VISEGRAD SUSTAINABLE LIVING LABS

NETWORK 4 YOUTH OF UNIVERSITIES (VSLLN4YOU)

TOOLKIT

Czech University of Life Sciences Prague
Visegrad Fund
UNIVERSITY of INFORMATION TECHNOLOGY and MANAGEMENT in Rzeszow
PÉCSI TUDOMÁNYEGYETEM
UNIVERSITY OF PÉCS

Publication of the toolkit with the financial support of the project: Visegrad Sustainable Living Labs Network 4 Youth of Universities (VSLLN4YOU)

Editorial supervision
Hynek Roubík

Proofreading
Stacy Denise Hammond Hammond

Design
Jan Staš

Toolkit developed by

- Hynek Roubík - Czech University of Life Sciences Prague (Czechia)
- Jan Staš – Czech University of Life Sciences Prague (Czechia)
- Balazs Borkovitas - University of Pecs (Hungary)
- Michal Cirner and – University of Presov (Slovakia)
- Gabriel Székely – University of Presov (Slovakia)
- Justyna Berniak-Woźny – University of Information Technology and Management in Rzeszów (Poland)
- Małgorzata Rataj - University of Information Technology and Management in Rzeszów (Poland)

A full version of the publication is available at: https://wsiz.edu.pl/vslln4you/

Introduction and acknowledgements

Students Living Labs are collaborative initiatives that involve students in real-world problem-solving and research projects. These labs provide a practical and hands-on learning environment where students can work on projects that have a direct impact on their communities or society at large.
The concept of Living Labs originated from the field of innovation and technology, where it referred to real-world test environments for new technologies and services. In the context of students, Living Labs have evolved to include a broader range of disciplines, such as social sciences, sustainability, urban planning, healthcare, and more.
Students Living Labs represent a dynamic and collaborative approach to education that empowers students to actively engage in real-world problem-solving and research initiatives. These innovative labs offer a practical and hands-on learning environment, where students have the unique opportunity to work on projects that directly impact their communities and society as a whole.
The concept of Living Labs finds its origins in the realm of innovation and technology, where it initially referred to real-world test environments for evaluating new technologies and services. However, in the context of students, Living Labs have evolved into multifaceted platforms encompassing a diverse array of disciplines beyond technology. Students now have the chance to explore and contribute to fields such as social sciences, sustainability, urban planning, healthcare, and many more.
Living Labs empower students to become proactive change-makers, as they step beyond the confines of traditional classrooms and theoretical learning. By immersing themselves in practical projects, students not only gain valuable academic knowledge but also develop essential skills, such as critical thinking, problem-solving, collaboration, and effective communication.

These initiatives thrive on interdisciplinary collaboration, fostering an environment where students from various academic backgrounds come together to exchange ideas and perspectives. By embracing a holistic and inclusive approach, Students Living Labs encourage students to appreciate the interconnectedness of real-world challenges, leading to the development of comprehensive and sustainable solutions.
Through the Living Lab experience, students not only refine their academic expertise but also cultivate a strong sense of social responsibility and empathy. Engaging directly with their communities and addressing genuine societal issues, students learn to prioritize ethical considerations and understand the broader implications of their actions.
As the concept of Living Labs continues to evolve, educational institutions worldwide recognize the transformative impact of these initiatives on students' personal growth and their ability to contribute positively to society. By fostering a culture of innovation, creativity, and community engagement, Students Living Labs play a pivotal role in shaping the leaders and problem-solvers of tomorrow, who are equipped to face the complexities of the modern world with confidence and compassion.

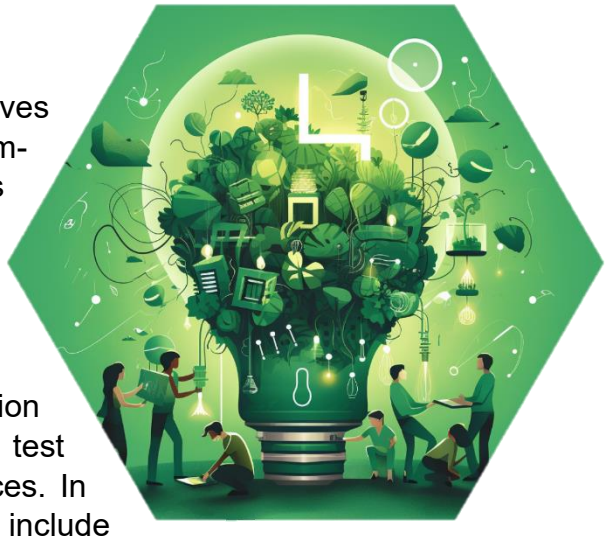
Therefore, we are here presenting you a Toolkit for university staff enabling effective support for Students Living Labs.
We truly believe that this toolkit will help you in developing and successfully running your Living Labs.

Wishing you a pleasant reading

Assoc. Prof. Dr. Hynek Roubík and the rest of contributing authors

Table of Contents

Introduction: Living Labs



Students Living Labs are collaborative initiatives that involve students in real-world problem-solving and research projects. These labs provide a practical and hands-on learning environment where students can work on projects directly impacting their communities or society.

Living Labs originated from the field of innovation and technology, where it referred to real-world test environments for new technologies and services. In the context of students, Living Labs evolved to include a broader range of disciplines, such as social sciences, sustainability, urban planning, healthcare, and more.

Students Living Labs represent a dynamic and collaborative approach to education that empowers students to engage in real-world problem-solving and research initiatives actively. These innovative labs offer a practical and hands-on learning environment where students have the unique opportunity to work on projects that directly impact their communities and society.

The Living Labs concept originates in the realm of innovation and technology, where it initially referred to real-world test environments for evaluating new technologies and services. However, in the context of students, Living Labs have evolved into multifaceted platforms encompassing diverse disciplines beyond technology. Students now have the chance to explore and contribute to fields such as social sciences, sustainability, urban planning, healthcare, and many more.

Living Labs empowers students to become proactive change-makers as they step beyond the confines of traditional classrooms and theoretical learning. By immersing themselves in practical projects, students gain valuable academic knowledge and develop essential skills, such as critical thinking, problem-solving, collaboration, and effective communication.

These initiatives thrive on interdisciplinary collaboration, fostering an environment where students from various academic backgrounds exchange ideas and perspectives. By embracing a holistic and inclusive approach, Students Living Labs encourages students to appreciate the interconnectedness of real-world challenges, leading to the development of comprehensive and sustainable solutions.

Through the Living Lab experience, students not only refine their academic expertise but also cultivate a strong sense of social responsibility and empathy. Engaging directly with their communities and addressing genuine societal issues, students learn to prioritize ethical considerations and understand the broader implications of their actions.

As the concept of Living Labs continues to evolve, educational institutions worldwide recognize the transformative impact of these initiatives on students' personal growth and their ability to contribute positively to society. By fostering a culture of innovation, creativity, and community engagement, Student Living Labs play a pivotal role in shaping the leaders and problem-solvers of tomorrow who are equipped to face the complexities of the modern world with confidence and compassion.

Therefore, we present you with the **Toolkit for university staff, enabling effective support for Students Living Labs**.

We believe this toolkit will help you develop and successfully run your Living Labs.

Wishing you a pleasant reading

Assoc. Prof. Dr. Hynek Roubík and contributing authors.

Key features of Students Living Labs

Interdisciplinary Collaboration: Students from various academic backgrounds come together to work on projects. This fosters interdisciplinary collaboration and allows students to gain insights and perspectives from different fields.

Real-World Projects

The projects undertaken in Students Living Labs are usually focused on solving real-world problems or conducting research that has practical applications.

Community Engagement

Living Labs often engage with local communities, non-profit organizations, government agencies, or businesses to address local challenges and needs effectively.

Innovation and Creativity

Students are encouraged to think innovatively and develop creative solutions to the problems they are tackling.

Mentorship and Guidance

Faculty members or experts in relevant fields typically supervise and guide students throughout their projects.

Learning by Doing

Students learn through hands-on experiences, gaining practical skills that go beyond traditional classroom learning.

Data Collection and Analysis

Living Labs often involve data collection and analysis to assess the impact of the projects or to inform decision-making.

Iterative Process

Projects in Living Labs may undergo iterative development and improvement, allowing students to learn from failures and make necessary adjustments.

Entrepreneurial Spirit

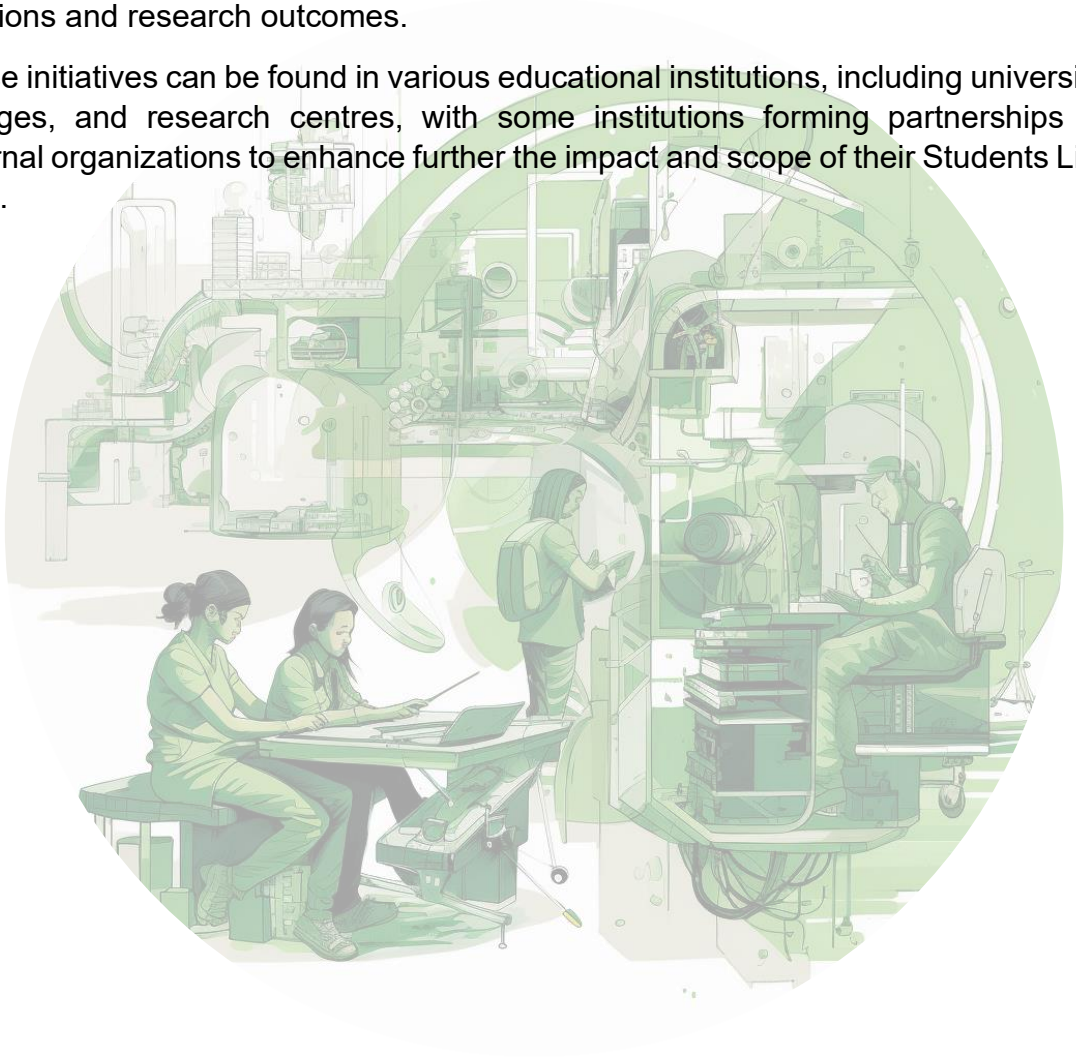
Most of the Students Living Labs encourage students to explore entrepreneurial opportunities based on their project outcomes.

Social Impact

The emphasis on real-world problem-solving often results in projects that have a tangible positive impact on society or the environment.

Students Living Labs provide a win-win scenario, benefiting both students and the communities they serve. Students gain valuable experience, skills, and a deeper understanding of the subject matter, while communities' benefit from the innovative solutions and research outcomes.

These initiatives can be found in various educational institutions, including universities, colleges, and research centres, with some institutions forming partnerships with external organizations to enhance further the impact and scope of their Students Living Labs.



Interdisciplinary Collaboration

Students Living Labs bring together students from diverse academic backgrounds. For example, an environmental sustainability project might involve students from environmental science, engineering, economics, sociology, and urban planning. This interdisciplinary approach allows students to pool their knowledge, skills, and perspectives to address complex problems that require multifaceted solutions. They learn how to communicate effectively across disciplines and gain insights into how different fields contribute to a comprehensive solution.

Interdisciplinary collaboration in Students Living Labs is a fundamental aspect that enriches the learning experience and enhances the problem-solving capacity of students. Let's explore this concept further with more detail and practical examples:

Environmental Sustainability Project

Imagine a Students Living Lab focused on finding sustainable solutions for waste management in a city. Students from various disciplines would contribute as follows:

- **Environmental Science Students**: They would assess the types of waste generated, their environmental impact, and potential recycling or disposal methods.
- **Engineering Students**: They could design innovative waste collection systems, recycling facilities, or waste-to-energy technologies.
- **Economics Students:** They would conduct a cost-benefit analysis of different waste management strategies, considering factors such as investment costs, operational expenses, and potential revenue streams from recycling.
- **Sociology Students**: They might conduct surveys and interviews to understand public attitudes and behaviours related to waste disposal, aiming to promote better waste reduction practices.
- **Urban Planning Students**: They would analyse the city's infrastructure and recommend efficient waste collection and disposal methods that align with urban development plans.

Through this collaboration, students from different fields would learn to appreciate the significance of each other's expertise and perspectives. They would develop the ability to communicate complex ideas in an understandable and actionable way to peers from different disciplines.

Healthcare Improvement Project:

In another scenario, a Students Living Lab could be dedicated to improving healthcare services in a rural area. The interdisciplinary team might consist of the following:

- **Medical Students**: They would identify the primary healthcare needs of the community and explore ways to address common health issues.
- **Engineering Students**: They might design low-cost medical equipment or mobile health solutions to reach remote areas.
- **Social Work Students**: They would consider the social determinants of health and work on community engagement strategies to encourage preventive healthcare practices.
- **Data Science Students**: They could analyse health data to identify trends and patterns, helping healthcare professionals make data-driven decisions.
- **Public Policy Students**: They would explore healthcare policies and advocate for healthcare infrastructure and service improvements.

Student collaboration would lead to comprehensive and culturally sensitive healthcare solutions in this scenario. By working together, students would become more adaptable and open-minded, learning to integrate their specialized knowledge with the broader context of community needs.

Sustainable Urban Development Project:

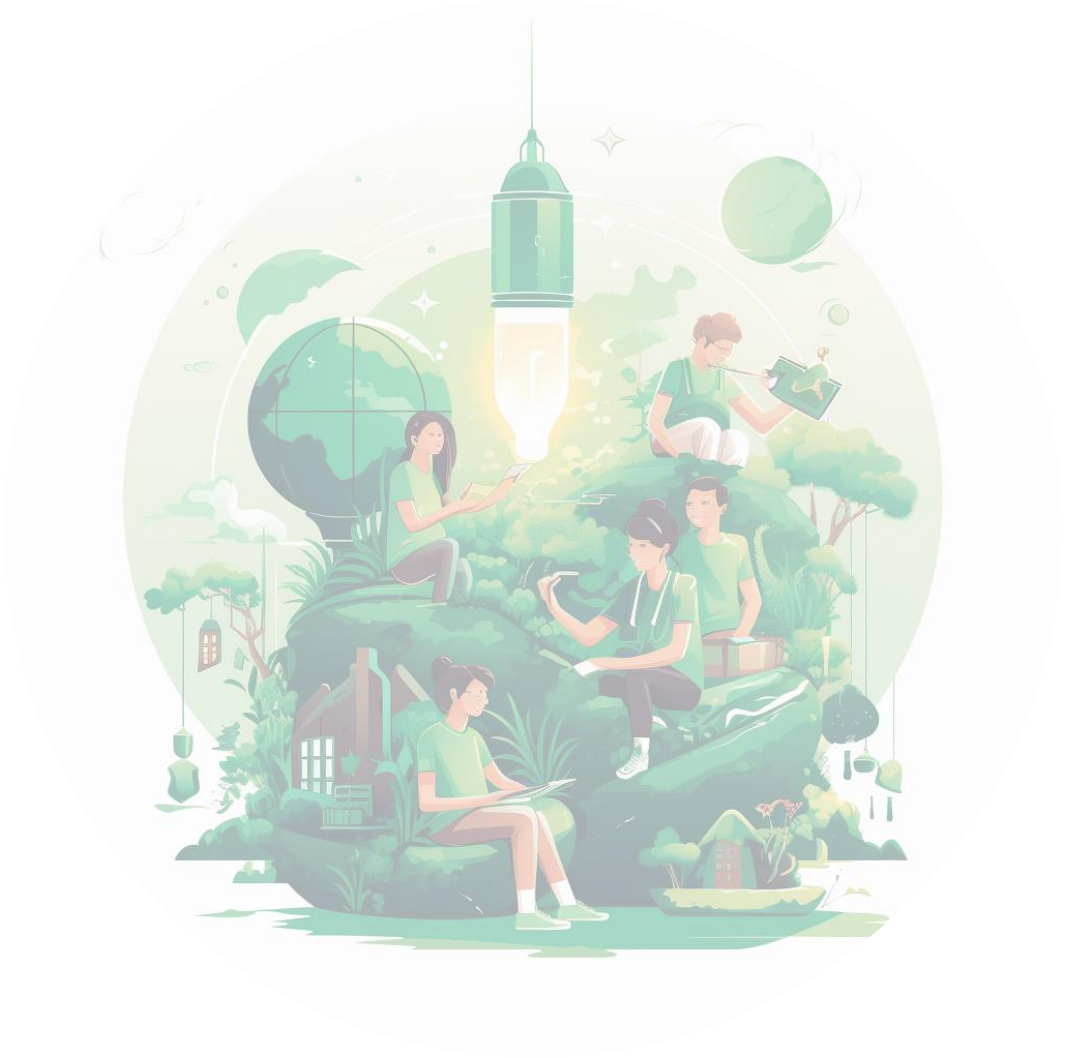
Suppose a Students Living Lab aims to revitalize a neighbourhood and promote sustainable urban development. The interdisciplinary team could include:

- **Architecture Students**: They would design eco-friendly, energy-efficient buildings that blend with local architectural heritage.
- **Civil Engineering Students**: They might focus on infrastructure improvements, such as creating pedestrian-friendly spaces, improving public transportation, and enhancing water and waste management systems.
- **Economics Students**: They would analyse the potential economic impact of the revitalization project, considering factors like property values, job creation, and local business opportunities.
- **Sociology Students**: They could conduct studies on the community's needs and preferences, ensuring that the revitalization plan respects and benefits its residents.
- **Environmental Science Students**: They would assess the project's environmental impact and propose ways to incorporate green spaces and renewable energy sources.

This interdisciplinary collaboration would give students a holistic understanding of sustainable urban development. They would learn to navigate the complexities of urban planning by integrating diverse viewpoints and expertise.

In all these examples, interdisciplinary collaboration in Students Living Labs cultivates teamwork and fosters a sense of collective responsibility. It encourages students to

think beyond the boundaries of their disciplines and equips them with the skills needed to address real-world challenges collaboratively. Moreover, these collaborations often extend beyond the duration of the projects, leading to long-term professional networks and partnerships that can continue to drive positive change in society.



Real-World Projects

The projects undertaken in Students Living Labs are not purely theoretical exercises. Instead, they focus on solving practical challenges faced by communities or industries. For instance, students might work on a renewable energy project to design and implement a solar-powered system for a local school. By working on real-world projects, students get a sense of purpose and relevance in their academic pursuits and see the direct impact of their efforts.

Real-World Projects in Students Living Labs are designed to tackle actual problems faced by communities or industries, providing students with hands-on experience in addressing real-life challenges. These projects go beyond classroom assignments and theoretical exercises as students work on practical solutions that have a tangible impact on the world around them. Let's elaborate further with a practical example:

Sustainable Water Management Project

Problem Statement

In a local community, there is a growing concern over water scarcity and inefficient water usage. The community relies heavily on groundwater, leading to depletion of water resources during certain periods of the year. Additionally, leakages in the existing water distribution system are causing further wastage. The community seeks a sustainable water management solution to conserve water and optimize its distribution.

Students Living Lab Project

A group of students from various disciplines, such as civil engineering, environmental science, and social sciences, form a team to address this water management challenge. Under the mentorship of faculty members and experts in water resources management, the project proceeds as follows:

- **Research and Data Collection**: The students start by conducting a thorough study of the local water resources, including groundwater levels, rainfall patterns, and water usage data. They also assess the current water distribution system to identify potential leakages and inefficiencies.
- **Community Engagement**: The students engage with the local community through surveys, interviews, and public meetings. They gather insights into the community's water consumption patterns, preferences, and concerns. Community members become actively involved in the project, contributing valuable input.

- **Designing Sustainable Solutions**: Based on their research and community input, the students develop a multi-faceted approach to address water scarcity and wastage. This might include:
    - Implementing rainwater harvesting systems to capture and store rainwater for non-potable uses.
    - Installing smart water meters to monitor usage and detect leaks in the distribution network.
    - Promoting water conservation awareness campaigns to encourage responsible water use among residents.
- **Testing and Implementation**: The students build prototypes of the proposed solutions and test them in controlled environments to ensure their effectiveness. For example, they might set up a rainwater harvesting system in a pilot location or install smart water meters in a small community section.
- **Impact Assessment**: Once the solutions are implemented, the students monitor and evaluate their impact on water conservation and efficiency. They collect data on water usage before and after the interventions to quantify the improvements achieved.
- **Community Outreach and Education**: The students organize workshops and informational sessions to educate the community about the importance of sustainable water management. They teach residents how to operate and maintain the new systems, empowering them to continue the initiatives in the future.
- **Continuous Improvement**: Throughout the project, the students regularly discuss with their mentors and the community to gather feedback. They use this feedback to refine and improve their solutions continuously.
- **Outcomes and Impact**: The team successfully implements sustainable water management practices in the community through the Students Living Lab project. The rainwater harvesting system reduces the community's reliance on groundwater during the rainy season, leading to more sustainable water usage. Smart water meters help detect and repair leaks promptly, reducing water wastage. The awareness campaigns can create a culture of responsible water use in the community, further contributing to conservation efforts.

The Students Living Lab not only provides the local community with tangible solutions to its water management challenges but also equips the students with invaluable skills. They learn how to conduct interdisciplinary research, engage with stakeholders, design and implement practical solutions, and assess the impact of their work. Moreover, they experience the fulfilment of working on a project that directly benefits the community and the environment. This real-world experience prepares them to be proactive and socially responsible professionals in their future careers.

Community Engagement

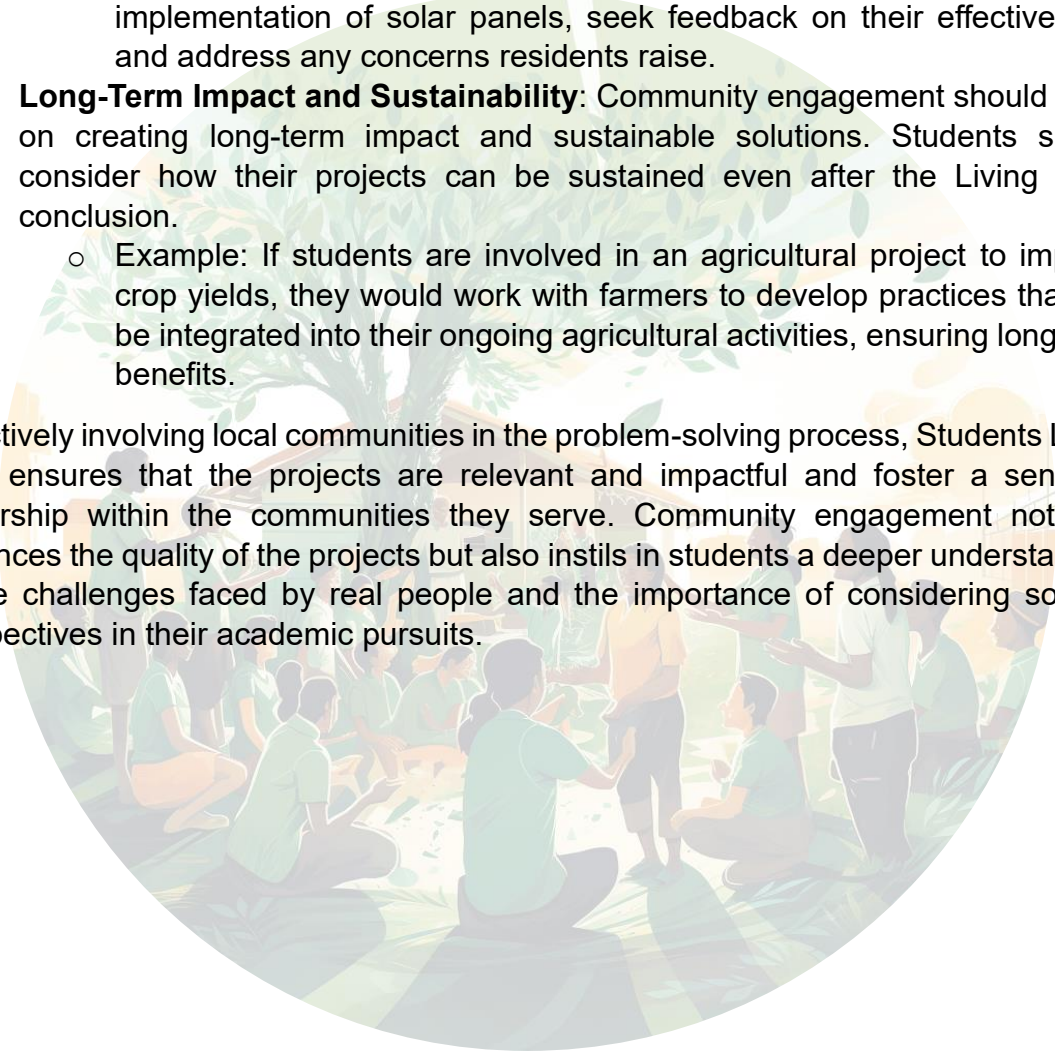
Students Living Labs often collaborate with local communities or external organizations to identify pressing issues and needs. For example, students working on a public health project might partner with local health clinics or NGOs. This engagement ensures that the projects are aligned with actual community requirements, increasing the likelihood of successful and meaningful outcomes.

Community engagement is a critical aspect of Students Living Labs, as it connects students with real-world challenges and ensures that the projects they undertake have a meaningful impact on the communities they serve. Here's a more detailed explanation of community engagement in Students Living Labs, along with practical examples:

- **Identifying Relevant Issues**: Community engagement begins by identifying relevant issues and needs in the local community. Students and faculty members actively interact with community members, local organizations, and stakeholders to understand their challenges. This could be achieved through surveys, focus groups, interviews, or town hall meetings.
    - Example: Let's say students are part of a Living Lab focused on sustainable urban development. They would engage with city residents, local government officials, and environmental organizations to identify key issues like transportation problems, air quality, green spaces, or waste management concerns.
- **Collaborating with Local Partners**: Students Living Labs often partner with local organizations, NGOs, government agencies, or businesses to gain insights and expertise. These partners may have a deeper understanding of the community's needs and can provide valuable guidance to students throughout the project.
    - Example: If students are working on a project to improve access to education in underserved communities, they might collaborate with local educational NGOs, schools, and relevant government departments.
- **Co-Creation and Co-Design**: Effective community engagement involves co-creation and co-design, where community members actively participate in shaping the project's goals and strategies. This collaborative approach ensures that the solutions proposed are contextually appropriate and have the community's buy-in.
    - Example: In a Students Living Lab focusing on food security, students would involve local farmers, food banks, and residents to design interventions that address specific nutritional and food distribution challenges the community faces.
- **Empowering Community Members**: Community engagement should empower community members to have a voice in decision-making processes.

Students in Living Labs work alongside community members as partners rather than imposing solutions from an outsider's perspective.
    - Example: If students are working on a health outreach program, they would involve community health workers, local leaders, and residents in planning and executing health campaigns, empowering them to take ownership of their community's health.
- **Cultural Sensitivity and Ethical Considerations**: Engaging with communities requires cultural sensitivity and understanding of ethical considerations. Students should respect the community's cultural norms, privacy, and autonomy throughout the project.
    - Example: Suppose students are researching water resource management in a culturally diverse region. They would ensure that their data collection methods and findings are sensitive to cultural beliefs and practices related to water usage.
- **Continuous Feedback and Communication**: Regular communication and feedback loops are crucial for successful community engagement. Students should keep community members informed about the project's progress, share findings, and incorporate feedback into their work.
    - Example: In a Students Living Lab working on renewable energy solutions, students would regularly update the community on the implementation of solar panels, seek feedback on their effectiveness, and address any concerns residents raise.
- **Long-Term Impact and Sustainability**: Community engagement should focus on creating long-term impact and sustainable solutions. Students should consider how their projects can be sustained even after the Living Lab's conclusion.
    - Example: If students are involved in an agricultural project to improve crop yields, they would work with farmers to develop practices that can be integrated into their ongoing agricultural activities, ensuring long-term benefits.

By actively involving local communities in the problem-solving process, Students Living Labs ensures that the projects are relevant and impactful and foster a sense of ownership within the communities they serve. Community engagement not only enhances the quality of the projects but also instils in students a deeper understanding of the challenges faced by real people and the importance of considering societal perspectives in their academic pursuits.



Innovation and Creativity

Living Labs fosters an environment where students are encouraged to think outside the box and propose innovative solutions. Students are given the freedom to explore unconventional ideas and experiment with new approaches. This freedom to innovate nurtures creativity and encourages students to take calculated risks in problem-solving.

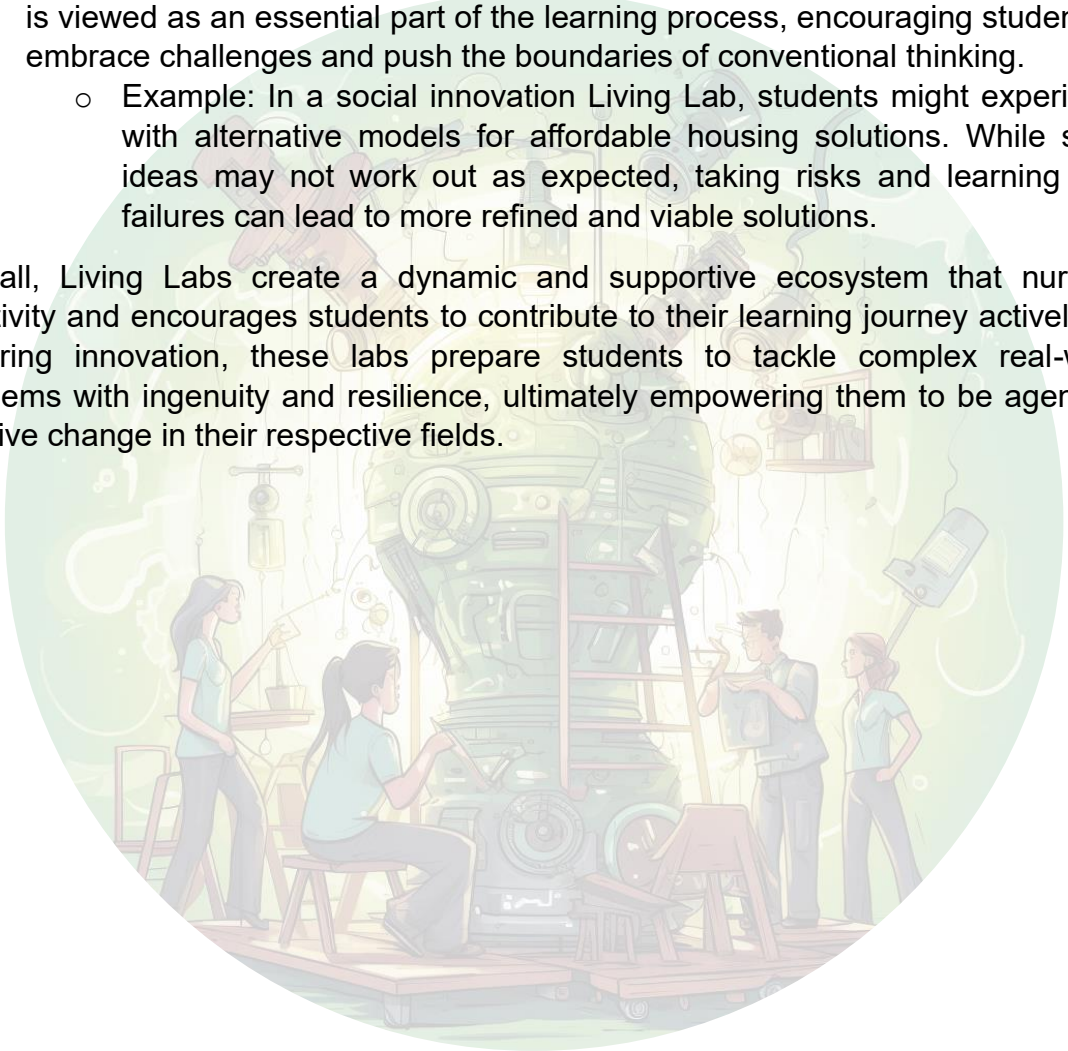
Innovation and creativity are central to the success of Students Living Labs. These labs provide a unique setting where students can explore and apply novel ideas to address real-world challenges. Let's go a bit deeper into how Living Labs promote innovation and creativity, along with practical examples:

- **Open-Mindedness and Freedom to Explore**: In Living Labs, students are encouraged to approach problems with open minds and without preconceived notions. They have the freedom to explore different perspectives and potential solutions. This open-mindedness allows students to challenge traditional thinking and explore unconventional approaches.
    - Example: Suppose a group of engineering students is tasked with improving water access in a rural community. Instead of relying solely on traditional water infrastructure solutions, they might explore sustainable water harvesting techniques inspired by nature, such as biomimicry, to create innovative and environmentally friendly water supply systems.
- **Cross-Disciplinary Collaboration**: Living Labs often involve students from various academic disciplines working together. Interacting with peers from different backgrounds exposes students to diverse viewpoints and methodologies. This cross-disciplinary collaboration sparks new ideas and encourages the integration of knowledge from different fields.
    - Example: A Students Living Lab addressing urban mobility challenges may have students from urban planning, data science, and psychology collaborating. Together, they might develop an innovative transportation solution that combines smart city technologies, human behaviour analysis, and optimized route planning to reduce traffic congestion and improve public transportation usage.
- **Prototyping and Experimentation**: Living Labs allow students to create prototypes and experiment with different concepts before settling on a final solution. The ability to build and test prototypes in real-world scenarios allows students to learn from failures and iterate on their ideas.
    - Example: Students working on a sustainability project to reduce food waste might design and test various smartphone apps that connect local businesses with surplus food to nearby shelters or food banks. Through

experimentation, they can identify the most efficient and user-friendly solution.

- **Inspiration from Real-World Challenges**: Living Labs often address pressing real-world problems, which can serve as a source of inspiration for students. The desire to positively impact society motivates students to think creatively and develop practical solutions.
    - Example: A group of students engaged in a healthcare-focused Living Lab might be inspired to develop a low-cost medical device to diagnose a prevalent local disease. Their innovation could significantly improve healthcare access and quality in the region.
- **Mentorship and External Expertise**: Living Labs often involve mentorship from faculty members and collaboration with external experts and professionals. These mentors provide guidance and expose students to different perspectives, fostering a culture of continuous learning and innovation.
    - Example: If students are working on a renewable energy project, they might collaborate with energy experts from the industry. The experts' insights could inspire students to think creatively about sustainable energy solutions, leading to breakthrough innovations.
- **Encouragement of Healthy Risk-Taking**: Living Labs provide a safe environment for students to take calculated risks and explore bold ideas. Failure is viewed as an essential part of the learning process, encouraging students to embrace challenges and push the boundaries of conventional thinking.
    - Example: In a social innovation Living Lab, students might experiment with alternative models for affordable housing solutions. While some ideas may not work out as expected, taking risks and learning from failures can lead to more refined and viable solutions.

Overall, Living Labs create a dynamic and supportive ecosystem that nurtures creativity and encourages students to contribute to their learning journey actively. By fostering innovation, these labs prepare students to tackle complex real-world problems with ingenuity and resilience, ultimately empowering them to be agents of positive change in their respective fields.



Mentorship and Guidance

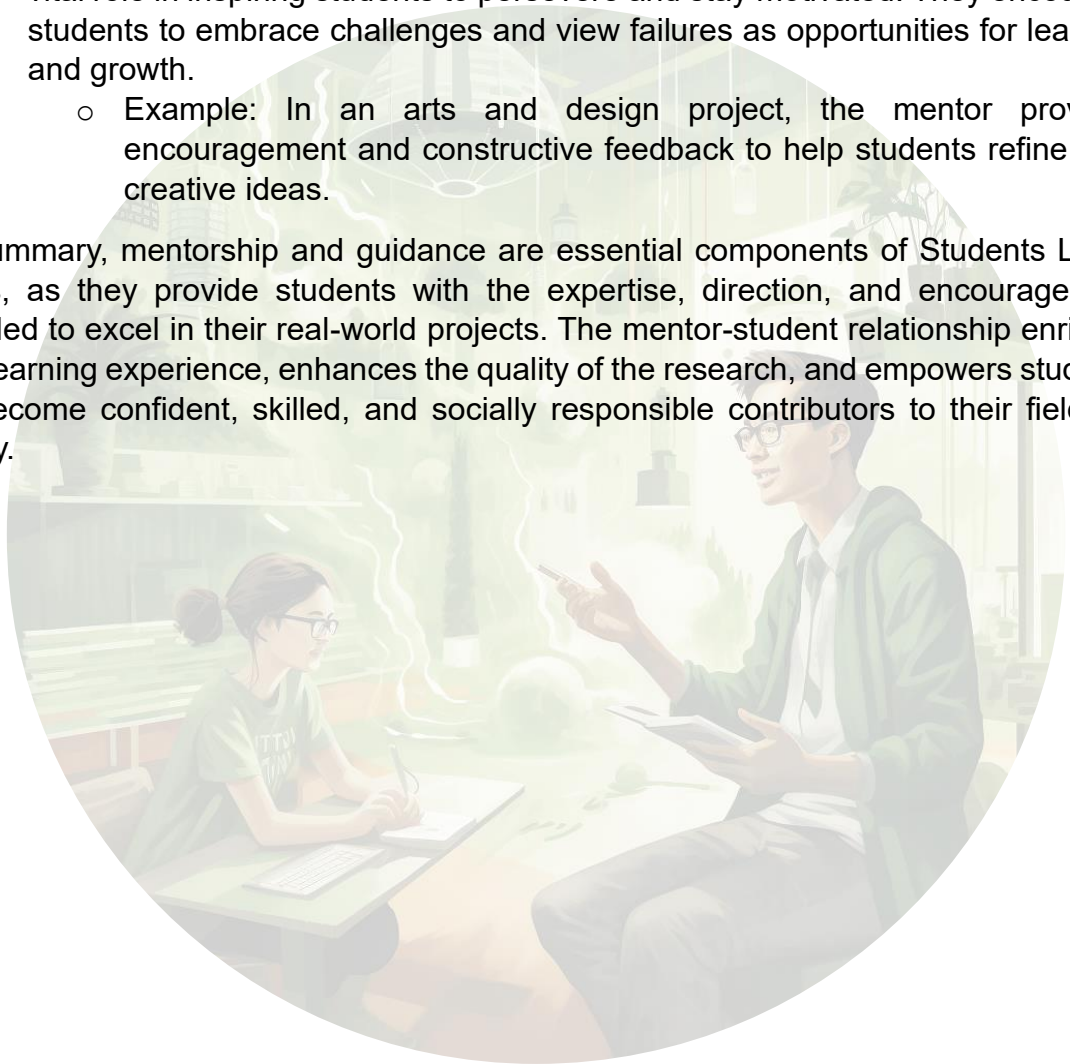
Faculty members or experts in relevant fields are crucial in guiding and mentoring students throughout their projects. These mentors provide valuable insights, offer technical expertise, and assist in project planning and execution. The mentorship relationship helps students refine their research methodologies and enhances the overall quality of their work.

Mentorship and guidance are integral components of Students Living Labs, as they provide students with the necessary support and expertise to navigate their projects successfully. Let's explore this aspect in more detail, along with practical examples:

- **Selection of Mentors**: Faculty members or experts are chosen as mentors in a Students Living Lab based on their expertise in the relevant field. The mentor's knowledge and experience should align with the focus of the student's project to ensure they receive appropriate guidance.
    - Example: If students are working on a renewable energy project, the mentor could be a professor from the engineering department specializing in renewable energy technologies.
- **Initial Project Planning**: Mentors collaborate with students during the initial stages of their projects to help them define clear objectives and create a project roadmap. They assist students in formulating research questions, defining methodologies, and setting realistic milestones.
    - Example: In a social sciences project focused on studying the impact of a community program, the mentor helps students design surveys, interviews, and data collection methods.
- **Technical Expertise**: Mentors provide technical knowledge and skills students might lack or need to enhance their project's quality. They help students understand complex concepts, use specialized tools or equipment, and navigate potential challenges.
    - Example: If students are developing a new healthcare device, the mentor could guide them in understanding the intricacies of the device's engineering and provide insights into relevant regulatory requirements.
- **Feedback and Guidance**: Throughout the project, mentors offer constructive feedback on students' progress, methodologies, and findings. They help students critically analyse their data and interpretation, ensuring the research is sound and aligned with academic standards.
    - Example: In a business project aimed at optimizing supply chain logistics, the mentor reviews the data analysis process and provides suggestions for improving efficiency and accuracy.
- **Troubleshooting and Support**: When students encounter obstacles or difficulties, mentors are there to assist them in troubleshooting issues and

finding potential solutions. They act as a source of support, helping students regain momentum and confidence in their work.
    - Example: In an environmental project assessing water quality, the mentor might assist students in troubleshooting technical challenges with data collection sensors.
- **Ethical Considerations**: Mentors guide students in considering ethical implications related to their projects. They ensure that research is conducted ethically, respecting the rights and privacy of participants and adhering to relevant ethical guidelines.
    - Example: In a psychology study investigating sensitive topics, the mentor ensures that the project follows ethical protocols for informed consent and data confidentiality.
- **Professional Development**: Mentorship extends beyond the project itself and can include guidance on career development, networking, and presentation skills. Mentors help students prepare for showcasing their work in academic conferences or other public forums.
    - Example: For an engineering project, the mentor might advise students on how to present their findings effectively in a technical conference.
- **Encouragement and Inspiration**: Beyond technical support, mentors play a vital role in inspiring students to persevere and stay motivated. They encourage students to embrace challenges and view failures as opportunities for learning and growth.
    - Example: In an arts and design project, the mentor provides encouragement and constructive feedback to help students refine their creative ideas.

In summary, mentorship and guidance are essential components of Students Living Labs, as they provide students with the expertise, direction, and encouragement needed to excel in their real-world projects. The mentor-student relationship enriches the learning experience, enhances the quality of the research, and empowers students to become confident, skilled, and socially responsible contributors to their fields of study.



Learning by Doing

Living Labs are all about experiential learning. Instead of passively absorbing information from lectures, students actively engage with the challenges at hand. They apply theoretical concepts learned in the classroom to practical scenarios, developing critical thinking and problem-solving skills. Learning by doing also allows students to build confidence and self-efficacy in their abilities.

Learning by Doing in Students Living Labs is a pedagogical approach that emphasizes active engagement and hands-on experience. It involves students directly participating in real-world projects rather than passively receiving information through traditional lectures or theoretical coursework. By immersing themselves in practical scenarios, students gain valuable insights and develop essential skills that are not easily attainable through theoretical learning alone.

Here's a more detailed explanation of this crucial feature with practical examples:

- **Project-Based Learning**: Students in Living Labs typically work on projects that align with their academic interests and the lab's objectives. For example, a group of engineering students might collaborate on a renewable energy project, designing and building a small-scale wind turbine to power a community center. They apply mechanical engineering principles, aerodynamics, and electrical systems by working on the project, translating theoretical knowledge into tangible, functioning devices.
- **Problem-Solving Challenges**: Living Labs present students with real-world challenges that require innovative problem-solving. For instance, a group of urban planning students might be tasked with developing a sustainable transportation plan for a city. They must consider factors like traffic flow, environmental impact, and community accessibility, applying theoretical knowledge in urban planning to design practical and feasible solutions.
- **Community Engagement and Fieldwork**: Learning by doing often involves engaging directly with the community or conducting fieldwork. For example, public health students might work with local clinics to assess the effectiveness of health awareness campaigns. They might collect data through interviews and surveys, applying research methodologies and statistical analysis techniques learned in their coursework.
- **Prototyping and Testing**: Living Labs offer opportunities for students to build prototypes and test their ideas in real-world conditions. For instance, a group of product design students might develop a new assistive technology device for individuals with disabilities. They will create prototypes, gather feedback from potential users, and iterate on their designs to improve functionality and usability.

- **Collaboration and Teamwork**: Learning by doing in Living Labs often involves teamwork and collaboration. Students learn to work effectively with peers from different backgrounds and perspectives, mirroring the dynamic nature of real-world professional environments. This experience hones their communication skills and ability to collaborate on complex projects.
- **Reflection and Feedback**: Students engage in reflective practices throughout the process, analysing their experiences and learning outcomes. They may participate in regular discussions or presentations to share their progress and receive feedback from peers, mentors, and community partners. This reflective practice fosters a deeper understanding of the project's impact and allows students to refine their approaches.
- **Building Confidence and Self-Efficacy**: As students actively engage in problem-solving and project execution, they develop confidence in their abilities. They witness the practical application of their knowledge, see their ideas come to life, and experience the positive impact of their work. This increased self-efficacy motivates students to take on more significant challenges and believe in their capacity to effect change.

Practical Example: Sustainable Agriculture Project

Suppose a group of students from various disciplines, such as agriculture, environmental science, and business, collaborates on a sustainable agriculture project in a rural community.

- ***Step 1 - Understanding the Community***
  - The students engage with local farmers, community leaders, and environmental experts to assess the region's agriculture practices and challenges.
- ***Step 2 - Identifying the Problem***
  - Through community engagement and research, they identify water scarcity as a significant issue affecting crop yields and food security.
- ***Step 3 - Designing a Solution***
  - Using their theoretical knowledge of irrigation techniques, hydrology, and resource management, the students propose a sustainable irrigation system that utilizes rainwater harvesting and smart water distribution.
- ***Step 4 - Building and Implementing***
  - The students build a prototype of the irrigation system and work with local farmers to install and test it on a pilot farm.
- ***Step 5 - Data Collection and Analysis***
  - They collect data on crop yields, water usage, and overall system performance. They use statistical analysis to evaluate the system's effectiveness in conserving water and improving crop production.
- ***Step 6 - Reflection and Improvements***
  - Through regular team meetings and discussions with mentors, the students reflect on the project's progress and challenges. They use feedback to refine the irrigation system design and address operational issues.
- ***Step 7 - Community Impact***
  - The sustainable irrigation system proved successful in the pilot phase, leading to expanded adoption by local farmers. As a result, crop yields increase, and the community's food security improves.

In this example, students applied theoretical concepts from various disciplines to address a real-world problem, fostering critical thinking and problem-solving skills. They also learned to collaborate effectively in an interdisciplinary team, build prototypes, and use data for informed decision-making. Through this hands-on experience, they developed confidence in their ability to impact the community's well-being positively.

Data Collection and Analysis

Living Labs often involve data collection to support their projects. Students learn how to design surveys, conduct interviews, or use sensors and data analytics tools to gather relevant information. Data analysis is crucial, as students interpret the data to draw meaningful conclusions and make informed decisions.

Data Collection and Analysis is a fundamental aspect of Students Living Labs. It involves gathering relevant information to understand the problem, assess the impact of interventions, and draw meaningful conclusions to inform decision-making and project outcomes. Let's explore this key feature in more detail with practical examples:

- **Designing Surveys**: In a Students Living Lab focused on urban mobility, students might design surveys to collect data on commuting patterns, transportation preferences, and challenges residents face in a particular city. The surveys could be distributed to the local community, asking questions about their mode of transportation, frequency of travel, and reasons for choosing specific transport options. The collected data could then be analysed to identify opportunities for improving transportation infrastructure and services.
- **Conducting Interviews**: Let's say students are involved in a healthcare-related Living Lab. They might interview patients, healthcare providers, and administrators to understand the pain points and inefficiencies in the current healthcare system. Through these interviews, students can gain insights into patient experiences, identify bottlenecks in the care process, and explore potential solutions to enhance healthcare delivery.
- **Using Sensors and IoT Devices**: In an environmental sustainability Living Lab, students may deploy sensors and Internet of Things (IoT) devices to monitor air quality, water pollution, or energy consumption in a specific area. For instance, they could set up air quality sensors in different locations to measure pollution levels over time. The collected sensor data would help identify pollution hotspots and evaluate the effectiveness of any implemented interventions.
- **Data Analytics Tools**: Students can learn to use various data analytics tools and software to process and analyse the data they have collected. For example, they might use spreadsheet software to organize survey responses or perform basic data visualization to identify patterns and trends. They could use statistical software like R or Python to conduct regression analysis, hypothesis testing, or clustering for more advanced analysis.

Practical Example: Students Living Lab in Energy Efficiency

Let's consider a practical example of a Students Living Lab focused on energy efficiency in university buildings. The goal is to identify opportunities to reduce energy consumption and implement sustainable practices.

- ***Step 1 - Data Collection Phase***
  - Students begin by deploying IoT sensors in different campus buildings to monitor electricity usage, temperature, and occupancy.
  - They also design and administer surveys to gather information from students, faculty, and staff about their energy usage habits and suggestions for improvement.
- ***Step 2 - Data Analysis Phase***
  - After collecting data for a few weeks, students aggregate and clean the sensor data, ensuring its accuracy and consistency.
  - Using data analytics tools, they analyse the energy consumption patterns in various buildings, identifying peak usage times and areas with high energy wastage.
  - They correlate the sensor data with survey responses to understand how occupant behaviour affects energy usage.
- ***Step 3 - Insights and Recommendations***
  - Based on the analysis, students discover that certain buildings have outdated heating and cooling systems, leading to excessive energy use.
  - They find that a significant number of students leave lights and electronic devices on in empty classrooms and offices, contributing to unnecessary electricity consumption.
  - Armed with these insights, students propose recommendations, such as upgrading HVAC systems, installing motion-sensor lighting, and raising awareness about energy conservation practices among the university community.
- ***Step 4 - Impact of Data Collection and Analysis***
  - The Students Living Lab's recommendations can be presented to university administrators and facilities management.
  - Upon implementation, the university experiences a noticeable reduction in energy consumption, leading to cost savings and a reduced carbon footprint.
  - Students involved in the Living Lab gain hands-on experience in data collection and analysis, problem-solving, and communicating their findings to stakeholders.

In conclusion, the Data Collection and Analysis aspect of Students Living Labs empowers students with practical research skills and enables them to make evidence-based decisions. It equips them with the ability to identify problems, collect and analyse data, and propose informed solutions, all of which are invaluable skills in their academic and professional journeys.

Iterative Process

Projects in Students Living Labs might not have a linear progression. Students often encounter challenges, setbacks, or unexpected findings. The iterative process allows them to continuously improve and refine their approaches based on feedback and outcomes. This iterative nature fosters adaptability and resilience, which are essential qualities in real-world problem-solving.

The iterative process in Students Living Labs refers to project development's cyclical and continuous nature. It involves going through repeated cycles of planning, executing, gathering feedback, and improving the project based on the lessons learned from each cycle. This approach contrasts with a linear process where each step is completed before moving on to the next. The iterative process is particularly well-suited for complex, dynamic, and uncertain real-world problems that may require multiple attempts to find optimal solutions.

Let's break down the iterative process in Students Living Labs with practical examples:

- **Project Planning**: Students start by defining the scope and objectives of their project. They identify the problem they want to address and create a plan outlining the steps to tackle the issue. For instance, a group of students interested in waste management may plan a project to reduce plastic waste on their college campus.
- **Initial Implementation**: In this phase, students execute their plan. They might implement a waste segregation system, place recycling bins across the campus, and raise awareness about plastic recycling. As the project progresses, they collect data on the amount of plastic waste generated and the effectiveness of their efforts.
- **Gathering Feedback and Data**: During the implementation phase, students collect feedback from stakeholders, such as fellow students, faculty, janitorial staff, and waste management personnel. They also gather data on the amount of plastic waste being properly segregated and recycled. This feedback and data are critical inputs for the iterative process.
- **Reflection and Analysis**: Once the initial implementation phase is complete, students analyse the feedback and data they have collected. They reflect on the outcomes and assess whether their efforts have had the desired impact on reducing plastic waste. They also identify any challenges or unexpected findings that emerged during the implementation.
- **Adaptation and Refinement**: Based on the analysis, students identify areas for improvement. For instance, they may discover that certain locations on campus have low recycling rates and need more attention. They might also find that some communication strategies were more effective than others in raising

awareness. With this knowledge, they adapt their approach and refine their project for the next iteration.

- **Reiteration of the Cycle**: The process of planning, implementing, gathering feedback, reflecting, and refining is repeated in subsequent cycles. Each iteration builds upon the insights gained from the previous one. Each cycle makes the project more effective and tailored to the specific needs and challenges identified during the feedback and analysis stages.
- **Continuous Learning and Improvement**: Students continuously learn from their successes and failures throughout the iterative process. They develop adaptability and resilience as they navigate setbacks and unexpected obstacles. This continuous learning process is a valuable aspect of Students Living Labs, as it prepares students to handle uncertainty and complexity in their future careers.

Now, if we continue with the practical examples, let us suppose during the iterative process of the waste management project, students discover that certain dormitory areas on campus have consistently low recycling rates despite their efforts. They realise that recycling bins in these areas alone cannot promote recycling behaviour.

For the next iteration, the students introduce a rewards-based system to incentivise recycling in these locations. They collaborate with the residential life office to offer small rewards, such as discounts at the campus bookstore or meal vouchers, to students who consistently recycle in those areas. The rewards system is communicated effectively through social media and posters.

After the second iteration, the students collected data again and found that recycling rates in the targeted areas had significantly increased. However, they also noticed that some students were still confused about which items could be recycled, leading to contamination issues.

In response, the students adjust their communication strategy in the next iteration, providing more precise and detailed information on what can and cannot be recycled. Additionally, they conduct workshops and awareness sessions in collaboration with the campus sustainability club to educate the student community about proper waste segregation.

The waste management project becomes increasingly effective through multiple iterations and refinements, and recycling rates across the campus improve significantly. The iterative process allowed the students to adapt their approach based on feedback, learn from their experiences, and make data-driven decisions, ultimately achieving positive results in their real-world project.

In summary, the iterative process in Students Living Labs fosters a culture of learning, experimentation, and improvement. It empowers students to become adaptable problem-solvers who can tackle complex challenges and drive meaningful change in their communities.

Entrepreneurial Spirit

Living Labs encourages students to consider entrepreneurial opportunities based on their project outcomes. If students identify a viable and innovative solution, they might explore the possibility of commercializing it or starting a social enterprise. This entrepreneurial spirit promotes self-driven initiative and fosters an appreciation for the potential societal impact of entrepreneurial ventures.

Entrepreneurial Spirit in Students Living Labs encourages students to think beyond academic exercises and consider how their projects can translate into real-world ventures with potential commercial or social impact. This aspect of Living Labs empowers students to become proactive problem-solvers and fosters an entrepreneurial mindset that values innovation, creativity, and initiative.

Let's explore this further with some examples:

Example 1: Sustainable Product Design

Imagine a Students Living Lab focused on sustainability and product design. A group of students is tasked with developing an eco-friendly alternative to single-use plastic bottles. Through their research and experimentation, they created a biodegradable water bottle made from renewable resources.

- **Entrepreneurial Spirit**: One of the students realizes that their biodegradable water bottle has significant market potential. They start considering the possibility of commercialising the product. The Living Lab mentors support this student in conducting market research, creating a business plan, and exploring potential partnerships with manufacturers and distributors. They learn about supply chains, pricing strategies, and branding to make their project a viable business venture.
- **Impact**: Not only does this project contribute to reducing plastic waste and promoting sustainability, but it also empowers the student entrepreneur to launch a socially responsible business that can make a difference in the market.

Example 2: Healthcare Technology

In another Students Living Lab focused on healthcare technology, students are working on a project to improve patient monitoring in rural areas. They developed a low-cost, portable medical device that can remotely monitor vital signs and transmit data to healthcare professionals.

- **Entrepreneurial Spirit**: One of the students sees the potential of their medical device to address healthcare disparities in underserved communities. They are

considering forming a social enterprise to provide these devices to remote clinics at affordable prices. The Living Lab mentors guide them in understanding the regulatory requirements, building a sustainable business model, and seeking potential funding or grants for their venture.

- **Impact**: Beyond the initial project, this student's entrepreneurial initiative leads to creating of a social enterprise that bridges the gap in rural healthcare, potentially saving lives and improving health outcomes in vulnerable communities.

Example 3: Sustainable Urban Planning

In a Students Living Lab focused on sustainable urban planning, students are working on a project to revitalize an underutilized urban area. They propose a mixed-use development plan incorporating green spaces, energy-efficient buildings, and sustainable transportation solutions.

- **Entrepreneurial Spirit**: One of the students also recognizes the demand for sustainable urban planning solutions in other cities. They decided to create a consultancy firm that offers sustainable urban planning services to local governments and developers. The Living Lab provides them with business development, marketing, and networking guidance.
- **Impact**: Beyond the initial project location, this student's entrepreneurial venture expands the reach of sustainable urban planning practices, promoting environmentally friendly and socially inclusive urban development in various cities.

In each of these examples, the entrepreneurial spirit in Students Living Labs goes beyond the classroom. It encourages students to identify opportunities for impact and take the initiative to turn their ideas into reality. Students learn valuable business acumen, risk management, teamwork, and negotiation skills by exploring entrepreneurial opportunities. Moreover, they gain a deeper appreciation for the potential of entrepreneurship to drive positive societal change and sustainable innovation. Even if students choose not to pursue entrepreneurship directly, this mindset equips them with the ability to think creatively and seek innovative solutions in their future.

Social Impact

Ultimately, the primary goal of Students Living Labs is to make a positive social impact and in case when linked with the university, also help to fulfil the so-called “Third role of the universities”. The projects are designed to address real-world problems and create meaningful change in communities or industries. Students learn to consider their work's ethical and social implications, understanding the broader context of their actions.

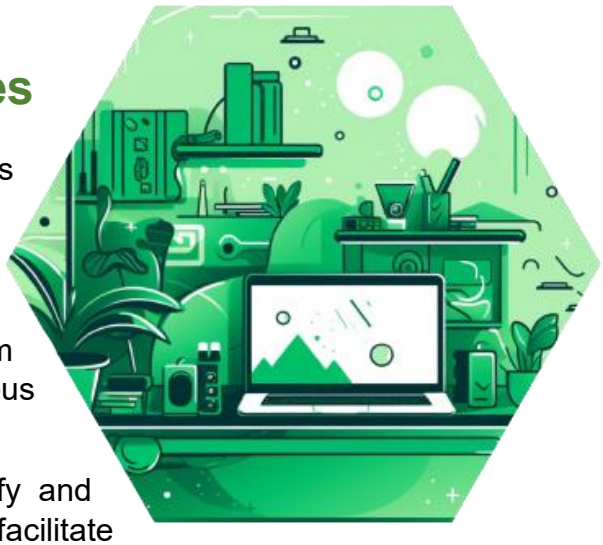
Social impact is a fundamental aspect of Students Living Labs, emphasizing the importance of addressing societal challenges and contributing to positive change. The projects undertaken within these labs are not just academic exercises but have real-world implications and benefits for communities and industries. Here's a more detailed exploration of the social impact aspect of Students Living Labs, along with practical examples:

- **Identifying Social Challenges:** Students Living Labs begin by identifying pressing social challenges communities or industries face. These challenges can be wide-ranging, such as environmental sustainability, healthcare access, education equity, poverty alleviation, or urban planning issues. Students work collaboratively to understand these challenges' root causes and potential solutions.
    - **Example:** Let's say a group of students in an urban planning Living Lab identifies a growing problem of traffic congestion and lack of pedestrian safety in a local neighbourhood.
- **Designing Solutions:** Students brainstorm and design potential solutions once the challenges are identified. The solutions should be innovative, practical, and considerate of the unique needs and constraints of the community or industry involved.
    - **Example:** The urban planning Living Lab students propose a solution that involves redesigning road intersections, creating more pedestrian-friendly spaces, and introducing bike lanes to reduce car dependency and improve overall mobility.
- **Community Engagement:** Community engagement is a critical part of Students Living Labs. Students interact with the affected communities, stakeholders, or organizations to gather insights, feedback, and input on their proposed solutions. This ensures that the solutions are relevant, culturally sensitive, and genuinely meet the needs of those they aim to serve.
    - **Example:** The urban planning students hold public meetings and conduct surveys to involve residents, businesses, and city officials in developing their traffic management proposal.
- **Ethical Considerations:** Students in Living Labs are encouraged to think critically about the ethical implications of their projects. They consider factors

like social justice, inclusivity, and environmental sustainability to ensure their solutions do not inadvertently harm any group or have negative consequences.
    - **Example:** The urban planning students carefully analyse how their traffic management proposal might impact low-income residents and ensure that their redesign plans do not lead to displacement or gentrification.
- **Measuring Impact:** Social impact projects require a way to measure and evaluate the effectiveness of the proposed solutions. Students learn to use data collection and analysis techniques to assess the impact of their interventions.
    - **Example:** The urban planning students implement their redesigned intersections and measure the changes in traffic flow, accident rates, and pedestrian safety over a specific period.
- **Iterative Improvements:** Living Labs embrace an iterative approach, meaning students continuously refine their solutions based on feedback and results. This ensures that the projects evolve and improve over time.
    - **Example:** The urban planning students use the data collected to identify areas of improvement and adjust their intersection designs accordingly to enhance traffic flow and pedestrian safety further.
- **Sustainable Long-Term Impact:** Social impact is not just about short-term fixes but creating sustainable, long-term change. Students in Living Labs consider how their projects can be maintained and scaled even after the lab's completion.
    - **Example:** The urban planning students collaborate with city officials to ensure their redesigned intersections become part of the city's long-term infrastructure planning and maintenance.
- **Learning Empathy and Empowerment:** Engaging with real-world challenges teaches students empathy as they understand the lived experiences of the communities they are working with. Moreover, empowering communities by involving them in problem-solving fosters a sense of ownership and sustainability.
    - **Example:** Through community engagement, the urban planning students develop a deeper understanding of the concerns and needs of residents, which informs their decision-making and strengthens community relationships.

In summary, the social impact aspect of Students Living Labs goes beyond academic exercises and textbook learning. It nurtures students' sense of responsibility and agency, empowering them to tackle real-world problems with creativity, empathy, and a focus on sustainable positive change for communities and industries alike. By addressing these challenges, students not only enhance their academic and technical skills but also develop a broader sense of purpose and commitment to making a meaningful impact in the world.

Adapting toolkit for Student Living Labs for online purposes



When adapting the toolkit for Students Living Labs to be applicable online, several aspects must be considered to ensure a seamless transition from face-to-face to virtual environments.

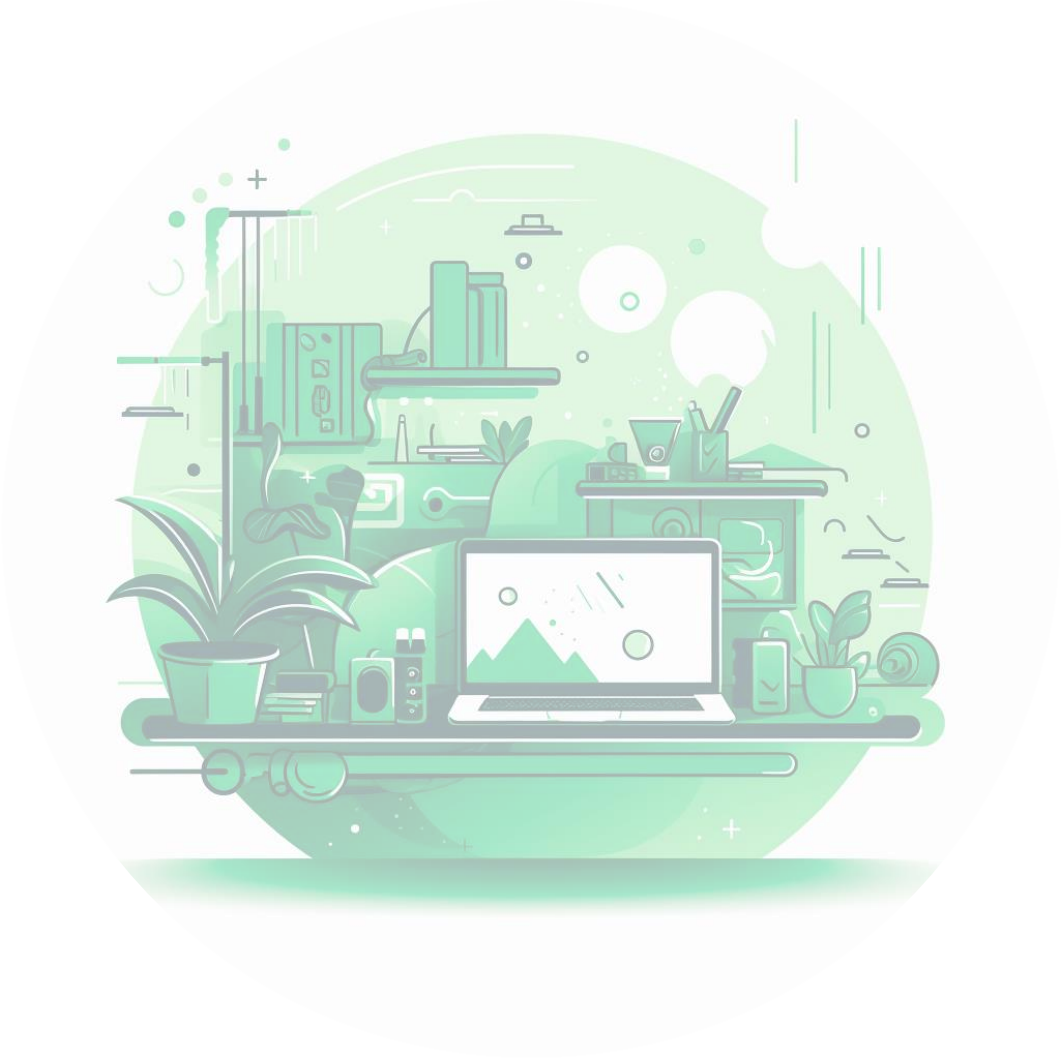
Here are vital points that require adaptation from what we otherwise described on all the previous pages:

- **Virtual Collaboration Platforms**: Identify and use suitable online collaboration tools that facilitate team communication, file sharing, virtual meetings, and project management. Platforms like Zoom, Microsoft Teams, Google Workspace, or dedicated project management tools can be utilized.
- **Community Engagement Online**: Find ways to engage with the community virtually. This might involve conducting virtual meetings, using online surveys, or hosting webinars to gather community input and feedback.
- **Online Data Collection and Analysis**: Implement online data collection methods such as digital surveys, online interviews, or remote sensing technologies to collect relevant data for analysis.
- **Remote Mentorship and Guidance**: Develop strategies for providing mentorship and guidance to students remotely. Virtual office hours, video conferencing, and online communication channels can be utilized for regular support and feedback.
- **Adapting Project Scope and Activities**: Modify project activities to fit the online environment while maintaining the original project's objectives and social impact goals.
- **Cultural Sensitivity and Virtual Cultural Exchange**: Foster cultural sensitivity in online interactions and facilitate virtual cultural exchange experiences to enhance cross-cultural understanding.
- **Ensuring Ethical Considerations Online**: Address ethical considerations unique to the virtual environment, such as data privacy and digital consent, in project development and implementation.
- **Virtual Learning by Doing**: Plan and design online activities that allow students to engage in experiential learning, simulations, and virtual hands-on experiences.
- **Online Data Visualization and Analysis Tools**: Train students to use online data visualization and analysis tools effectively to interpret and present their findings.
- **Online Empowerment Sessions**: Organize virtual workshops or webinars to empower communities and students, encouraging active involvement and contribution.

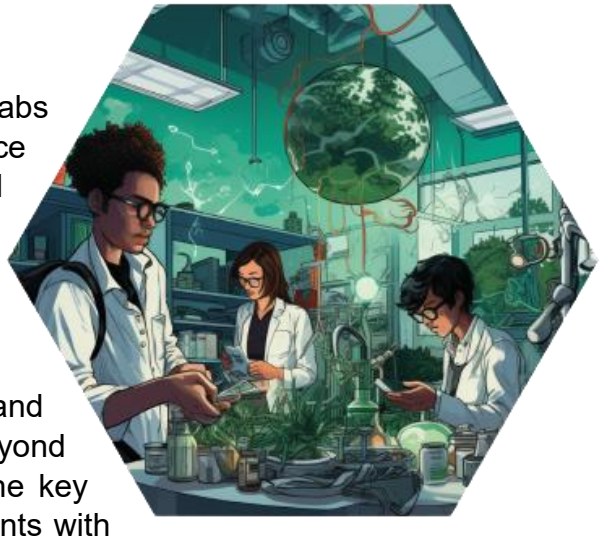
- **Online Adaptation Strategies**: Develop contingency plans and online adaptation strategies to handle unexpected challenges that may arise in virtual settings.
- **Long-Term Online Sustainability**: Explore virtual platforms and resources that can support the long-term sustainability of online projects.

By thoughtfully adapting the Students Living Labs Toolkit to the online environment, educators and students can continue to experience the benefits of experiential learning, community engagement, and social impact while navigating any crisis or geographical constraints. Embracing online collaboration tools and virtual methodologies will enable living labs to transcend physical boundaries, fostering an inclusive and impactful learning experience for all participants.

And keep in mind that adapting the toolkit for Student Living Labs for online purposes is not only useful in case of a pandemic (which we all experienced) but also adopting it in the daily life of the Living Lab.



Conclusion



Integrating these key features, Students Living Labs provides a transformative educational experience that prepares students to be proactive and engaged problem-solvers in their future careers. They gain academic knowledge and the practical skills and mindset needed to contribute meaningfully to society.

Students Living Labs offer a unique and transformative educational experience beyond traditional classroom learning. By integrating the key features outlined earlier, these labs equip students with the necessary tools and mindset to become proactive and engaged problem-solvers in their future careers.

The benefits and impact of Students Living Labs on students and society are significant.

So, here is a summary of the key takeaways that we would like you to take from reading this toolkit:

- **Real-World Relevance**
  - Students Living Labs immerse students in real-world projects that have tangible impacts on communities and industries. This practical experience bridges the gap between theory and practice, making education more relevant and meaningful.
- **Interdisciplinary Skills**
  - Collaborating with students from different disciplines fosters interdisciplinary skills and exposes students to diverse perspectives. This prepares them to tackle complex career challenges, where solutions often require multi-dimensional approaches.
- **Empathy and Social Responsibility**
  - Engaging with communities and addressing real-world problems cultivates empathy and social responsibility in students. They learn to consider ethical implications and prioritize the well-being of society in their decision-making processes.
- **Innovation and Creativity**
  - Students Living Labs encourage students to think innovatively and creatively, empowering them to develop novel solutions to pressing issues. This fosters a spirit of entrepreneurship and adaptability, valuable traits in a rapidly changing world.
- **Data-Driven Decision Making**

    - The emphasis on data collection and analysis teaches students to make informed decisions based on evidence and empirical findings. This analytical approach enhances the quality and efficacy of their solutions.
- **Mentorship and Guidance**
    - Working closely with faculty mentors and experts provides students with valuable guidance and feedback. This mentorship fosters personal and professional growth, instilling confidence, and competence in students.
- **Learning by Doing**
    - The hands-on nature of Students Living Labs allows students to learn through experience, making education more engaging and impactful. They become active participants in their learning journey, leading to better retention and application of knowledge.
- **Sustainable Impact**
    - Addressing real-world challenges encourages students to consider the long-term sustainability of their solutions. This mindset of creating lasting impact extends beyond the lab and influences their future.
- **Community Engagement**
    - Students Living Labs strengthen the bond between educational institutions and the communities they serve. It builds trust and collaboration, leading to a reciprocal relationship where both students and communities' benefit from the outcomes.
- **Preparation for Future Careers**
    - By actively participating in Students Living Labs, students develop a range of skills, including problem-solving, communication, leadership, and teamwork. These skills are highly valued in the job market and prepare students to excel in their future careers.

In summary, Students Living Labs offers a holistic educational approach that nurtures socially responsible and capable individuals. Combining real-world projects, community engagement, interdisciplinary collaboration, and ethical considerations gives students a passion for positively impacting society.

Armed with practical skills, innovative thinking, and a deep understanding of the broader implications of their actions, students are better equipped to contribute meaningfully to society and address the challenges of our time.

Ultimately, Students Living Labs play a crucial role in shaping the leaders and change-makers of the future, fostering a culture of continuous learning and social responsibility that benefits both individuals and society as a whole.

Chosen examples of Living Labs from around the world

- **European Network of Living Labs (ENoLL)**
  - ENoLL is not a specific Living Lab but rather a network of Living Labs across Europe. It fosters collaboration, knowledge-sharing, and best practices among its member labs. The network has contributed to developing innovative solutions in areas such as healthcare, education, and sustainability.
  - Link: https://enoll.org/

- **University Living Lab, United Kingdom:**
  - University Living Lab applies the energy and expertise of students to real-world sustainability challenges. We do this by developing student research projects with external organisations that help them to meet their sustainability goals. Our research projects are framed with the United Nation's Sustainable Development Goals (SDGs). At the same time, our projects enable students to make a difference through their studies and gain key skills and experience in an accessible manner.
  - Link: https://www.universitylivinglab.org/

- **Copenhagen Solutions Lab, Denmark:**
  - Copenhagen Solutions Lab is a prominent example of a successful Living Lab focusing on sustainable urban development. It collaborates with various stakeholders, including citizens, businesses, and city officials, to address urban energy, mobility, and waste management challenges. The lab's innovative projects have led to increased use of renewable energy, improved public transportation, and efficient waste management practices.
  - Link: https://cphsolutionslab.dk/en

- **MIT Media Lab, USA:**
  - MIT Media Lab is a well-known Living Lab that explores the intersection of technology, art, and design. Its interdisciplinary approach has led to groundbreaking projects in fields such as wearable technology, human-computer interaction, and data visualization. The lab's research has significantly impacted industries ranging from healthcare to entertainment.
  - Link: https://www.media.mit.edu/

- **Amsterdam Smart City, Netherlands:**

- Amsterdam Smart City is a collaborative Living Lab focusing on sustainable urban development and smart city initiatives. It brings together local governments, businesses, and citizens to implement innovative solutions related to energy efficiency, transportation, and circular economy practices. The lab's projects have transformed Amsterdam into a leading smart city in Europe.
- Link: https://amsterdamsmartcity.com/

- **Singapore Living Labs, Singapore:**
  - Singapore is a country that has embraced the Living Lab concept to drive its Smart Nation initiatives. Various Living Labs operate in Singapore, focusing on areas such as urban planning, digital innovation, and smart transportation. These labs have played a crucial role in Singapore's transformation into a technologically advanced and efficient city.
  - Link: https://www.sustainablelivinglab.org/

- **EIT Urban Mobility Living Lab, Barcelona, Spain:**
  - EIT Urban Mobility Living Lab in Barcelona focuses on innovative solutions for urban mobility challenges. It has successfully implemented projects that promote sustainable transportation options, reduce congestion, and enhance accessibility for citizens.
  - Link: https://www.eiturbanmobility.eu/welcome-urban-lab-mobility-barcelona-eit-urban-mobility-barcelona-city-council-fira-de-barcelona-and-dgt-join-forces-to-turn-the-city-into-a-test-bed-for-future-mobility/
  - Tools and learning practices: https://livinglabs.eitum.eu/tools/

- **Bristol Living Lab, United Kingdom:**
  - Bristol Living Lab is a vibrant hub for research and innovation, addressing various urban challenges related to sustainability, transport, and citizen engagement. The lab has played a vital role in transforming Bristol into a smart city and a center for digital innovation.
  - Link: https://kwmc.org.uk/about/research/livinglab/

It is important to note that the success of Living Labs can vary depending on the context, stakeholders involved, and the specific challenges they address. Additionally, new Living Labs may have emerged since my last update, further contributing to the global knowledge base and impact of Living Labs.

Simple 15 steps for setting up a Living Lab

Setting up a Living Lab requires careful planning, stakeholder engagement, and a clear vision for addressing real-world challenges. Below are some simple steps to guide you through the process of setting up a Living Lab.

- ***Step 1 -Define the Vision and Objectives***
  - Determine the overarching vision of the Living Lab. What are the main goals and purposes?
  - Identify specific objectives that align with the vision, such as sustainability, digital innovation, or social inclusion.
- ***Step 2 -Identify the Focus Area***
  - Decide on the domain or focus area of the Living Lab. It could be urban planning, healthcare, education, mobility, or any other field.
- ***Step 3 - Stakeholder Mapping and Engagement***
  - Identify key stakeholders, including local communities, businesses, academic institutions, government agencies, and NGOs.
  - Engage stakeholders in the early stages to ensure their buy-in and commitment to the Living Lab.
- ***Step 4 - Form a Multidisciplinary Team***
  - Assemble a diverse team of experts from various disciplines related to the chosen focus area.
  - Include researchers, designers, engineers, social scientists, and representatives from partner organizations.
- ***Step 5 - Secure Funding and Resources***
  - Explore funding opportunities from government grants, private organizations, or academic institutions.
  - Allocate resources for project implementation, technology infrastructure, and personnel.
- ***Step 6 - Choose a Physical Location***
  - Determine the physical location of the Living Lab. It could be in an urban neighbourhood, a research centre, or a designated space in an academic institution.
- ***Step 7 - Establish Partnerships***
  - Form partnerships with local governments, businesses, community organizations, and research institutions.
  - These partnerships will help with access to resources, data, and community engagement.
- ***Step 8 -Design the Governance Model***
  - Develop a governance model that outlines all stakeholders' roles, responsibilities, and decision-making processes.
  - Ensure transparency and inclusivity in governance to foster collaboration.
- ***Step 9 - Set Up Infrastructure and Technology***

    - Establish the necessary physical and digital infrastructure, such as laboratories, data collection tools, and communication platforms.
    - Implement technology solutions that facilitate data collection, analysis, and stakeholder collaboration.
- ***Step 10 - Develop Project Management Processes***
    - Create a project management framework to effectively plan, execute, and monitor Living Lab projects.
    - Define key milestones, timelines, and evaluation metrics for projects.
- ***Step 11 - Engage with the Community***
    - Involve the local community in the Living Lab's initiatives and decision-making processes.
    - Conduct community consultations to identify their needs, aspirations, and concerns.
- ***Step 12 - Initiate Pilot Projects***
    - Start with small-scale pilot projects to test the effectiveness of the Living Lab's approach.
    - Learn from the outcomes of pilot projects and make necessary adjustments.
- ***Step 13 - Monitor and Evaluate***
    - Continuously monitor the progress and outcomes of Living Lab projects.
    - Evaluate the impact of the Living Lab on the community, stakeholders, and the chosen focus area.
- ***Step 14 - Share Knowledge and Best Practices***
    - Disseminate the findings, best practices, and lessons learned from the Living Lab's initiatives.
    - Contribute to the broader Living Lab community through conferences, publications, and workshops.
- ***Step 15 - Scale and Expand***
    - Once the Living Lab has proven successful, consider scaling up projects or expanding into new domains.
    - Strengthen partnerships and seek additional funding to support growth.

Remember that setting up a Living Lab is a dynamic and iterative process. Flexibility, adaptability, and the willingness to learn from both successes and challenges are essential to ensure the Living Lab's long-term success and positive impact on society.

Simple 15 steps for creating a Living Lab Team

Creating a Living Lab team involves assembling a diverse group of experts and stakeholders who will collaboratively work towards the Living Lab's objectives. The team should be multidisciplinary, comprising individuals with complementary skills and expertise.

Here are some simple steps to guide you in creating an effective Living Lab team:

- ***Step 1 - Define Team Roles and Responsibilities***
  - Determine the key roles required for the Living Lab team, such as project manager, researchers, designers, community engagement specialists, data analysts, and domain experts.
  - Clearly outline the responsibilities and expectations for each role to avoid ambiguity.
- ***Step 2 - Identify Core Competencies***
  - Identify the core competencies and skills needed for each team member based on the Living Lab's focus area and objectives.
  - Look for individuals with a mix of technical expertise, creativity, problem-solving ability, and interpersonal skills.
- ***Step 3 - Recruit Diverse Experts***
  - Cast a wide net while recruiting team members to ensure diversity regarding backgrounds, disciplines, and perspectives.
  - Look for candidates from academia, industry, government, and the community.
- ***Step 4 - Establish Collaboration and Communication Channels***
  - Set up efficient communication channels to facilitate seamless collaboration among team members.
  - Utilize online collaboration tools, project management platforms, and regular meetings to foster effective communication. Usually, what is commonly used at your university, but do not let yourself be locked into the tools used at the university, as there might be other more efficient communication and collaboration channels.
- ***Step 5 - Encourage Interdisciplinary Collaboration***
  - Promote a collaborative and inclusive culture where team members from different disciplines actively share ideas and insights.
  - Organize interdisciplinary workshops and brainstorming sessions to encourage cross-pollination of ideas.
- ***Step 6 - Foster a Learning Environment***
  - Create a supportive environment where team members are encouraged to learn from each other's expertise and experiences.
  - Encourage continuous learning and professional development opportunities for team members.
- ***Step 7 - Cultivate Community Engagement Skills***

    - Ensure team members have strong community engagement skills to interact effectively with stakeholders and local communities.
    - Training in community consultation, empathetic communication, and cultural sensitivity can be beneficial.
- ***Step 8 - Emphasize Team Dynamics***
    - Pay attention to team dynamics and ensure a healthy balance of leadership, collaboration, and respect among team members.
    - Address conflicts proactively and foster a positive team culture.
- ***Step 9 - Provide Mentorship and Guidance***
    - If possible, appoint experienced mentors or advisors to guide and support the Living Lab team.
    - Mentorship helps in knowledge transfer, skill development, and building confidence among team members.
    - Feel free to reach beyond (for example, abroad). Most of the experienced people are often happy to provide their mentorship.
- ***Step 10 - Celebrate Achievements and Acknowledge Contributions***
    - Celebrate the team's achievements and recognize individual contributions to boost morale and motivation (both in person and via publishing information online).
    - Regularly acknowledge and appreciate team members' efforts to maintain a positive work atmosphere.
- ***Step 11 - Monitor Progress and Performance***
    - Regularly review the team's progress and assess individual performance against the Living Lab's goals and milestones.
    - Identify areas of improvement and provide constructive feedback.
- ***Step 12 - Encourage Innovation and Creativity***
    - Foster an environment that encourages innovation and out-of-the-box thinking.
    - Embrace experimentation and learn from failures as well as successes.
- ***Step 13 - Adapt to Changing Needs***
    - Be flexible and adapt the team's composition as the Living Lab's focus evolves or new projects are initiated.
    - Continuously assess the team's needs and make necessary adjustments.
- ***Step 14 - Support Team Well-being***
    - Prioritize team members' well-being and work-life balance to maintain productivity and engagement.
    - Encourage open communication and provide resources for mental and physical health support.
- ***Step 15 – Keep the Good Atmosphere***
    - Make sure there is a genuinely good atmosphere in the team.

Creating a successful Living Lab team requires thoughtful planning, effective communication, and a commitment to a shared vision. By bringing together a diverse and skilled group of individuals who collaborate seamlessly, a Living Lab team can achieve meaningful and impactful outcomes for their projects and the communities they serve.

Simple 15 steps for Finding Resources for Living Lab

Finding resources for a Living Lab is again crucial for its successful implementation and sustainability. These resources can include financial support, infrastructure, technology, partnerships, and human capital.

Here are some simple steps to guide you in finding resources for your Living Lab:

- ***Step 1 - Clearly Define Living Lab Objectives***
  - Clearly articulate the Living Lab's objectives, focus area, and social impact goals.
  - A well-defined vision will help attract resources that align with the Lab's mission.
- ***Step 2 - Research Funding Opportunities***
  - Explore various funding sources, including government grants, research institutions, foundations, and corporate sponsorships.
  - Identify funding opportunities that support projects related to the Living Lab's focus area.
- ***Step 3 - Develop a Comprehensive Budget***
  - Create a detailed budget that includes expenses for infrastructure, technology, research, personnel, and community engagement activities.
  - The budget should align with the Living Lab's objectives and timeline.
- ***Step 4: Seek Academic and Institutional Support***
  - Partner with academic institutions and research centers that can provide access to expertise, facilities, and resources.
  - Leverage existing academic networks and collaborations.
- ***Step 5 - Establish Public-Private Partnerships***
  - Seek partnerships with private companies, NGOs, and industry stakeholders that share an interest in the Living Lab's focus area.
  - Private partners can offer financial support, technological expertise, and access to real-world implementation.
- ***Step 6 - Engage with Local Government and Policy Makers***
  - Connect with local government agencies and policymakers to discuss the Living Lab's potential contribution to community development and policy goals.
  - Government support can open doors to funding opportunities and policy alignment.
- ***Step 7 - Leverage Digital Platforms***
  - Utilize crowdfunding platforms or online fundraising campaigns to engage the public in supporting the Living Lab's initiatives.
  - Leverage social media and online networks to raise awareness about the Living Lab and attract potential donors.
- ***Step 8 - Seek In-Kind Contributions***

    - Explore opportunities for in-kind contributions from companies or organisations, such as equipment, office space, software licenses, or materials.
    - In-kind support can supplement the budget and reduce financial burdens.
- ***Step 9 - Apply for Grants and Competitions***
    - Apply for research grants, innovation challenges, and competitions that align with the Living Lab's focus area.
    - Winning grants or competitions can provide significant financial support and visibility.
- ***Step 10 - Engage Community and Volunteers***
    - Engage the local community and seek volunteers who are passionate about the Living Lab's objectives.
    - Volunteers can contribute their time, skills, and expertise to support various activities.
- ***Step 11 - Collaborate with International Partners***
    - Consider collaborations with international organizations or Living Labs working on similar challenges.
    - International partnerships can bring additional resources, knowledge exchange, and global visibility.
- ***Step 12 - Explore Corporate Social Responsibility (CSR) Programs***
    - Connect with corporations with CSR programs that align with the Living Lab's goals.
    - Many companies allocate resources to initiatives that promote sustainability and social impact.
- ***Step 13 - Build a Network of Supporters***
    - Build a network of supporters, advocates, and ambassadors who can help promote the Living Lab's initiatives and attract resources.
    - Engage with influencers and community leaders who share an interest in the Living Lab's work.
- ***Step 14 - Develop a Strategic Fundraising Plan***
    - Develop a fundraising plan that outlines specific strategies, target donors, and timelines.
    - Implement the plan systematically, tracking progress and making adjustments as needed.
- ***Step 15 - Demonstrate Impact and Success, and Do Not Be Afraid to Ask***
    - Regularly communicate and showcase the Living Lab's achievements, impact, and outcomes to existing and potential donors.
    - Demonstrating tangible results will build credibility and attract ongoing support.
    - And most importantly, do not be afraid to ask for support and resources.

Finding resources for a Living Lab requires a proactive and strategic approach. By building a solid network of partnerships, seeking funding opportunities, and demonstrating the Lab's potential impact, you can secure the necessary resources to realize the Living Lab's vision and address real-world challenges effectively.

Living Lab Life throughout the time

Planning a Living Lab project involves careful consideration of its objectives, scope, timeline, resources, and stakeholder engagement.

In many cases and similarly, new projects and initiatives, the long-term sustainability, and the efficient running of such activity are very important.

So, here are some of the strategies to adopt and ensure to have to be sure that the Living Lab will be working throughout the time because ensuring the continuity and sustainability of a Living Lab over time is essential to maximize its impact and benefits.

Planning a Living Lab project involves thorough preparation, collaboration with stakeholders, and a commitment to addressing real-world challenges. Following these steps, you can create a well-structured and impactful Living Lab project that contributes meaningfully to your chosen focus area and benefits the communities involved.

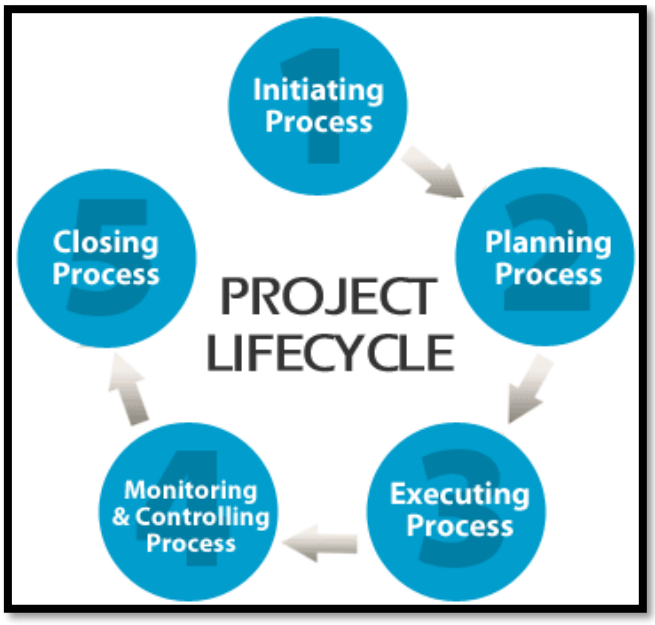
- **Long-Term Vision and Planning**
  - Develop a clear and inspiring long-term vision for the Living Lab.
  - Create a strategic plan that outlines objectives, milestones, and actions for the coming years.
  - Continuously review and update the plan to adapt to changing needs and opportunities.
- **Stakeholder Engagement and Collaboration**
  - Cultivate strong relationships with stakeholders, including students, faculty, community members, businesses, and government agencies.
  - Regularly engage with stakeholders through meetings, workshops, and collaborative projects.
  - Foster a sense of ownership and involvement among all stakeholders to build a committed and supportive community.
- **Diverse and Ongoing Projects**
  - Ensure a diverse range of ongoing projects within the Living Lab.
  - Encourage students and researchers to propose and lead new projects that align with the Lab's focus areas.
  - Regularly initiate new projects to keep the Living Lab dynamic and relevant.
- **Secure Sustainable Funding**
  - Explore multiple sources of funding to ensure financial sustainability.
  - Seek long-term partnerships, endowments, or grants to support the Living Lab's activities.
  - Develop a fundraising strategy and continually seek new funding opportunities.
- **Monitoring and Evaluation**
  - Regularly assess the impact and outcomes of Living Lab projects.
  - Use data-driven evaluation to measure success and identify areas for improvement.

    - Share evaluation results with stakeholders to maintain transparency and accountability.
- **Continuous Learning and Improvement**
    - Cultivate a culture of continuous learning and improvement within the Living Lab.
    - Encourage students and researchers to reflect on their experiences and learn from both successes and challenges.
    - Use feedback and insights to refine processes and enhance future projects.
- **Knowledge Sharing and Dissemination**
    - Publish and share research findings, project outcomes, and best practices.
    - Organize conferences, workshops, and seminars to disseminate knowledge within the academic and broader communities.
    - Use digital platforms and social media to reach a wider audience.
- **Adaptability to Changing Contexts**
    - Remain adaptable to technological changes, societal needs, and educational trends.
    - Continually assess the Living Lab's relevance and adjust strategies accordingly.
    - Be open to exploring new focus areas and collaborations that align with emerging challenges.
- **Strong Leadership and Coordination**
    - Appoint dedicated leadership to oversee the Living Lab's activities and initiatives.
    - Ensure effective coordination among team members and stakeholders.
    - Foster a positive and supportive working environment.
- **Community Outreach and Involvement**
    - Engage with the broader community to promote awareness and involvement in the Living Lab's projects.
    - Invite external experts and organizations to participate in collaborative initiatives.
    - Encourage alums and past participants to stay connected and contribute to the Living Lab's development.

By following these strategies, a Living Lab can maintain its vibrancy and impact over time, making it a valuable and enduring resource for students, researchers, communities, and other stakeholders. Continuous efforts to innovate, collaborate, and adapt will keep the Living Lab relevant and effective in addressing real-world challenges and fostering meaningful learning experiences.

Project initiation/generation and project management methods and practices

The following tasks and exercises are planned for a thorough and deeper analysis of the project management cycle, implying group work to develop the skills – mainly – for generating relevant and effective projects. The tasks are related mainly to the first two phases of the cycle, the initiation and the planning process.



The following problem questions should be used for tasks and group activities:

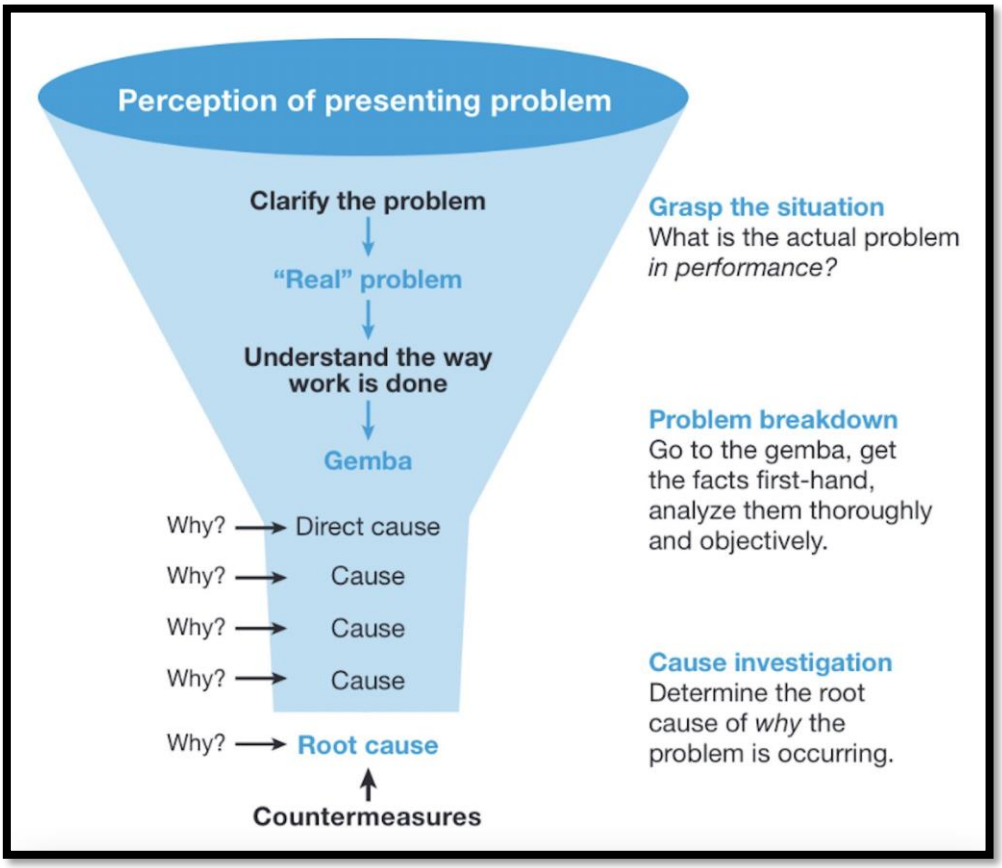
1) Durin summer, thousands of people go to hospital/die due to severe weather conditions in Southern Europe / North America.
2) Thousands of people lose their jobs and revenues due to drought each summer worldwide.
3) Each year, about 25,000 square kilometers of rainforest are eliminated in Brazil, equalling the loss of the carbon sink effect of about 275,000 tons annually.

Identifying project goals, i.e., generating projects based on problem analysis and definition – group work.

Use the following methods to identify the problems that are the leading cause of a problem that should be solved with a project. It is important to note that using one problem identification method is NOT enough to describe the problem for an in-depth understanding of the problem. Please identify and analyze the problems (and, in the framework of the second task, the solutions) as thoroughly as possible. Use the following methods to prepare a thorough and deep understanding of the problem, which is the first step for identifying a project.

Method 1: The 5 Whys method

The 5 Whys method allows uncovering the root cause of a problem by simply asking "Why" five times. This interrogative technique is one of the most effective tools for root cause analysis in Lean management. The 5 Whys method is part of the Toyota Production System and an essential approach to problem-solving. It was developed by Sakichi Toyoda, a Japanese inventor and industrialist.



How Do You Perform 5 Whys Analysis?

The 5 Whys technique may help you improve continuously at any level of your organization. The 5 Why's process typically includes the following steps.

1. Form a Cross-Functional Team

Try to assemble a team of people from different departments. Each representative has to be familiar with the process that will be investigated.
By forming a cross-functional team, you will receive unique points of view.
This will help you collect enough information to make an informed decision. Be aware that this is not an individual task and needs to be executed by the team.

2. Define the Problem

Discuss the problem with the team and make a clear problem statement. It will help you define the scope of the issue you will investigate.

This is important because investigating a wide-scope problem may be a time-consuming exercise with blurred boundaries. Try to be as focused as possible to find an effective solution in the end.

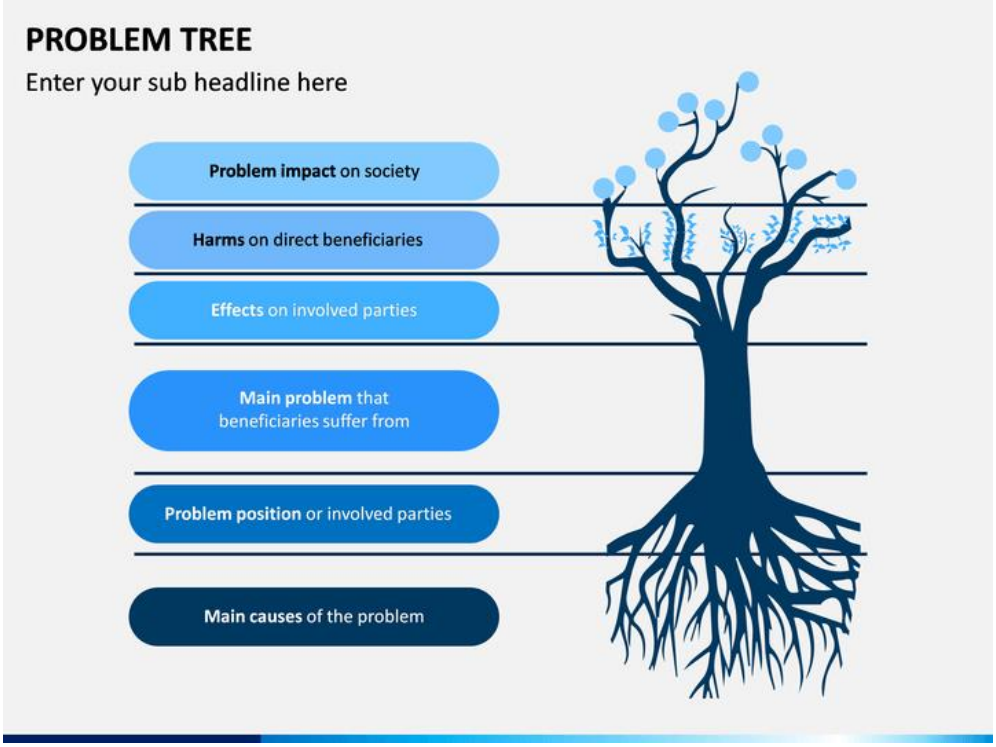
3. Start Asking "Why"

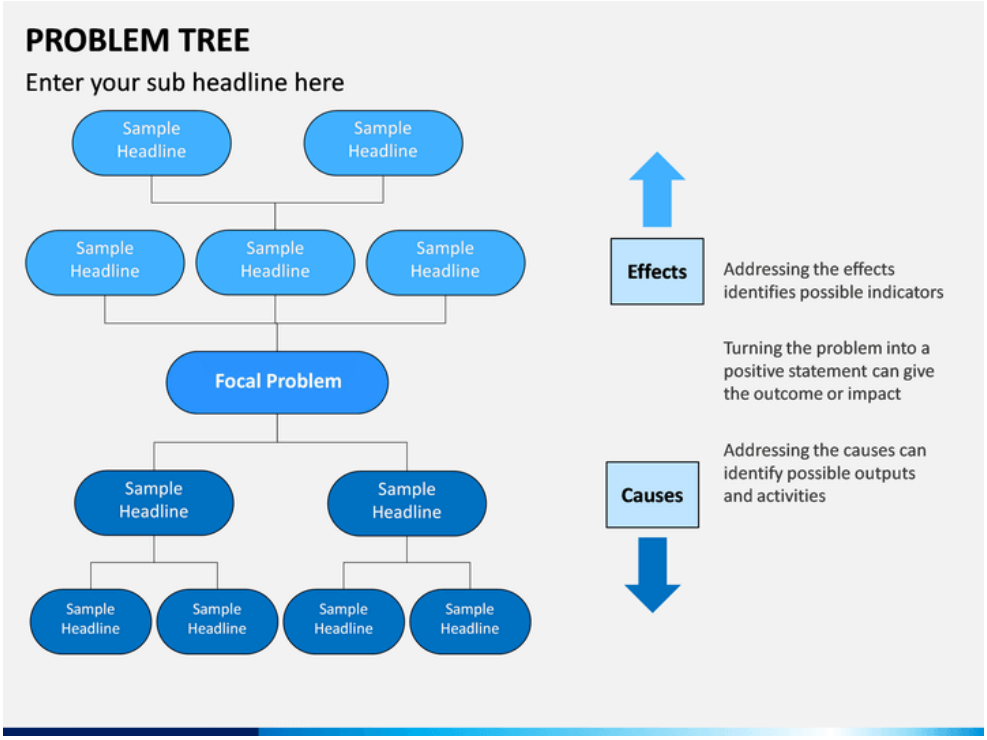
Empower one person to facilitate the whole process. This team leader will ask questions and try to keep the team focused. The answers should be based on facts and accurate data rather than emotional opinions.
The facilitator should ask "Why" as often as needed until the team can identify the root cause of the initial problem.

Advice 1. *Don't ask too many Whys. If you keep going, you may receive tons of unreasonable suggestions and complaints, which is not the purpose. Focus on finding the root cause.*

Advice 2. *Sometimes, there could be more than one root cause. The 5 Whys analysis will look more like a matrix with different branches in these cases. This may even help you detect and eliminate organizational issues that have permanent adverse effects on overall performance.*

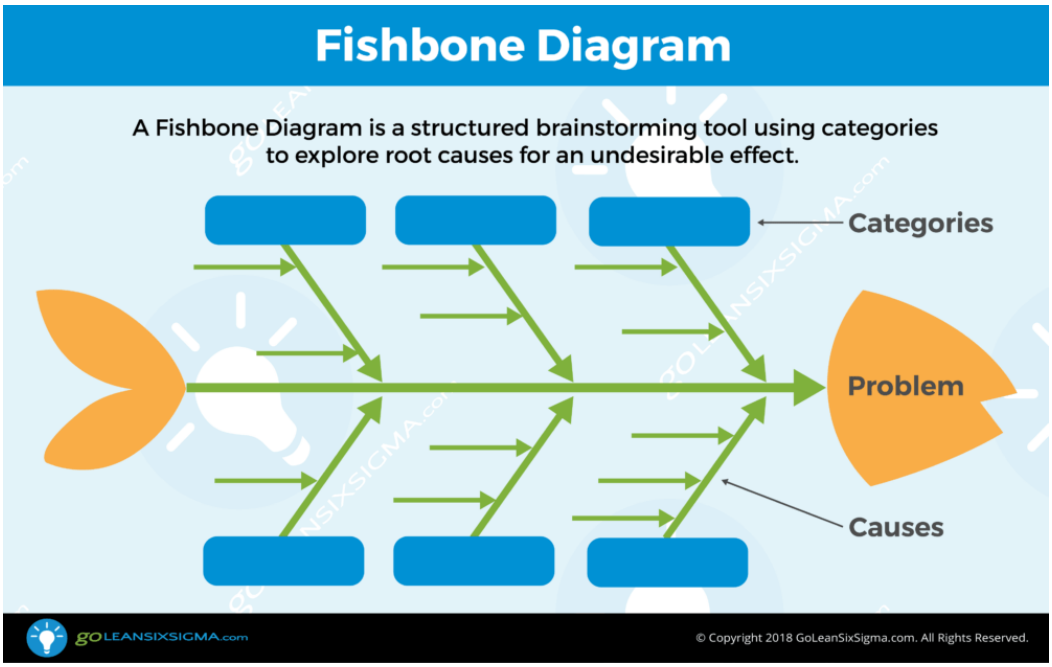
Method 2: The problem-tree method





Method 3: Ishikawa's (fishbone) method/diagram, the 5M / 8M methods

A Japanese professor, Kaoru Ishikawa, elaborated on one of the most widely used methods to identify root causes. The **root cause analysis** (**RCA**) is a method of problem-solving used for identifying the root causes of faults or problems. It is widely used in IT operations, manufacturing, telecommunications, industrial process control, accident analysis (e.g., in aviation, rail transport, or nuclear plants), medicine (for medical diagnosis), healthcare industry (e.g., for epidemiology), etc.



Root cause analysis is a form of inductive (first create a theory [root] based on empirical evidence [causes]) and deductive (test the theory [underlying causal mechanisms] with empirical data) inference. RCA can be decomposed into four steps:

- Identify and describe the problem clearly.
- Establish a timeline from the normal situation until the problem occurs.
- Distinguish between the root cause and other causal factors (e.g., using event correlation)
- Establish a causal graph between the root cause and the problem.

RCA generally serves as input to a remediation process whereby corrective actions are taken to prevent recurring problems.

Ishikawa's method, the 5M method, is used mainly in manufacturing. Still, it is also possible to use these methods – combined with other methods – to identify and manage problems unrelated to the productive sector, as the originating factors cannot be other than those used in 5M and 8M.

The 5 Ms

Originating with lean manufacturing and the Toyota Production System, the 5 Ms is one of the most common frameworks for root-cause analysis:

- Manpower/mind power (physical or knowledge work, includes kaizens, suggestions)
- Machine (equipment, technology)
- Material (includes raw material, consumables, and information)
- Method (process)
- measurements/medium (inspection, environment)

These have been expanded by some to include an additional three and are referred to as the 8 Ms:

- mission/mother nature (purpose, environment)
- management/money power (leadership)
- Maintenance

Method 4: The objective-tree

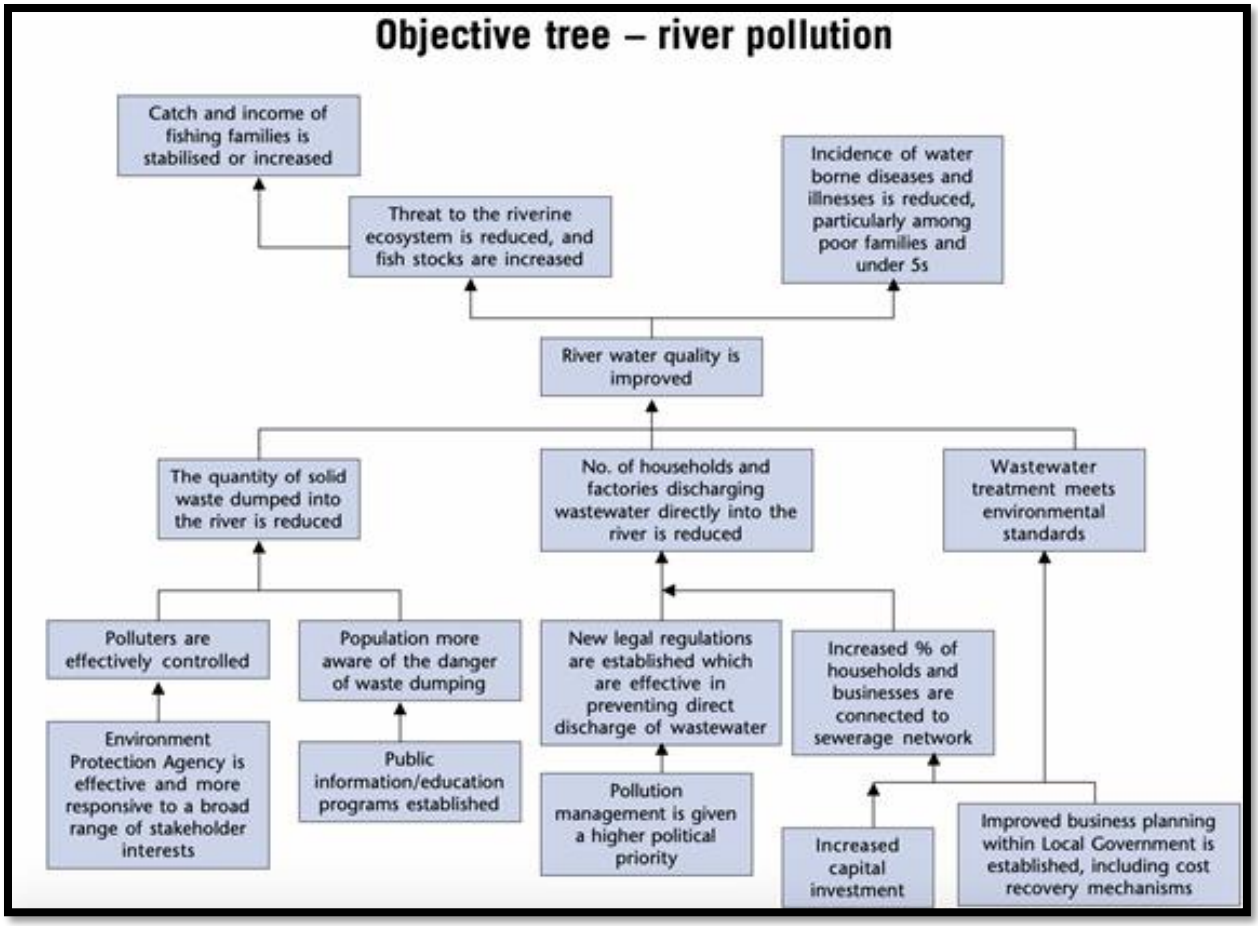
The problem tree's negative situations are converted into 'positive achievements'. These positive achievements are, in fact, objectives and are presented in a diagram of objectives showing a means/ends hierarchy. In this sense, the indicative means by which ends can be achieved should be included.

- Reformulate all negative situations of the problem analysis into positive situations that are a) desirable and b) realistically achievable.
- Check the means-ends relationships to ensure validity and completeness: Cause-effect relationships are turned into means-ends of the hierarchy.

<u>If necessary:</u>

- revise statements.
- add new objectives if these seem to be relevant and necessary.
- elite objectives which do not seem suitable or necessary.

<u>Example for an objective tree:</u>



Method 5: The logical framework approach

The Logical Framework Approach is a planning methodology adopted by many international organisations; it is particularly adapted to capture all elements involved in designing an intervention implying intangible results (i.e. behavioural changes). Since 1993, it has become the main instrument of the intervention cycle management of the European Union, which contributed directly to its development.

What can it be used for?

The Logical Framework Approach supports the design of an intervention. Its main output, the Logical Framework Matrix, summarizes in a single framework the main characteristics and specification of intervention, including measurement indication, becoming a relevant tool for the monitoring and evaluation process.

When can it be used?

The Logical Framework Approach is used in the intervention cycle from identification to closure.

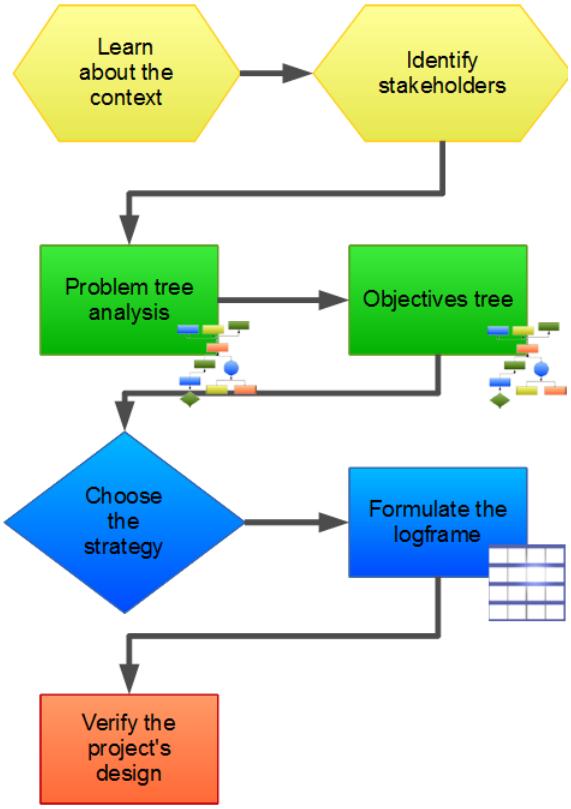
What are the strengths of the method?

- It provides a structured way to integrate analytic and planning tools in designing the intervention, providing a reference tool, the Logical Framework Matrix, which can be used in all phases of the Intervention cycle,
- systematically addressing assumptions and risks highlighted in the analytical phase increases the chances of success of the intervention by linking and adapting it to the surrounding context.

What are the limitations of the method?

- The Logical Framework Approach is an efficient design tool only if it integrates consistent preparatory analysis (context, stakeholder, public policy, etc.) and is aligned with the intervention context. It does not replace sound professional judgment or experience.

The logical framework approach:



Practical application:

The Logical Framework Approach starts with an analytical phase, where all needed context analyses (i.e., Public policy, Stakeholder, Gender, etc.) are performed to define the broad rationale of the intervention.

That analysis is generally performed during the identification phase and will be progressively fine-tuned in an iterative process throughout the design phase. They

provide evidence supporting the chosen strategy and the planned intervention's relevance, credibility, and feasibility.

Toward the end of the intervention design process, planning tools (Activity Based Costing, Activity and Resource schedule) are applied to define the intervention's timespan and the required inputs. Both time and input planning should be outcome-based - precisely lined to the intervention and its context, providing additional evidence of the feasibility of the intervention from the timing, quality, and cost perspectives.

The key outputs of the logical framework are **the Intervention Logic and the Logical Framework Matrix (Logframe).** The intervention logic is how an intervention is expected to achieve its desired results, including underlying assumptions about the causality and interaction between the intervention, its inputs, activities, outputs, outcomes and impacts in the context of the intervention. The Logical Framework Matrix represents the totality of the intervention within a structure connecting three interdependent elements: the Result Chain, showing the causal link leading from input to the expected impact; the Assumptions, linking the intervention to its specific context; and the indicators, allowing measurement of intervention progress:

Results chain – the key indicators of a project

Results are the changes the intervention aims to contribute to within the context. While the results chain may include inputs and activities, the term 'results' refers to outputs, outcomes, and impact. **Outputs** are the products, capital goods and services that result from an intervention; they include changes in knowledge, skills, or abilities produced by the activities and are under its complete control**. Outcomes** (or specific objectives) are the short-term and medium-term effects of an intervention's outputs; they are under its direct influence but not under its direct control. **Impact** (overall objective) is the long-term change the intervention aims to contribute to but can only be indirectly influenced.
The starting point for formulating the results chain is the problem analysis. Preconditions are events that need to occur to allow full implementation of the intervention. These may be the approval of a by-law or the completion of necessary infrastructure and must be considered in terms of risk. Results are built into the logical framework matrix and matched with assumptions at the output and outcome levels.

Assumptions

They represent external conditions that are necessary for the success of intervention. Assumptions are formulated based on the context and risk analysis and are explicit in the log frame at the levels of activities (in contract log frames), outputs and outcomes. They are not under the control of intervention management and should not be too critical: if assumptions do not hold, they should not wholly impede the successful implementation of the intervention. In the design phase, assumptions should progressively reflect a more focused context and risk analysis. The **risk analysis** should, therefore, cover internal factors that will eventually be faced at the operational level (e.g., resource management, delivery, and implementation). This assessment should lead to a clear decision on how to deal with the identified risks (risk response) and to design a risk management plan. Potential mitigation measures will be studied, developed, and integrated into the intervention design as a risk management plan. Regarding the environment, for example, environmental management plans or climate

risk management plans may be developed. All associated costs need to be included in the budget estimate.

Indicators

Indicators are quantitative or qualitative factors or variables of interest related to the intervention and its results or the context in which an intervention occurs. They are a factor used to assess performance and to measure result statements, their actual value providing evidence of what expected results have or have not achieved. Indicators should follow RACER criteria (in EU projects):

- Relevant, closely linked to the objectives.
- Accepted by the partners.
- Credible for non-experts, unambiguous.
- Easy to monitor.
- Robust against manipulation.
- Indicators should include a precise unit of measure and be formulated neutrally.
- For quantitative indicators: "number of", "percentage of", or ratio, rate, index, etc.
- For qualitative indicators: "status of", "degree of", "level of", "the extent to which" etc.

It should be noted that a quantitative variable could also be integrated into the assessment of progress for qualitative indicators (such as allocating sufficient funding as a percentage to a policy, which can assess the extent to which the policy is effectively implemented).

Operational managers should ensure that indicators are well suited for monitoring the results statement (output or objective) for which they are being proposed. This means that:

- **Output indicators** measure the direct results (goods, services, benefits).
- **Outcome indicators** measure the change in behaviour of the target group. This can be done considering the employ of goods and services provided by the intervention with and without the intervention.
- **Impact indicators** measure long-term macro-changes influenced by the intervention.

Data sources

Data sources are the primary location from where information originates. They should be relevant, trustworthy, attainable, and regular.

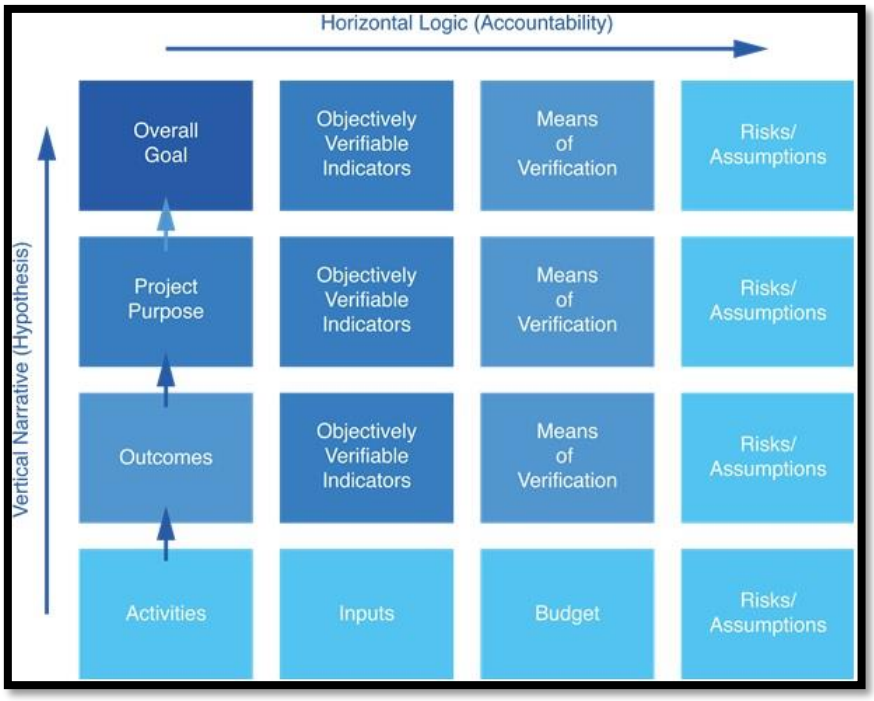
Internal sources are those generated by the intervention. They can include reports of different kinds, analytical studies, assessments, surveys, and other types of statistics. Depending on what is being studied and how closely it is related to the intervention, these sources could be relevant for output, outcome, or impact-level indicators.

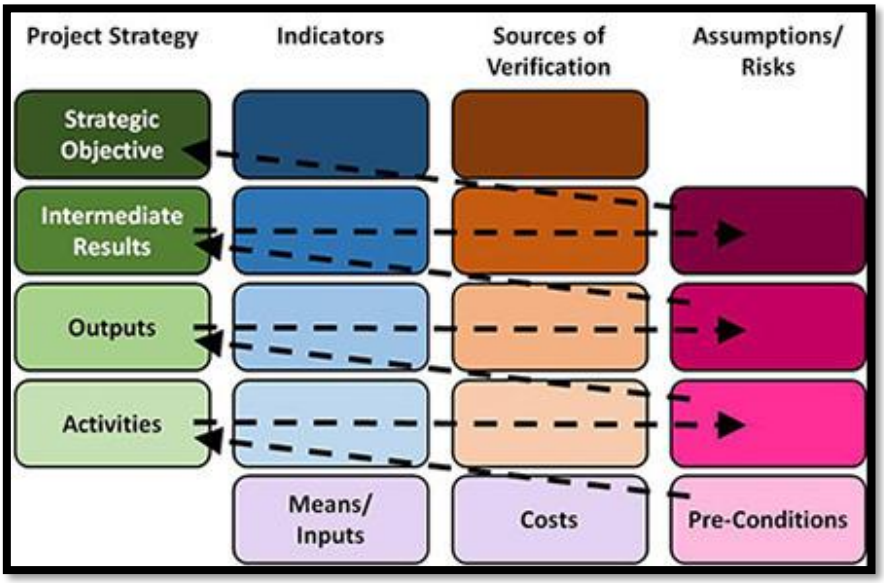
External sources are most frequently (though not exclusively) at outcome and impact levels because the related indicators focus on the change of the behaviour of our target

groups and long-term changes that are not under the complete control of the intervention:

- For impact-level indicators, external sources may include national SDG data or statistical platforms of international development partners.
- For outcome-level indicators, external sources usually consist of national statistics or data from any external reviews conducted chiefly by development partners.
- For output-level indicators, external sources include data provided by the intervention's main counterparts and beneficiaries, which can complement data sources provided by implementing partners.

The 'logic' of the logical framework matrix

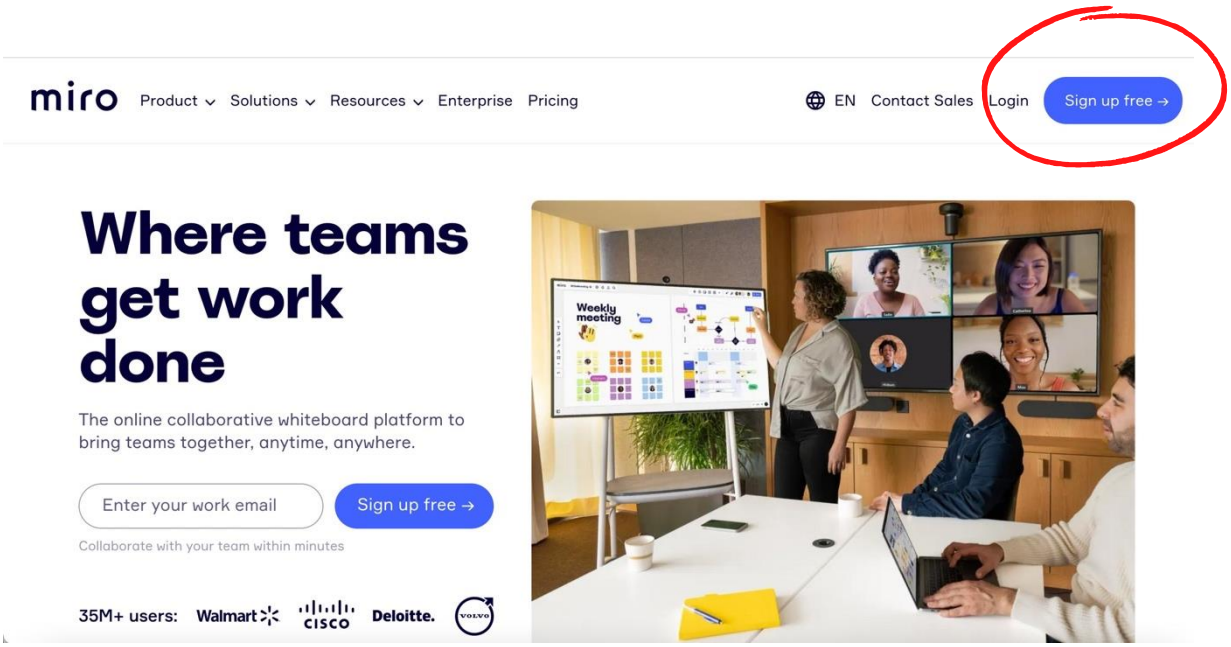




Useful tips for business development - a short guide to the MIRO platform

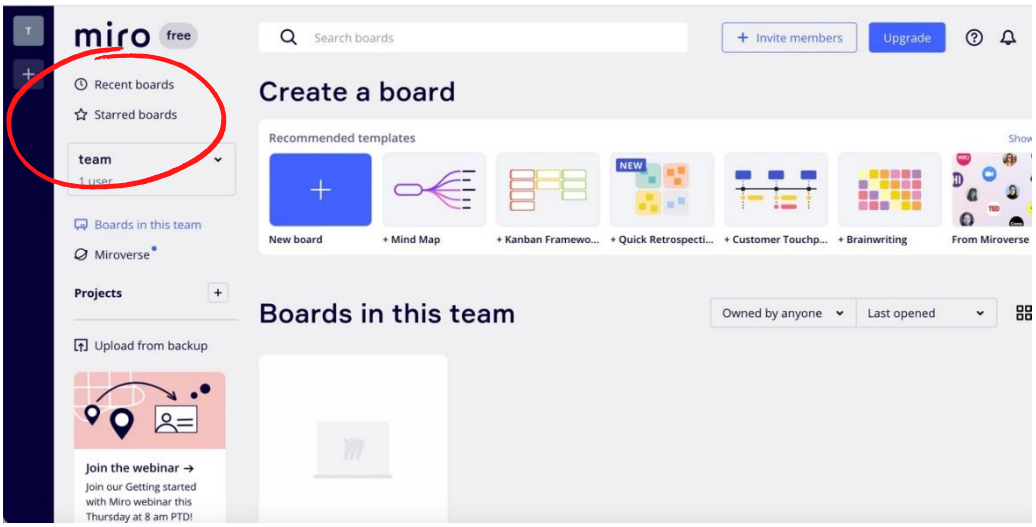
This guide will introduce you to the best-known templates for business development so you can learn the methodology most effectively in a team using a super platform.

To do this quickly as a team, the first step is to go to https://miro.com/ and register!

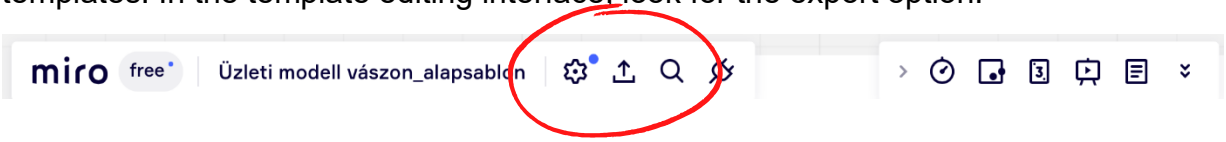


Here, you will access the templates, which you can export. You will get a short description for each template, so work with it!

After registering, you can invite team members to the following drop-down menu on the left side of the platform, and you can edit the templates together!

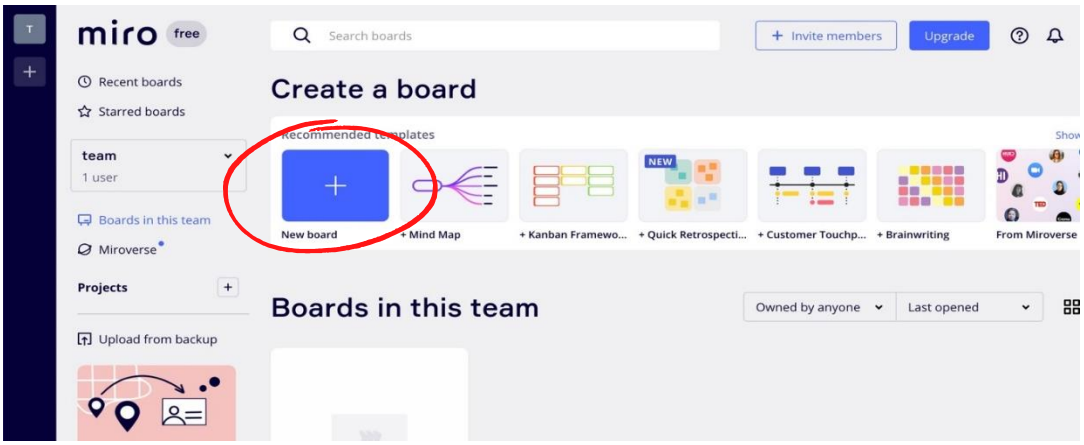


This platform is a powerful collaboration site where you can work together on different projects in real-time. You can create your own templates using any platform's tools. Note that you can only edit 3 templates simultaneously in the free version. Once you're done with these 3 templates, export them. You will then be able to use additional templates. In the template editing interface, look for the export option:

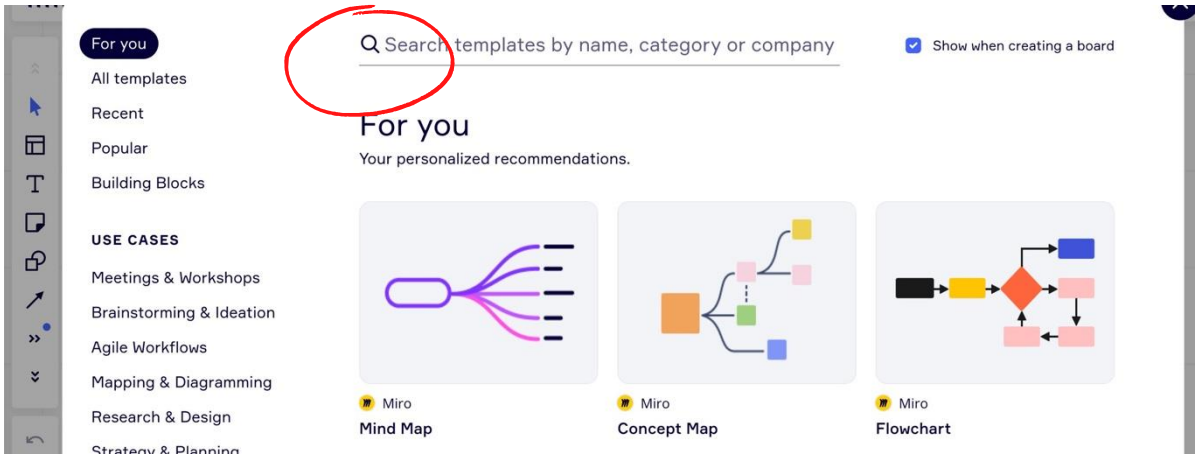


Explore the platform a bit; it has a lot of possibilities, and it's an excellent solution for group work at home!

Let's get to work and see which will be the first template you'll need to use! On the main page, select the "create new table" option!



You can then browse manually or with a specific keyword search. You must search for the template's name related to the course!



Defining the problem

A good product or service solves a specific problem for users.

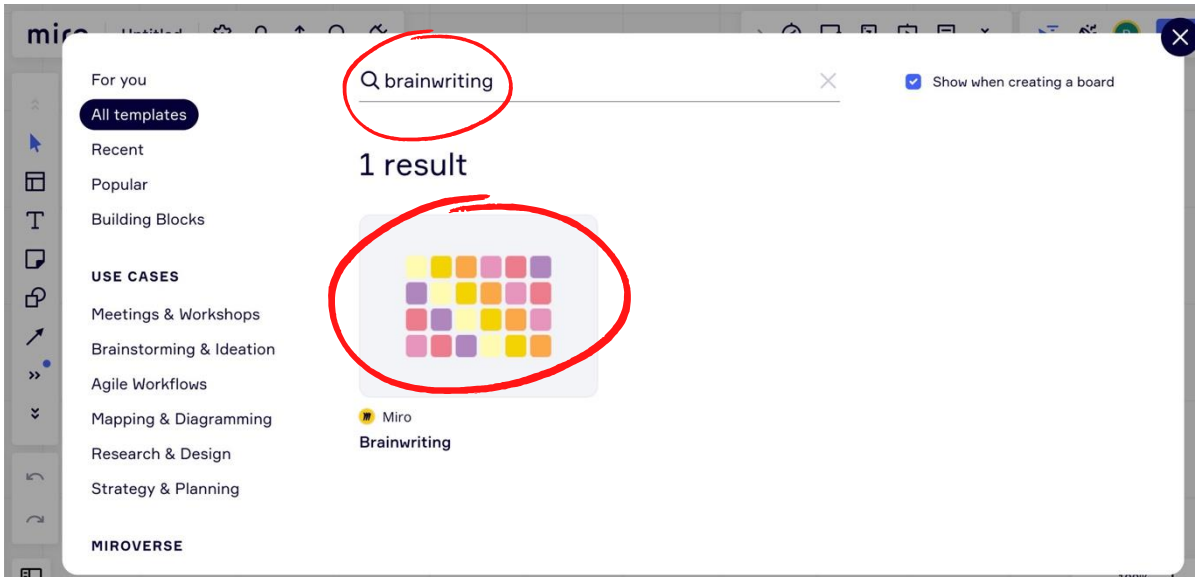
Seeking and recognising opportunities means discovering ways to solve problems or alleviate pain points that individuals or organisations struggle with. These solutions become our products/services.

Do you have the ability to identify such problems accurately? Do you have the necessary competencies to develop the product/service? In this step, we develop these skills and competencies.

Think about the individual facing the problem. Consider their characteristics, allowing you to validate your solution successfully and effectively later.

To find the best problems, always think of things that are pain points in your life. You also need to find the cause of the problem, not the solution, so pay attention to that!

The first task will be to compile a problem list, also known as a "bug list". To do this, look for the 'Brainwriting' template in MIRO, which everyone can use simultaneously, individually or in a team. It can be extended with Post-it notes. It consists of an idea and an idea development link, where you write down a fundamental problem in the idea space and the details in outline form in the idea development section.



Then, group them using a specific methodology (trend-fit testing helps) and try to select. Primary objective: Select 3 relevant problems!

Target market/persona

Once the problems have been selected and finalised, we need to identify the final 1 problem groups affected by it and to whom we will offer our solution to alleviate the pain point associated with the problem. But how do we get started?

Think about what you are offering.

It's not about the product or service but the problem and the solution you offer. People don't want to buy a hand drill; they want a hole in the wall.

An excellent example of a solution-oriented offer is one of the first iPod ads: instead of emphasising storage size, it promises that you can carry 1000 songs in your pocket.

Narrow your target group.

You need to narrow your target group to make a more personalised offer and advertise more accurately.

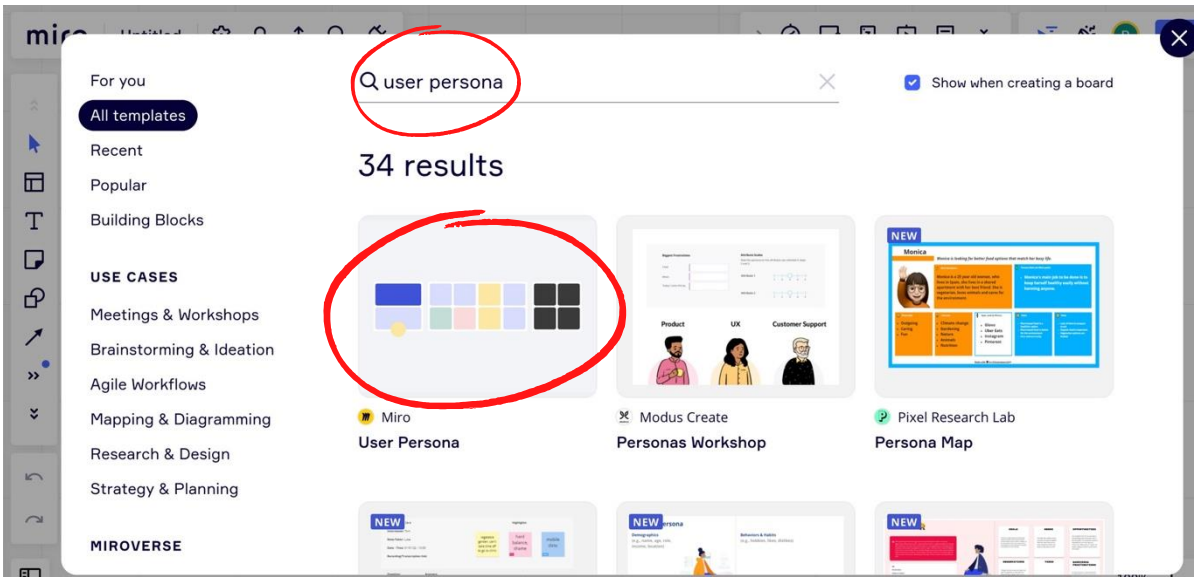
A good target group has three characteristics: specific: easy to target, either in copywriting or in ad settings big enough: you can make a living from it, i.e., it can support your growing business solvent: able and willing to pay for your offer.

Identify the target group (positioning)

Once you have your broad target group, describe them in as much detail as possible. In most cases, it is common to break down the target groups into four categories:

- Demographic characteristics: age, gender, languages spoken, income/income, industry.
- Geographic characteristics: postcode, county, city, residence, favourite places.
- Psychological characteristics: personality traits, interests, hobbies, communication style.
- Behaviour: tasks, difficulties, desires, goals, hobbies, habits.

We can also visualise the results of the previous steps as a "profile" of the priority members of our target group. The next step is to create 3 profiles of ideal customers. For this, look for the 'User Persona' template in MIRO!

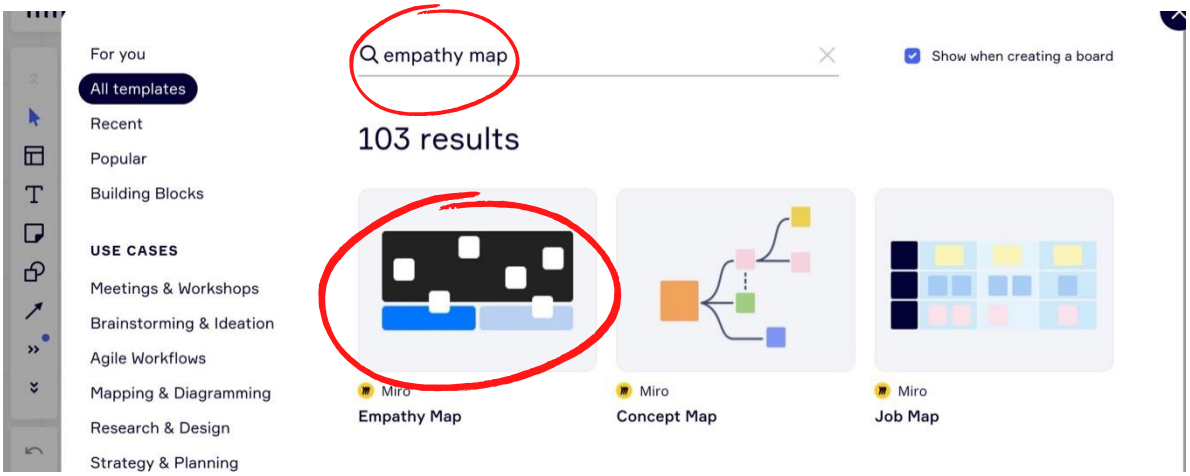


In the editing interface, you use Tables 2 and 3, where you can enter the different attributes of your customers and what creates value for them. In addition, in the last block, you must formulate the following tasks for the team by answering the questions. The template can be extended indefinitely in the editing interface, so copy blocks 2 and 3 twice more to make 3 personas. For the profiles, also insert a photo of the persona!

Target market/persona

After defining the profiles, you need to understand in more depth where the user has problems (pains) or potential benefits (gains) and infer their tasks (the so-called "to-do" tasks and the different activities they perform).

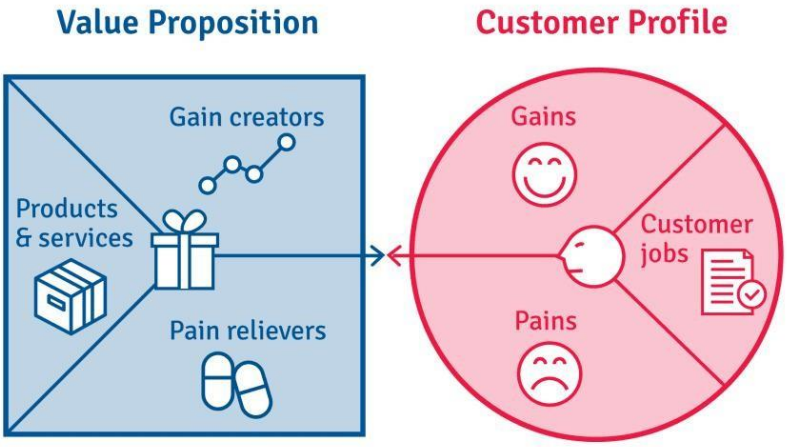
This will be helped by the so-called empathy map, which is a tool for empathic target group analysis. It is used to identify the feelings, thoughts and attitudes of existing or potential users and customers and to understand their needs. To do this, find the 'Empathy map' template in MIRO and apply it to your target group, even in multiples, for all three personas!



Value proposition

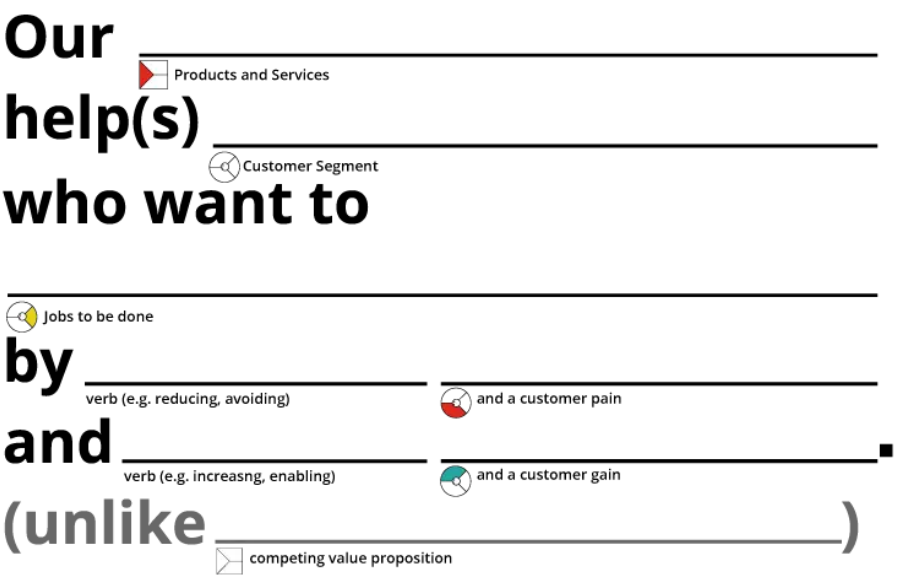
A concise and to-the-point value proposition is one of the best ways to illustrate and demonstrate our core values to prospective clients. A good value proposition identifies the key selling points in a few sentences and is attention-grabbing for the visitor. Customers should be shown the simplest possible way to expect when they do business with us. So, first impressions are essential!

The methods used to define the target group greatly support the definition of the value proposition. In this context, a so-called "Value proposition canvas" methodology is used, which has been transformed into a one-sentence value proposition in the presentation linked to the curriculum. The canvas is briefly presented; it can be necessary to formulate the sentence, as the sentence is composed of its different parts.



It is the canvas itself that helps to formulate the value proposition. To offer our visitors the best possible value proposition, we need to assess their pain and gain points, which will help us to target our message to them most effectively.

Customer pain points are negative factors that prevent prospective customers from implementing valuable processes. These can be unwanted costs, situations, negative emotions or risks.



Our customers aim to save effort, time, or money. These help them generate customer gain and grow further in the market. It is also from this perspective that we need to capture their attention with calls such as "save time", "keep processes under control", "save up to 20%", and "increase efficiency".

Our value proposition must meet three main criteria: be relevant, show the value of our business and be unique. Considering these three aspects, we must answer the following questions when developing our value proposition.

- Relevance: Why is our product or service needed? What needs can we meet?
- Value: What benefit does our product or service provide? How can we help them achieve their goals?
- Uniqueness: What can we offer our customers that our competitors cannot?

Competitor analysis

Competitor analysis helps you discover your competitors, their marketing strategy, how they get their customers, and what they do better than you. A detailed competitor screening will show you where to strengthen to stay ahead of your competitors.

Competitor analysis helps to determine who a business's potential competitors are, what their strengths and weaknesses are and what their marketing strategy is.

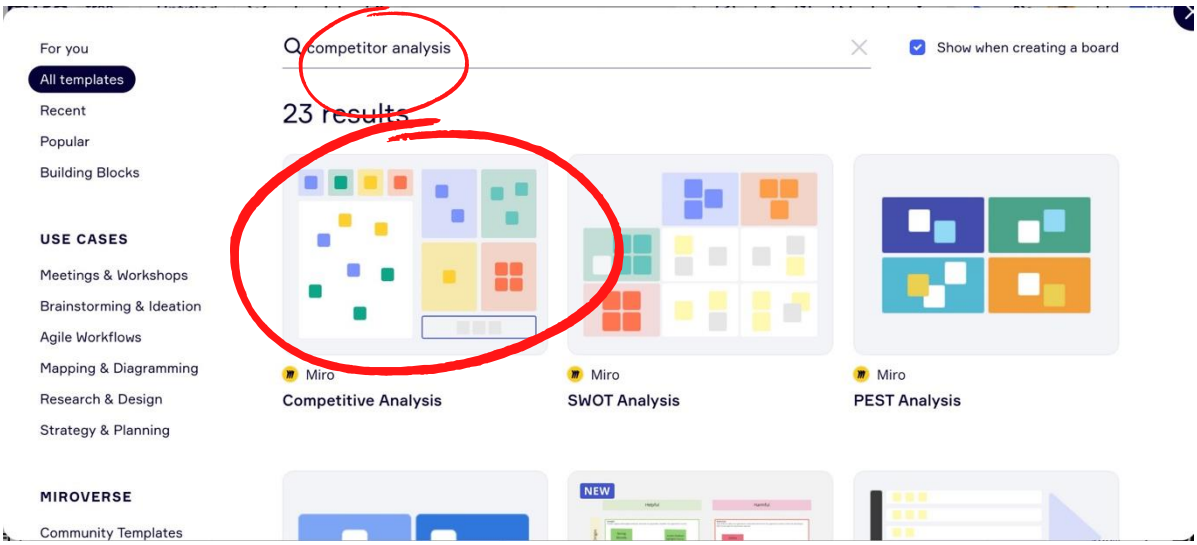
Screening your competitors will also help you identify areas where your business needs to improve to catch up or even overtake them.

Competitor analysis is required in the following cases:

- Before starting a business.
- After a decline in turnover and revenue.
- before the launch of new products or services.
- When a new, strong competitor appears on the market.

To make the market want you, it's not enough to be good; you also need to know who you're up against and what "weapons" your competitors are using. That's why part of strategic marketing is learning about your competitors' solutions and looking at them from a customer's perspective.

Thus, this topic's first task will be to conduct a competitor analysis. To do this, look for the 'Competitor Analysis' template in MIRO, which everyone can use simultaneously, individually, and as a team. It can be extended with Post-it notes. Map out your potential competitors in the market and then analyse their specificities.



And then, include your projects in the analysis to see where you are better than your competitors or where you need to focus more on and strengthen.

MVP – minimum viable product

MVP stands for the fastest first beta ready to go. The product or service has only the most essential features at launch. The aim is to gather feedback and experience. MVP is often used in the context of Eric Ries' Lean Startup methodology (Ries, 2018).

What is MVP, or is finished better than perfect?

Minimum = rudimentary, exists and is tangible, can be demonstrated.

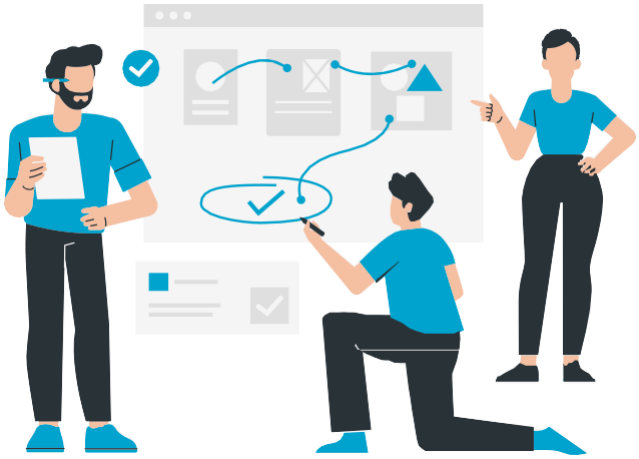
Viable = it has a reason to exist and is needed.

Product = a product, i.e., something you can sell, be it a physical product or a service.

Market entry can happen with relentless speed, even for a half-finished product.

In simple terms, MVP is a way to cost-effectively create a novel digital product that can be downloaded and purchased by the first users. Using the experience gained from MVP development and user feedback, we can effectively enhance the application we develop and ensure we are moving in the right direction with our project.

One of the most critical and challenging aspects, when you start designing your product/service is selecting and prioritising features. Many people make the mistake of judging a successful business by the many already launched versions when the road to the top is never short.



What tools can you use, and what qualifies as an MVP?

1. The first and most straightforward way to make an MVP is to draw it on paper or MIRO. Describe the process that demonstrates the features and functionality of the product/service. Use colourful post-its and highlight the critical points, especially the functionality that is the focus of your value proposition.
2. Even a good poster can be the perfect MVP if you can showcase the fundamental values and features! Use CANVA 's site to do this, where you can find many other great templates besides the poster.
3. A landing page, also known as a simple website. Don't be scared; you don't need to know how to program... You can create a landing page for your project in no time with WIX, where you can adapt ready-made templates to your own needs. Or very similar to the WEBNODE site, we recommend both!
4. Create your app design. There are also plenty of sites where you don't need to know how to program, and you can create a click-through application prototype. One of the best-known is MARVELAPP, but you can also check SKETCH or BUBBLE. But perhaps the most knowledgeable, completely free platform is JUSTINMIND 's site.
5. You can also use a video to showcase your product/service, so this is also an MVP if it's well put together. There are also an almost endless number of sites available for this; we've picked out a few for you, but if you have a well-established platform, feel free to use ANIMOTO, VISME, or FLEXCLIP. And the king of animation: ANIMAKER.
6. Create your social media platform(s) because, in the future, you will be able to reach your customers, describe your products/services in detail and measure feedback and market results.

Examples of revenue models

Advertising-based revenue model

Ad-based revenue models involve creating and strategically placing ads for a website, service, app or other product on high-traffic channels. If your company has a website or web-based business, Google AdSense is one of the most widely used tools for acquiring ads. AdSense earns around $5-10 per 1000 page views for most websites.

"Affiliate" revenue model

Another popular web revenue model is the affiliate revenue model, which promotes links to relevant products, earns a commission on selling those products, and can work in conjunction with or separately from advertising.

Transaction revenue model

Many companies, technology and otherwise, are trying to rely on the transactional revenue model, and with good reason. It is one of the most direct ways to generate revenue, as the company provides a service or product, and customers pay for it.

Subscription-based revenue model

A subscription-based revenue model means offering your customers a product or service that they can pay for over a more extended period, usually month by month or even year by year.

Sales on the web

This is a branch of the transactional revenue model, in which the customer pays directly for the product or service, except that customers must first reach your company through an internet search or outbound marketing and transact exclusively.

Direct sales

There are two types of direct sales: inside sales, where someone calls to place an order or sales agents call potential customers, and outside sales, which is a face-to-face sales transaction.

Channel sales (or indirect sales)

The channel sales model consists of agents or resellers selling your product on your behalf and you or the reseller delivering the product. The affiliate revenue model is an excellent companion to this model, especially if your offering is a virtual product.

Retail sales

Retail sales means establishing a traditional department store or retail shop offering customers physical goods. Remember that the retail sales model requires shelf space (which you must pay for) in existing stores and is best suited to products that require logistics to get them to customers.

The product is free, but the service is not.

This model is unique because you must give the product away for free, but customers must pay for installation, customisation, training or other services.

Freemium model

A freemium model is a model where a company's essential services are free, but users must pay for additional premium features, extensions, functionality, etc. One of the biggest companies using this model is LinkedIn, the most popular business/social media platform.

Business model canvas

The Business Model Canvas is the result of research by Swiss economist Alexander Osterwalder, based on business model analyses.

The canvas model builds a business venture out of 9 components, summarising a given project's operational and strategic aspects briefly and concisely. As the name suggests, it is a model designed to represent complex real-world relationships in a simple, understandable way.

The structure of Canvas

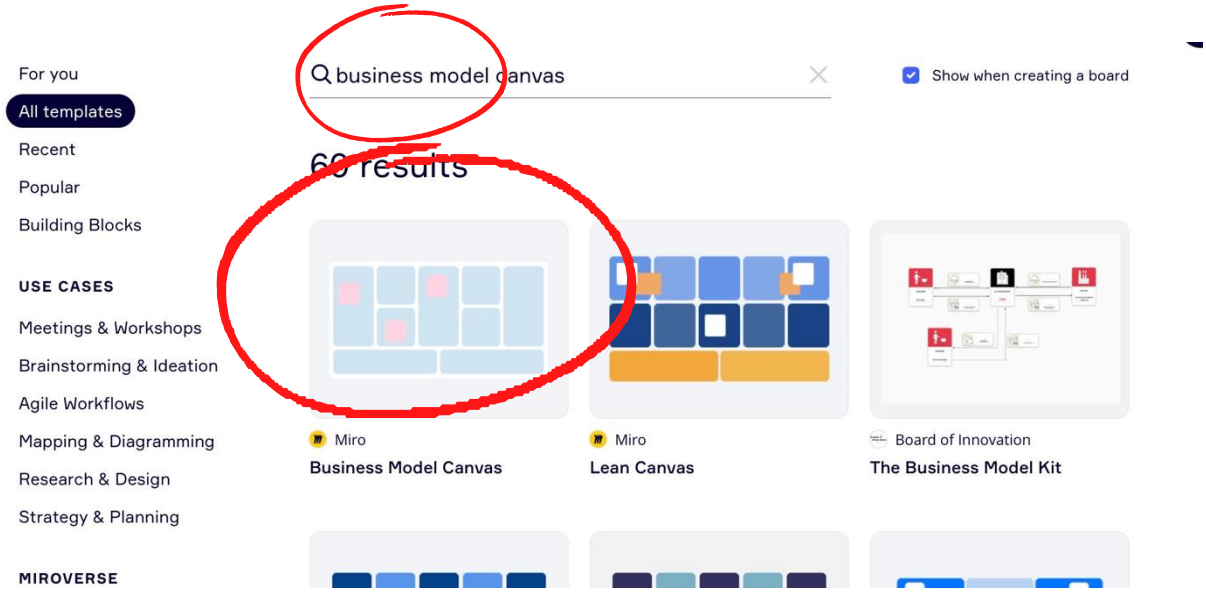
The model consists of the following nine elements:

- Value Proposition
- Customer Segments
- Channels
- Customer Relationship
- Revenue Streams
- Cost Structure
- Key Activities
- Key Resources
- Key Partners

Each of these elements can be done in just a few words. But in no case do you need to write long lines for each item. Of course, they can be explained in detail, but there is no need. It is no coincidence that canvas is usually written on Post-it notes.

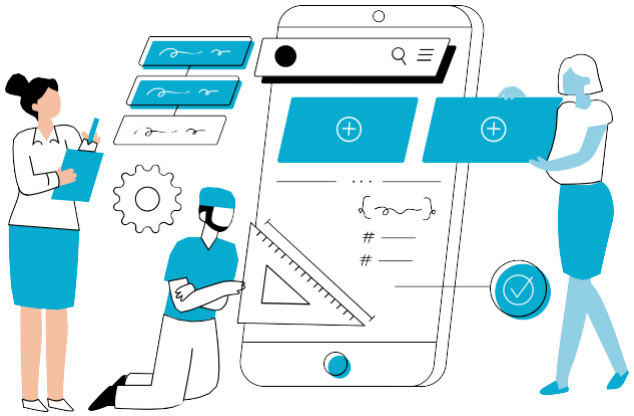
The aim is to summarise briefly and succinctly what the passage means. This is a significant difference from business plans. Classic business plans are typically 30- 70 pages of written documents that detail the business environment, strategy, competitors, assumptions and financial calculations related to the business model of the company or project.

Let's find the canvas (business model canvas) in MIRO and study it a bit.



You will then have to create your business model for your project using Canvas if there is time during the Hackathon. It's not compulsory, but it's good to think about it!

The Business Model Canvas shows the critical elements of a project on one page. This makes it a much quicker, simplified schematic model to put together. However, this does not mean that it is inaccurate or wrong. It simply means that its purpose and value lie not in the detail but in the primary context. If there is already a flaw in the relationship between the essential elements, writing a 50-page business plan for that project is pointless. In this respect, the canvas is not a substitute for the business plan but precedes and complements it. Think of it as an executive summary of a business plan. Osterwalder's book contains several business model templates he created for specific companies and projects.



Living Labs toolkits (Products)

1. Discover your university and partner universities' toolkit

The goal is to get to know the university where I am employed or where I study from different perspectives. Get to know the university environment, history, other faculties, and departments. In this way, the barrier between employees and students between different departments and faculties will be overcome. This can be done based on short lectures/excursions, which can also be in the form of videos, presentations or developed leaflets/posters and the like. The university environment could be mapped through drone videos in the form of "university view," similar to Google Street View from the point of view of a teacher/student walking around the university building, offices, classrooms, and external and internal university spaces. The mentioned lectures, information and the like would be available for the critical points of the university. It would bring together teachers, students, and the public or (potential) visitors to the university. Everyone would learn new and practical information. There would also be a connection with partner universities implementing the same tool. Universities are often not connected between individual workplaces or open to the public. This approach would overcome formality and get to know each other better, which could lead to greater openness and cooperation within and across universities.

2. An open mind, an open university toolkit

It is about creating a common platform within and across universities. This is a regular cycle of lectures, discussions, and workshops for the entire academic community of the university and the public, respectively, for members of partner universities (since the lectures discussions could be streamed online, the workshops could also be implemented, for example, via MS Teams). The main intention is that another department always prepares a free lecture, discussion, or workshop with interesting, current topics that would have a popular science character. One day, it would be philosophy, ecology, linguistics, mathematics and the like. As it is written, all teachers, students, and the public or partner universities could come or join online. It would increase the general overview of what individual departments do and what they do, what kind of experts they have. It would be a space for interdisciplinary studies, getting to know each other and enriching ourselves with knowledge. Students could also be involved in the process, bringing topics related to their lives, studies, and issues they consider important. Teachers would thus get to know them from a different perspective and better understand their motivations and thinking. The presence of the public would make the university genuinely open.

3. Counseling-psychotherapeutic outpatient clinic for university workers/students toolkit

Nowadays, mental health is greatly endangered, and diseases of the soul are becoming diseases of civilisation. Most universities have their departments of psychology, pedagogy, etc. The tool could serve as an ambulance, where you can come and talk to a psychologist in person at a particular time, and meetings in the online space or chatting would also be possible. Psychology teachers could be assisted by students of psychology and pedagogy but also by other interested teachers/students who would undergo training and be supervised by supervisors. Counselling would be aimed at helping with personal, study and relationship problems, in case of stress, uncertainty, tension, problems in studies, fear and anxiety about exams, low self-confidence, family and partner problems, work burnout and the like. The preservation of anonymity and professionalism is a matter of course. This tool is perhaps more narrowly focused, but it could be expanded to include prevention - for example, lectures on sports, healthy nutrition, sociology of lifestyle, relaxation and psychohygiene. Therefore, other departments, students or the professional public could also be involved.

4. Make the university a more beautiful toolkit

Making the university more beautiful can be done in various ways, and everyone can be involved, including the public. This tool can also be used online because websites and social networks are part of the university and its workplaces. In this case, new visuals of websites and social networks (their clarity, practicality, attractiveness, modernity, etc.) would be proposed, making the university and its components visually and otherwise more beautiful online. Then there is the call for a natural beautification of the university by improving the outdoor spaces through brigades (planting flowers, trees, landscaping, etc.) or by installing works of art, works of students and teachers in the university's interior. For example, they beautify classrooms and offices by bringing and caring for plants, inventing maps, blackboards and little things that familiarise the university environment so that students, teachers, employees and visitors feel even better. New logos, slogans, department boards and the like could be invented. All within the challenge, thanks to this tool. A permanent creative workshop could be the primary platform for this tool.

5. Ecological University toolkit

The classic competition is the creation of ecological patrols at workplaces consisting of teachers and students or the public. These groups - ecological patrols should regularly carry out challenges with an ecological focus, which would be evaluated during joint meetings (also possible in the online form). For example, how to reduce paper consumption. Everyone could bring their tools that could be shared and, if

successful, applied across the board. For example, they submit seminar papers electronically, writing tests only online, reducing teacher bureaucracy. Environmental patrols could have a paper collection competition. This would also apply to recycling, eliminating single-use plastic cups in workplaces, and the like and saving electricity, for example, by setting savers on computer monitors and the like. Ideas on how to make the university ecological should be brought by everyone, including lectures or discussions with experts, activists, and members of ecological patrols. Ecological patrols should also conduct educational activities at their workplaces and within the university.

6. Black box toolkit

How do we improve the university's functioning, prevent conflicts, learn important non-public facts or learn about essential problems? It is a black box project. This tool can also be online as an anonymous or non-anonymous platform for all possible problems, from bullying mobbing to proposing changes and improvements, through listening to the voices of students and university employees. A black box can be a box for messages, a voice box, a video box, or a box for electronic messages. The university management should deal with anonymous references and serious accusations officially. Still, various proposals and outlines of problems should be regularly resolved in an open moderated discussion forum, where responsible management staff should also be. This platform could also be Hyde Park, where the black box committee would directly listen to students' teachers. Each university would decide how to select the members of the given commission, and only this commission would have access to all outputs of the black box and assess them (send them for an official investigation or prepare a discussion forum on the issue).

7. Know Me Better toolkit (Product)

This tool is intended to contribute to the humanisation of formal relationships between students and teachers and between students when building informal relationships. This tool could have two dimensions. The first would be for students to get to know each other within the field of study (it could also occur online). One or more students would regularly introduce themselves according to a precise scheme, and it would be possible to ask questions, but the responsible teacher would regulate everything. The questions would not be personal and discussed before the event (what the student does not want to answer, etc.). In principle, in a fun way, students should learn more about their colleagues, for example, whether they like cats or dogs or some other animals, what colour they like, music, movies, why they study a given field, and so on. The second dimension would serve to get to know another side of their teachers for students with similar questions (hobbies, favourite places, colours...). This tool is limited for teachers since there are fewer of them than students, and there is not such a turnover, but it can serve new students and new teachers to present themselves in a different light. This tool replaces the so-called matriculation for first-class students.

8. Solve things together toolkit

This approach has three dimensions. It is about organising a competition within the university, where it is about connection and cooperation within teams. The competition can have a different character - sports, knowledge and the like. Team building is essential. Within the first dimension, teams are formed by students and their teachers. As part of the competition, they will get to know each other better and be forced to communicate and work together. Within the second dimension, teams of academic staff from different workplaces and teams of students from different fields of study will also be mixed. In the third dimension, teachers will be part of a team with their colleagues from partner universities, and students will be mixed in a team with their colleagues - students from partner universities. As already mentioned, - various competitions will force you to solve things together in mixed teams, where it will be necessary to cross the comfort zone and cooperate with someone you do not know or know only formally. Competitions should have a highly collective character, so that team spirit must be manifested, and cooperation necessarily leads to a result. These competitions could be renewed and repeated annually.

9. Cultural night at the university toolkit

A tool that can also be implemented online but should primarily be implemented face-to-face (with the possibility of online streaming). For example, a cultural evening should be held at the university once a year. We can leave it up to individual workplaces and universities how they would conceive of these cultural evenings. Teachers could prepare the cultural program for their students or other teachers, or it could be prepared jointly by students and teachers for other students and teachers, preferably voluntary. However, the program should be offered by almost all parts of the university or faculty, and everyone could choose. "Performances" would occur in classrooms or other parts of the university. Everything should take a different form from the everyday life of the university. The artistic community or fellow teachers/students from partner universities could help. They could only be invited as guests of the cultural evening. The event could become a tradition. The specificity of such an event is that it revitalises the university at a time when there is usually no one there. Therefore, the event should have a particular atmosphere and evoke positive emotions associated with the university where you usually work or study.

10. Let's help the weaker ones' toolkit

A tool that has a charitable character and thus combines the pleasant with the useful. The goal is to create a voluntary community within the university that will seek goals to help the weaker. Students, teachers, and the public can participate. The goal is to regularly prepare a charity event that will be promoted throughout the university and

end with a charity collection or work performed for free as part of the charity event. The primary goal of the activity should be the "weaker" who are connected to the university. For example, former lonely university workers, disabled children or parents of university students/teachers, socially weak students, disabled students, fundraising or writing a project to remove barriers at the university to make it fully barrier-free, etc. Such activity will deepen solidarity tolerance and contribute to the image of a humanistic institution in the eyes of the public. Sometimes, asking for help when someone gets hurt, sick, etc., is hard, but the university should stand by its students, staff, and loved ones, as it's a big and strong community. This tool should also contribute to a greater sense of belonging and pride towards the university.

11. University of diversity toolkit

Knowing other cultures, traditions, and countries is essential for building tolerance and prevention against xenophobia. Every university has international students and teachers. This tool can also be implemented online. International students or interns (Erasmus+ and others), lecturers from abroad, researchers or colleagues from partner foreign universities should regularly be given space within the university/faculty to present their country, traditions, and culture, but also their thinking and life attitudes in regular discussions in the context of diversity. Within this tool, a group of university workers and students would select and address foreigners at the university long-term or short-term, or foreigners outside the university who have something to say to students/teachers/public and want to say it in regular lectures connected with the discussion. In the case of long-term study or work, thematic lectures, or evenings (for example, about cooking, about movies in the country...) can also be held regularly, where one foreigner can present several aspects of one country that they know or present subjectively.

12. Thinking outside the box toolkit

It is known that universities have little connection with practice. This tool aims to bring some practice into the academic environment through practitioners. Regularly bring experts to the university grounds through presentations, discussions, or workshops. Let the official talk about public administration, practically show how they arrange pages using a computer program, and let the students fill out the form. Let the painter talk about the technique and tell the students his reservations and recommendations directly in class. Let the moderator come to the rhetoric class. It can also be done in a more comprehensive form - lists of experts from practice should be created for individual fields of study, who would be regularly invited when necessary or when a topic in which they are real experts is to be presented. It can have different formats; for example, it can be online consultations when students and teachers can contact the expert. Partner universities could share lists of experts who want to cooperate, and open lectures by experts should be the rule.

13. Healthy university toolkit (Product)

This tool is intended to contribute to education and prevention in health. The university/faculty should regularly organise health days where teachers/students/professionals and the lay public would be involved. The event would be focused on lectures on healthy nutrition, exercises, measuring blood pressure and other health indicators, where everyone concerned would be involved. The public could be invited, not only the academic community. Sports competitions and first aid seminars could also be held. Health packages (vitamins, etc.) should be distributed for sponsors or sufficient funds. This activity would have a significant educational and preventive character. It should be focused more on occupational diseases that plague teachers and students' most common health problems (unhealthy lifestyle, lack of sleep, use of substances for concentration - energy drinks, drugs, etc.). It could also include an anonymous survey on the health of teachers and students, which would be repeated regularly, and the results could be compared. A healthy university app could ask users basic questions about their health every week. According to the results, follow-up actions could be prepared because it would be clear what problems the health day should focus on.

14. Don't get lost in Babylon toolkit

This helps learn foreign languages (it can also be done online). In addition to the standard teaching of foreign languages at the university, it is also necessary to approach long-term language teaching in the form of school through play. The training should have an efficient character through conversations on various topics. The criterion would be that the lecturer should be a student/teacher/someone from a foreign partner university who is a native speaker - a foreigner. Participants should prepare for the given conversation and be divided into groups according to their language knowledge. During the conversation, they could use the help of colleagues, but also other aids - for example, applications dictionaries, or they could ask for advice. Conversations should be about everyday topics in primary groups, but with a better knowledge of the language about various professional topics using precise professional terminology. The tasks could be the preparation and presentation of presentations, seminar papers, essays or short lectures in the given language. Furthermore, it could translate a professional text and the like. There could be various skits, etudes, and funny quizzes to lighten the load.

15. Artists of versatile development toolkit

It is about establishing an "artistic" community among the academic community, which would continuously and, according to possibilities, prepare performances focused on sustainable development topics. Artistic display and creation should have an educational and emotional character. The main motive would be for the academic community and the public to be more interested in the given issues and think more

based on the performances. The artistic community should find its ways of self-presentation (on social networks, video platforms, and university media - university television, university theatre, university radio, university gallery). It could be theatre performances, films (for example, on YouTube) or short skits on other social networks. They should always be instructive and provide enough information about the given issue. The artistic community would not have to be stable; for example, other actors could be involved in it from the external environment. The goal could be a university festival on all-round development, where other (partner) universities or civil society could also present their works of art.

16. Involve the marginalised toolkit

This tool is aimed at people from marginalised backgrounds who do not have the opportunities, finances, or information to get enough education and have enough development opportunities. This is, for example, the Roma community, immigrants, children from orphanages, homeless people, long-term unemployed, single-parent households, people in prison and the like. As part of this activity, the university (students and teachers) should prepare educational courses aimed at acquiring basic or missing skills (learn to read, write, calculate, write and submit an application, navigate the primary legislation for social and family benefits, get basic information about legal and social assistance, learning essential hygiene habits, financial literacy, the basics of decent behaviour, etc.). Of course, according to the group, the course topic can also be adapted and changed based on the requirements of the course participants to make it as practical and helpful as possible. It could also be a preliminary preparation for socially weaker secondary school students for university entrance exams or zero years of university so that these students reach a similar level as others.

17. The University in harmony with nature toolkit

This tool should support solutions that support the university's symbiosis with nature. This means supporting university parks and other places, for example, insect hotels and birdhouses, and supporting small animals such as squirrels according to the location and possibilities of the university. For example, the University of Prešov has established beehives and a beekeeping study program. The academic community can participate in constructing green roofs, ponds, and other green areas. Part of harmony with nature is also the construction of quiet zones or zones without cars and the like. It is also worth considering using the university's land to cultivate various crops. Students/teachers could adopt university trees, which they would take care of themselves or financially support their maintenance. The activity should also include the assessment of every reconstruction or other intervention within the university so that it is an ecological solution in harmony with nature. For example, they avoid "bad" chemicals when cleaning the university or taking care of the exterior of the university and its green areas. It is also worth considering leaving some of the lawn uncut so

insects and animals can exist there. Plants from this area could be used as herbs, dandelion honey, and the like.

18. University start-up for innovations and intelligent solutions toolkit

This activity could also take place online. It could be an application or a website where the academic community and the public could share and present innovative and intelligent ideas for a better and more sustainable university functioning. It could not just be random and unfinished ideas; it would have to be precisely formulated and prepared as a project, including financial costs. The best ideas could go before a jury. The best and selected ideas should be further developed with the help of experts and university officials to reach a feasible position. University crowdfunding could be used for implementation, or the university would give part of the funds to the projects every year. Another possibility would be participatory financing, when funds from the university or crowdfunding would be used for the project/projects for which most university voters would vote. This activity should significantly positively change the university's functioning and increase the academic community's engagement and participation.

19. Safety and self-defense toolkit

This approach is aimed primarily at students, predominantly female or physically weaker students. First, it can be a course in self-defence/empathy and assertiveness/against manipulation and manipulative techniques. These should prevent mobbing, bossing, bullying, sexual harassment, abuse and inappropriate behaviour by teachers/students/employees towards our person. Young people and young women are exposed to many traps. They come to live in boarding schools, leave their birthplace, and are psychologically and physically vulnerable. To feel safe at the university and in their surroundings, they should know their rights and social norms and be able to estimate inappropriate behaviour or actions and perhaps defend themselves against them actively. In the courses, they should be told about the pitfalls of the new environment; they must familiarise themselves with the local realities. The second and no less important part is safety and self-defence in the online space. How they use the Internet and social networks, how to avoid data leakage, passwords, photos, and videos, and how to behave on social networks so as not to become a victim of fraud, blackmail and the like.

20. Be a good example toolkit

We can become a good society if good examples inspire us. Role models with strong stories attract and motivate others to emulate their actions. On a regular monthly or

annual basis, the university should nominate and select an academician of the month/year through its mechanisms. It is already up to each academic institution to consider whether it would be an announcement as part of the gala evening with awards or just a photo of the academician on the website/social network/ the board in the university lobby with a description of what he was awarded for in the given month/year. In any case, individual students/teachers/employees and possibly the public or university collectives could nominate, and decisions could be made by (online) voting or through some established jury. Considering sustainable development, all activities beyond normal work activities could be awarded. This is a common practice in private companies, and in universities, teachers and students are primarily awarded for their academic results. The fundamental difference will, therefore, be extracurricular activity in the form of help, participation, solidarity, volunteering, but also human approach, method of communication and the like.

21. University swap and bazaar toolkit

University/faculty should organise university swaps and bazaars regularly. Especially for young people, it is expected that they want to stand out and be original - they want to have a lot of clothes. Here, they could exchange it for free; it could also apply to the public. At the same time, it would be a bazaar; students/teachers/the public could bring things they don't need, but others will still need, or they could exchange things. At the same time, it would serve as a course or a repair shop for non-functional items. Artisans could show how things can be repaired and reused. Books, university scripts, and other study aids could also be exchanged there. Producers and sellers of local and regional products should be invited to the event. Students or teachers could also offer their products (to support the university and its sustainable development programs). The leitmotif should be products from recycled materials and the like. It could also include creative workshops and a presentation of old traditional crafts, which could recruit new interested parties who, for example, would like to devote themselves to the craft in their free time.

22. Travel together, have fun together toolkit

It is a tool - an application or a website within which shared transport would be negotiated. It would primarily be a trip to and from the university. Everyone could join. Members of the public who have a scheduled journey to or from the University and have available seats in the vehicle or students/faculty/staff who wish to share their vehicle. Of course, the most proactive individuals transporting the most passengers per month could be "good examples". However, it would be about shared transport and agreements to travel together by train/bus simultaneously so that students/teachers get to know each other more and have fun/communication/or even learn/prepare for teaching during the trip. They could also plan joint trips by bike/scooter or on foot. The university should support events that will regularly promote green and shared transport or other ecological forms of transport, in which most of the academic community should

participate. In the case of longer joint journeys of students with teachers by train or bus, travel could replace some seminar hours.

23. The university community library toolkit

Libraries are no longer places to borrow books but also fulfil a more comprehensive cultural, informational, educational, social and community function. The community library does not focus its activities only on registered users but plans and systematically addresses the entire community while developing its services to respond flexibly to the needs of all people in its place of operation. It provides space for the activities of individual groups of people, connects individual activities of groups with other groups and individuals by the development of the community, participates in the common life of the university and the city, cooperates with local organisations and institutions, connects the public and private sectors, develops partnerships between organisations, entrepreneurs. The goal is to involve residents in active participation in the life of the university and the city, to help solve community problems by providing informational support to all those involved, to strengthen people's relationship with the university and the place they live in, in cooperation with other organisations in a coordinated manner to develop cultural, educational and leisure activities that are based on the needs of the community (supporting the development of the potential of the place). It is a place to exchange books and other educational materials and where the public/students/teachers can meet outside of working hours. The university community library could also be open on weekends or during the week until late evening or night hours.

24. Change my mind toolkit

This activity consists of the fight against misinformation, hoaxes, and fake news, supports professional discussion based on arguments and rejects argumentative fouls. At the same time, it is supposed to support relevant facts about the climate crisis, poverty, and inequality (about sustainability topics). Under the teacher's guidance, the students will regularly prepare one topic from the field of sustainable development, and, within the university, they will prepare tables with materials at which, for example, three students will sit. There will be a poster at the table with the title, for example, Global warming is a fact - change my mind. Students/public/teachers can sit down, ask questions, argue, or discuss critically. One student always discusses with the participant who came to discuss. The discussion/discussions will be observed by independent observers (experts, teachers, students) who will only draw attention to argumentative fouls and polite behaviour and prevent the discussion from deviating to other topics. This way, everyone can confront the facts, learn to debate politely, argue and learn something new about various topics, or form an opinion about a given issue. Meetings may be streamed online, and there may be an audience that cannot engage with or support individual participants.

25. Life is elsewhere - thoughts about the real-life toolkit

It is a journalistic, essayistic, and literary tool to stimulate reflection on the sustainability of our lifestyle and our planet. It should be short reflection assignments, essays, poems, and short stories (it can also be done online) in written form or presented publicly or through videos. Both academia and the public could be involved. The selected essays, short stories, and poems will be discussed, and the participants' feelings, attitudes, and opinions will be analysed. Finding space and time to think about the true meaning of "things", holidays, and events is necessary. The event should focus more on spirituality and reducing everyday noise and stress. The result should reflect what is essential in life. What is the point of human values, ethics, morality, decency, solidarity, tolerance and the like? In which direction we are going, where we are walking and why—questions about the meaning of life and the good life. In a certain sense, it would be about the psycho-hygiene of the participants and the expression of their feelings, fears, and thoughts. We should not look for ways out but rather accept ourselves and the world and describe threats, hopes and hopelessness.

Planning a Living Lab and Quiz

- IDEA CARD
- PERSONA CARD
- LIVING LAB MODEL CANVAS
- ECO FACTS – quiz

THE IDEA CARD helps to clarify the subject of business idea. It is an excellent tool to use when presenting your initial idea to stakeholders or future beneficiaries. IDEA CARD helps to recognize on the early stage what should be improve in your idea.

The next step is to transform THE IDEA CARD into THE LIVING LAB MODEL CANVAS. LIVING LAB MODEL CANVAS is a strategic management tool that lets you visualize your business idea or concept. The traditional business plan has several pages. THE LIVING LAB MODEL CANVAS is one-page document offering a much easier way to understand the different core elements of a business. THE LIVING LAB MODEL CANVAS structured approach to designing, analysing, optimizing, and communicating your business model.

When we understand what our business is about in detail we need to focus on customers. THE PERSONA CARD is a fictional customer created to represent a user type that might use our product. Personas represent the similarities of consumer groups. They are based on demographic and behavioural information collected.

When we understand who our customers are we can get on with personalising the product to their needs. VALUE PROPOSITION CANVAS FOR LIVING LABS help to recognize: What is the most important product feature.

ECO FACTS - the purpose of this test is not to test your knowledge, but to arouse ecological awareness.

RESPONSIBLE CONSUMPTION - the purpose of this test is not to test your knowledge, but to arouse ecological awareness.

PLANNING A LIVING LAB

- IDEA CARD
- PERSONA CARD
- LIVING LAB MODEL CANVAS
- VALUE PROPOSITION CANVAS FOR LIVING LABS

IDEA CARD

WHAT'S FOR?	**Idea Card helps to clarify your own idea.** **It is an excellent tool to use when presenting your initial idea to stakeholders or future beneficiaries, customers, students, teachers to get a feel of what you're doing right and what you could improve on.**
HOW TO USE IT?	1. Start the activity by defining in detail the specific needs that you are addressing. What is the scale of this need (university, local people, city, country, world)? 2. Who exactly are you targeting with your Living Lab. Give a very specific target group, avoid generalities. 3. Explain why you think your Living Lab has a chance of success. How is it different from other initiatives in this area? 4. List in points what is unique about your Living Lab. What stands out in the market? What will get people interested in your Living Lab?
RULES	A group of students (2-4 people) comes up with their own Living Lab. Then they present it to their groups. After all the presentations, 1 Living Lab from among those presented is chosen by voting. All group members work on chosen Living Lab by filling the IDEA CARD.
TIME REQUIRED:	2-3 hours
GROUP SIZE:	2-4 students
MATERIAL REQUIRED:	computer with Microsoft Word or/and pen
TOOL:	IDEA CARD

IDEA CARD

Working title of the LIVING LAB:

Date:

Team members:

What need does the idea of Living Lab meet?	What is the target group?	Why does an idea of Living Lab have a market opportunity?	Why is the idea unique?	others...

PERSONA CARD

WHAT'S FOR?	**Personas are fictional characters that take part in Living Lab.** **The main goal is to understand: Which customers segments are most important for me? What do your customers want? How they will use the Living Lab? What they expect from the Living Lab? What motivates them? What frustrates them? Who exactly are you targeting with your Living Lab.** **Give a very specific target group, avoid generalities.**
HOW TO USE IT?	1. Give Persona a meaningful name 2. Add a Persona's photo to the profile. To add a photo to your persona, use UXPressia's or any other photo you wish to use. Avoid using photos of famous people. 3. Provide demographic details. 4. Describe Persona's personality: a. Motivations: What drives the persona (concerning your product/service)? b. Frustrations: What makes them unhappy/angry? Or what makes their tasks more challenging? 5. Describe the knowledge and skills in what area Persona has. 6. What are Persona's personal and professional goals? 7. Describe what brands of products Persona prefers. 8. Finally, provide ATTITUDES AND MOTIVATIONS for the product you described in the IDEA CARD.
RULES	Every student in the group prepares his PERSONA. Then students present PERSONA CARDS to their groups. After all the presentations, the final PERSONA CARD is created together.
TIME REQUIRED:	2-3 hours
GROUP SIZE:	2-4 students
MATERIAL REQUIRED:	computer with Microsoft Word or/and pen
TOOL:	https://edit.org/blog/user-persona-online-editable-templates-examples

PERSONA CARD

Working title of the LIVING LAB:

Date:

Team members:

NAME:

LIFE'S MOTTO:

DEMOGRAPHICS

SEX:	
AGE:	
NATIONALITY:	
PLACE OF RESIDENCE:	
EDUCATION:	
OCCUPATION:	
HOW MUCH DOES HE/SHE EARN?	
MARRIAGE STATUS:	

PERSONALITY

CHARACTER FEATURES:	
MOTIVATIONS:	
FLUSTRATIONS:	
WHAT IS THE PERSON AFRAID OF?	

KNOWLEDGE

PROFESSIONAL KNOWLEDGE:	
KNOWLEDGE OF TECHNOLOGY AND CURRENT TRENDS:	

PERSONA CARD

PERSONAL GOALS

GOALS FOR THE NEAR FUTURE	
GOALS FOR THE FAR FUTURE:	

BRANDS THAT THE PERSONA PREFERS

ATTITUDES AND MOTIVATIONS

WHAT NEEDS DOES THE PERSON WANT TO SATISFY NEEDS CONNECTED WITH OUR PRODUCT, CONTENT, ECT?	
WHAT DOES THE PERSON EXPECT FROM THE INTERACTION WITH YOUR PRODUCT, CONTENT, ETC	

LIVING LAB MODEL CANVAS

WHAT'S FOR?	**Allow you to transform IDEA CARD into LIVING LAB MODEL CANVAS.**
HOW TO USE IT?	1. CUSTOMER SEGMENTS describes who you are targeting with your Living Lab. 2. VALUE PROPOSITION describes specific benefits, what you deliver that has value for customers. 3. CHANNELS - these are the communication channels that build awareness about your Living Lab. 4. CUSTOMER RELATIONSHIPS shows how to build relationship with customers. 5. KEY ACTIVITIES shows what activities must be done in backstage. 6. KEY RESOURCES explain what allows to create KEY ACTIVITIES. 7. KEY PARTNERS – provide a key partners for your Living Lab 8. COST STRUCTURE – describe what generates the costs 9. REVENUE SOURCES – describe what generates the revenue
RULES	LIVING LAB MODEL CANVAS is created together by team after a short brainstorm.
TIME REQUIRED:	2-3 hours
GROUP SIZE:	2-4 students
MATERIAL REQUIRED:	computer with Microsoft Word or/and pen
TOOL:	https://edit.org/blog/templates-create-canvas-business-model-online

LIVING LAB MODEL CANVAS

Working title of the LIVING LAB:

Date:

Team members:

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
	Key Resources		**Channels**	

Cost Structure	Revenue Streams

VALUE PROPOSITION CANVAS FOR LIVING LABS

WHAT'S FOR?	**VALUE PROPOSITION CANVAS FOR LIVING LABS help to recognize: What is the most important product feature?**
HOW TO USE IT?	1. GAIN CREATOR is the value that your product or service creates for customer. Describe how your products and services create profits for your customers (functional utility, social gain, positive emotions or cost reduction). 2. PAIN RELIEVERS is showing how the Living Lab solve the problem (pain). How Living Lab eliminate or reduce negative emotions, costs and unwanted situations, risks that your clients experience. 3. PRODUCT&SERVICES - how Living Lab do you offer can help your clients perform functional, social and emotional tasks. Can Living Lab help them meet basic needs? System Features of Living Lab have to be attractive for customers and sustain the creation of value for the client. 4. GAINS are benefits for the client, benefits should create positive emotions associated from fulfilled expectation with the Living Lab. 5. PAINS are the negative experiences, emotions and risks that the client experiences in the process of doing the work (without our Living Lab). 6. JOB TO BE DONE - the functional, social, and emotional tasks that clients are trying to accomplish, the problems they are trying to solve, and the needs they want to satisfy.
RULES	**VALUE PROPOSITION CANVAS FOR LIVING LABS** is created together by team after a short brainstorm.
TIME REQUIRED:	2-3 hours
GROUP SIZE:	2-4 students
MATERIAL REQUIRED:	computer with Microsoft Word or/and pen
TOOL:	**VALUE PROPOSITION CANVA FOR LIVING LABS**

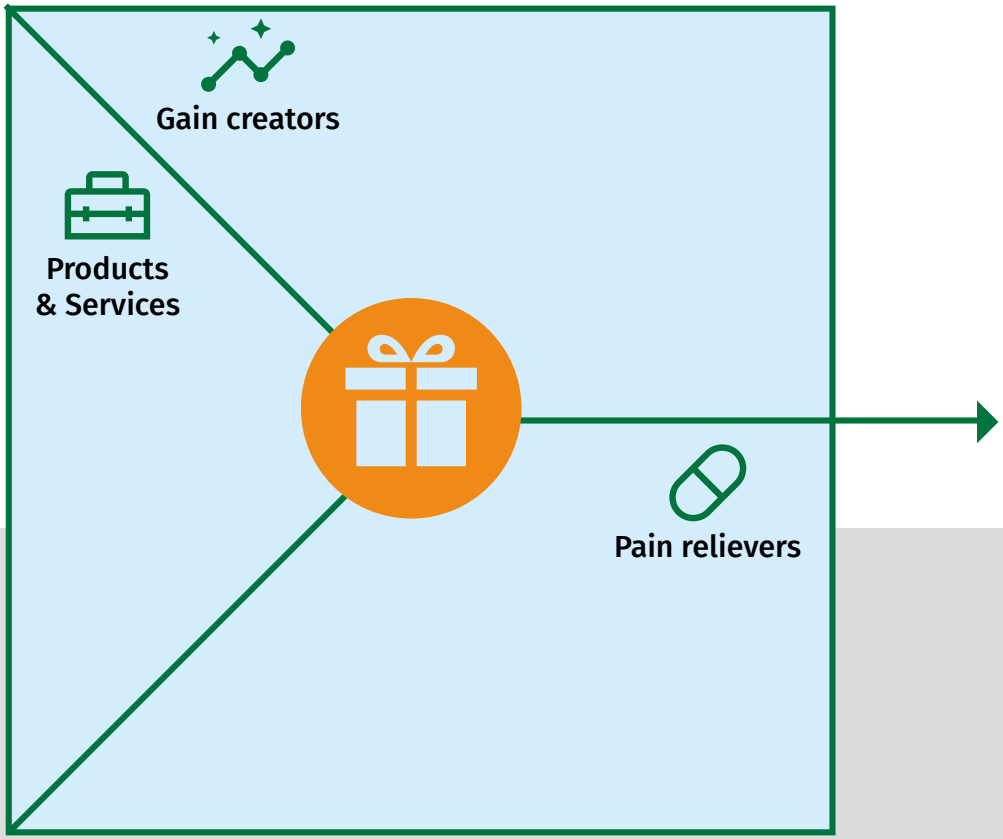
VALUE PROPOSITION CANVAS FOR LIVING LABS

Working title of the LIVING LAB:

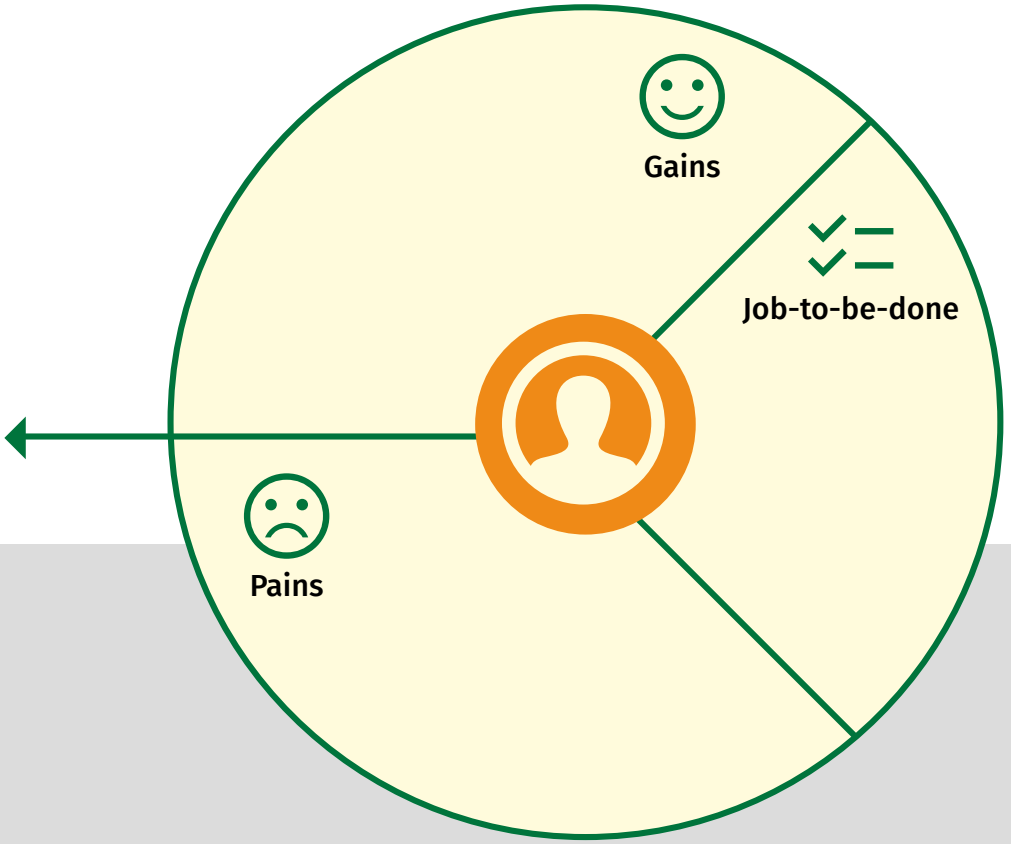
Date:

Team members:

PRODUCT MAP



CUSTOMER PROFILE



QUIZ

ECO FACTS - quiz

The purpose of this test is not to test your knowledge, but to arouse ecological awareness.

1. **The European Commission proposes more ambitious targets for reducing the CO2 emissions of new cars and vans.**
   a. 55% reduction of emissions from cars by 2030
   b. 100% reduction of emissions from cars by 2030
   c. 25% reduction of emissions from cars by 2030

2. **The European Commission proposes to increase the binding target of renewable sources in the EU's to:**
   a. 100% new renewable energy target for 2030
   b. 10% new renewable energy target for 2030
   c. 40% new renewable energy target for 2030

3. **40%of our energy consumption is by:**
   a. Buildings
   b. Factories
   c. Agriculture

4. **European industry uses:**
   a. 12% recycled materials
   b. 50% recycled materials
   c. 100% recycled materials

ECO FACTS - quiz

5. **Transport represents:**
   a. 50% of our emissions
   b. 80% of our emissions
   c. 25% of our emissions

6. **400 000 premature deaths per year today due to:**
   a. air pollution
   b. lack of water
   c. hunger

7. **Globally, the number of people at risk of being forced from their homes by river flooding could increase to:**
   a. 10 million a year
   b. 50 million a year
   c. 5 million a year

8. **Climate change could lead to:**
   a. a 20% food price rise in 2050
   b. a 5% food price rise in 2050
   c. a 50% food price rise in 2050

9. **More than 40% of the world's public climate finance comes from:**
   a. the EU
   b. the World Bank
   c. the Greenpeace International

10. **The global population of wild species has fallen by:**
    a. 60% over the last 40 years
    b. 5% over the last 40 years
    c. 10% over the last 40 years

11. **The Commission will take actions to:**
    a. reduce by 10% the use and risk of chemical pesticides by 2030
    b. reduce by 100% the use and risk of chemical pesticides by 2030
    c. reduce by 50% the use and risk of chemical pesticides by 2030

12. **Each cow can release between 200 and 400 pounds of methane gas through burps and farts each year. These levels are very high and:**
    a. are twenty-times more powerful than carbon dioxide gas
    b. are five-times more powerful than carbon dioxide gas
    c. are three-times more powerful than carbon dioxide gas

13. **About 71% of the earth is water. The oceans hold approximately 96.5% of all the water on earth, and the ice caps hold about 2%. The remaining exists in rivers, ponds, glaciers, ice caps, lakes, as water vapor and our taps, among other water bodies. Interestingly, only:**
    a. 10% of all that water can be used by human beings
    b. 1% of all that water can be used by human beings
    c. 30% of all that water can be used by human beings

ECO FACTS - quiz

14. About ..... are cut down every year to make toilet paper.

a. 10 million trees
b. 10 thousand trees
c. 1 million trees

15. Paper comes from trees and can be recycled a maximum:

a. of six times
b. of one time
c. of two times

16. Humans are responsible for the toxic air, water, and soil, among other levels of pollution. In turn, over:

a. one million people die every year as a direct or indirect result of the pollution
b. two million people die every year as a direct or indirect result of the pollution
c. nine million people die every year as a direct or indirect result of the pollution

17. About ..... of the planet's oxygen comes from the Amazon rainforest

a. 1 percent
b. 11 percent
c. 19 percent

18. A glass bottle may take up ..... to decompose in the environment.

a. to 1 hundred years
b. to 10 years
c. to 1 million years

19. Plastic bags take up ..... to decompose.

a. to one thousand years
b. to one hundred years
c. to one year

20. About 20 to 50 million metric tons of electronic waste is produced globally annually. Out of this, only 11.4% is recovered for recycling, but very little of this actually gets recycled.

a. 1% is recovered for recycling
b. 11% is recovered for recycling
c. 20% is recovered for recycling

21. About 20 to 50 million metric tons of electronic waste is produced globally annually. Out of this, only 11.4% is recovered for recycling, but very little of this actually gets recycled. The rest ends up in:

a. landfills
b. forest
c. oceans

ECO FACTS - quiz

22. A faucet leaking a drop of water per second can add up:

a. to 60 liters a month
b. to 16 liters a month
c. to 600 liters a month

23. Currently, we have more than 500 million cars in the world. This number is expected to rise to over a billion by 2030, which means the pollution caused by cars could potentially:

a. Three times by that year
b. double by that year
c. four times by that year

24. You don't need to wash clothes in hot water. This is just a waste of energy. Use the cold setting on your washing machine and you'll save around:

a. $25 every year
b. $115 every year
c. $75 every year

ECO FACTS - quiz

ONE POINT FOR THE ANSWER:

1.a
2.c
3.a
4.a
5.c
6.a
7.b
8.a
9.a
10.a
11.c
12.a
13.b
14.a
15.a
16.c
17.c
18.c
19.a
20.b
21.a
22.c
23.b
24.b

100% - 80%

ECO GENIUS. You have a high environmental awareness. With this kind of commitment, you can deal professionally with supporting ECO initiatives at the University and in your community.

79%-60%

ECO AWARE. You understand what the issues involved in ecology are. You can encourage the university community to act for the environment. Continue to gain knowledge about the dangers of poisoning the environment.

59%- 40%

ECO OBJECTIVE. You know that our environment is a very serious issue, but you have other interests that are a priority for you. Think about how you could get more involved.

39%-0%

ECO IGNORANT. Our environment is a very serious matter. Climate change will affect everyone. Pretending there is no problem is not the solution. It's about your and your family's future.

RESPONSIBLE CONSUMPTION - quiz

The purpose of this test is not to test your knowledge, but to arouse ecological awareness.

1. **It is estimated that in the EU in 2017 ..... deaths were attributable to unhealthy diets.**
   a. over one out of two
   b. over one out of four
   c. over one out of five

2. **At a time when almost one billion people go hungry, it's sad to note that about ..... of all food produced worldwide is either lost or wasted.**
   a. one-tenth
   b. one-twentieth
   c. one-third

3. **.....people die every day from drinking unclean water.**
   a. 1000
   b. 5000
   c. 100

4. **Anyone who lives on a vegan diet emits ..... less CO2 than a person who eats meat. Veganism is an effective way of reducing carbon emissions.**
   a. 1 percent
   b. 50 percent
   c. 10 percent

RESPONSIBLE CONSUMPTION - quiz

5. **I limit my meat buying:**
   a. Yes
   b. No
   c. Sometime

6. **I have too little time to prepare meals without meat**
   a. Yes
   b. No
   c. Sometime

7. **I only buy as much food as I can eat and don't throw anything away**
   a. Yes
   b. No
   c. Sometime

8. **I believe that food should not be thrown away, so I avoid wasting food**
   a. Yes
   b. No
   c. Sometime

9. **I avoid buying food in plastic packaging**
   a. Yes
   b. No
   c. Sometime

10. **I avoid buying foreign vegetables and fruits whose equivalents can be found in my country in the right season**
    a. Yes
    b. No
    c. Sometime

11. **I prefer to choose products that occur locally, because foreign imports destroy the environment**
    a. Yes
    b. No
    c. I don't know

12. **I buy fruits and vegetables without wrapping them in plastic bags**
    a. Yes
    b. No
    c. Sometime

13. **I buy bio/eko products**
    a. Yes
    b. No
    c. Sometime

RESPONSIBLE CONSUMPTION - quiz

14. Do you turn off the water while brushing your teeth?

a. Yes
b. No
c. Sometime

15. Do you unplug devices you don't use?

a. Yes
b. No
c. Sometime

16. How much less energy do energy-efficient bulbs use than conventional ones?

a. 80%
b. 10%
c. 5%

17. 1 cm layer of ice in the freezer makes the appliance use significantly more energy.

a. Yes
b. No
c. Depends on the brand of the device

18. When shopping, I take a bag or basket with me.

a. Yes
b. No
c. Sometime

19. The zipper on your new, good quality, jacket broke. What will you do?

a. Buying a new jacket
b. I buy a new zipper and give it to sew in
c. I don't know

20. What kind of toilet paper do you buy most often?

a. such as it is on promotion
b. Eco-friendly, recycled paper
c. I don't know

21. What kind of transportation in the city do you choose?

a. Bus
b. Taxi
c. bike

RESPONSIBLE CONSUMPTION - quiz

ONE POINT FOR THE ANSWER:

1.c

2.c

3.b

4.b

5.a

6.a

7.a

8.a

9.a

10.a

11.a

12.a

13.a

14.a

15.a

16.a

17.a

18.a

19.b

20.b

21.c

100% - 80%

ECO GENIUS. You have a high environmental awareness. With this kind of commitment, you can deal professionally with supporting ECO initiatives at the University and in your community.

79%-60%

ECO AWARE. You understand what the issues involved in ecology are. You can encourage the university community to act for the environment. Continue to gain knowledge about the dangers of poisoning the environment.

59%- 40%

ECO OBJECTIVE. You know that our environment is a very serious issue, but you have other interests that are a priority for you. Think about how you could get more involved.

39%-0%

ECO IGNORANT. Our environment is a very serious matter. Climate change will affect everyone. Pretending there is no problem is not the solution. It's about your and your family's future.

Visegrad Sustainable Living Labs Network 4 Youth of Universities

Visegrad Fund

The VSLLN4YOU project aims to create the Living Labs (LLs) network, which will enable the co-creation and testing of innovative and sustainable solutions relevant to the Visegrad universities and Region in cooperation with partners from the private, public, and civil society sectors. The SLLs will engage students with real-world experience, working on sustainable projects and green solutions, and prepare them to be change agents in their personal and professional lives. The project offers knowledge transfer for sustainable change through SLLs, workshops, training materials, and conferences.

Czech University of Life Sciences Prague

Czech University of Life Sciences Prague

Czech University of Life Sciences Prague (CZU) is Prague's third-largest public university. Backed by more than one hundred years of history, CZU combines cutting-edge technologies, progressive science and research in agriculture, forestry, environment, engineering, economy, management and business. CZU provides complete higher education, summer schools, lifelong learning courses and the University of the Third Age to over 19,000 people. About one-third of the study programmes are taught in English, with more than 2,000 students involved. CZU cooperates with several private and public organisations and research institutions at local and international levels. The university is a member of the EuroLeague for Life Sciences (ELLS), a prestigious network of universities, and also belongs among twenty-eight members of Agrinatura, a group of European universities and research institutions that foster sustainable agricultural development. In recent years, CZU established the Centre for Precision Agriculture, the Bioeconomy Platform of the Czech University and the Water, Soil and Landscape Centre. The university's research activities and PhD programmes target the faculties' focus areas, which are also intensely concentrated in research pillars reflecting UN Sustainable Development Goals.

University of Pécs

PÉCSI TUDOMÁNYEGYETEM
UNIVERSITY OF PÉCS

The University of Pécs, with its 20,000 students, more than 4,500 international students, 1,400 lecturers and researchers, and 10 faculties, is one of Hungary's largest higher education institutions and the centre of knowledge within the Transdanubian region. Its roots date back to 1367. The UP represents classical values, while the challenges of the present and future times are also being adapted successfully. It extends far beyond the city of Pécs and covers various educational areas. The UP operates an independent faculty in Szekszárd and runs significant training programmes in Kaposvár, Szombathely and Zalaegerszeg and even abroad in Zombor.

University of Presov

The University of Presov ranks among the most renowned and distinguished universities in the Slovak Republic. The University was officially established by Act No. 361/1996 Coll. on the Pavol Jozef Šafárik University division in Košice, effective 1 January 1997. It is a member of the Danube Rectors Conference (DRC), the European Universities Association (EUA) and the National Rectors Conference with the primary aim of promoting a unified system of higher education in Europe. The University of Presov is also a co-founder of the Alliance of the Central-Eastern European Universities and Euro-Mediterranean University (EMU NI). The University consists of 8 faculties that offer several accredited study programmes in all 3 degrees (Bachelor, Magister and Doctoral degrees) and both full-time and part-time forms. The University of Presov develops an intense research activity with three Centres of excellence. The Centre of Competences and Lifelong Learning offers various courses and educational products.

University of Information Technology and Management

The University of Information Technology and Management (UITM) in Rzeszów is a non-public higher education institution operating since 1996. It is the largest and highest-ranked private university in southern-east Poland. During 25 years of activity, over 60 thousand people have studied here in Poland and abroad. Currently, 6,000 undergraduate and postgraduate students are at four facilities: Management, Applied Computer Science, Media and Social Communication, and Medical Faculty. Since 2015, UITM has been entitled to award a doctoral degree as part of Media Studies and in 2022, the University obtained such powers in the fields of Economy and Finance, as well as in Medical Science. UITM is also very engaged in matters important to the regional (Podkarpacie) and local community and cooperates with a wide range of partners representing public administration, business, and the non-government sector.

VISEGRAD SUSTAINABLE LIVING LABS

NETWORK 4 YOUTH OF UNIVERSITIES (VSLLN4YOU)

TOOLKIT

Czech University of Life Sciences Prague
Visegrad Fund
UNIVERSITY of INFORMATION TECHNOLOGY and MANAGEMENT in Rzeszow
PÉCSI TUDOMÁNYEGYETEM
UNIVERSITY OF PÉCS