

The Economic and Societal Impact of the Ludwig Boltzmann Gesellschaft

We are faced with growing economic and societal challenges. Universities and public research organizations have a special responsibility to address and resolve these societal problems. They are called upon to contribute the results of their research to society through deepened engagement and increased cooperation. In the exercise of their societal responsibility, universities and public research organizations have to demonstrate the ways in which they are beneficial to society, providing an account for their public support.

Ludwig Boltzmann Institutes as Platforms for Impact

As a research organisation, the Ludwig Boltzmann Gesellschaft takes up complex and highly relevant societal problems (“wicked problems”) and addresses them in close collaboration with partner organisations. The unique collaborative and shared funding concept of the Ludwig Boltzmann Gesellschaft fosters novel forms of cooperation between academic, private and public stakeholders within therefore established Ludwig Boltzmann Institutes. Ludwig Boltzmann Institutes are designed as inter- and transdisciplinary research partnerships with the aim to develop innovative solutions which generate immediate benefits for civil society, politics and the economy.

The Ludwig Boltzmann Institutes stand for a re-focusing of:

- Tame scientific to wicked societal problems, characterized by the complexity of the problem and the fragmentation of knowledge and interests among stakeholders; (Alford, Head, 2017)
- Basic research to translational research, in order to harness the findings of basic science¹ and to test this basic knowledge in the real world,
- Scientific discovery in disciplinary “silos” to knowledge production, which is “socially distributed, application-oriented, trans-disciplinary, and subject to multiple accountabilities”; (Nowotny et al., 2013, p179)
- Encoded knowledge in the form of publications to economic and societal impact co-created in eco-systems.

¹ The mission of basic research is considered to be one not of solving human problems, but of creating new opportunities for an unpredictable future. Translational research, on the other hand, translates basic knowledge into practice. It is through interaction among scientists, experts and the population that basic knowledge is integrated into practice in the best possible way; by the same token, experience drawn from practical applications directly informs research.

To improve the economic and societal effects (impact²) of research, Ludwig Boltzmann Institutes operate beyond the limits that typically separate organisations, disciplines and systems (Open Innovation in Science). New forms of cooperation between academics and non-academic stakeholders (engagement³) increase the possibility of generating innovative approaches to problem-solving.

Thus, Ludwig Boltzmann Institutes organise human resources and infrastructure for research, establish interdisciplinary and transdisciplinary research cooperation, open up deliberately the research process to the public and engage end-users to generate impact within the system of science, public policy, economy and society. (Figure 1)

² Economic and societal impact defined as the demonstrable contribution that excellent research makes to society and the economy, and its benefits to individuals, organisations and/or nations.

³ Engagement defined as the interaction between researchers and research end-users outside of academia, for the mutually beneficial transfer of knowledge, technologies, methods or resources.

Ludwig Boltzmann Institutes

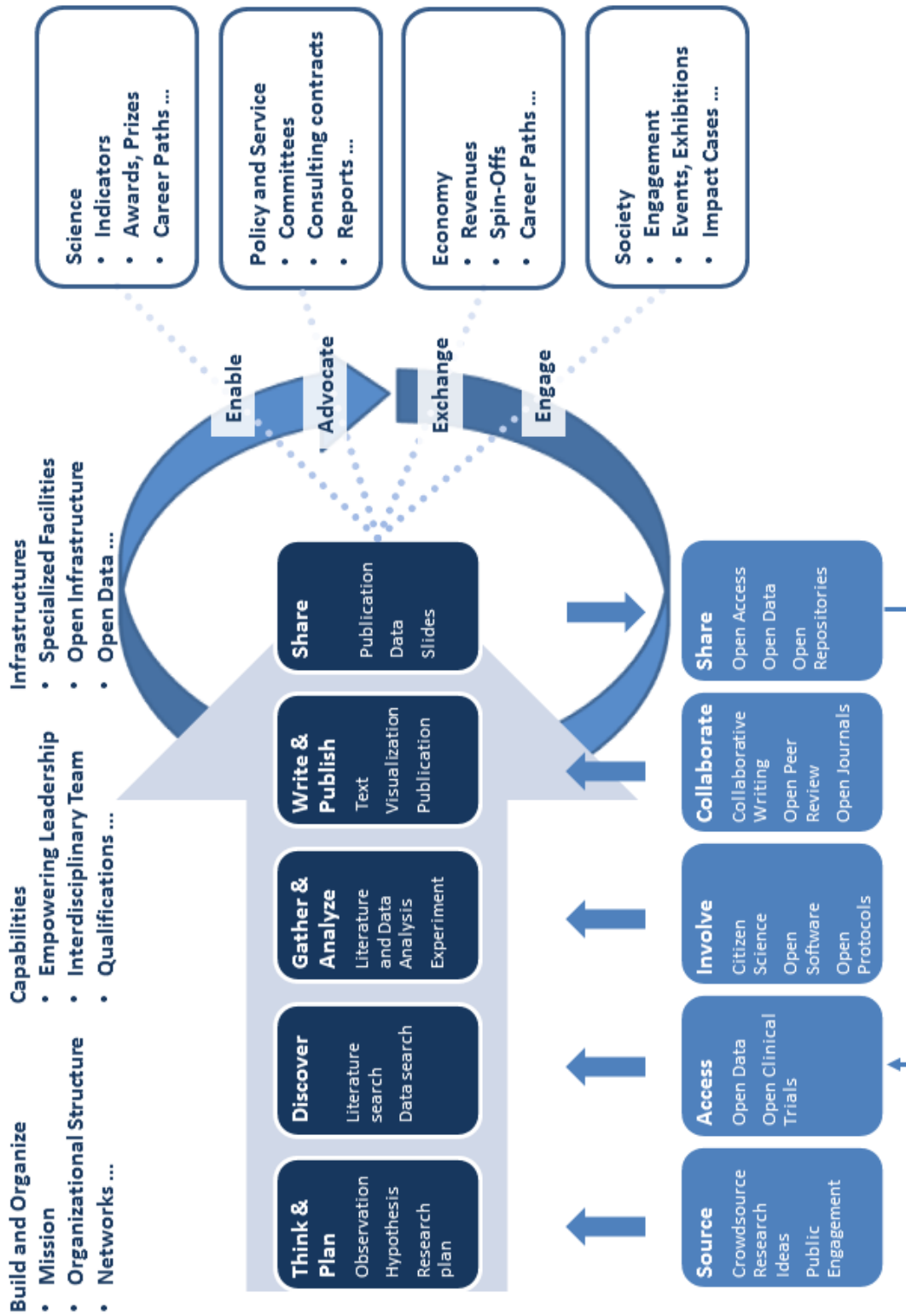


Figure 1 – Ludwig Boltzmann Institutes as Impact Platforms

Demonstrating Economic and Societal Impact

The paths through which economic and societal effects of research occur vary along with the disciplines, sectors and time line involved. A comprehensive approach is required to illustrate the impact of research; a limited set of metrics does not do justice to the multidimensional character of impact. Impact must be considered in all of its dimensions, bearing in mind that impact evolves over time in complex systems of formal and informal relationships and that these relationships may be interdisciplinary and transdisciplinary in nature. Measures to create and maintain such relationships are themselves an important aspect of impact.

To consider the economic and societal impact in all of its dimensions, LBG introduces Impact and Engagement Studies. Impact and Engagement Studies point up the range of effects that research has on civil society, policy-making and the economy. Further, such Impact and Engagement Studies provide insights into how successful economic and societal impact is generated using which methods (“pathway of impact”).

The impact of the institutes’ inter- and transdisciplinary research approach on civil society and policy-making as well as the ways in which this impact is co-produced are made accessible through structured Impact and Engagement Studies providing the basis for future learning on impact generating processes and methods.

Template: Impact and Engagement Study

I) OVERVIEW

1. *Title of Impact and Engagement Study*
2. *Ludwig Boltzmann Institute*
3. *Principal Investigators; Research Team Members*
4. *Abstract for the general community (maximum 250 words)*
5. *Keywords*
6. *Scientific Disciplines (Code Statistics Austria)*
7. *Sustainable Development Goals relevant to the Impact (United Nations)*
8. *Users and Beneficiaries*
9. *Partners*
10. *Funders*

II) IMPACT⁴ and ENGAGEMENT⁵ STUDY

A) MISSION – Envisioning Impact (maximum 250 words)

Briefly describe the mission of the Ludwig Boltzmann Institute, i.e. the main aims and objectives.

B) STRUCTURE – Organizing Impact (maximum 250 words)

Briefly describe the structure and organization of the Ludwig Boltzmann Institute. Describe who the research partners are.

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⁵ Engagement is the interaction between researchers and research end-users outside of academia, for the mutually beneficial transfer of knowledge, technologies, methods or resources.

C) RESEARCH – Enabling Impact (maximum 500 words)

Briefly describe the research that led to the impact. Provide details of what research was undertaken, when, and by whom. Describe what is unique about the research and why it is important. References to specific research outputs that embody the research described in this section, and evidence of its quality, should be provided in section III.

D) PATHWAY to IMPACT – Achieving Impact (maximum 750 words)

Provide a narrative that clearly outlines the research impact. The narrative should explain how the associated research made a distinct and material contribution to the impact.

It should explain the nature and extent of the impact:

- who or what has benefitted from the results of the research (this should identify relevant research end-users, or beneficiaries from industry, the community, government, wider public etc.)
- the nature or type of impact and how the research made a societal, economic, and/or public policy and service impact
- the extent of the impact (with specific references to appropriate evidence, such as cost-benefit-analysis, quantity of those affected, reported benefits etc.)
- the dates and time period in which the impact occurred.

Provide a clear explanation of the process or means through which the research led to, underpinned or made a contribution to the impact (for example, how it was disseminated, how it came to influence users or beneficiaries, or how it came to be exploited, taken up or applied).

Provide a clear narrative of the engagement with parties, outside of academia, for the mutual benefit of the researchers and research end-users:

- the purpose of engagement, describing what the institution was trying to achieve through the engagement
- the type of the engagement activities
- the targeted parties of the engagement activities
- the duration and extent of the engagement activities

E) LEARNINGS – Reflecting Impact (maximum 500 words)

Provide based on your experience a critical reflection of possibilities, limits and novel methods to achieve economic and societal impact. Briefly describe as well adverse effects and unexpected problems related to the pathway of impact.

Briefly describe how evidence for impact has been captured and how the OIS and engagement activities have been assessed. What types of indicators have been used to measure the OIS and engagement efforts as well as the derived impact?

III) SOURCES

Provide references to key outputs from the research described including:

- Author(s)
- Title
- Year of publication
- Type of output
- Access details (for example, a DOI or URL)

List sources to corroborate the key claims made in the Impact and Engagement Study. Sources provided should not be a substitute for providing clear evidence of impact.

If possible, provide relevant images linked to impact and engagement activities of the Ludwig Boltzmann Institute and the societal challenges addressed.