

Innovation & Enterprise – Creating value from R&D



PERSONAL DESCRIPTION

Functions

- Managing Director Fraunhofer Building Innovation Alliance
- Head of SME 4.0 Competence Center Planning and Building

Education

- Diploma in Industrial Engineering, University for Applied Science Rosenheim
- Executive MBA at RWTH Aachen University and University of St. Gallen

Major Roles

- Management Board Member of the International Council for Research and Innovation in Building and Construction (CIB)
- Member of national standardization activities
- Part of the consulting team for the National Digitization Roadmap in Infrastructure
- Advisory Board Member of the Rationalization and Innovation Center for the German Economy RKW
- Advisory Board Member in the Computer Aided Facility Management Circle e.V.
- Member of the European Construction, built environment and energy efficient building Technology Platform (ECTP)



AN INNOVATION MASCHINE – WITH HIGH SPEED COMMUNICATION

MARKET-ORIENTED ALLIANCES



CONSTRUCTION



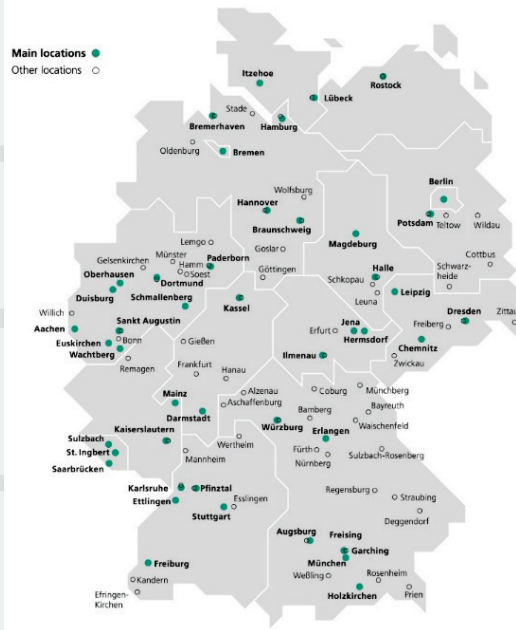
ENERGY



DIGITIZATION



MOBILITY



MASCHINERY AND PLANTS



HEALTH ECONOMY



CHEMICAL INDUSTRY



NUTRITION

70%

Contract Research

8

Lead Markets

74

Institutes

28.000

Employees

2.8 b€

Annual Research Volume

FRAUNHOFER BUILDING INNOVATION ALLIANCE

FIELDS OF ACTION

DIGITAL TRANSFORMATION

Digital Communication, BIM, Digital Twins, IoT, AI



SMART CITIES / SMART BUILDINGS

IoT, AI, Cloud Computing, Common Data Environments, Linked Data



CLIMATE NEUTRALITY

Energy Efficiency, Climate Neutrality, Sustainability, Ökologization, Urban Green



INDUSTRIALIZATION/MODULARIZATION

Prefab, System Development, Logistics, Robotic, Renovation-Prefab



INNOVATIVE MATERIALS

Biobased-, Bionic-, Programmable-, Composite Materials, New Insulation



CIRCULAR ECONOMY

Cradle2Cradle, Recycling, Urban Mining, New Materials



NEW WORK

Activity Based Working, Open-/Flex Desk, Work 4.0



COMFORT & HEALTH

Indoor Climate, User Focused Design, Fraunhofer vs Corona

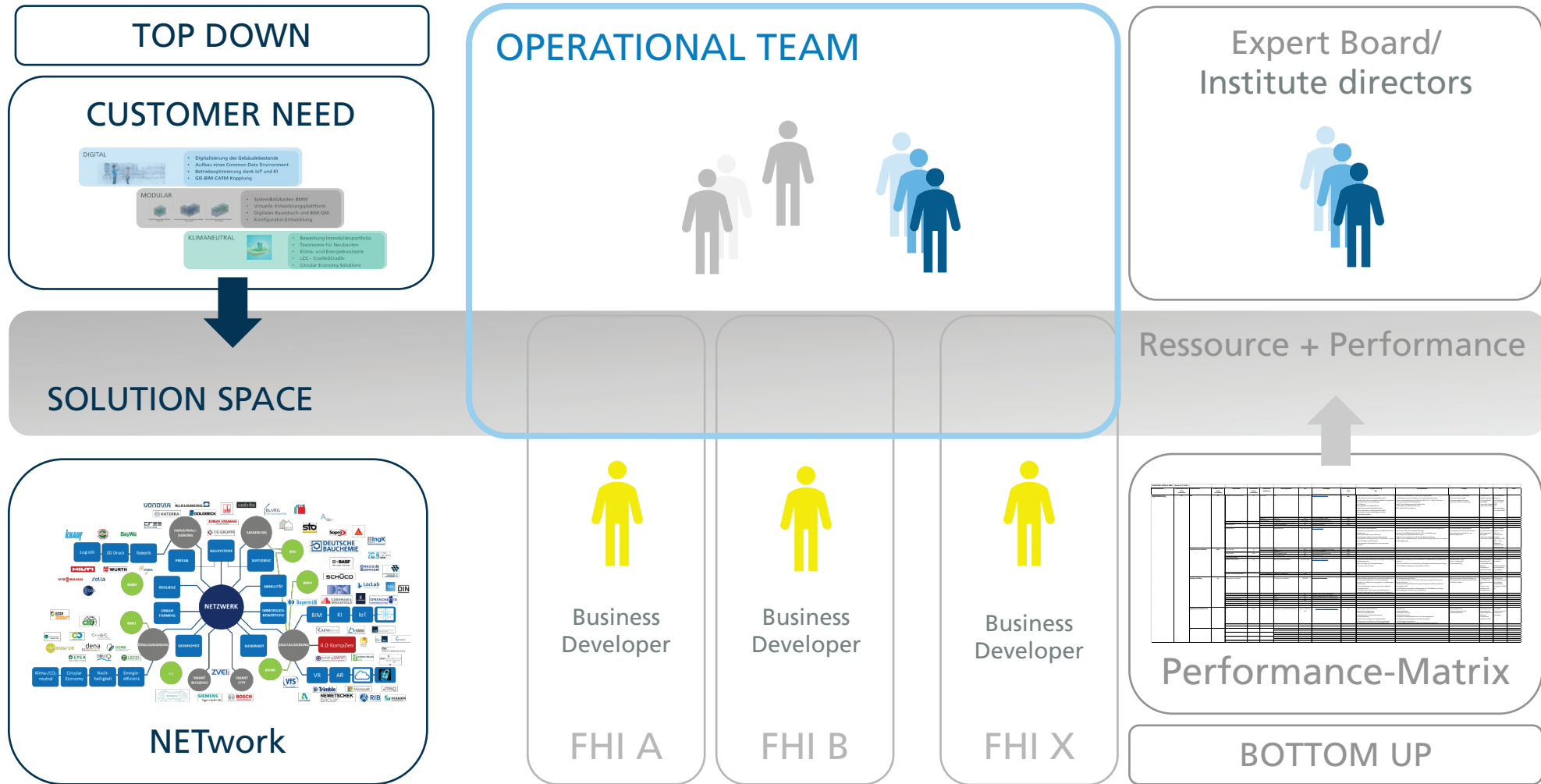


SAFETY & RESILIENCE

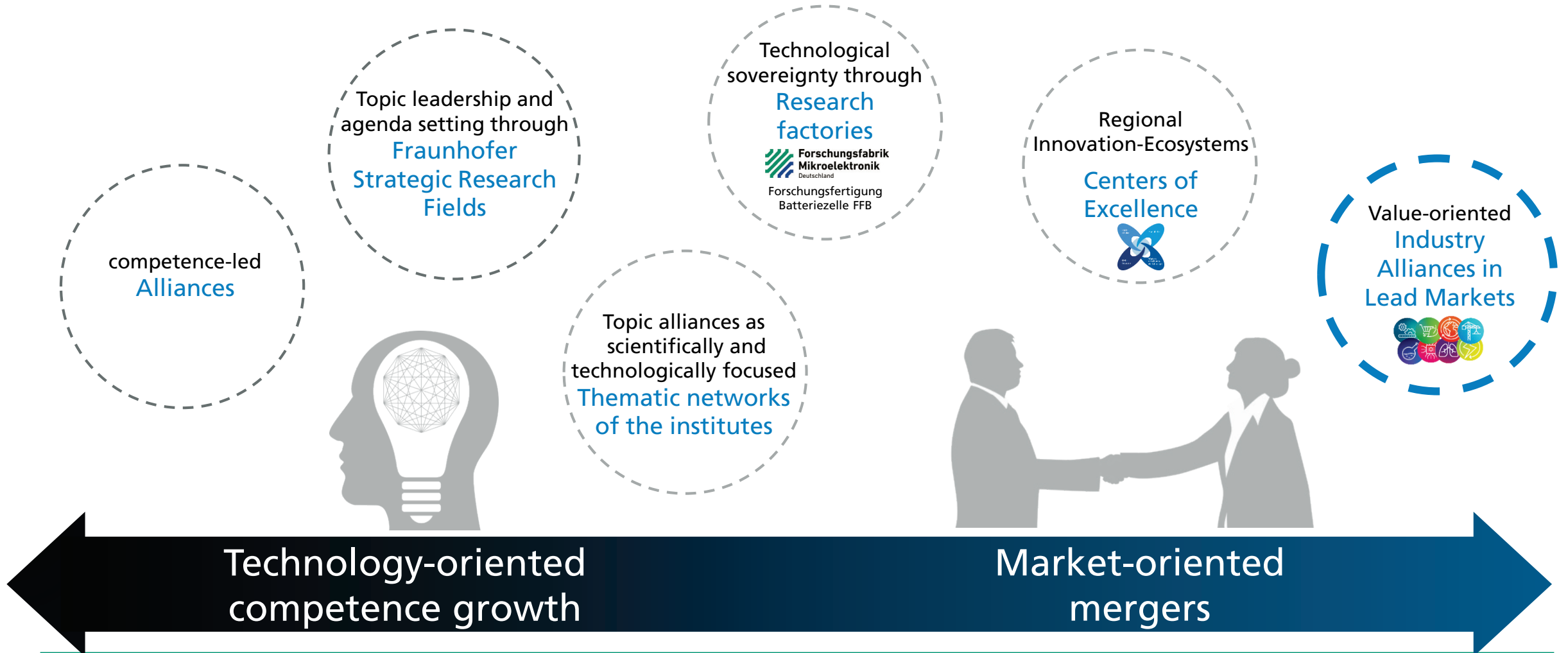
Flood protection, Earthquake resistance, Terror protection, IT Security



FRAUNHOFER BUILDING INNOVATION ALLIANCE ÖKO-SYSTEM AND SOLUTION STRUCTURE



DIFFERENT CLUSTERS FOR DIFFERENT TARGETS



LARGEST BUSINESS OF THE WORLD – BUT A POOR PERFORMANCE

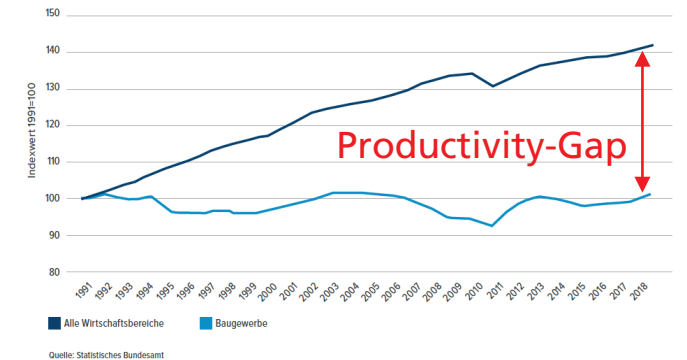
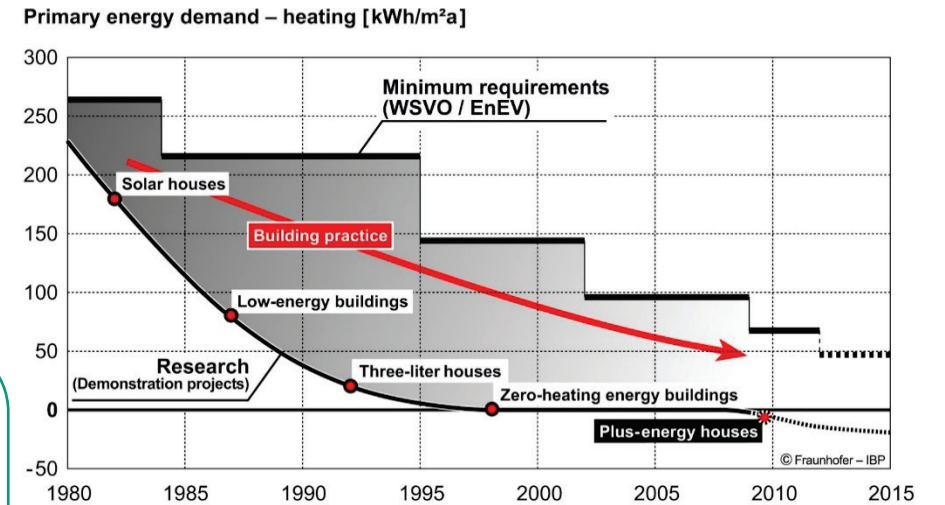
“The building sector accounts for a value of USD 10.4 trillion in 2017 and that figure is expected grow to USD 18 trillion by 2030.”

Roland Berger

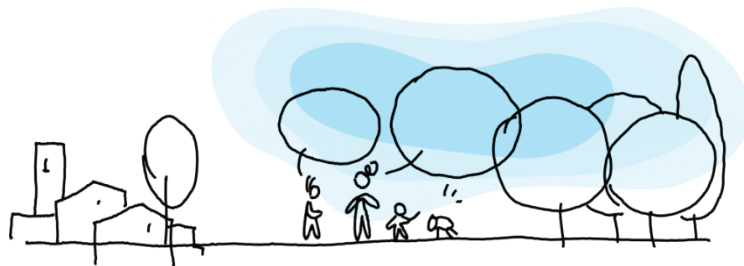
“Buildings are responsible for 40% of energy consumption and 36% of CO₂ emissions in the EU. While new buildings generally need fewer than 3 to 5 liters of heating oil per square meter per year, older buildings consume about 25 liters on average.”



European Commission

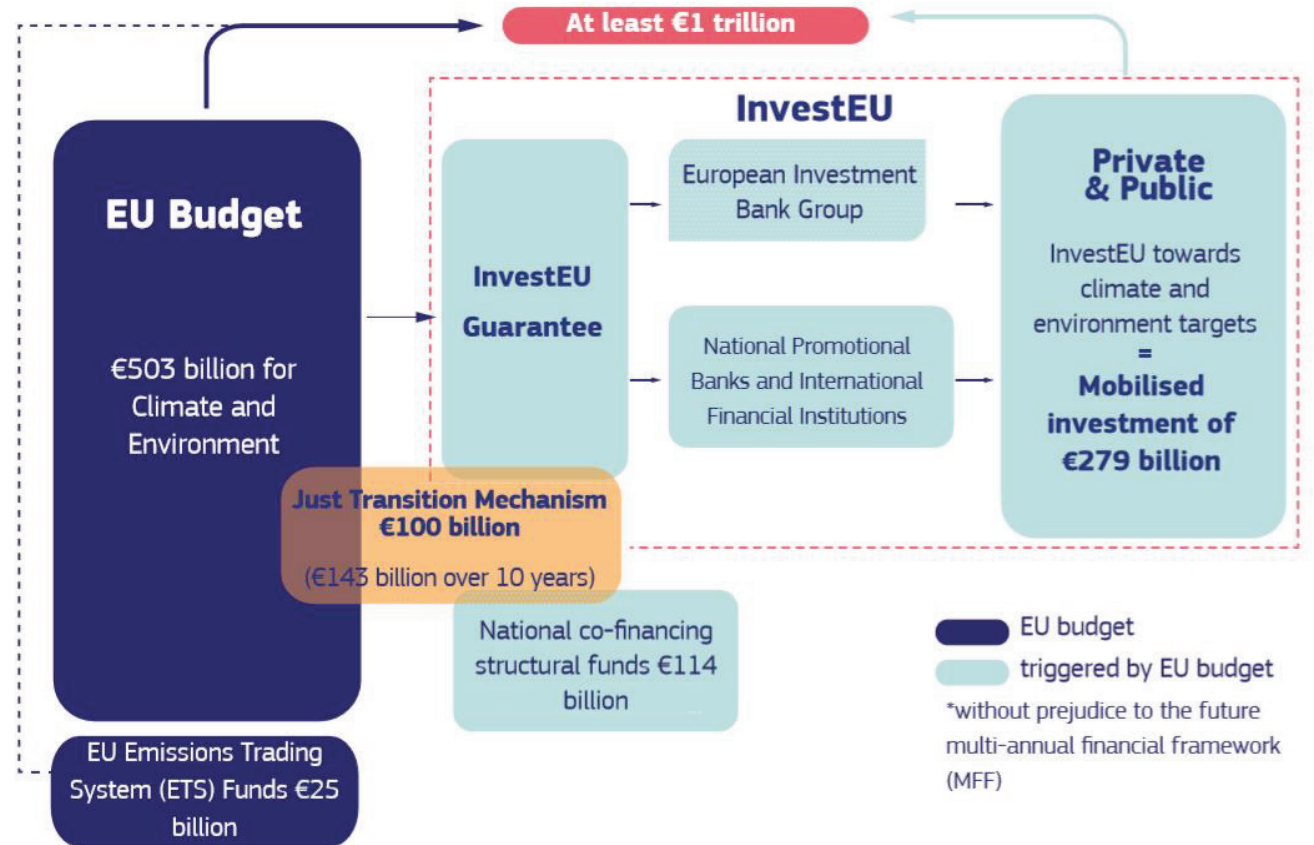


ENOURMOUS EFFORT TO COPE WITH THE TASK



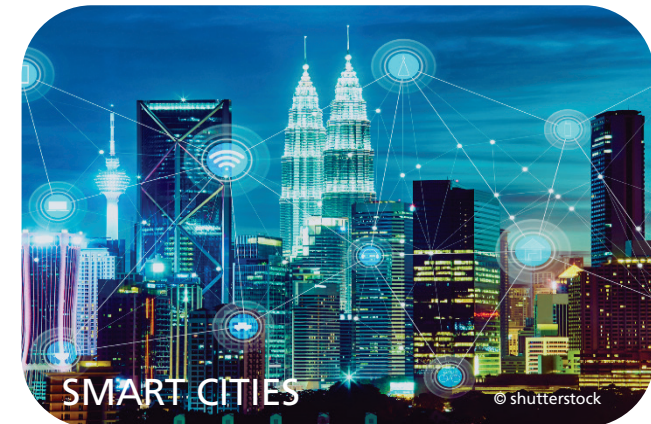
New European Bauhaus
beautiful | sustainable | together

WHERE WILL THE MONEY COME FROM?



*The numbers shown here are net of any overlaps between climate, environmental and Just Transition Mechanism objectives.

THE NEW NORMAL – CONSTRUCTION INDUSTRY IN CHANGE

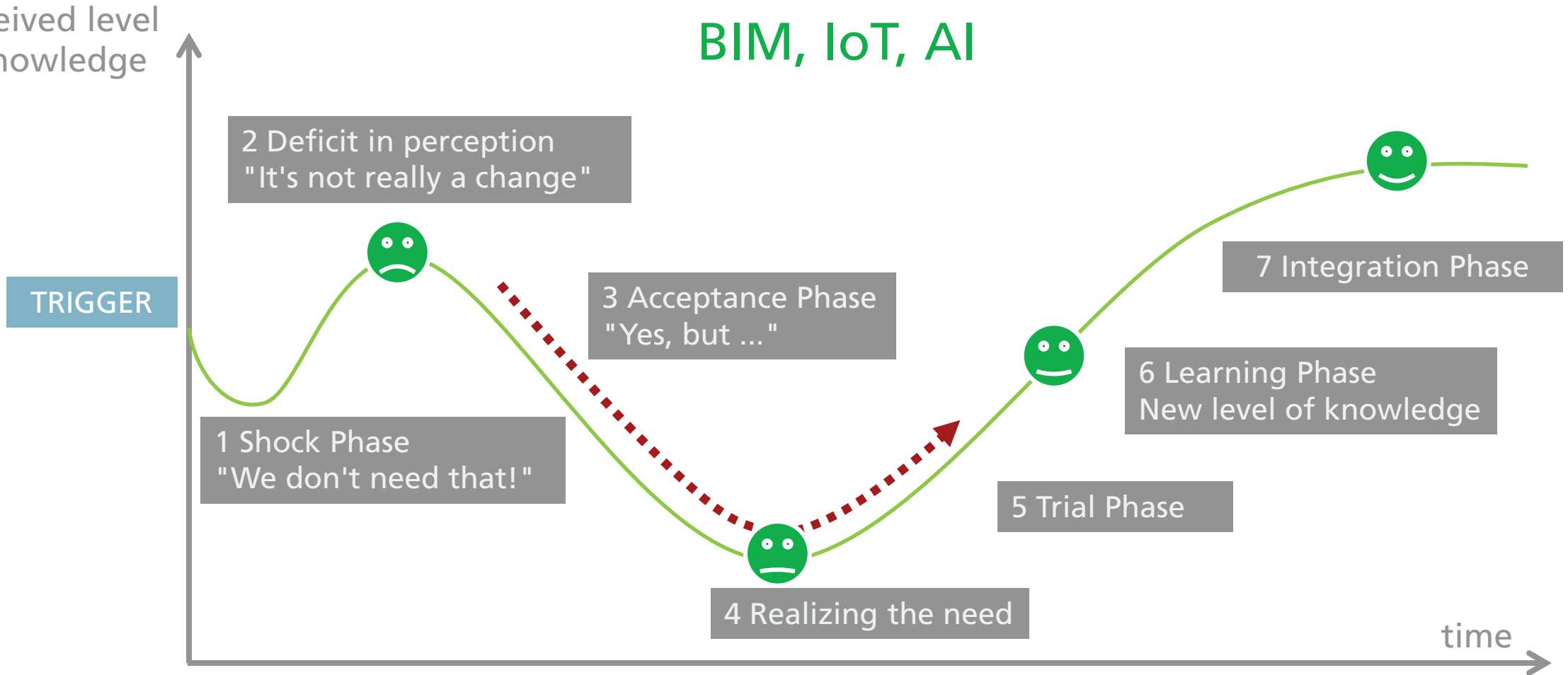


Fraunhofer Society

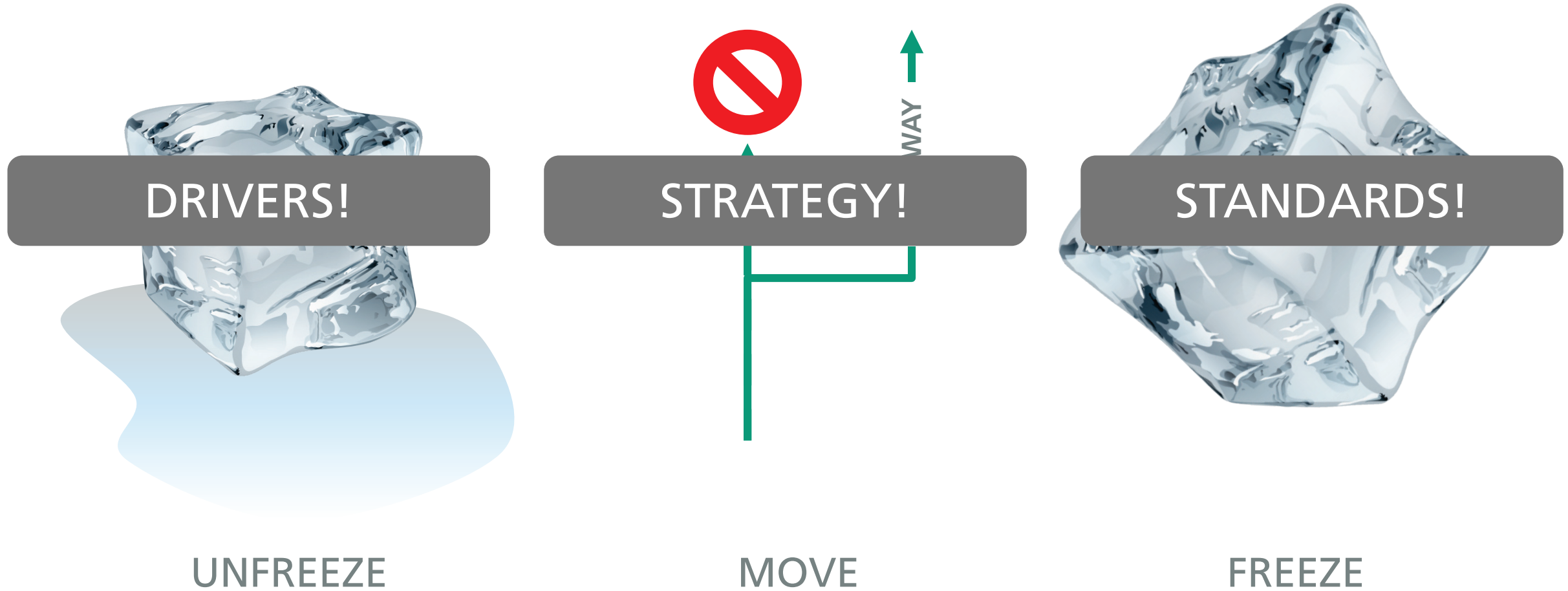
PROBLEMS FOR CHANGE

Perceived level of knowledge

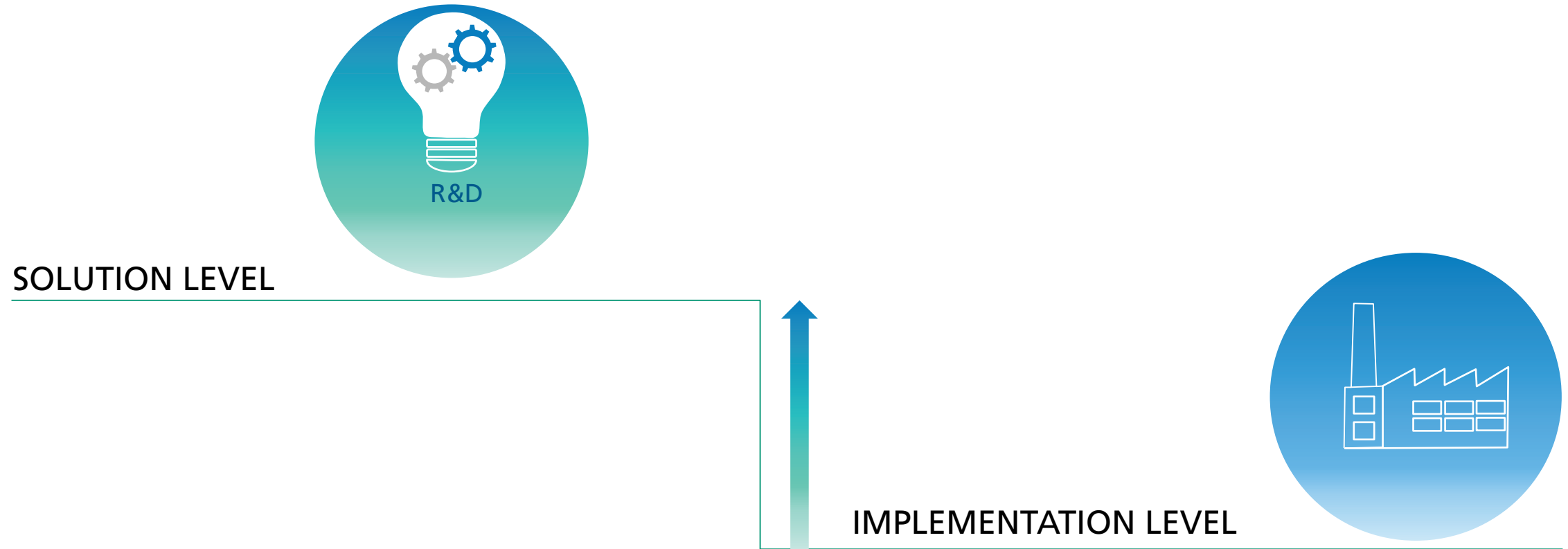
BIM, IoT, AI



Fraunhofer Society
CURT LEWIN – CHANGE THEORY

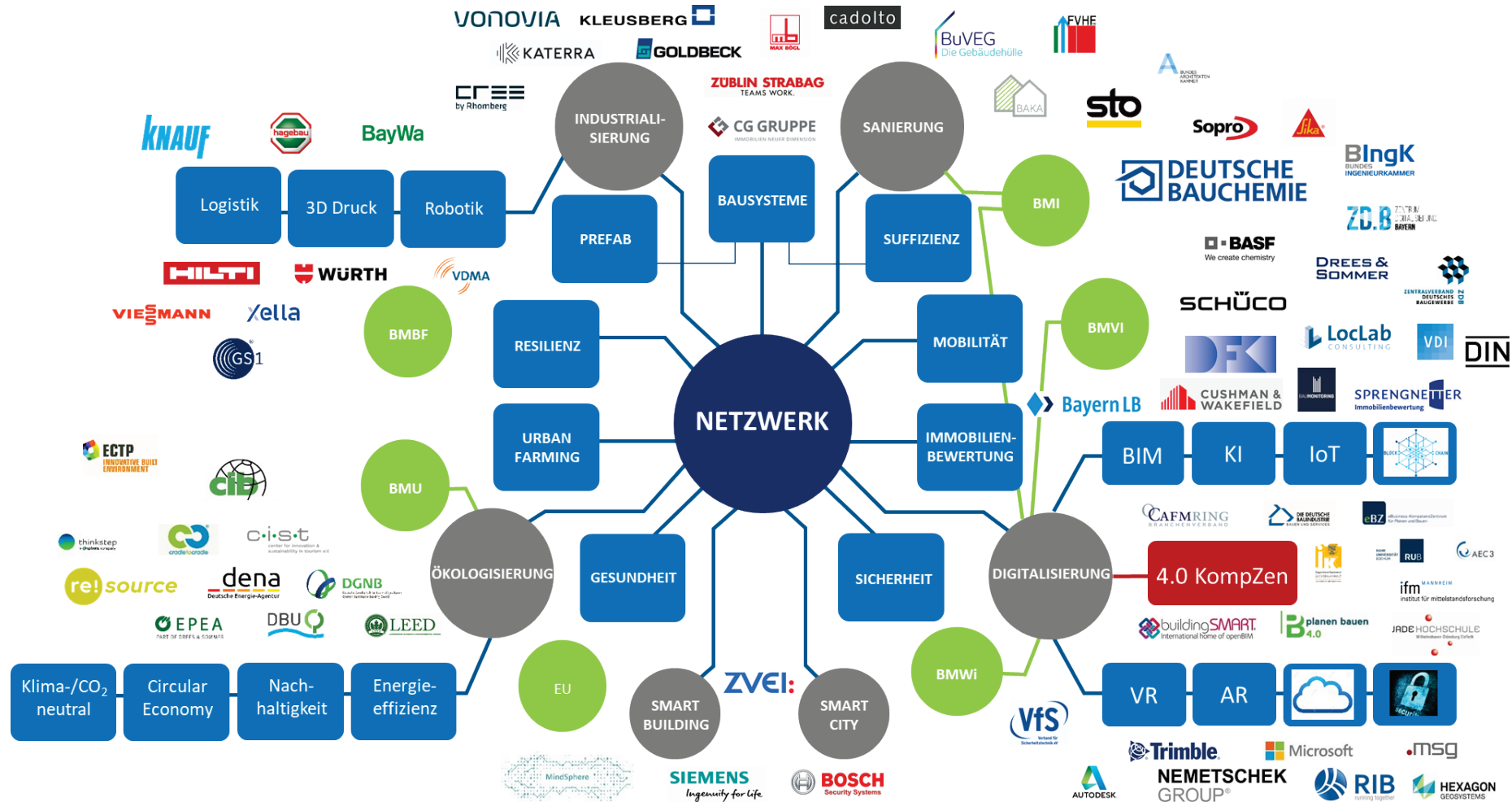


GAP BETWEEN AVAILABLE SOLUTIONS AND IMPLEMENTATION



FRAUNHOFER BUILDING INNOVATION ALLIANCE

GLOBAL PROBLEMS NEED GLOBAL ANSWERS IN GLOBAL NETWORKS



FRAUNHOFER BUILDING INNOVATION ALLIANCE INNOVATION-PARTNERSHIP

The Fraunhofer Building Information Alliance as a "solution provider" for innovation, new business models, start-ups and future orientation.



Innovation-Power



Time to Solution



Future viability

Performance foundation

Knowledge, innovation and experience from across the Fraunhofer-Gesellschaft. Agile implementation structure with a network of business developers.

74

Institutes

28.000

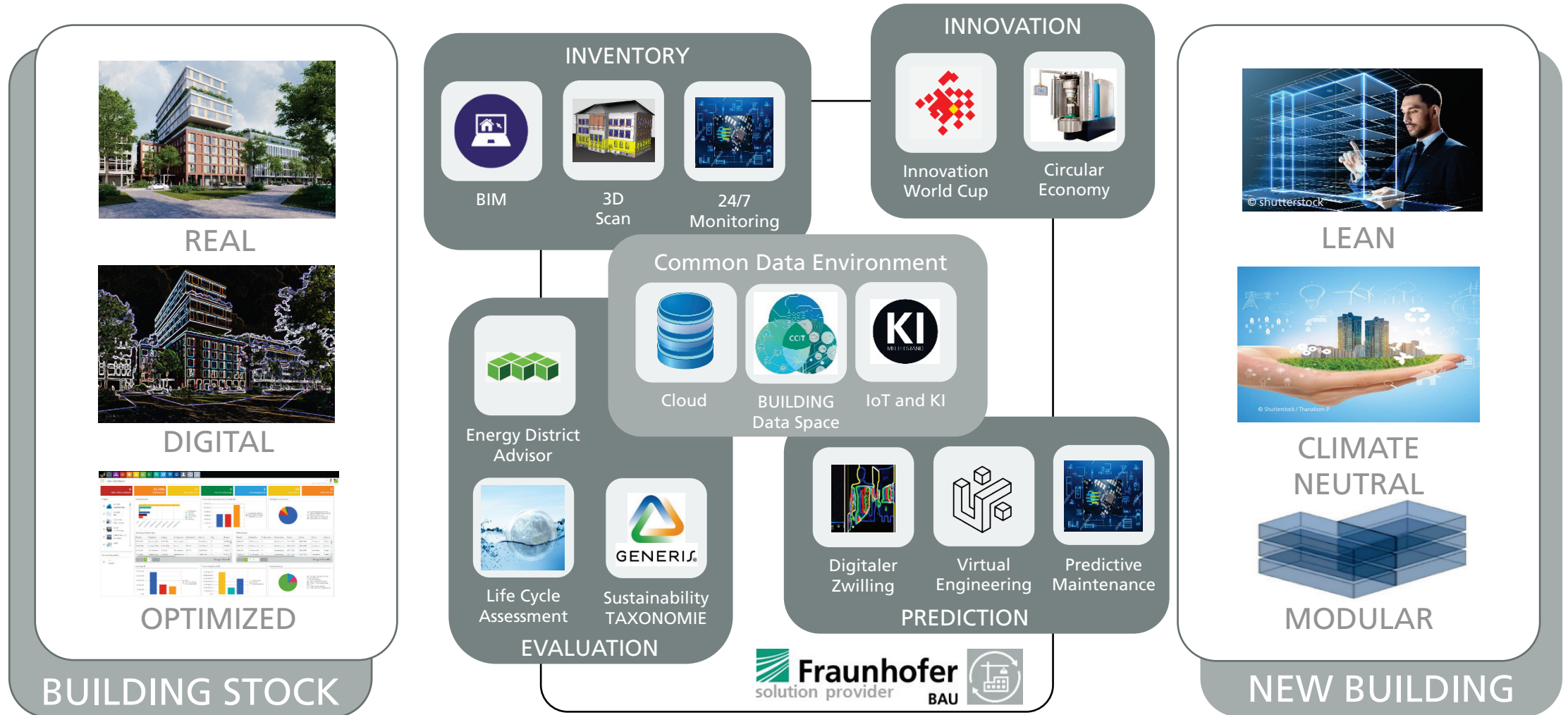
Employees

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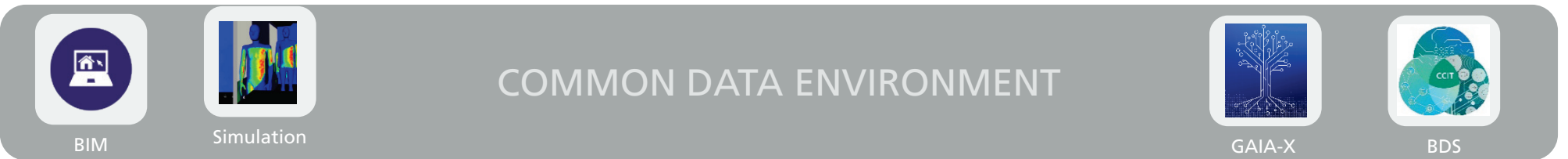
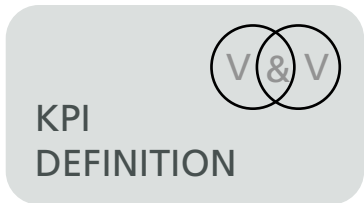
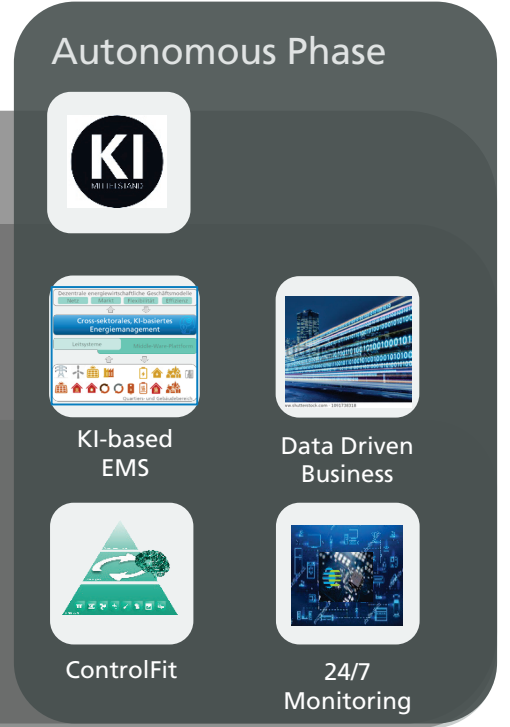
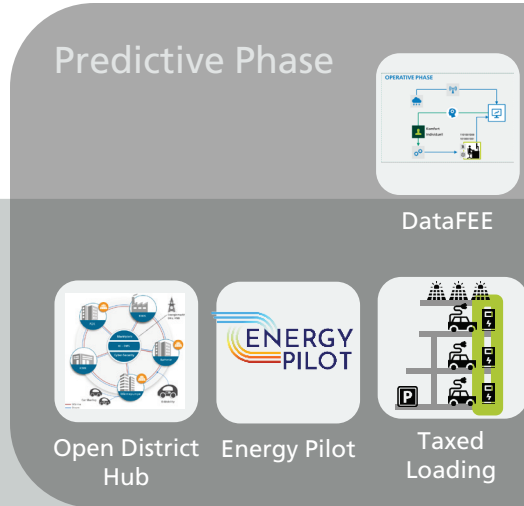
Annual research volume

FRAUNHOFER BUILDING INNOVATION ALLIANCE

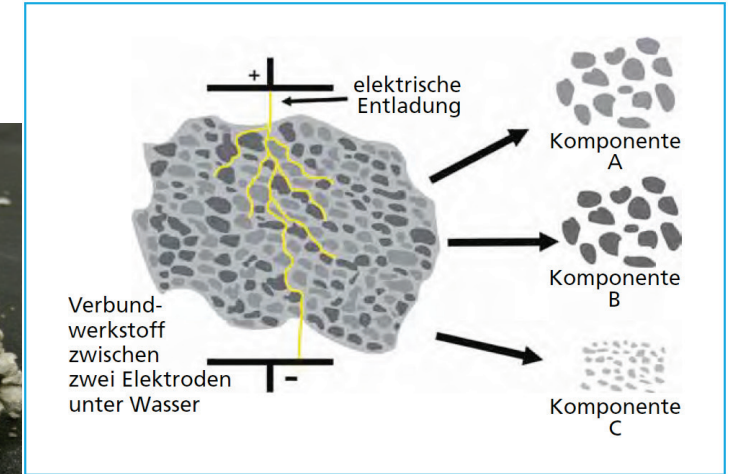
SOLUTION ICONS FOR AN INNOVATION PARTNERSHIP WITH INDUSTRY



EXAMPLE - THE WAY TO A DATA DRIVEN BUSINESS FOR BUILDING OPERATION



FRAUNHOFER BUILDING INNOVATION ALLIANCE PARTNERSHIP WITH INDUSTRY – ELEKTRODYNAMIC FRAGMENTATION



FRAUNHOFER BUILDING INNOVATION ALLIANCE PARTNERSHIP AND PROP TECH ACCELERATION

INNOVATION WORLD CUP® SERIES
SMART CONSTRUCTION AWARD

**International Council
for Research and Innovation
in Building and Construction**

cib

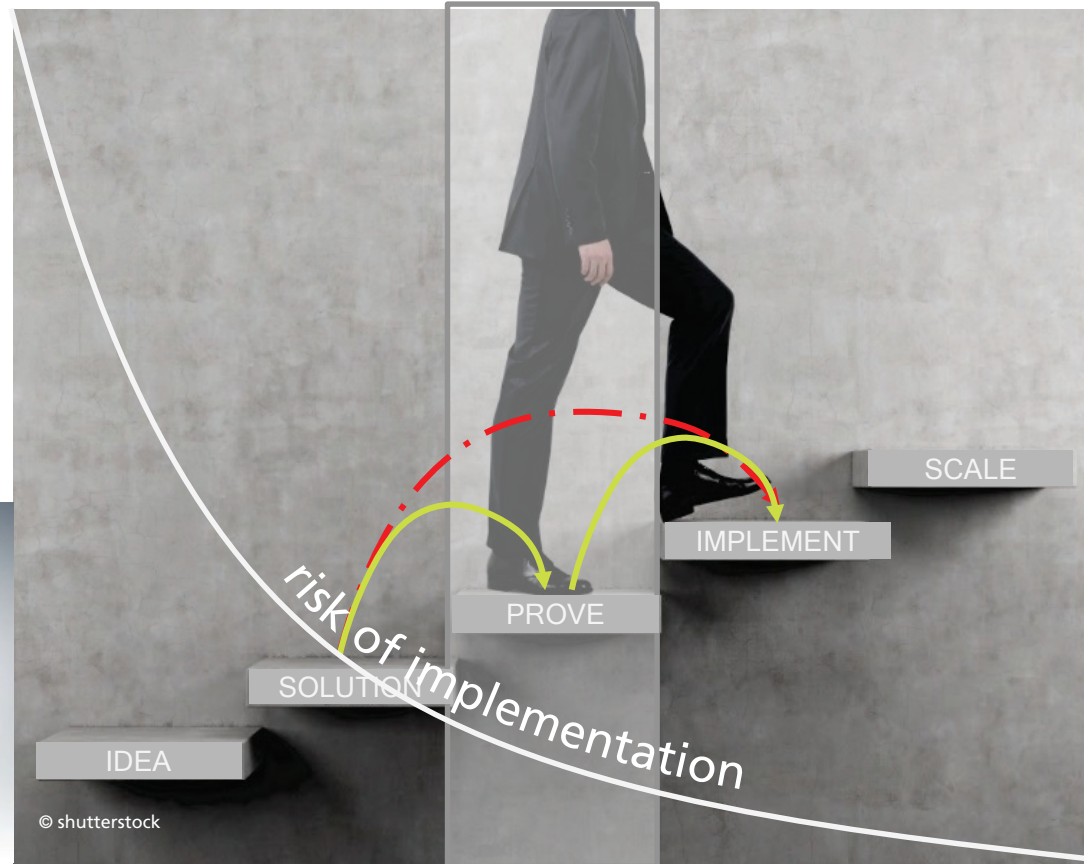
INNOVATION WORLD CUP® SERIES

A group of nine people, including men and women in professional attire, are standing on a stage. Several of them are holding white award certificates. The background is a large screen displaying a futuristic cityscape with glowing blue and purple lights.

INNOVATION WORLD CUP® SERIES

- 13TH IOT/WT INNOVATION WORLD CUP®**
POWERED BY STMICROELECTRONICS
ENTER >
- STWIN CHALLENGE**
POWERED BY STMICROELECTRONICS
ENTER >
- rapidM2M CHALLENGE**
POWERED BY MICROTRONICS
ENTER >
- EBV IOT HERO**
POWERED BY EBV ELEKTRONIK
ENTER >
- 13TH HEALTHCARE INNOVATION WORLD CUP®**
IOT/WT HEALTHCARE CATEGORY
ENTER >
- 10TH MEDICA START-UP COMPETITION**
MEDICA
ENTER >
- SMART CONSTRUCTION IWC®**
BIM WORLD MUNICH
ENTER >
- SMART CLOTHING CHALLENGE**
POWERED BY AIQ SMART CLOTHING
ENTER >
- WELLTECH CHALLENGE**
ENTER >

FRAUNHOFER BUILDING INNOVATION ALLIANCE LOWER RISK OF IMPLEMENTATION




FRAUNHOFER BUILDING INNOVATION ALLIANCE EXPERIENCE LABS – INCREASE IN SPEED

EXPERIENCE LABS

- copy reality
- create controlled environmental conditions (Temperature, CO2-Level, Moisture, Sunlight, People, etc.)
- are a combination of physical and virtual (simulation models)
- secure a maximum learning curve
- provide a quick prove of concept for successful implementation
- identify new business models





Complicated tasks can only
succeed in a team!

LETS COOPERATE