.g. students, start-ups, SMEs)

- Get in touch with companies and experts on a certain topic.
- Good ideas often lead to a long-term cooperation between participants and the idea seeking companies. Some tech start-ups use them to explore business opportunities.
- Get the opportunity to dive into the topic/domain for several days and try out different solutions. Direct feedback shows you whether the idea is useful.

Online Resources



- How to run a successful hackathon
- 16 tips for an amazing hackathon
- Hackerearth e-guidebook
- TechRepublic's 6 key tips
- Ultrahack online community
- Crossweb hackathon event site



Conferences, Fairs & Presentations

Why online events?

For online events the content is key, as there is less networking potential, no new city to see or food to try, attendees are primarily here for the content and to be part of the community! Online attention span is lower, so hosts need to plan to keep participants' interest and interaction throughout the event. Set clear goals and objectives for the session and make sure content is relevant, interesting, and engaging. Intersperse content with interactions such as polls, quiz questions, and breakout sessions. Facilitate networking through having small moderated breakout sessions where everyone has a chance to talk, coffee-break rooms, or lunch-table.



The aim of event or conference is to host a well-attended event with strong audience buy-in and participation that meets participants' expectations and your event goals and objectives

How to Do It

In addition to the usual considerations for a physical event, keep online events short, interactive and engaging. Think about how you

would usually facilitate engagement in a physical event and how you can convert that to your online event. Understand and communicate your goals at the event. Do you want to share knowledge or key results with a large target audience? You may need feedback or to hold a brainstorm session to tackle a specific problem. It could be an opportunity to simulate external collaboration or facilitate a discussion between knowledge owners and potential end-users. Whatever your motivation, the following points should be considered:

- Tailor content to your audience.
- Plan interactions to maximise engagement.
- Manage participants' expectations – through good event description, information at registration, and pre-event survey.
- Have a clear agenda.
- Have a briefing for speakers.
- Advertise event widely and register attendees.
- Remind attendees a few days in advance of approaching event.
- Plan how to measure event impact.



HELPFUL TIPS!

Conferences, Fairs & Presentations

- ☑ Practice using platform technology, have back-ups ready (speaker presentations on host's machine as well as own)
- ☑ Assign roles in advance (presenter, timekeeper, technical support, breakout facilitators and rapporteurs)
- ☑ Choose the tool(s) that are fit for purpose for your event and practice using them
 - Microsoft Teams, Zoom, GoToMeeting, Skype, Webex, Other
- ☑ Use polling/whiteboard/breakout room collaboration tools
- ☑ Have your team and presenters check their camera positioning and audio/mic in advance. Recommend headsets for better quality audio. Adjust laptop height with a few books so the camera is at a more flattering angle and not pointed directly at a window – such that audience sees only a silhouette

Special Considerations

- Communication difficulties (reading body language)
- Timekeeping
- Interactivity (incorporating tools)
- Attention spans and online seminar fatigue!

Success Stories

The Industry4.E CSA hosted a series of online webinars featuring break-out sessions on Zoom, live online polling with Mentimeter, pre-event survey and open discussions. Feedback survey results indicated a high satisfaction rate from attendees.

ECSEL-JU Symposium was hosted for the first time online in 2020. In addition to the interesting keynote speakers, the format included inactive functions: a scroll message bar at the bottom of the screen at the start, a **Slido poll** with results displayed on the side of the screen, and a chat function for attendees to pose their questions.

Online Resources



- NCCPE guide: Meaningful engagement – online events
- Virtual events in 2020: The ultimate guide
- 7 warning signs your meeting should be an email
- Abundance of information narrows our collective attention span



Demo, Showcase & Booth

Why online demos?

Whether hosting a physical or a virtual demo, highlight or booth, approximately 80% of the considerations are the same. The additional 20% of planning for the virtual events is to substitute for the physical interactions, informal discussions, rapport and connection that happens more naturally at physical events.



The aim of a project demo is to showcase the project work maximising project and output exposure, and to identify and engage potential partners, collaborators, or customers

How to Do It

Strategy: As with all exploitation activities, you need to have a clear strategy with which the team involved is

familiar.

Why are you holding this exploitation activity? **What** type of key exploitable results (KER) do you have to show? **Who** is your target audience / end-user(s) for a specific KER? **What** outcome are you trying to achieve from your exploitation activity (establish spin-off or start-up, sell or license a product, sell a service, establish a standard, further develop or validate a KER, collaborations for further research, policy change, inform society)? **How** do you want to manage interaction during your exploitation activity? **How** do you measure the impact or success of your activity?

- Requirements for a virtual booth or showcase:
 - ✓ **Video:** Pitch, Demo, Virtual Tour
 - ✓ **E-Assets:** Flyer, brochure, technical brief
 - ✓ **Contact details:** Video intro (ideal), virtual business card
 - ✓ **Interaction:** Call-to-action, real-time meetings and/or chat facilities
 - ✓ **Links:** Where tool does not provide feature, link to website
- **Follow-up:** A means to measure and follow-up on interactions with the booth and establish further two-way engagement

Use this opportunity to showcase what you have produced, designed or developed and take the chance to **convince stakeholders of your vision** for your idea. Let them see the future of your core product through your eyes.



HELPFUL TIPS!

Demo, Showcase & Booth

- ✓ Make the content engaging, personable and easy for the viewer to initiate interactions with your team
- ✓ Demo video can range from a simple, results-based, for non-experts to a more complex demo, with tech demonstrations and interviews e.g. University of Groningen demo in MANTIS
- ✓ The demo is mainly about relationship building with your target audience
- ✓ See video tips for the production of your demo presentation

Success Story

The Industry4.E Lighthouse project MANTIS partner University of Groningen demo video **Robot as problem solver**. This demo video explains the problem in an industrial setting, explains the solution under development, and introduces the audience to key team members with names for contact.



Source: Mantis YouTube – Robot as problem solver | Accessed 2020

Another good example is the **I-MECH Demoday Compilation**, with a clear introduction to the benefits of the proposed solution and clear call-to-action for viewers on how to contact the team.



Source: I-MECH YouTube – Demoday Compilation | Accessed 2020

Online Resources



- 360° Virtual tour
- App demo
- Video editing



Methods and Tools for Project Exploitation

Following a successful project development including a well-received communication and dissemination plan, there is the equally important step of designing an exploitation plan. This can be developed along a three-step-plan starting with the following questions:



- The first step is the identification of **Key Exploitable Results** (KERs). In this phase, the collective input of all project partners is required. Apart from jointly defining, characterising and prioritising the exploitable results, it is suggested to possibly group some of these into clusters. This promotes the formation of synergies boosting exploitability of the project.
- Subsequently, an analysis of the **macro-economic landscape** must be conducted to evaluate the strategic fit of the suggested KERs to the market. The main objective of this step is the analysis of the attainability of a successful exploitation including all its various influences.
- The third step involves **strategic implementation** tools to maximise the impact of the project results. This might be achieved by several methods including further research, licensing, new services/products, joint ventures or standards, skills training, recommendations for policy stakeholders or a policy brief.

The figure opposite presents a general overview containing some of the key elements to develop a tailored exploitation strategy and plan. It presents all the important aspects as well as the timeline relative to your project's progression.

The following pages will depict more detailed insights into the most important tools used for the identification, understanding and management of your intellectual property.

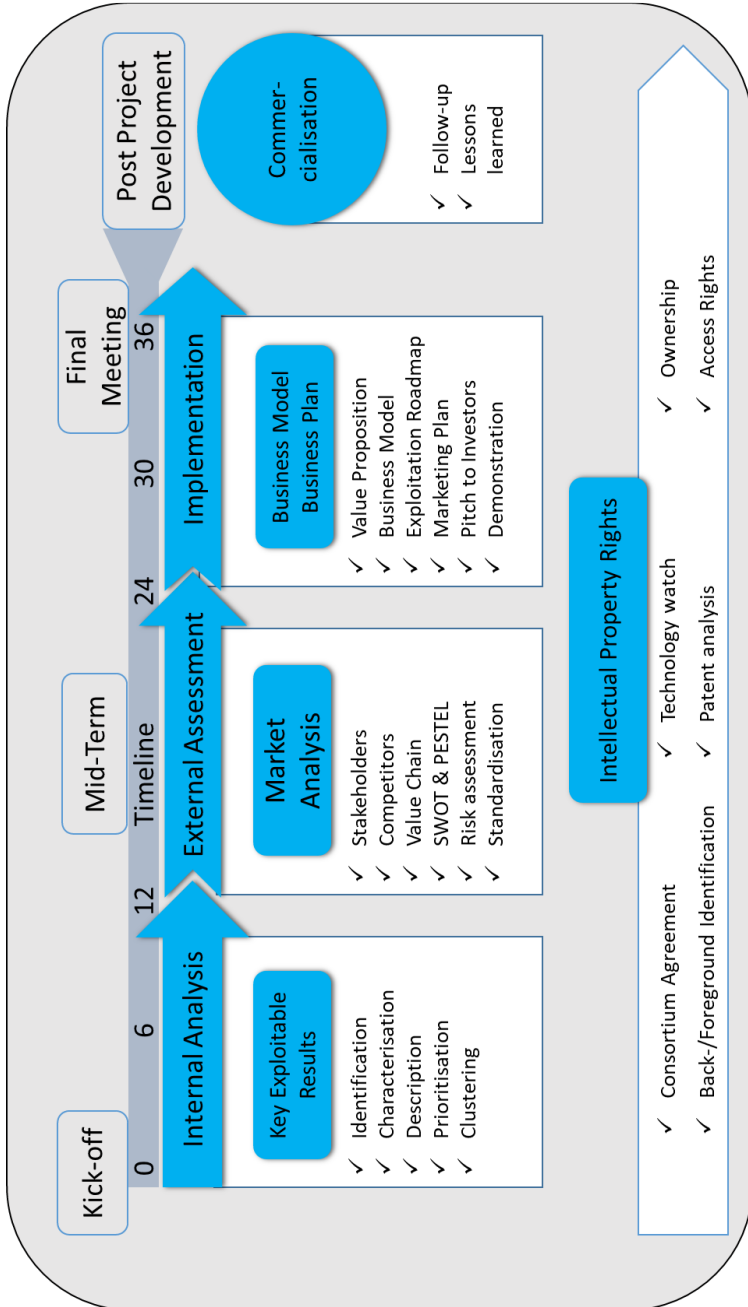


Figure 10: Intellectual Property Management Overview | Source: Steinbeis 2i

Management of Intellectual Property

A certain set of exploitation activities will be performed throughout the entire duration of the project, namely the **Intellectual Property Management**. This section guides the internal organisation of project inputs and outcomes between project partners. It focusses inward, considering external factors and producing an agreement which facilitates close and trustworthy collaboration between unknown entities.



The aim of intellectual property management is to establish an understanding of one's potential inputs, goals and expected outcomes and come to an agreement on how to handle those aspects legally

How to do it

The first step is the definition of Intellectual Property Rights (IPR) related expressions and processes for everybody to be on the same page.

Exploitation: Direct or indirect utilisation of foreground in further research activities (other than those covered by the project), or for developing, creating and marketing a product or process or services. An exploitable result is defined as an outcome of the project that meets two conditions:

- It has commercial/social/academic relevance;
- It can be commercialised/exploited as a stand-alone result.

These results might need further R&D, prototyping, engineering, validation, etc. before they become commercially exploitable. Exploitable results are generally defined as products, processes, methods, services, which are new, improved or more efficient.

Background: Information held by beneficiaries, owned or controlled by project partners and brought to the project; may come from existing knowledge as well as copyright or other IPR. Background information must be relevant to the project result, needed to carry out the project, or for using the foreground, and somehow embedded in the result.

Foreground = Results: Foreground includes information, being protectable or not, which is generated under the project. All foreground belongs to the beneficiary generating it.



HELPFUL TIPS!

Intellectual Property Management

- ☑ Establish a clear understanding and agreement of all consortium members as early as possible to avoid later conflict
- ☑ Discuss back- and foreground issues in a series of workshops face to face. There will be relations nobody thinks about in the beginning
- ☑ Point out the importance of this topic regularly as most partners are not used to this aspect of a project
- ☑ Check the legal landscape when envisioning a new patent

Foreground can also be jointly generated (joint ownership). These results are not only represented in terms of actual scientific findings. In addition, processes or other usable information can be classified as generated foreground. Moreover, different means and mechanisms apply for different kinds of results. It is important to clearly identify the exploitable results, and the appropriate means of protection.

Specific considerations

While participants from academia often aim to publish their findings at conferences or in journals, industry focuses on protecting and commercialising results. It is highly recommended to handle exploitation activities as well as IPR Management in a participative and transparent manner ideally conducting a series of webinars and face-to-face exploitation workshops. Within European RD&I-projects, several complementary partners from research, small and large industry come together. Therefore, it is important to set common grounds and learn about each other's expectations, aims and needs early on.

Exploitation workshops will help to clearly define the Key Exploitable Results, characterise them and prioritise them jointly with the project partners. Exploitable results can be of scientific or commercial relevance and may be either published or protected. For commercial KERS, various workshop-based methodologies can support the elaboration of suitable business models and strategies. A series of IPR and exploitation workshops will help to get a clear picture on background and foreground of each partner, in addition to the related ownership to foster discussions on access rights.

Intellectual Property Rights				
IPR Basics	<ul style="list-style-type: none"> ✓ Back-/Foreground ✓ Technologies, products, know-how ✓ Consortium agreement 	<ul style="list-style-type: none"> ✓ Patent Analysis ✓ Technology watch ✓ Scientific / commercial relevance ✓ Exploitation claims ✓ Protection of results 	<ul style="list-style-type: none"> ✓ Ownership / Access Rights ✓ Prioritisation of results ✓ Identification of ownership ✓ Definition of access rights 	<ul style="list-style-type: none"> ✓ Technology Transfer ✓ Invention, Evaluation, Licensing, Marketing ✓ Economic benefits ✓ Risk analysis ✓ Business model & plan
Identification	Characterisation	Prioritisation	Investor's Pitch	
Workshops				

Figure 11: Exemplary IPR-workshop content | Source: Steinbeis Zi

Exploitation Workshops can combine the assessment of Intellectual Property Rights in parallel with elaborating on the roadmap for the exploitation of results. IPR basics will be handled in an early workshop along with the identification of the Key Exploitable Results (KERs), while access rights and technology transfer will be included in a workshop at a late stage.

European IP Helpdesk



“The **European IP Helpdesk** is a service managed by the European Commission’s Executive Agency for Small and Medium-sized Enterprises (EASME), with policy guidance provided by the European Commission’s Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG Grow). It supports cross-border SME and research activities to manage, disseminate and valorise technologies and other Intellectual Property (IP) Rights and IP assets at an EU level. Offering a broad range of informative material, a Helpline service for direct IP support and on-site and online training, the European IP Helpdesk’s main goal is to support IP capacity building along the full scale of IP practices: from awareness to strategic use and successful exploitation. This strengthening of IP competencies focuses on EU SMEs, participants and candidates in EU-funded projects, and EU innovation stakeholders for an increased translation of IP into the EU innovation ecosystem.”

Source: www.iprhelpdesk.eu | Accessed 2020

Online Resources



- IPR Helpdesk
- IP Management in International Business
- IP and Contract Guide



Patent Analysis

What is Patent Analysis?

If your project introduces a new product/service/process to the market, it is crucial to assess the current state-of-the-art and demonstrate how your project's exploitable result strives beyond that. Therefore, it is vital to screen the following areas: concurrent project landscape; published scientific literature; and already granted patents.



The aim of a patent research is to understand the state of the art in your sector and evaluate the necessity of securing ownership of your own innovations

How to Do It

Available patents can be researched online. There are two important factors for successful patent research:

- Understanding the structure of patents
- Conducting efficient research

Structure of patents:

The information contained in patent documents is generally structured in three parts:

- The first part provides **general information** about the patent: The title, a summary, the invention, the names of the inventors, dates and numbers and the status of the patent document.
- The second part of a patent describes the **problems being solved** by the invention, the state-of-the-art today and a technical description.
- The third part concludes with **drawings, the claims and a research report.**

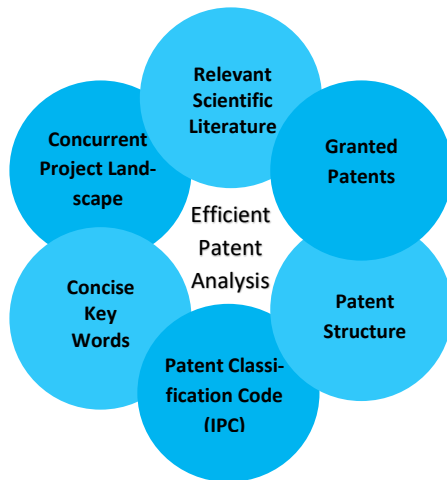


Figure 12: Relevant patent key words | Source: Steinbeis 2i



HELPFUL TIPS!

Patent Analysis

- ☑ Search for Patent Classification
- ☑ Know the difference between patents and patent applications. Find documents with the legal status 'grant' to avoid including pending patents
- ☑ Understand the topic of patent families
- ☑ Use the Boolean OR operator (compared to AND)
- ☑ Spend time to find the right keywords

When researching a patent, choosing the right key words is crucial. These should be selected according to the geographic area, the time period and inventor's company and most importantly the type of and fitting description for your invention. Additionally, it is advised to combine the textual search with patent classification codes. The most widely used codes are found under the [International Patent Classification](#).

Special Considerations

If your goal is to ensure that your project results are indeed disrupting an existing market the [European Patent Office \(EPO\)](#) is a good place to start. However, Patent searches can be incredibly complex and difficult to perform. If you do not feel comfortable taking on the task alone, or if you do not have the time or resources to do so, you can hire professionals to help you.

Online Resources



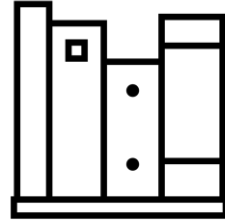
- Espacenet
- European Patent Office
- Wipo guide to using patent information
- IPR Helpdesk - How to search for patent info
- Tips for reading patents



Market Research

What is Market Research?

The objective of Market Research is the gathering, analysing and interpretation of relevant market information to establish an effective exploitation strategy for promising project results. This comprises, but is not limited to, market segmentation, supply and demand, past, present and potential spending habits of target customers and the economic environment in the industry sector, including key competitors in the field, barriers to entry and regulations. The accurate definition of a strategy to answer questions about those topics is a valuable tool to gain understanding of one's macro-economic situation and to optimally apply researching resources.



The aim of market research is to reduce uncertainty and risk and to provide information on variables for marketing decisions

How to Do It

There are two types of market research sources:

- Primary information gathered from first-hand accounts through surveys, observation or experimentation. These can be gathered qualitatively, through in-depth interviews or quantitatively, gathering large amounts of opinions.
- Secondary information is compiled through other sources, like company records, research studies or related books.

Before diving into the research, a clear path should be established starting with the identification of the problem you are trying to solve. **What** information is missing to solve that problem? **How** will you get this information? **Who** will provide this information and **which** extraction method seems most promising? When collecting data, make sure to keep an overview even while you are collecting. And finally, when you have the data, use it. Analyse it even for information that you were not expecting at the onset of the research campaign.

Competitive Intelligence

An addition to market research is Competitive Intelligence (CI). It describes the mechanism of understanding and learning what's happening in the world outside your business with the aim to maximise your competitiveness. In an increasingly digital environment, this method makes increasing use of Big Data and analysis algorithms to maximise the impact of research results. This means learning as much as possible as early as possible about the industry and its competitors to a point

at which it is essentially possible to anticipate changes and adapt your strategies accordingly. As CI is an ongoing action, the data collection process is better described as surveillance rather than research and can be summarised with the following four steps:

- Definition of information surveillance strategies;
- Regular information collection;
- Transfer from collected info to intelligence by the application of "Know-How";
- Dissemination of gained intelligent insights to the decision makers.

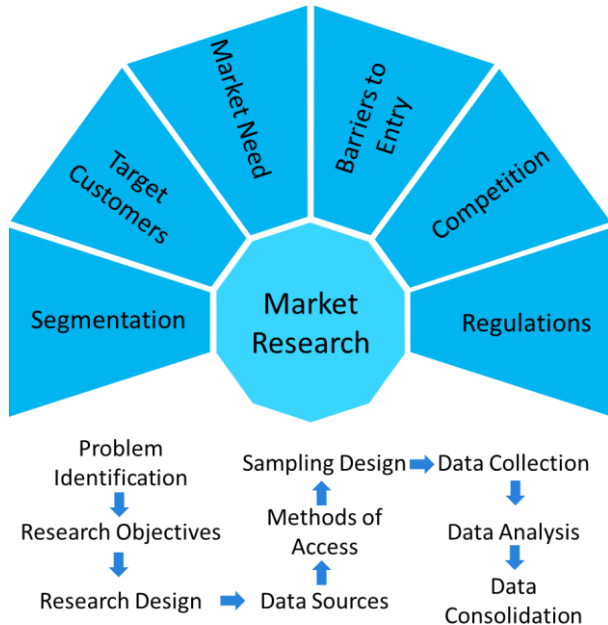


Figure 13: Market research overview including strategy roadmap |
Source: Steinbeis 2i

Online Resources



- Market research insights
- Market research definition
- Market research reports
- European Commission: Market analysis
- Bid Analytics and Decision making



PESTEL

What is PESTEL?

To optimise the chances of a successful project completion, it is crucial to understand one's own organisation as well as the surrounding macro-economic landscape. A PESTEL analysis is a tool to analyse and monitor the macro-environmental factors surrounding a project or company. This tool is especially useful when starting a new project or business.



The aim of a PESTEL analysis is to understand one's own positioning and influencing factors in a global environment

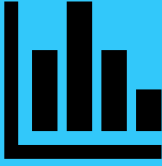
How to do it

Create a list of all relevant PESTEL factors. Decide which are most relevant in your context.

- Rank or rate the implications of those factors for your project or business
- Evaluate the impact of any of the circumstances and their likelihood of happening

<p>Political</p> <ul style="list-style-type: none"> ✓ Tax policy ✓ Trade restrictions ✓ Tariffs ✓ Political stability ✓ Education ✓ Infrastructure ✓ Elections 	<p>Economic</p> <ul style="list-style-type: none"> ✓ Gross Domestic Product ✓ Inflation Rate ✓ Nominal Interest Rate ✓ Exchange Rate ✓ Tax Burden ✓ Purchasing Power 	<p>Social</p> <ul style="list-style-type: none"> ✓ Population Growth Rate ✓ Age Distribution ✓ Cultural Aspects ✓ Health Consciousness ✓ Career Attitude ✓ Emphasis on Safety ✓ Migration
<p>Technological</p> <ul style="list-style-type: none"> ✓ R&D Activity ✓ Funding ✓ Automation ✓ Technology Incentives ✓ Rate of technological change ✓ Innovation cost 	<p>Environmental</p> <ul style="list-style-type: none"> ✓ Weather ✓ Climate ✓ Environmental Protection ✓ Circular Economy ✓ Renewables ✓ Green Growth 	<p>Legal</p> <ul style="list-style-type: none"> ✓ Discrimination Law ✓ Consumer Law ✓ Antitrust Law ✓ Employment Law ✓ Health and Safety Law ✓ Intellectual Property

Figure 14: Suggestions for relevant PESTEL factors | Source: Steinbeis 2i



HELPFUL TIPS!

PESTEL

- ☑ **Have a good reason for using this tool**
- ☑ **Know your organisation. Decide which aspects of the analysis are most important in your organisation**
- ☑ **Think about the future. Don't only focus on the status quo. Incorporate trends and future developments**
- ☑ **Integrate other tools such as the SWOT analysis. This will help consolidate findings from the PESTEL for specific guidance**
- ☑ **Consolidate your findings. The PESTEL Analysis can yield huge amounts of data. Distil them down to simple conclusions and recommendations**

Special Considerations

It is often used in collaboration with other analytical business tools such as the SWOT analysis to provide a clear understanding of a situation and related internal and external factors. PESTEL stands for Political, Economic, Social, Technological, Environmental and Legal factors. This acronym has been expanded with factors such as Demographics, Intercultural, Ethical and Ecological resulting in variants such as STEEPLED, DESTEP and SLEPIT. Here, we will stick to PESTEL since it encompasses the most relevant factors in general business.

When you are planning to use the PESTEL analysis, be clear about what you are using it for. Are you looking to launch a new venture, enter a new market or identify new opportunities or looming threats for your existing business? The more precise you know your goal, the more directed your research for influencing factors will become.

Online Resources



- Pestle analysis
- BSC Designer: An example of using PESTEL template for strategic planning
- How a PESTEL analysis can help your business strategy



SWOT Analysis

What is SWOT analysis?

The SWOT matrix is designed to help building an understanding of your own organisation and its current standpoint in respect to the macro-economic situation detailed in the PESTEL analysis. This analysis is split into internal and external factors also described as Strengths and Weaknesses, Opportunities and Threats.



The aim of a SWOT analysis is to **maximise potential of strengths and minimise the impact weaknesses considering opportunities and threats**

How to do it

Usually, the SWOT analysis is carried out after the PESTEL analysis. The combination of both can be used to produce a strategic matching between internal characteristics and external circumstances.

- Strengths and Weaknesses comprised of the **4 Ps, i.e. Product, Price, Place and Promotion** as well as other resource and manufacturing capabilities. The content of these fields can be found within the organisational structure.
- Opportunities and Threats relate to macroeconomic, technological, legal or socio-cultural changes that might be beneficial or debilitating to a project's objective.

	Helpful	Harmful
Internal	Strengths Competitive Advantages <ul style="list-style-type: none"> ✓ Value Proposition ✓ Successful product ✓ Reason for preferability ✓ Unique/Economic resources 	Weaknesses Competitive Disadvantages <ul style="list-style-type: none"> ✓ Room for Improvement ✓ Actions to be avoided ✓ Unsuccessful product ✓ Perception of weaknesses
External	Opportunities Exploitation opportunities <ul style="list-style-type: none"> ✓ New resources ✓ Interesting trends ✓ Customer suggestions ✓ Beneficial changes 	Threats Harmful elements <ul style="list-style-type: none"> ✓ Obstacles ✓ Competitors ✓ Change of demand ✓ Change of legislation

Figure 15: Suggestions of relevant SWOT factors | Source: Steinbeis 2i



HELPFUL TIPS!

SWOT Analysis

- ☑ Start with external factors taken from the previously accomplished PESTEL analysis
- ☑ Have a clear objective or venture in mind
- ☑ Each objective requires an individual SWOT analysis
- ☑ Create specific quantifiable factors. The more specific the analysis, the better the resulting strategy
- ☑ Identify the most important driving factors
- ☑ Put a timeframe on existing opportunities to put your potential into a realistic scenario
- ☑ Strive for a clear action plan arising from the analysis

Special Considerations

These factors are collected to deduce the obtainability of an objective and hence the best strategy of achieving it. Subsequently, the strength and weaknesses can be matched to the identified opportunities and threats to achieve or avoid them respectively.

This said, it should be noted, that neither PESTEL nor SWOT analysis leave you with a strategy on how to improve your project. They are tools to better understand one's current standpoint and potential direction and thus presents a versatile starting point for discussions.

Online Resources



- EU: SWOT
- EFP: SWOT analysis
- Unlock growth with SWOT
- SWOT online



Risk Management

What is Risk Management?

Risk management is an on-going process to be carried out throughout the project duration to identify, quantify, manage, and monitor threats to the successful implementation of your project. The aim of a good risk management plan is to maximise the probability of project success by timely identification of difficulties that the project could face, and anticipation of actions to prevent or reduce any possible negative impacts. In terms of exploitation, risk assessment of the knowledge output transfer is important. Every project is subject to risks. Risk management offers procedures to stay in control. Risk management is the process of identifying, evaluating and controlling threats and avoiding missing opportunities. Risks can stem from a variety of areas such as the strategic management errors, operational difficulties, financial uncertainty, reputational hazards, legal liabilities or simply natural disasters.



The aim of risk management is to identify, evaluate and plan against potential problems before they occur

How to assess risks

Risk management starts with the assessment of potential risks. Those risks are analysed regarding the implication for the company or project. Each risk receives an impact and a probability value usually on a scale from one to five. The multiplication of those values provides the so-called **Risk Index**. Alternatively, a **Risk Assessment Matrix** can be used to classify the urgency of addressing each risk. By nature, the risk assessment is qualitative, though enabling you to prioritise threats and prepare measures accordingly. Each identified risk is calculated individually which allows a numerical prioritisation of issues. Once risks are identified, mitigation measures can be developed.



Figure 16: Circle of Risk management | Source: Steinbeis Zi



HELPFUL TIPS!

Risk Management

- ☑ Two factors, impact and probability, qualify a risk: One can either avoid the occurrence of a risk becoming reality or reduce its impact on the project
- ☑ It is always helpful to share risks and especially mitigation actions with others as they might be or have been confronted with the same situation
- ☑ Assign a responsible person to effectively and continuously monitor a risk
- ☑ When the probability of a risk is increasing an early response, even before disaster occurs, will help to avoid most of the potential damage

How to mitigate risk

Following the identification, analysis and evaluation of potential risks comes the development of a **Risk Mitigation Strategy**. Each risk can be tackled on two fronts: its occurrence and its impact. There are four common strategies for risk mitigation, namely Acceptance, Avoidance, Limitation and Transference.

- **Risk Acceptance** is usually applied when the risk index is low. No action is taken.
- **Risk Avoidance** implies any action necessary to avoid the risk from occurring. This is usually applied when the risk index is high.
- **Risk Limitation** weights the cost of risk avoidance against the impact of the risk acceptance. This is the strategy for risks with intermediate indices.
- **Risk Transference** describes the option to transfer especially risk tasks to willing third parties.

All four strategies require continuous monitoring, especially when internal goals or the external circumstances change.

Online Resources



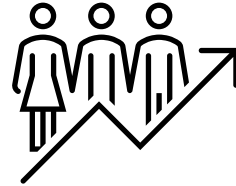
- Towards an effective & coherent risk management
- EC: Risk assessment & management
- Governance, risk management & compliance simplified
- The best risk management tools & techniques



Business Model Canvas

What is a Business Model Canvas?

The Business Model Canvas is a tool for developing new or documenting existing business models. It aims at directing activities to where attention is most urgently needed. Initially proposed by Alexander Osterwalder in 2008, it is a well-known and widely applied canvas. Its main advantages are the simple use, the comprehensiveness and the flexibility.



The aim of a Business Model Canvas helps entrepreneurs to keep focus on key building blocks to save time and succeed

How to Do It

The Business Model Canvas includes nine building blocks, covering crucial topics of business development.

- **Customer Segments:** Who are you creating values for?
- **Value Proposition:** What core value do you deliver to the customer?
Which Value do they expect?
- **Channels:** Which channels are most effective to reach your customers?
Which are most convenient for them?
- **Customer Relationships:** What relationship expects the target customer to establish with you?
- **Revenue Streams:** For which values are your customers willing to pay?
How is the payment most convenient?
- **Cost Structure:** Which infrastructure bears the most cost?
Which has the highest cost-benefit ratio?
- **Key Resources:** Which key resources do your value propositions require?
- **Key Activities:** What key activities do your value propositions require?
- **Key Partners:** Who are your key partners/suppliers?
What are their motivations?

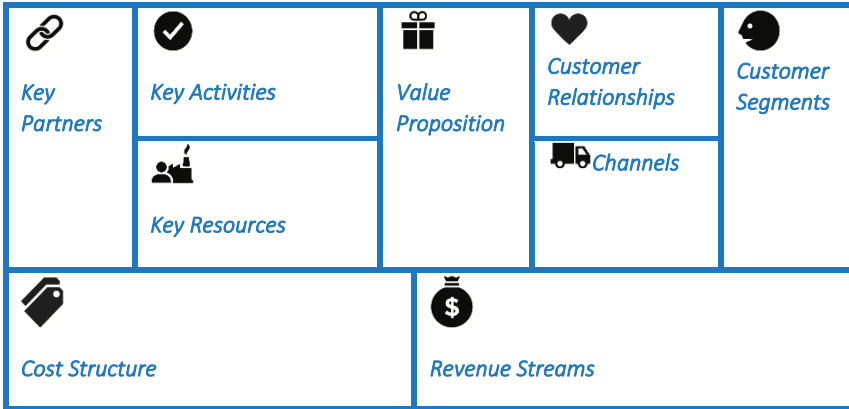


Figure 17: Business Model Canvas | Source: based on www.strategyzer.com | Accessed 2020

Special Considerations

Alternative versions might have space for ‘Social and Environmental Costs and Benefits’ or other relevant topics to choose from. This might represent a strong influence on all the above-mentioned areas of a business venture, especially in the social and environmental sector.

The Business Model Canvas is usually printed out on a large surface so groups of people can jointly start brainstorming and discussing business model elements with post-it notes or board markers. It enables an understanding of a business and to go through the process of making connections between ideas and how to turn it into a business.

A first step in completing the Business Model Canvas could be the Value Proposition Canvas, which focuses on the Value Proposition and the Customer Segments. For more information on how to use the Business Model Canvas, refer to the Business Model Generation materials developed by Strategyzer.

Online Resources



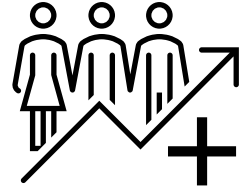
- Strategyzer
- Canvanizer
- [DIY Toolkit](#)
- [CASE: Sustainable Business Model Canvas](#)



Lean Canvas

What is a Lean Canvas?

The Lean Canvas is an adaptation of Business Model Canvas, which Ash Maurya created in the Lean Start-up spirit (Fast, Concise and Effective Start-up). The Lean Canvas focuses on problems, solutions, key metrics and competitive advantages and allows a fast access to the product without the necessity of a complete business plan. With its focus on new products and services, the Lean Canvas is the most suited for R&D projects. More information on the difference between the Business Model and the Lean Canvas can be found on the [Leanstack Blog](#).



The aim of a Lean Canvas is to help entrepreneurs focus on high risk and actionable business start-up factors

How to Do It

The Lean Canvas also includes nine building blocks:

- **Problem – Existing Alternatives:** List your top 1-3 problems and explain how these problems are solved today.
- **Customer Segment – Early Adopters:** List your target customers and users and describe the characteristics of your ideal customer.
- **Unique Value Proposition – High-Level Concept:** Describe a single, clear, compelling message that states why you are different and worth paying attention. List your X for Y analogy e.g. YouTube = Flickr for videos.
- **Solution:** Outline a possible solution for each problem. What you do, that the others do not do and is what matters to the clients.
- **Unfair Advantage:** What is it that gives you an advantage in front of the competition? Something that can't be easily copied or bought.
- **Channels:** List your path to customers (inbound and outbound).
- **Key Metrics:** List the key numbers that tell you how your business is doing (e.g. units sold, users registered, retaining users, paying customers, number of complaints ...).
- **Revenue Streams:** List your sources of revenue.
- **Cost Structure:** List your fixed and variable costs.

<i>Problem</i>	<i>Solution</i>	<i>Unique Value Proposition</i>	<i>Unfair Advantage</i>	<i>Customer Segments</i>
<i>Existing Alternatives</i>	<i>Key Metrics</i>	<i>High-Level Concept</i>	<i>Channels</i>	<i>Early Adopters</i>
<i>Cost Structure</i>		<i>Revenue Streams</i>		

Figure 18: Lean Canvas | Source: based on leanstack.com/lean-canvas | Accessed 2020

Special Considerations

The Lean Canvas is a 1-page business plan template that takes less than 20 minutes to create. The end goal of the lean canvas is that an unknowing third-party will be able to review it from start to end and, and through this revision, understand what your project result is about. It is a powerful tool to be used by the partners to further develop the characterisation of their project results.

The starting point for completing the Lean Canvas should be the following core questions:

- Who is “my customer”?
- What is “their” problem?
- How do “they” solve the problem now?
- Is our solution more efficient than the current ones?

Online Resources



- [Canvanizer](#)
- [Business model toolbox](#)
- [Business model canvas vs lean canvas](#)



Business Plan

What is a Business Plan?

A Business Plan consolidates all the evaluated information forming a comprehensive outlook of how and where your business is headed. A financial projection is added as a measure of allowing your venture to be summarised into hard numbers. To translate all collected information into numbers a couple of tools are used.

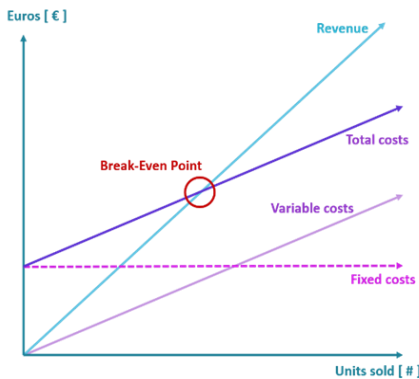
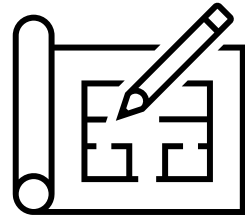


Figure 19: Break-Even-Point | Source: Steinbeis 2i

Break-Even-Analysis

To analyse the EU-independent sustainability of your project, it is important to understand how much and for how long you must rely on subsidisation. This analysis delivers a qualitative approach to this subject by simply comparing fixed and variable costs of the units sold to the expected revenue. The Break-Even-Point (BEP) marks the moment your business turns profitable.

Return of Investment

This graphical representation of BEP can be emphasised by the quantitative representation through your Return of Investment (ROI). The ROI produces a percentage of the revenue minus investment divided by investment. To achieve BEP it requires greater investment than revenue leading to losses and hence a negative ROI. Passing the BEP, ROI will turn positive and hence predict sustainability while the height of percentage provides an indication the profit that can be achieved.



The aim of a business plan is to identify, describe and analyse a business opportunity, including its technical, economic and financial feasibility

Implementation Roadmap

To fill in a Roadmap efficiently the high-level strategy on how to propel this project's idea into reality must be in place. The Roadmap combines everything providing a comprehensive list of actions to be undertaken throughout the project life cycle and beyond. It acts as a navigation chart, guiding the user of the status, the direction to take and how to get there. A well created road map accompanies the project development as a touchstone, informing the user what they should be doing and how well they are doing.

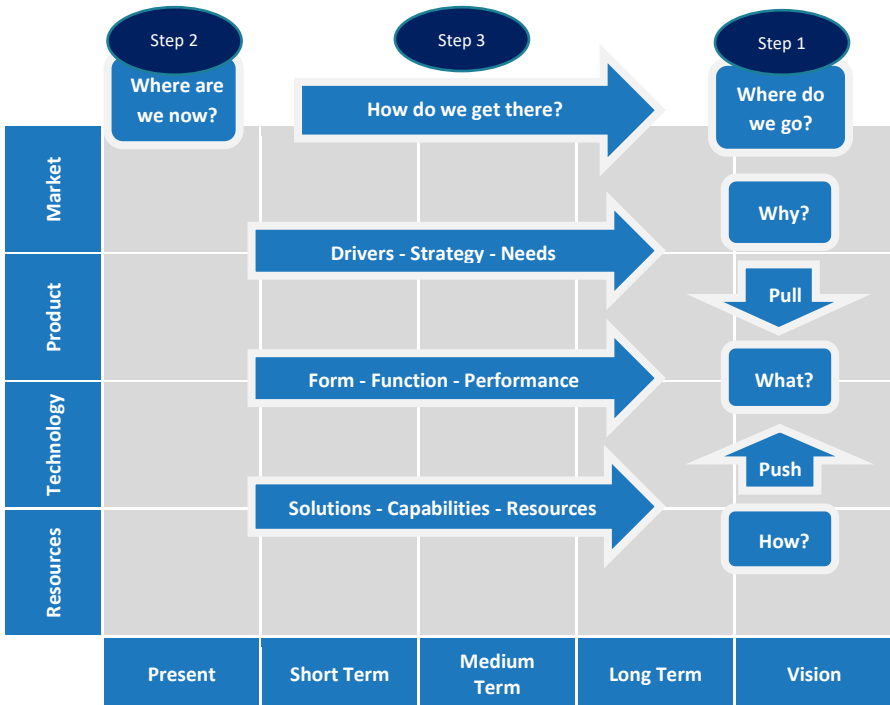


Figure 20: Implementation Roadmap template | Source: Steinbeis 2i

Online Resources



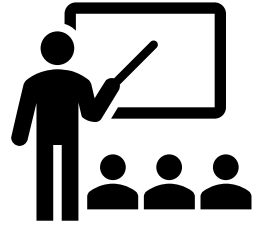
- Strategic & management plans
- Best business plan tools
- Technology roadmap tools
- Eco-innovation: General guidelines for developing a business plan



Knowledge Transfer to Policymakers

Policymakers

Part of the exploitation activities may involve knowledge transfer to policymakers, which can take many forms. The transfer may be in form of a technology roadmap, a policy brief or policy recommendations. Be aware of the needs and significance of your research at a policy level (e.g. creating new skills, jobs and/or SMEs, improving citizens lives, tackling societal challenges, helping to meet EU Green Deal terms, strengthening EU innovation and expertise).



Understand how local and EU policy is developed in your project area, to enable you to position yourself to increase your ability to transfer knowledge from your project to positively shape policy.



The aim of knowledge transfer to policymakers is the creation of the highest possible impact of research results on society through inspiring, innovative and integrated policy making

Strategically communicating your research and its outcomes to policymakers will increase the visibility of your research and build understanding, and potentially support, for future research

and innovation funding. It can highlight how the project tackles current issues and challenges and is of wider socio-economic relevance. **A policy brief can be used to present a short expert summary of your research findings** and their policy implications to a time-pressed non-specialist policymaker audience. The brief would usually also outline policy recommendations and actionable steps in clear concise language.

How to carry out knowledge transfer to policymakers

The following five steps can be used as a step-to-step guide to projects in developing and carrying out a Knowledge Transfer Strategy to Policymakers:

- **Assess your Knowledge** – describe your knowledge output(s).
- **Identify Policy and Target User(s)** – identify the policy processes you want to target and identify your target user(s). Be aware of the fit with existing policies.
- **Profile Target User(s)** – understand the individual profile of your target user(s), the knowledge they need, their influences and multipliers for getting your message to them.
- **Develop a Knowledge Transfer Plan** – This plan includes the message(s), the channel(s), the timeframe, resources available (budget, time, facilities), external supports.
- **Carry out and Measure** – perform Knowledge Transfer actions. Measure success.



HELPFUL TIPS!

Knowledge Transfer

- ☑ Make it relevant - Understand the world of decision makers and identify what is relevant to them
- ☑ Make it short - Present your knowledge clear and concise, get right to the point
- ☑ Make it concrete - Don't show data or information alone, present ideas and key-messages
- ☑ Concentrate on the cost-benefit relationship
- ☑ Correct myths and misled opinions

Special Considerations

As part of your CDE planning, **create your stakeholders map** considering public and policy stakeholders as well as the scientific community, potential industrial partners and educators. With each group or subgroup remember to map the relevant influencers, communities and multipliers.

Plan on what objectives you are aiming to meet, who your target audience is, decide on your message(s) and how to package the content, which channels and **tools to use to engage the targeted stakeholders** and how to evaluate your impact, for each subgroup.

Strategically communicate your project and its outcomes to the general public. Highlight the wider socio-economic relevance of your work and the impacts project outcomes could have on daily life, to increase the visibility of your research and build understanding, and potentially support, with taxpayers. **Show the public what issue your project is addressing**, and how it is relevant to everyday life, using appropriate non-technical language.

Remember the tips from the different sections above on using visually attractive (low text) material such as photos, videos, animations, infographics and graphs to which your public audience group(s) can relate. Use the channels they use and stories they associate with (local or regional).

Online Resources



- EPA Resource Kit - Bridging the gap between science and policy
- EU valorisation policy
- Open Innovation and Knowledge Transfer



Checklist #1

Dissemination

Methods/Tools	Yes/No	Comment
Dissemination and Exploitation Plan / Data Management		
Dissemination & Exploitation Plan in place		
D & E Plan regularly updated (KPIs?)		
Data Management Plan in place		
Stakeholders Analysis and Engagement		
Stakeholders target groups analysed		
Clustering activities / networking		
End-user involvement		
Dissemination / Communication Channels, Materials & Activities		
Website, dissemination kit, social media channels		
Project portfolio analysed and promoted		
Project messages clear, target group specific material developed		
Dissemination at fairs, conferences, workshops		
Scientific and technical publications / patents		
Own dissemination / demonstration event		
Dissemination campaigns		
Training activities		

Checklist #2

Exploitation

Methods/Tools	Yes/No	Comment
Key Exploitable Results (KER)		
Key Exploitable Results (KER) clearly defined		
Characterisation by innovation, exploitability, impact in industry		
Prioritisation of KERs		
Clustering of KERs		
Intellectual Property Management		
Consortium Agreement		
Background/Foreground		
Ownership		
Access rights		
Patent Analysis		
Technology Watch		
Market Research		
Stakeholder & Competitor analysis		
Value chain analysis		
SWOT/PESTEL		
Risk assessment		
Standardisation		
Business Models and Business Plans		
Value Proposition		
Business Model Design		
Business Plan		
Exploitation Roadmap		
Pitch to Investors		

Useful Links & References

Website	
EU project website best practices	http://www.eurosfair.pr.fr/7pc/documents/1271333123_project_website_guidelines_en.pdf
European Commission: Communicating your project	https://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management/communication_en.htm
The ultimate guide to web design 2019	https://www.pagecloud.com/blog/web-design-guide
Web design for beginners	https://webflow.com/blog/web-design-for-beginners
Social Media	
H2020: Social media guide for EU funded R&I projects	https://ec.europa.eu/research/participants/data/ref/h2020/other/grants_manual/amga/soc-med-guide_en.pdf
NCCPE guide: What works - engaging the public through social media	https://www.publicengagement.ac.uk/sites/default/files/publication/what_works_engaging_the_public_through_social_media_november_2018.pdf
Engaging with scientists and the public on social media	https://centennial.agu.org/resources-toolkits/engaging-social-media/
How to develop a social media science plan	http://www.fromthelabbench.com/from-the-lab-bench-science-blog/2016/7/31/how-to-develop-a-science-social-media-plan
SEO-Search Engine Optimization	
Keyword tool	https://keywordtool.io/
Answer the public search	https://answerthepublic.com/
Google trends	https://trends.google.de/trends/
Google page speed insights	https://developers.google.com/speed/pagespeed/insights/
Video	
10 Quick tips for creating compelling videos for social media	https://blog.hootsuite.com/quick-tips-for-creating-social-videos/
Visme video tips	https://visme.co/blog/video-tips/
OpenShot: Open source video editing software	https://www.openshot.org/
Mobile video production guidelines for researchers at home	https://vimeo.com/405056245
Cordis: Videos from H2020 funded projects	https://www.youtube.com/playlist?list=PLlyjX6SgFi0ft2rzfxdG6HHLJ9CBbtCoC

Printed and Digital Assets	
Scientific illustrations/graphical abstracts: Mind the graph	https://themarketingpeople.com/5-top-tips-for-making-the-most-of-your-print-marketing-materials/
5 tips for making the most of your print marketing materials	https://themarketingpeople.com/5-top-tips-for-making-the-most-of-your-print-marketing-materials/
Paper beats digital in many ways, according to neuroscience	https://www.forbes.com/sites/rogerdooley/2015/09/16/paper-vs-digital/#5c8b3a6033c3
EASME: Communication toolkit	https://ec.europa.eu/easme/en/section/communication-toolkit
Sharing Project News	
Creating engaging visuals: Canva	https://www.canva.com/de_de/
Creating engaging visuals: Unsplash	https://unsplash.com/
Creating engaging visuals: Pixabay	https://pixabay.com/de/
Medium blogs with Industry 4.0	https://medium.com/search?q=industry%204.0
NCCPE guide: How to work with digital media	https://www.publicengagement.ac.uk/sites/default/files/publication/how_to_work_with_digital_media.pdf
NCCPE guide: How to work with news media	https://www.publicengagement.ac.uk/sites/default/files/publication/how_to_work_with_news_media.pdf
NCCPE guide: Examples of successful public engagement (UK)	https://www.publicengagement.ac.uk/sites/default/files/publication/nccpe_and_forum_additional_evidence_of_successful_public_engagement.pdf
AAAS toolkit: Using multimedia visuals	https://www.aaas.org/resources/communication-toolkit/using-multimedia-visuals
Scientific illustrations/graphical abstracts: Mind the graph	https://mindthegraph.com/home
Hackathon	
How to run a successful hackathon	https://hackathon.guide/
16 tips for an amazing hackathon	https://medium.com/onerroof/how-to-organise-an-amazing-hackathon-68b282ef3bfa
Hackerearth e-guidebook	https://www.hackerearth.com/community-hackathons/resources/e-books/guide-to-organize-hackathon/
TechRepublic's 6 key tips	https://www.techrepublic.com/article/how-to-organize-a-hackathon-6-key-tips/
Ultrahack online community	https://ultrahack.org/
Crossweb hackathon event site	https://crossweb.pl/en/

Conferences, Fairs, Presentations–Remotely	
NCCPE guide: Meaningful engagement-online events	https://www.publicengagement.ac.uk/sites/default/files/publication/creating_and_running_virtual_events_-_april_2020_v1.pdf
Virtual evens in 2020: The ultimate guide	https://www.cvent.com/en/blog/events/virtual-events
7 warning signs your meeting should be an email	https://blog.gotomeeting.com/7-warning-signs-your-meeting-should-be-an-email/
Abundance of information narrows our collective attention span	https://www.eurekalert.org/pub_releases/2019-04/tuod-aoi041119.php
Demo, Showcase, Booth–Remotely	
360° Virtual tour	https://www.paneek.net/#/home
App demo	https://wideo.co/app-demo-video-template/
Video editing	https://www.movavi.com/videoeditor/
Management of Intellectual Property	
IPR Helpdesk	http://www.iprhelpdesk.eu/
IP Management in International Business	http://iprhelpdesk.eu/sites/default/files/documents/EU-IPR-Guide-IP-Int-Business-EN.pdf
IP and Contract Guide	https://www.iprhelpdesk.eu/sites/default/files/2018-12/european-ipr-helpdesk-your-guide-to-ip-and-contracts.pdf
Patent Analysis	
Espacenet	https://worldwide.espacenet.com/
European Patent Office	https://www.epo.org/
Wipo guide to using patent information	https://www.wipo.int/publications/en/details.jsp?id=180&plang=EN
IPR Helpdesk: How to search for patent information	http://www.iprhelpdesk.eu/sites/default/files/newsdocuments/Fact-Sheet-How-to-Search-for-Patent-Information.pdf
Tips for reading patents	https://www.tandfonline.com/doi/full/10.1080/13543776.2018.1438409
Market Research	
Market research insights	https://www.marketresearch.com/
Market research definition	https://www.entrepreneur.com/encyclopedia/market-research
Market research reports	https://www.marketresearchreports.com/countries/europe
European Commission: Market analysis	https://ec.europa.eu/digital-single-market/en/news/guidelines-market-analysis-and-assessment-significant-market-power
Bid Analytics and Decision making	https://ec.europa.eu/docsroom/documents/13411/attachments/1/translations/en/renditions/native

PESTEL	
Pestle analysis	https://pestleanalysis.com/
BSC Designer: An example of using PESTEL template for strategic planning	https://bscdesigner.com/pestel-analysis.htm
How a PESTEL analysis can help your business strategy	https://conceptboard.com/blog/pestel-analysis-guide-template/
SWOT	
EU: SWOT	https://europa.eu/capacity4dev/evaluation_guidelines/wiki/swot-strenghts-weakness-opportunities-threats-0
EFP: SWOT analysis	http://www.foresight-platform.eu/community/forlearn/how-to-do-foresight/methods/analysis/swot-analysis/
Unlock growth with SWOT	https://www.swotanalysis.com/
SWOT online	http://i-swot.com/
Business Model Canvas	
Strategyzer	https://www.strategyzer.com/canvas/business-model-canvas
Canvanizer	https://canvanizer.com/new/business-model-canva
DIY toolkit	https://diytoolkit.org/tools/business-model-canvas/
CASE Project: Sustainable Business Model Canvas	https://www.case-ka.eu/index.html%3Fp=2174.html
Lean Canvas	
Canvanizer	https://canvanizer.com/new/lean-canvas
Business model toolbox	https://bmtoolbox.net/tools/lean-canvas/
Business model canvas vs lean canvas	https://canvanizer.com/how-to-use/business-model-canvas-vs-lean-canvas
Risk Management	
European Commission: Towards an effective and coherent risk management	https://ec.europa.eu/info/sites/info/files/about_the_european_commission/eu_budget/sec-2005-1327_2005_en.pdf
European Commission: Risk assessment and management	https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-15_en_0.pdf
Governance, risk management and compliance simplified	https://www.simplerisk.com/
The best risk management tools & techniques	https://www.projectmanager.com/blog/risk-management-tools-techniques

Business Plan	
Strategic and management plan	https://ec.europa.eu/info/strategy/strategy-documents/strategic-plans-management-plans_en
Best business plan tools	https://www.business.org/business/startup/best-business-plan-software-tools/
Technology roadmap tools	https://www.clouddirect.net/tools-for-technology-roadmaps/
Eco-innovation: General guidelines for developing a business plan	https://ec.europa.eu/environment/eco-innovation/files/docs/getting-funds/business_plan_guidelines.pdf

Knowledge Transfer to Policymakers	
EPA Resource Kit – Bridging the gap between science and policy	http://www.epa.ie/pubs/reports/research/spr/research133knowledgetransferguideforresearchers.html
EU valorisation policy	https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/eu-valorisation-policy-making-research-results-work-society_en
Open Innovation and Knowledge Transfer	http://144.65.132.57/wp-content/uploads/2015/08/Open-Innovation-and-Knowledge-Transfer-in-the-EU_0.pdf

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FoF-Impact. <i>D1.3 Use and Impact of Existing Technology Transfer Services within the Context of Factories of the Future</i> . EFFRA, 2016, pp. 1–33.
FoF-Impact. <i>D2.2 Formats for public workshops and events</i> . EFFRA, 2016, pp. 1–37.
FoF-Impact. <i>D2.3 Formats for first and second line assistance to individual organisations or project consortia</i> . EFFRA, 2016, pp. 1–20.
Herlitschka, de Colvenaer et al. <i>ECSEL JU Book of Projects: Calls 2016 & 2017</i> . Vol. 2, European Commission, 2018.
Nowak, Foster et al. <i>ECSEL JU Book of Projects: Calls 2014 & 2015</i> . Vol. 1, European Commission, 2016.
<i>Participant Portal H2020 Online Manual</i> . European Commission, 2019. < ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management_en.htm >.
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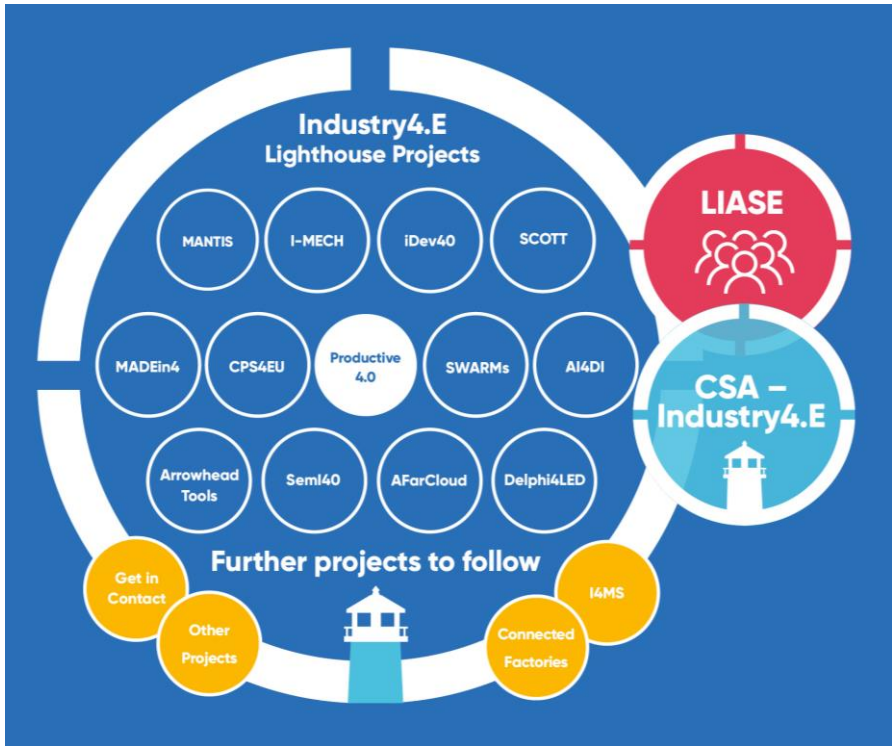
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Industry4.E Lighthouse Projects



Project Acronym

Project Website

Ai4Di

<https://ai4di.automotive.oth-aw.de/>

AFarCloud

<http://www.afarcloud.eu/>

Arrowhead Tools

<https://arrowhead.eu/arrowheadtools>

CPS4EU

<https://cps4eu.eu/>

Delphi4LED

<http://www.delphi4led.eu>

iDev40

<http://www.idev40.eu>

I-MECH

<http://www.i-mech.eu>

MADEin4

<https://www.semi.org/eu/MADEin4>

MANTIS

<http://www.mantis-project.eu>

Productive40

<http://www.productive40.eu>

SCOTT

<http://www.scottproject.eu>

Semi40

<http://www.semi40.eu>

SWARMs

<http://www.swarms.eu>



Abbreviations

Abbrev.	Description
BEP	Break Even Point
CDE	Communication, Dissemination & Exploitation
CI	Competitive Intelligence
CNC	Computer Numerical Control
CPS	Cyber Physical Systems
CSA	Coordinating and Support Action
DEP	Digital Europe Programme
DG	Directorate General
DMP	Data Management Plan
EASME	European Commission's Executive Agency for Small and Medium-sized Enterprises
EC	European Commission
ECS	Electronic Components & Systems
ECSEL-JU	Electronic Components & Systems for European Leadership Joint Undertaking
EU	European Union
H2020	Horizon 2020 Framework Programme 2014-2020
HEU	Horizon Europe Framework Programme 2021-2027
ICT	Information and Communication Technology
IPC	International Patent Classification
IPR	Intellectual Property Rights
KER	Key Exploitable Results
KPI	Key Performance Indicators
KT	Knowledge Transfer
LED	Light Emitting Diode
LIASE	Industry4.E Lighthouse Initiative Advisory Service
MVP	Minimum Viable Product
NDA	Non-Disclosure Agreement
OI	Open Innovation
PESTL	Political, Economic, Social, Technological, Legal
RD&I	Research Development and Innovation
ROI	Return on Investment
SEO	Search Engine Optimisation
SME	Small and Medium Enterprise
STEM	Science, Technology, Engineering and Mathematics
SWOT	Strengths, Weaknesses, Opportunities, Threats
TRL	Technology Readiness Level

Authors



Ivo Zeller is a project manager at S2i focusing on the area of advanced manufacturing technologies (Factories of the Future and Information Communication Technology), strategic dissemination, exploitation and road mapping activities. He is currently working as Dissemination and Community building lead in the INEDIT (H2020) project and as dissemination, exploitation and road mapping partner in the Industry4.E Lighthouse CSA (ECSEL). He also focusses on providing support in innovation management and technology transfer to SMEs and mid-caps. Ivo holds a degree in Earth and Ocean Science (University of Hamburg and NUIG, Ireland) as well as a master's in environmental Earth Sciences (Freie Universität Berlin and Nanjing University). Previously to his position at S2i, he was working as a project manager for offshore surveying in the Baltic Sea.



Dorothy Estrada is a Project Consultant at S2i. She holds a B.S. in Environmental Science from the University of Tampa and a dual M.S. in Sustainable Urbanism and Sustainable Design through both the University of Stuttgart and Ain Shams University. Dorothy is a recipient of the German DAAD scholarship and has over 5 years of professional experience as grant proposal writer and project coordinator. She was the co-founder of a sustainable agriculture-focused start-up, Ambrosia Global, from 2011-2013 and has specific expertise in both urban and environmentally sustainable development. Dorothy is passionate about projects related to local economic development, environmental improvement, and entrepreneurship/business development. Dorothy is a certified Master Facilitator with The Bridging Principles Europe, an organization delivering professional training on cross-cultural communication and cultural safety. She has also served as the Vice President of the development-focused NGO Weltweit e.V. since 2018.



Eva Kopf is a Project Consultant at S2i. She holds a bachelor's degree in Modern Languages, Cultures and Business Studies from the Justus-Liebig-University in Giessen, Germany, and a master's degree in Communication and International Marketing from the University of Surrey, where she graduated with distinction. Eva is a recipient of the Santander Country Scholarship and has over 5 years' experience in international communication and marketing in the private as well as public and academic sector. In her current role, she is mainly involved in projects related to circular economy and resource efficiency. She has a special interest in science communication and has co-organised two TEDx Events at the Karlsruhe Institute of Technology.



Dr. Meike Reimann is Senior Project Manager at S2i focusing on ICT and FoF projects and providing support in innovation management and technology transfer to SMEs and mid-caps. She has over 15 years of experience in coordinating and implementing interdisciplinary transnational research and innovation projects, and vast experience in leading dissemination and exploitation activities, technology transfer, foresight and innovation activities, road mapping and technical and socio-economic studies, trainings and coaching on innovation management services. Meike currently coordinates the CSA Smart4Europe2 as ‘outreach, ecosystem growth and sustainability’ lead to support innovative SMEs in their digital transformation through Digital Innovation Hubs. Moreover, she acts as the dissemination and user requirements partner in ConnectedFactories and is the exploitation and road mapping partner in the Industry4.E Lighthouse CSA (ECSEL). Meike has previously worked as a project manager for the Fraunhofer Institute for Biomedical Engineering and the University of Saarland and has gained deep experience in the scientific and administrative coordination of EC-funded projects.



Dr. Olga Ormond is a Senior Project Manager at AquaTT, providing communications, dissemination and exploitation support to manufacturing and nanotechnology projects. She is an experienced project manager, engineer, and research fellow, with significant knowledge of the Irish and European research and innovation landscape. Olga holds a PhD in Mobile and Wireless Networks (University College Dublin) and a Bachelor of Engineering in Telecommunications Engineering (Dublin City University (DCU)). Previously she has worked as an engineer for Ericsson, and as a Research Officer and a Funding Diversity Coordinator for DCU—supporting the development of many interdisciplinary transnational projects.



David Murphy is the General Manager at AquaTT and has almost 20 years of experience working in EC projects in the field of RTD, Education and Training, having coordinated eight and participated in over 40. He is the Strategic and Operational Leader for the H2020 EC Flagship project COLUMBUS, he coordinated Aqua-tnet for five years, and was facilitator of the Knowledge Management Thematic Area of the EATIP, the European Aquaculture Technology and Innovation Platform, bringing together private and public stakeholders to promote and coordinate research and development to improve competitiveness in the European aquaculture industry. He has a background in Marine Biology and Oceanography (BSc). He is a recognised leader in developing pioneer processes and responsible for the design and implementation of innovative techniques that incorporate collection, analysis and transfer of information in order to unlock the knowledge generated by EC funded research, assisting in the overall aim of reducing the barriers to impact from research.

Already published in the Steinbeis-Edition



Platforms4CPS

Key Outcomes and Recommendations
Haydn Thompson, Meike Reimann (Lead authors)

ISBN 978-3-95663-183-2 (print)

ISBN 978-3-95663-184-9 (non-print)

2018 | Softcover, color | 56 pages, engl.

Road2CPS

Meike Reimann, Carsten Rückriegel (Lead Authors)

ISBN 978-3-95663-065-1 (print)

ISBN 978-3-95663-117-7 (non-print)

2017 | Softcover, color | 56 pages, engl.



Strategic Research & Innovation Roadmap and Business Opportunities for ICT in Manufacturing

Nicky Athanassopoulou,
Haydn Thompson (Lead authors)

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2015 | Softcover, color | 36 pages, engl.



The digitalisation of industry – Industry 4.0 – is rapidly transforming all stages of the production value chain of goods globally. Advances in robotics, data collection, cybersecurity and other technologies are creating increasingly efficient, flexible and tailored manufacturing processes. If exploited, these technologies could create huge growth in across a spectrum of industries.

Over the past few years, Lighthouse Projects supported by the Industry4.E CSA have been guiding the way forward for other high-tech SMEs in Europe. Supported under the ECSEL Joint Undertaking and funded by the H2020 Research and Innovation Programme, CSA-Industry 4.E is a collaboration between 5 partners from 4 European countries.

Lighthouse Projects supported by the Industry4.E CSA have a special focus on all means of microelectronics and ICT for Digital Industry.

Now more than ever, Research, Development and Innovation (RDI) activities in high-tech areas are taking place across Europe and can help society achieve digital transition and strengthen Europe’s competitiveness. But, how does one communicate these high-tech innovations to the general public? How can scientists, industry peers, and even career-starters benefit from the information coming out of European projects? And how can results of projects be best utilized to capitalize on their added value for a maximum number of beneficiaries?

This publication aims to clarify these questions, while providing generalised tools for SMEs in any industry. This booklet also defines the EC’s expectations for Communication, Dissemination, and Exploitation activities within H2020-funded projects, and takes a deep-dive into each of these areas. Several practical use cases are presented, along with success stories from Industry4.E Lighthouse projects.

