FRAUNHOFER IMWS
CURRENT TRENDS IN TECHNOLOGY TRANSFER

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The Fraunhofer Gesellschaft at a glance

- Leading organization for applied research in Europe
- International collaborations with excellent research partners and innovative companies around the world

2,3 Billion Euro Budget

72 Institutes and Research Facilities

25,527 Staff
Innovation and Technology Transfer
Theoretical foundation

- Basic research generates knowledge, industry needs products and business models
- Fundamental challenge for technology transfer: knowledge spillovers
- Market failure reduces technology transfer below optimal levels
- Public-private partnerships correct for market failure

- Fraunhofer specialized in climbing the steep slope of maturity

Quelle: World Economic Forum
Fraunhofer helps in synchronizing Research cycle and innovation cycle

Societal challenge as future markets - being ready for global competition

Universities perform excellent scientific research

Research cycle

RTOs bridge the innovation gap with technological R&D

Innovation cycle

Innovative companies create new products

Intensive exchange with society
Fraunhofer 2022
Structure and agenda

IMPACT OF EXCELLENCE AND SYNERGY

Research and Transfer
- Cluster of Excellence
- High-Performance Centers
- Founding friendly start-up-strategy

Industry
- Enterprise Labs
- INNOVATION CLUSTER
- InnovationHub
- Venture Connect

Priority cross-cutting issues
- Fraunhofer Digital
- Fraunhofer International
- Excellence careers

Fraunhofer Headquarters
Corporate Portfolio Management
Major Governance Projects
Examples of success
Fraunhofer Leistungszentren

- Fraunhofer high-performance center as a regional cooperation of:
  - Universities (technology readiness level 1-5)
  - Fraunhofer institutes (TRL 3-8)
  - Other research institutions (TRL 3-8)
  - Cooperating companies and Industry (TRL 5-9)

- Specifications:
  - One-Stop-Shop for industry
  - Transfer paths:
    - Contract research, further education, licensing, Career, spin-offs, transfer to society
Examples of success
Innovation Cluster

- **Initiating innovation through regional networks**
  - Co-funded by private enterprises, Federal and regional funds and Fraunhofer
  - Average size / Cluster: €10-50 million for 3-5 years

- **Closure of a structural gap in innovation processes**
  - Concentration of participants’ strengths and resources
  - Improving the visibility of regions’ specific characteristics
  - Persistent value chains in respect of the three-pillar-model
  - Focusing on technology development **vertical** or **horizontal**
  - Vertical Clusters: market driven such as Microelectronics or Automotive
  - Horizontal Clusters: chemical industry or material clusters such as carbon fibers
Examples of success

Enterprise Labs

- Cooperation with iterative project design
- 100% rewarded research cooperation with industrial companies on strategically superior research topics
- Selected developers / engineers of the customer cooperate with Fraunhofer experts in "Enterprise labs" at the institute
  → Interaction of research & industrial needs
- Good-Practice-Example:
  - Fraunhofer IML cooperation with DB Schenker:
    - Internet of Things, Industry 4.0, Big Data, Cloud Computing, change from process to service
  → Further cooperations with BMW, Würth and Sick are following
Examples of success

Venture Connect

- Supports companies, especially SMEs, and Fraunhofer institutes in the joint identification and exploitation of technologies.
- Identifying the needs of the companies as well as common formats of business model development of technologies with respect to the corresponding business needs.
  - Mediation, initiation and implementation of utilization-oriented entrepreneurial cooperation between companies and Fraunhofer Institutes
  - Recording and channeling of technology search fields of companies
  - Identification of suitable institutions for the company partner
  - Targeted business model development of identified technologies to the company partner
  - Determination of the optimal common utilization route of the technology
Latest trends in Germany
»Research Factory« and »Real Laboratory«

»Research Fab«

Anja Karliczek, Federal Minister of Education and Research:
»More money for battery research, development of battery cell production in Germany, faster transfer of research results into the application«

- Research fab: battery
- Initiative „excellent battery“
- Research cluster „solid state battery“

»Real-World Laboratories«

Federal Ministry of Economics and Energy:
»Real-World laboratories as test rooms for innovation and regulation serve to gain experience with digital innovation under real conditions.«

→ Development of a smart legal framework

- Focus: Sector Coupling (power-to-x)
- Investment incentives
- Regulatory holidays