Open Science by Design
- Rethinking the Research Process -
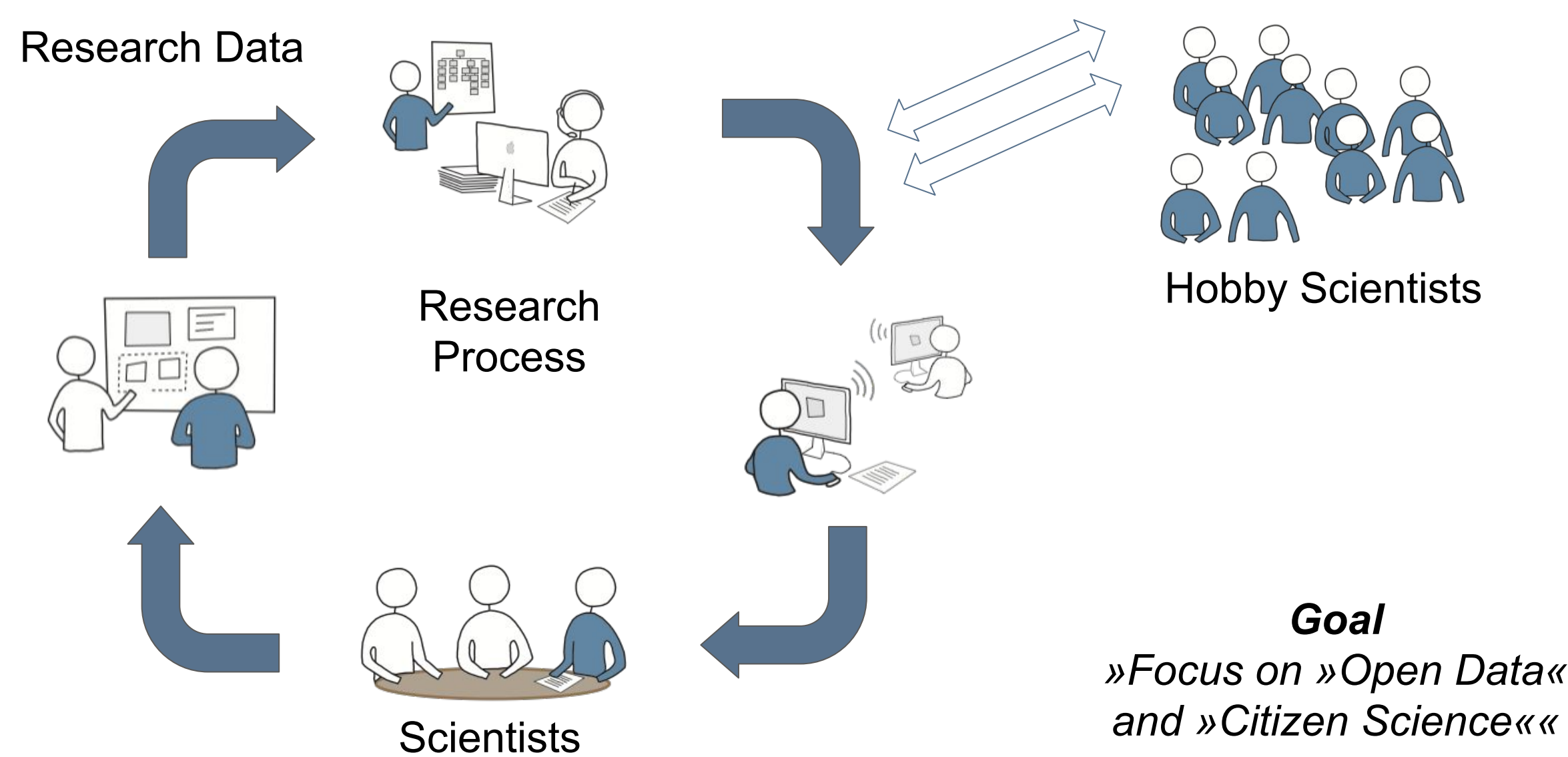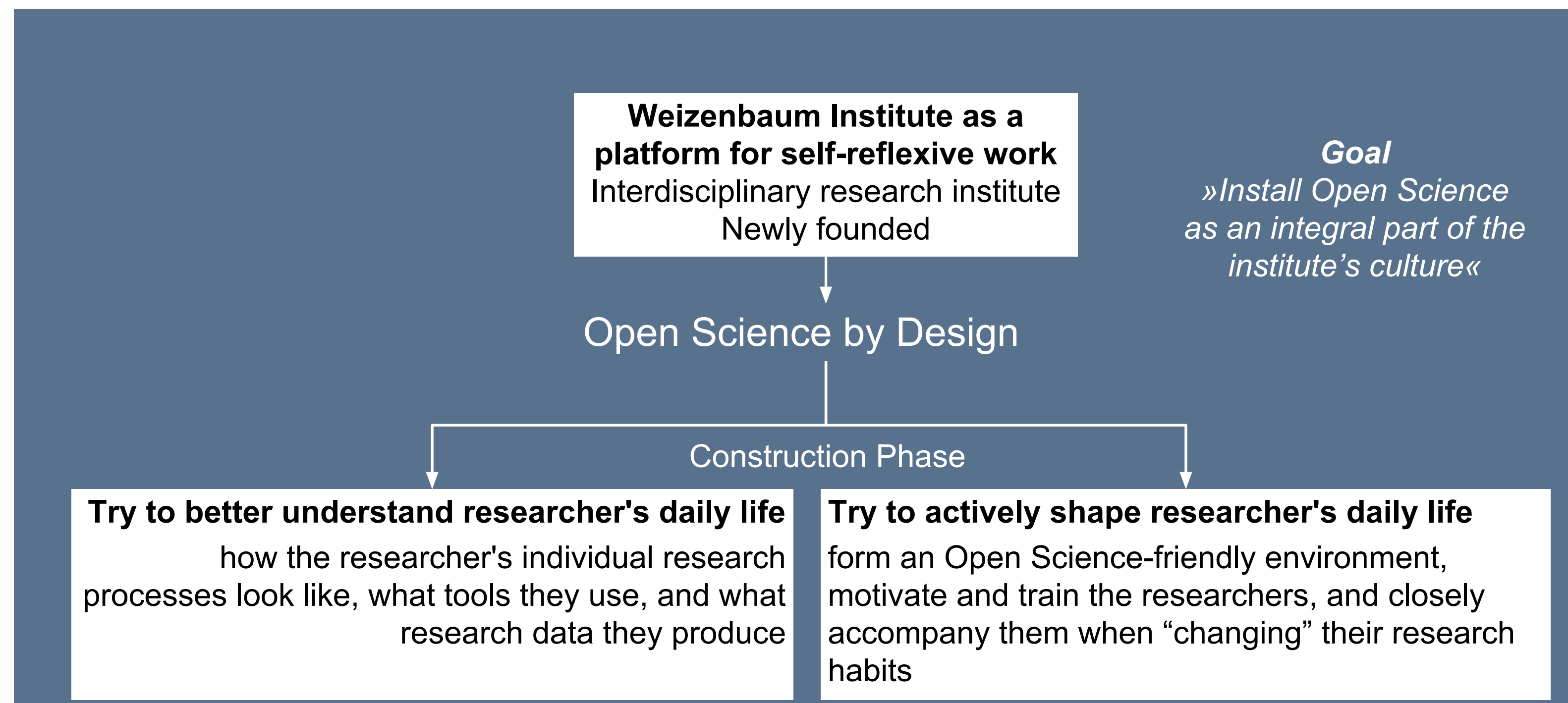
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Digitalization has an immense impact on our lives, our societies and research. Having this in mind, our group investigates the effects of digitalization on academic research. We understand digitalization as a change in the research and publication processes, with the proviso that the benefits of research are increased. Our special interest lies in the opening of science, the "dream imagination" of having an open, transparent and sustainable research environment.

Having an interdisciplinary background, our research team wants to approach the topic from different perspectives.
We are part of the Weizenbaum Institute for the Networked Society, an interdisciplinary research institute of about 100 researchers that has been newly founded and that explores the social changes that digitalization is bringing along. Due to these key facts and the institute's commitment to Open Science, we think that this is the perfect environment for our project. The goal of our project is **Open Science by Design**, namely to install Open Science as an integral part of the institute's culture.

Weizenbaum Institute as a platform for self-reflexive work
Interdisciplinary research institute
Newly founded

Open Science by Design

Construction Phase

Try to better understand researcher's daily life
how the researcher's individual research processes look like, what tools they use, and what research data they produce

Try to actively shape researcher's daily life
form an Open Science-friendly environment, motivate and train the researchers, and closely accompany them when "changing" their research habits

Goal
»Install Open Science as an integral part of the institute's culture«

Research Data

Research Process

Scientists

Hobby Scientists

Goal
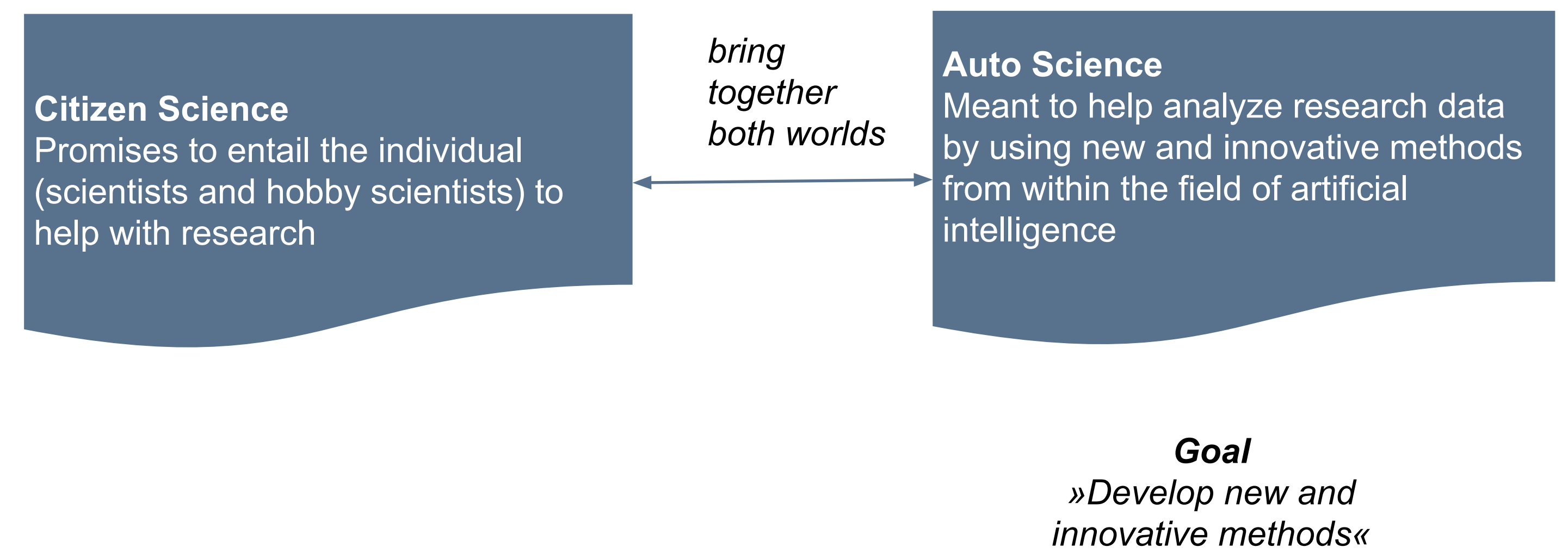*»Focus on »Open Data« and »Citizen Science««*

In the current construction phase of the research institute, we try to better understand the researcher's daily life and try to actively shape it:
- We try to understand how the researcher's individual research processes look like, what tools they use, and what research data they produce.
- In parallel, we try to form an Open Science-friendly environment, to motivate and train the researchers, and to closely accompany them when "changing" their research habits.

Our vision is to (mainly technically) support researchers in every phase of their research process when dealing with their data. Having experience in developing Open Data portals, we started to build an **Open Science Portal**, a central point of a researcher's daily life.
- With the help of the platform, a researcher will be enabled to manage his or her data, to update it, to share it with collaborators, and to reach out to the public.
- Furthermore, it will provide an easy way to exchange data with other tools, the researcher uses.

One of the key design decisions of the platform is that a researcher has a so-called **researcher's identity**, and all of his or her research output is tied to this identity, in order to grant data sovereignty and data provenance.

Citizen Science
Promises to entail the individual (scientists and hobby scientists) to help with research

bring together both worlds

Auto Science
Meant to help analyze research data by using new and innovative methods from within the field of artificial intelligence

Goal
»Develop new and innovative methods«

Open Science Portal

Researcher's identity
Data tied to it

Easy data exchange with other tools

Citizen Science Portal
Involve hobby scientists

data exchange

Research Data Portal
Manage & update data
Share it with collaborators
Reach out to the public

Goal
»Establish a central point of a researcher's daily life«

To further support researchers when dealing with their data, we started to develop some new and innovative methods. Our idea is to apply Citizen Science and Auto Science concepts, and to bring together both worlds.
- **Citizen Science** promises to entail the individual (scientists and hobby scientists) to help with research.
- **Auto Science** is meant to help analyze research data, e.g., to help publish the data and to help improve the quality of it, by using some new and innovative methods from within the field of artificial intelligence.

At the moment, hobby scientists are mostly used in a "crowd sourcing"-fashion, e.g., to collect data. We currently explore how scientists and hobby scientists can be incorporated in other ways as well, and how more sophisticated methods and tools can help here.

Research Group »Digitalization and Scientific Value Creation«
Weizenbaum Institute for the Networked Society