20 September 2018, Berlin

Emporio I Room

Measuring outcome of academic-industrial collaborations

Prof. Dr. Stefan Hornborstel (chair)
Dr. Tjark von Reden
Dr. Jörg Hellwig
Dr. Rikke Nørding Christensen

AESIS

20 September 2018, Berlin

Emporio I Room

Measuring outcome of academic-industrial collaborations

Prof. Dr. Stefan Hornborstel

Head of Research System and Science Dynamics, DZHW &
professor for Sociology, Humboldt University zu Berlin, Germany

AESIS

DZHW

Deutsches Zentrum für
Hochschul- und Wissenschaftsforschung

AESIS
Societal Outcome of Academic-Industrial Collaboration

September 20, 2018 in Berlin
Prof. Dr. Stefan Hornbostel
Chair of Session III: Measuring outcome of academic-industrial collaborations

Taxonomy of university-industry interorganisational relations (U-I IOR)

Type 1: Formalized, specified agreements

(contractually stabilized cooperations with specific goals)

- Contract research
- Qualification and training of company employees
- Collaborative and collective research

Type 2: Formalized, non-specified agreements

(contractually stabilized cooperations, with a broader concept, often of a long term strategic nature)

- Framework contracts
- Industrially funded reasearch groups
- Endowment chairs
- Donations and grants for R&D in certain institutes

Type 3: Establishment of new structures and organisations

(Establishment of long term structures at the border of science and industry or within the sciences)

- UI research consortia
- UIRCs, PPPs
- Incubators
- Industry-Research-Campus
- Fusion of universities or universities with non-university research institutions

Source: Knut Koschatzky, Fraunhofer ISI: Kooperationen zwischen Wirtschaft und Wissenschaft – Grundlagen, Erfolgsfaktoren und Förderansätze
https://docplayer.org/36053706-K-n-u-t-k-o-s-c-h-a-t-z-k-y.html (07.09.2018)

nach Bonaccorsi/Piccaluga 1994

Fraunhofer ISI

Die
Bundesregierung

HIGHTECH
STRATEGIE 2025
Köpfe. Kompetenzen. Innovationen.

Forschung und Innovation für die Menschen

Die Hightech-Strategie 2025

Source: HTS 2014
https://www.bmbf.de/pub/HTS_Broschuere_eng.pdf (12.09.2018)

Kernelemente der strategischen Neuorientierung
Elements of the strategic reorientation

1. Prioratory future tasks for added value and quality of life

2. Networks and Transfer

3. Innovation dynamics in the economy

4. Innovation-friendly basic conditions

5. Transparency and participation

I. Wir gehen die großen gesellschaftlichen Herausforderungen an.

Wir fokussieren unsere Forschungs- und Innovationsförderung auf aktuelle und zukünftige Bedarfe. Wir nehmen dabei besonders folgende Themen in den Blick: „Gesundheit und Pflege", „Nachhaltigkeit, Klimaschutz und Energie", „Mobilität", „Stadt und Land", „Sicherheit" sowie „Wirtschaft und Arbeit 4.0".

HIGHTECH STRATEGIE 2025

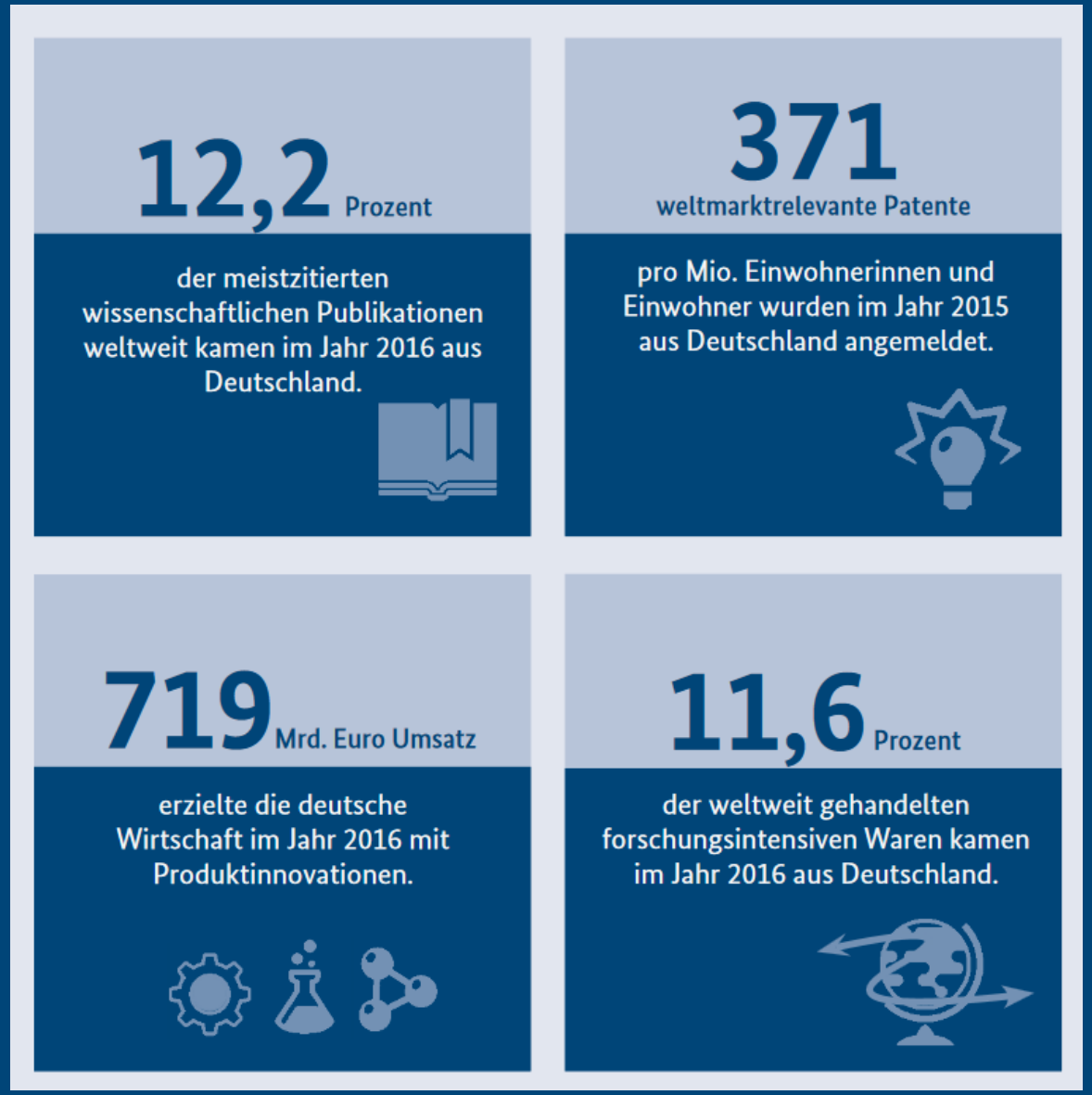
Köpfe. Kompetenzen. Innovationen.

„Additionally to **technological innovations**, we will promote **social innovation** with increased efforts. The Hightech-Strategy 2025 will only succeed if we look at the intended developments with regard to the people - affected in their different roles as citizens, employees and consumers."

„We are convinced that real progress for topics such as digital medicine, intelligent mobility in rural and metropolitan areas or recycling economy can only be truly achieved if we succeed to refine them into intelligently **cross-linked complete systems**."

„For topics in which solutions for grand challenges can only be found in the cooperation of different players, support will be mission-oriented and will **unite science, economy and society**."

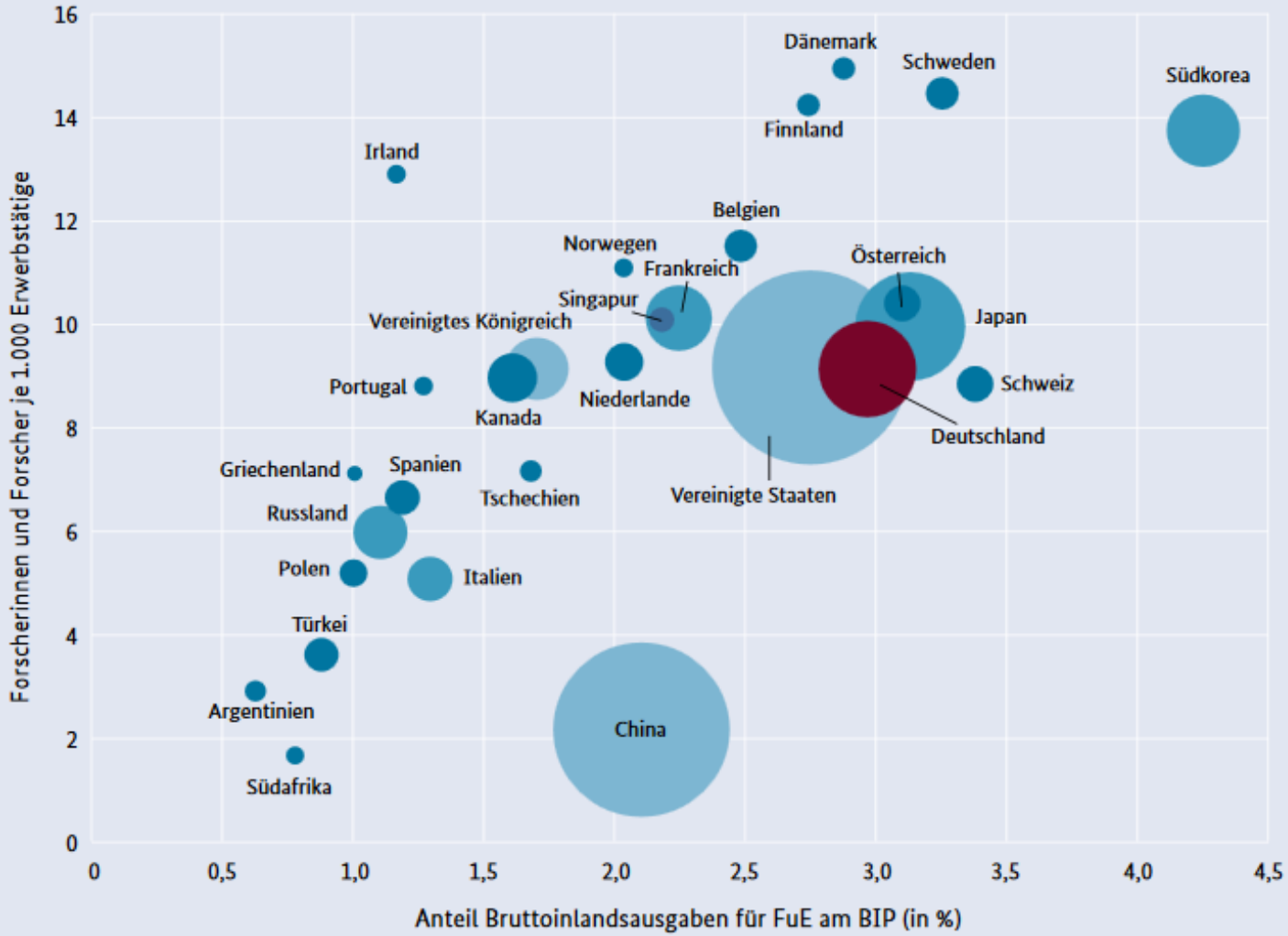
Source: HTS 2025 (2018), p. 16. https://www.hightech-strategie.de/files/HTS2025.pdf (12.09.2018); own translations



Bundesbericht Forschung und Innovation 2018

Forschungs- und innovationspolitische Ziele und Maßnahmen

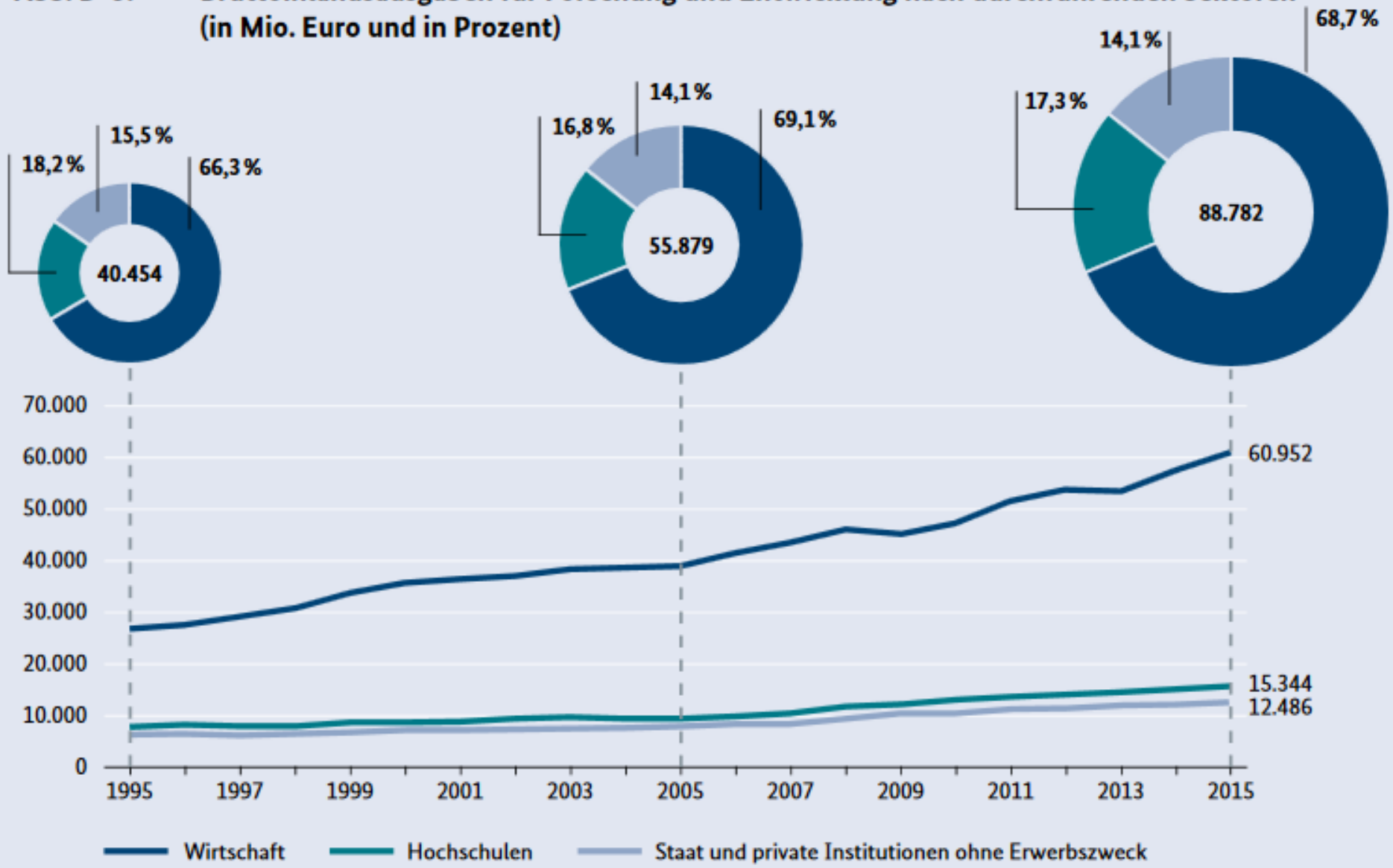
Abb. D-22: Ausgaben für Forschung und Entwicklung und Zahl der Forscherinnen und Forscher im internationalen Vergleich 2016



Kreisgrößen: absolute FuE-Ausgaben
Für einige Länder liegen für 2016 noch keine Daten vor.
Es wurden daher die jeweils aktuell verfügbaren Werte verwendet.

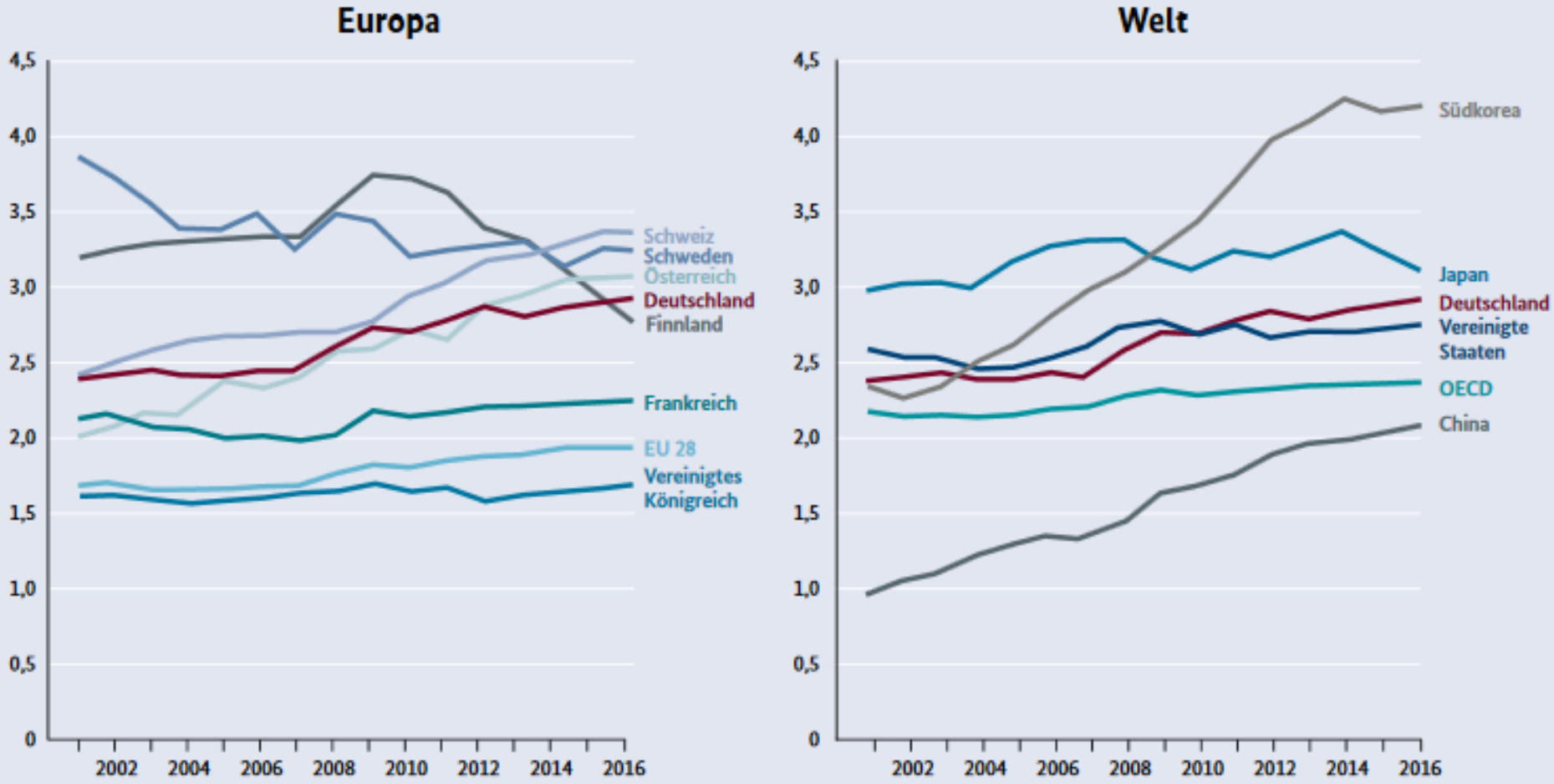
Datenbasis: OECD, Main Science and Technology Indicators (MSTI 2017/02). Werte zum Teil vorläufig, Daten zum Teil geschätzt.

Abb. D-3: Bruttoinlandsausgaben für Forschung und Entwicklung nach durchführenden Sektoren (in Mio. Euro und in Prozent)



Datenbasis: Datenband Tabelle 1; Datenportal des BMBF Tabelle 1.1.1

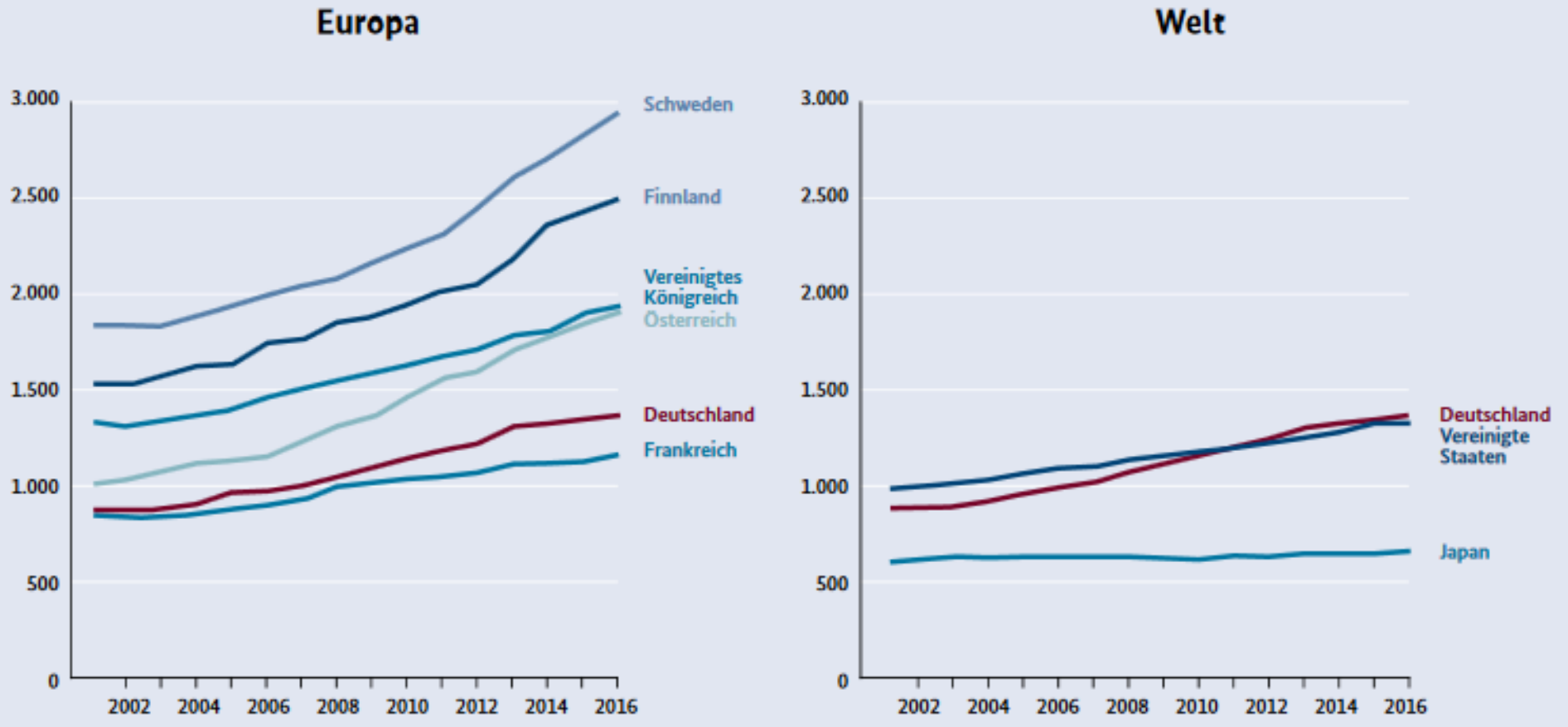
Abb. D-23: Anteil Bruttoinlandsausgaben für Forschung und Entwicklung am Bruttoinlandsprodukt im internationalen Vergleich (in Prozent)



Datenbasis: OECD, Main Science and Technology Indicators (MSTI 2017/02). Werte zum Teil vorläufig, Daten zum Teil geschätzt.

Source: Bundesbericht Forschung und Innovation 2018

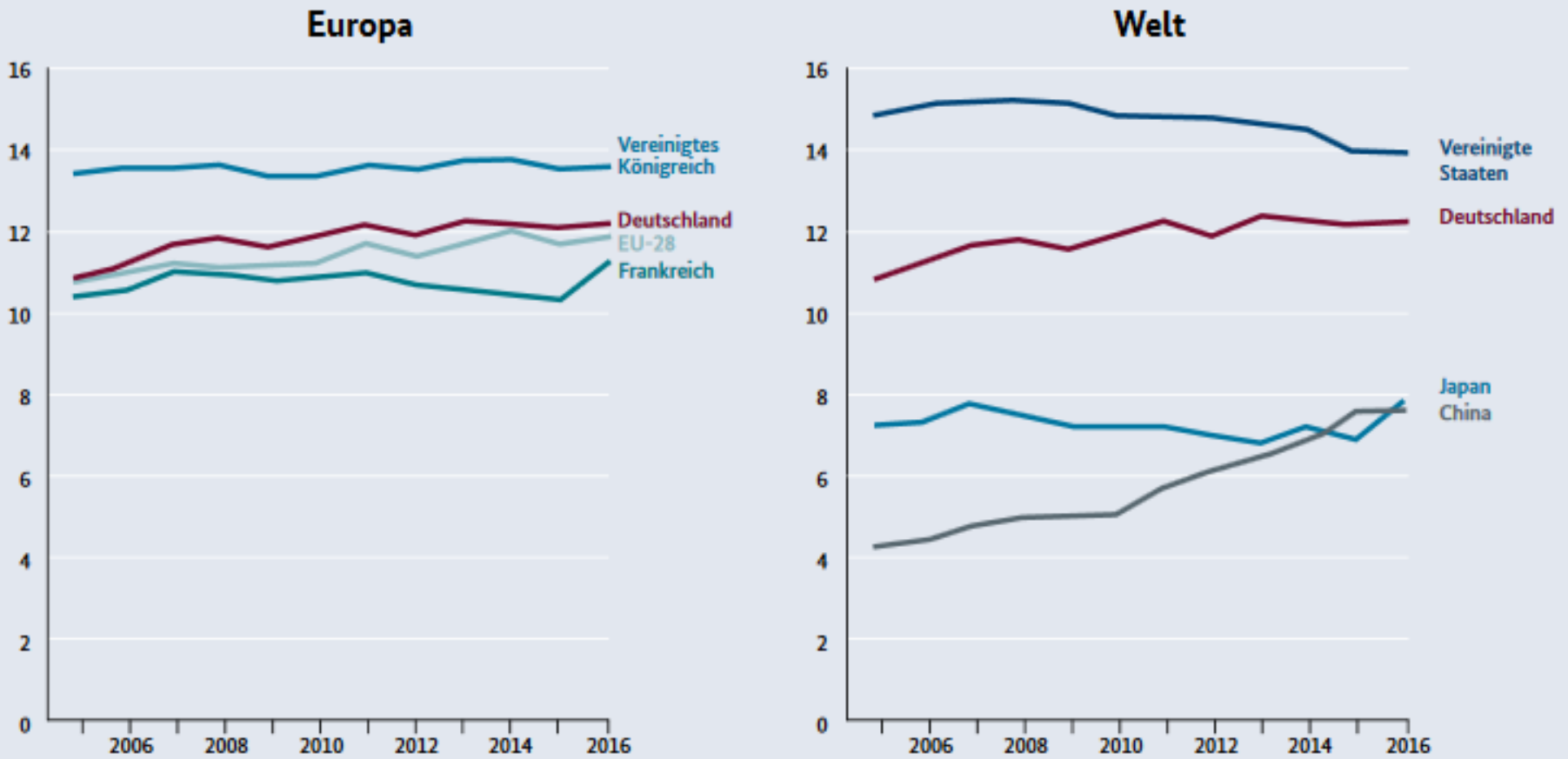
Abb. D-26: Anzahl wissenschaftlicher Veröffentlichungen (pro Mio. Einwohnerinnen und Einwohner)



Datenbasis: Datenband Tabelle 38; Datenportal des BMBF Tabelle 1.8.3

Source: Bundesbericht Forschung und Innovation 2018

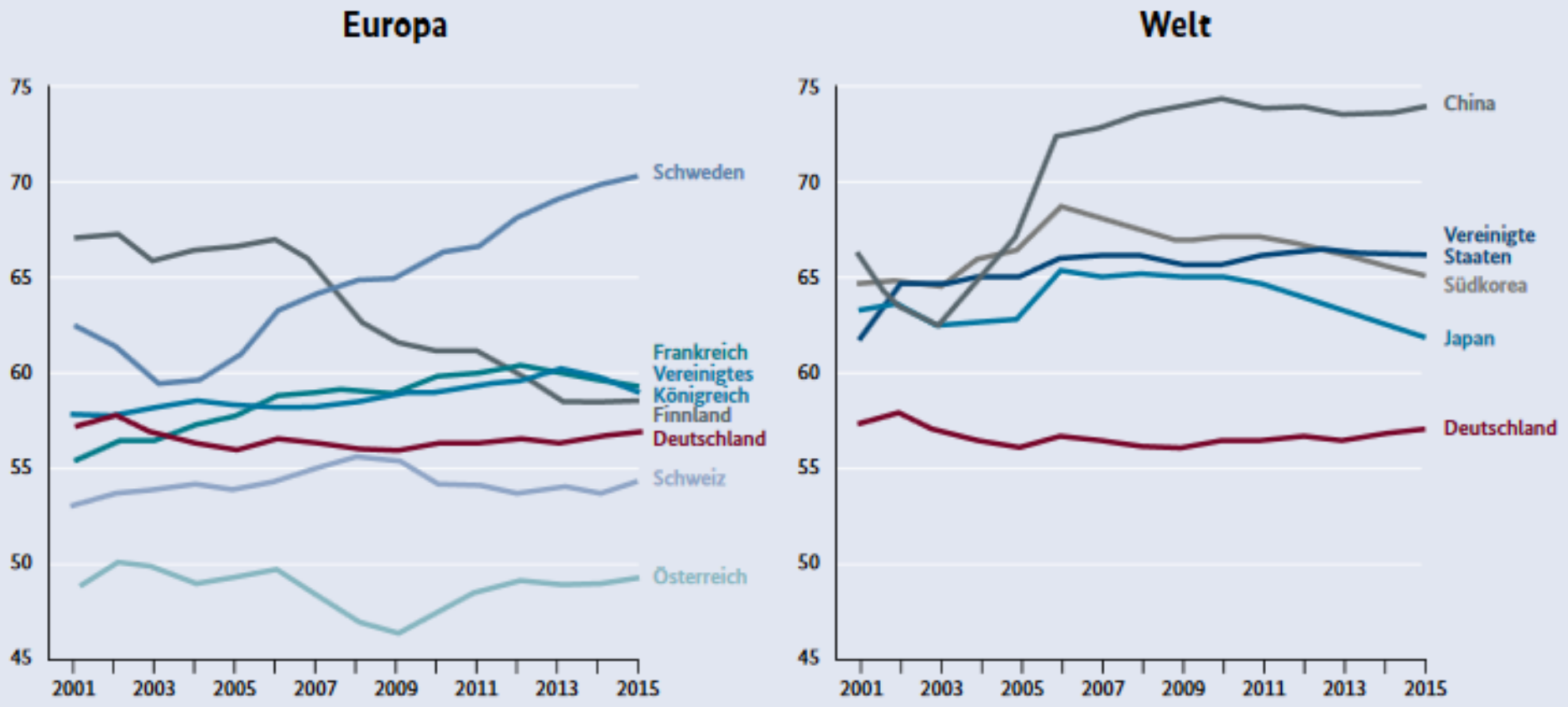
Abb. II-15: Exzellenzrate (in Prozent): Deutschland im internationalen Vergleich



Datenbasis: OECD Science, Technology and Industry Scoreboard 2017

Source: Bundesbericht Forschung und Innovation 2018

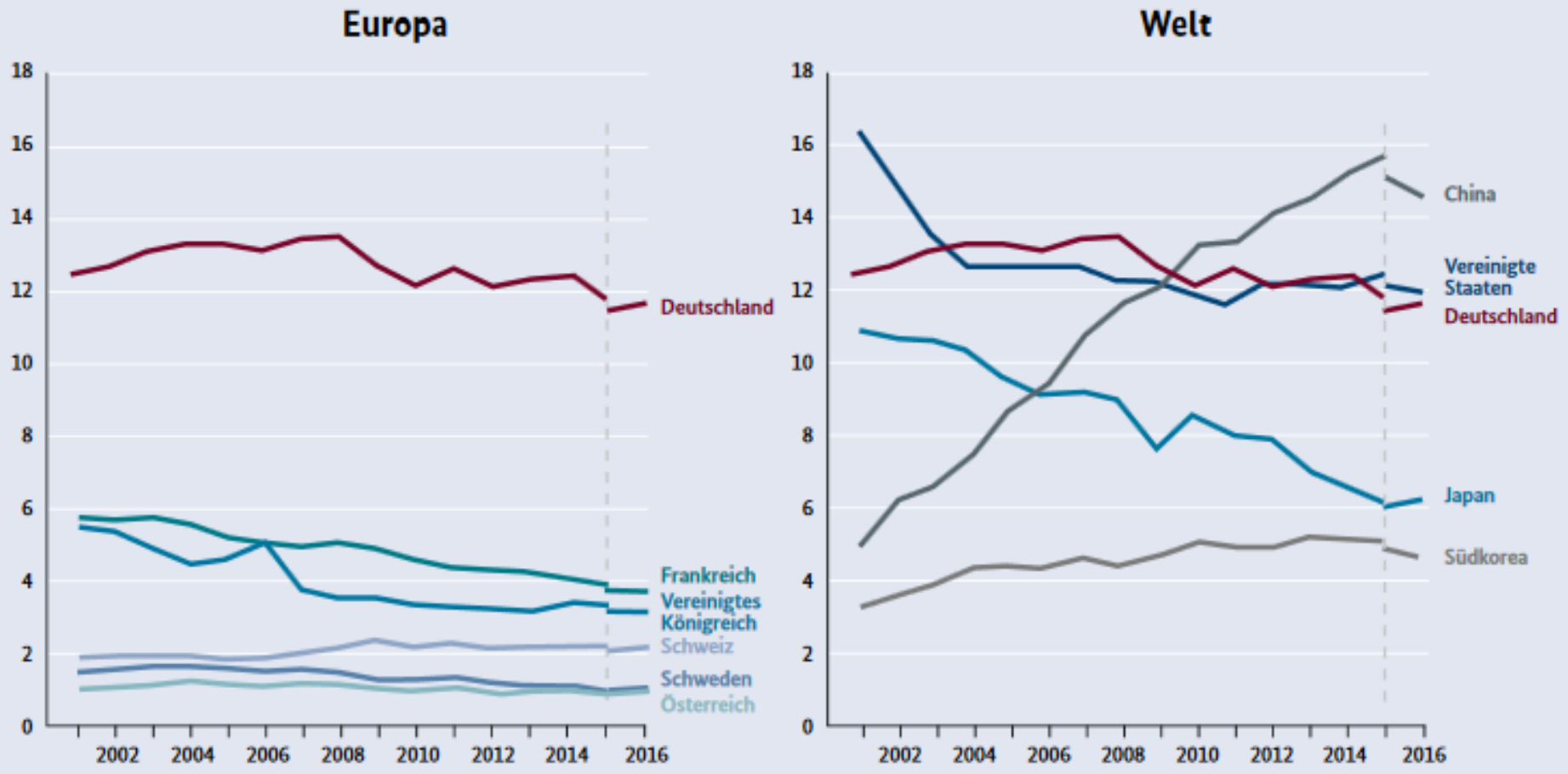
Abb. D-27: Anteil von Patenten der forschungsintensiven Industrie an allen Patentanmeldungen (in Prozent)



Datenbasis: Neuhäusler, P.; Rothengatter, O.; Frietsch, R. (2018): Patent Applications – Structures, Trends and Recent Developments 2017. Studien zum deutschen Innovationssystem Nr. 4-2018, Berlin: EFI

Source: Bundesbericht Forschung und Innovation 2018

Abb. D-29: Welthandelsanteile mit forschungsintensiven Waren (in Prozent)



Bruch in der Zeitreihe 2015 aufgrund von statistischen und methodischen Umstellungen.

Datenbasis: Gehrke, B.; Schiersch, A. (2018): FuE-intensive Industrien und wissensintensive Dienstleistungen im internationalen Vergleich. Studien zum deutschen Innovationssystem Nr. 6-2018, Berlin: EFI

Source: Bundesbericht Forschung und Innovation 2018

2018 European Innovation Scoreboard

Since 2010, the innovation performance improved in 18 EU countries

SWEDEN

Innovation leader

Sweden is once again the EU innovation leader, followed by Denmark, Finland, the Netherlands, the United Kingdom and Luxembourg.

In particular areas of innovation, the EU leaders are:

DENMARK
human resources and innovation-friendly environment

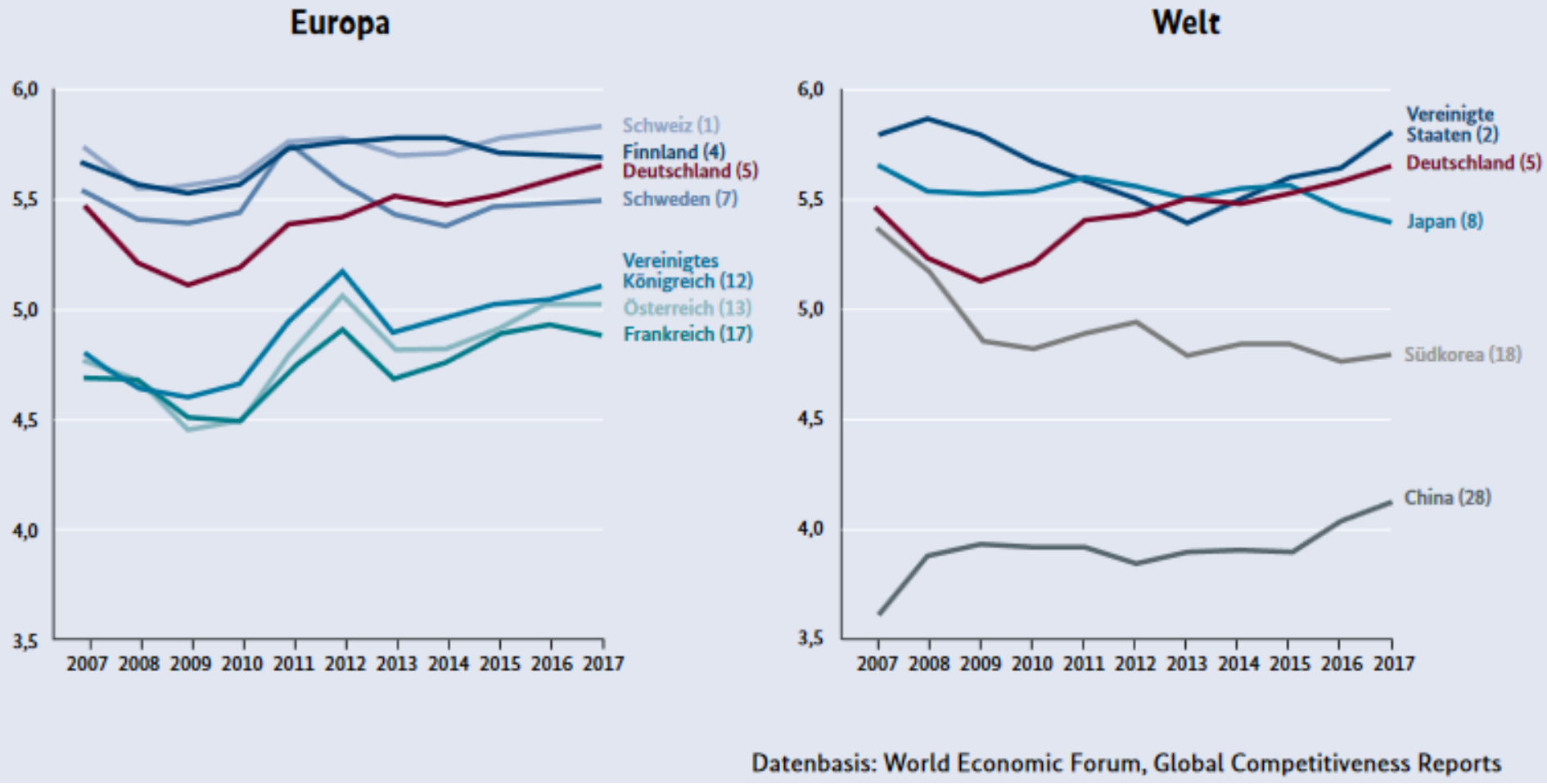
LUXEMBOURG
attractive research systems

FRANCE
finance and support

IRELAND
innovation in SMEs, employment impacts, and sales impacts

BELGIUM
innovation linkages and collaboration

Abb. D-30: Global Competitiveness Index – Indexwerte des Subindikators Innovation und Positionierung ausgewählter Länder 2017



Source: Bundesbericht Forschung und Innovation 2018

Old and new forms of impact assessment

How to grasp societal impact?

- Indicators used in reports such as the Federal Report on Research and Innovation operate most notably with basic indicators: publications, patents, economy data

- Aspect of Societal Challenges is not captured by these indicators

- Discussion and development of indicators for research innovation, e.g.: co-authorship data, research productivity, rate of innovators, patent analyses, marks

- Alternative Metrics: a suitable alternative?

Perspectives on Impact

Introducing the expert group of session III

- **Dr. Tjark von Reden, Departmental Director Spitzencluster MAI-Carbon, Germany**: gives an account on the first-hand experiences of an academic-industrial collaboration from the perspective of an Excellence Cluster with a focus on the question how, in the case of the carbon composites, impact is defined and which obstacles, challenges and successes such collaborations meet in pursuing the set goals;

- **Dr. Jörg Hellwig, Analytical Services Germany, Elsevier:** provides insight into the construction of indicators and how to provide the right tools for the question at hand and the different players involved (policy makers, funders, academia, industry) with regard to reflexion on validity, reliability and stability of these indicators.

- **Dr. Rikke Nørding Christensen, Scientific Officer Impact Assessment, Novo Nordisk Foundation, Denmark**: adept in the evaluation work of a Foundation, she will give us some insights into definitions and criteria for successful impact from a founder's perspective and the changes they may have undergone over the past years

Thank You For Your Attention!

Prof. Dr. Stefan Hornbostel
Deutsches Zentrum für Hochschul- und Wissenschaftsforschung
Abteilung Forschungssystem und Wissenschaftsdynamik
Schützenstr. 6a, 10117 Berlin
Tel.: 030/20641770, Mail: hornbostel@dzhw.eu
www.dzhw.eu

Emporio I Room

Measuring outcome of academic-industrial collaborations

Dr. Tjark von Reden

Departmental Director Spitzencluster MAI-Carbon, Germany

AESIS

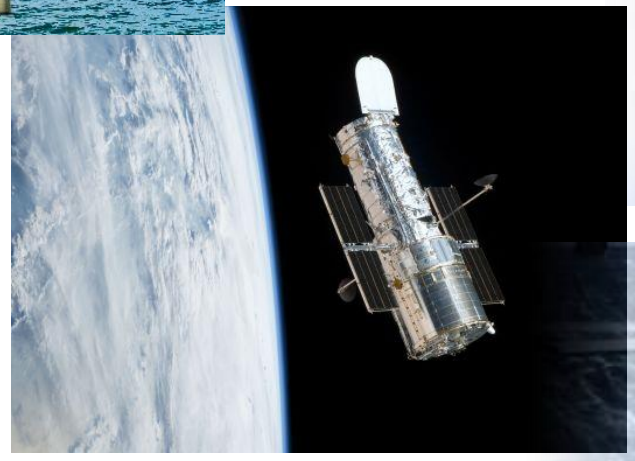
Experiences of an academic-industrial collaboration

Tjark von Reden | Berlin, 20. September 2018

M·A·I CARBON

CARBON COMPOSITES

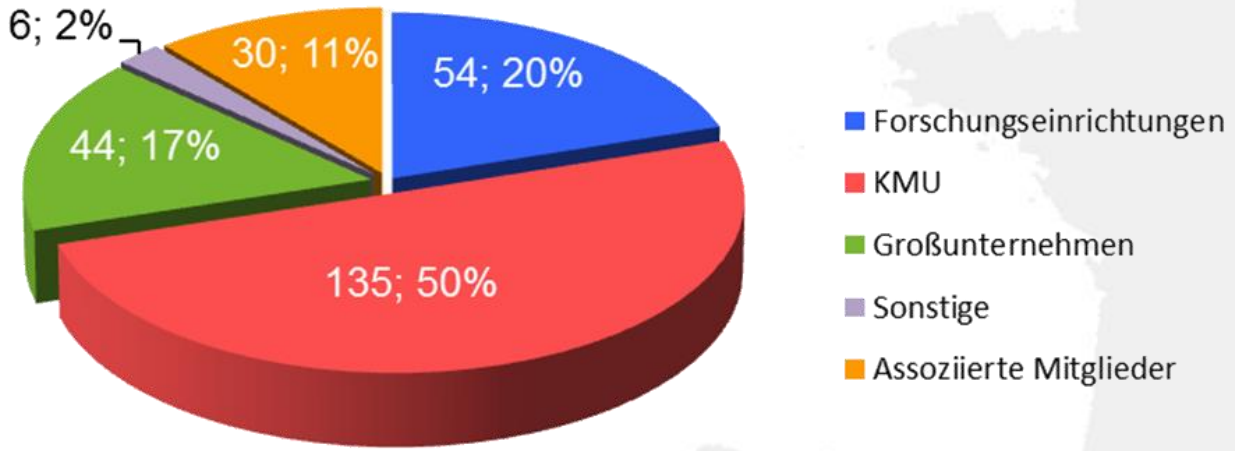
Usage of CFRP



Leading Edge Cluster MAI Carbon

Industrial Network for High Performance Fibre Reinforced Materials

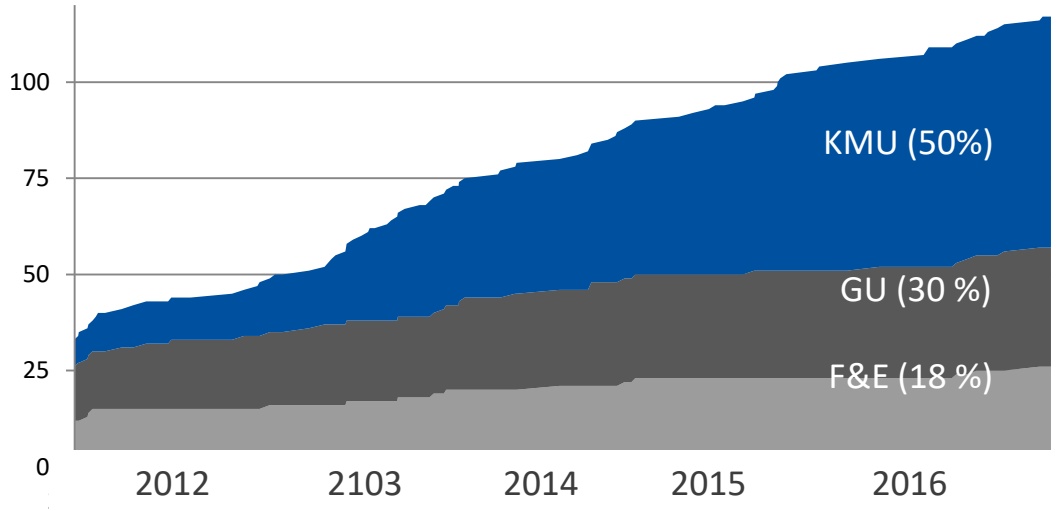
- European leading Network
- German speaking area
- Cross-Industry Network
- Member driven Association
- >280 Members



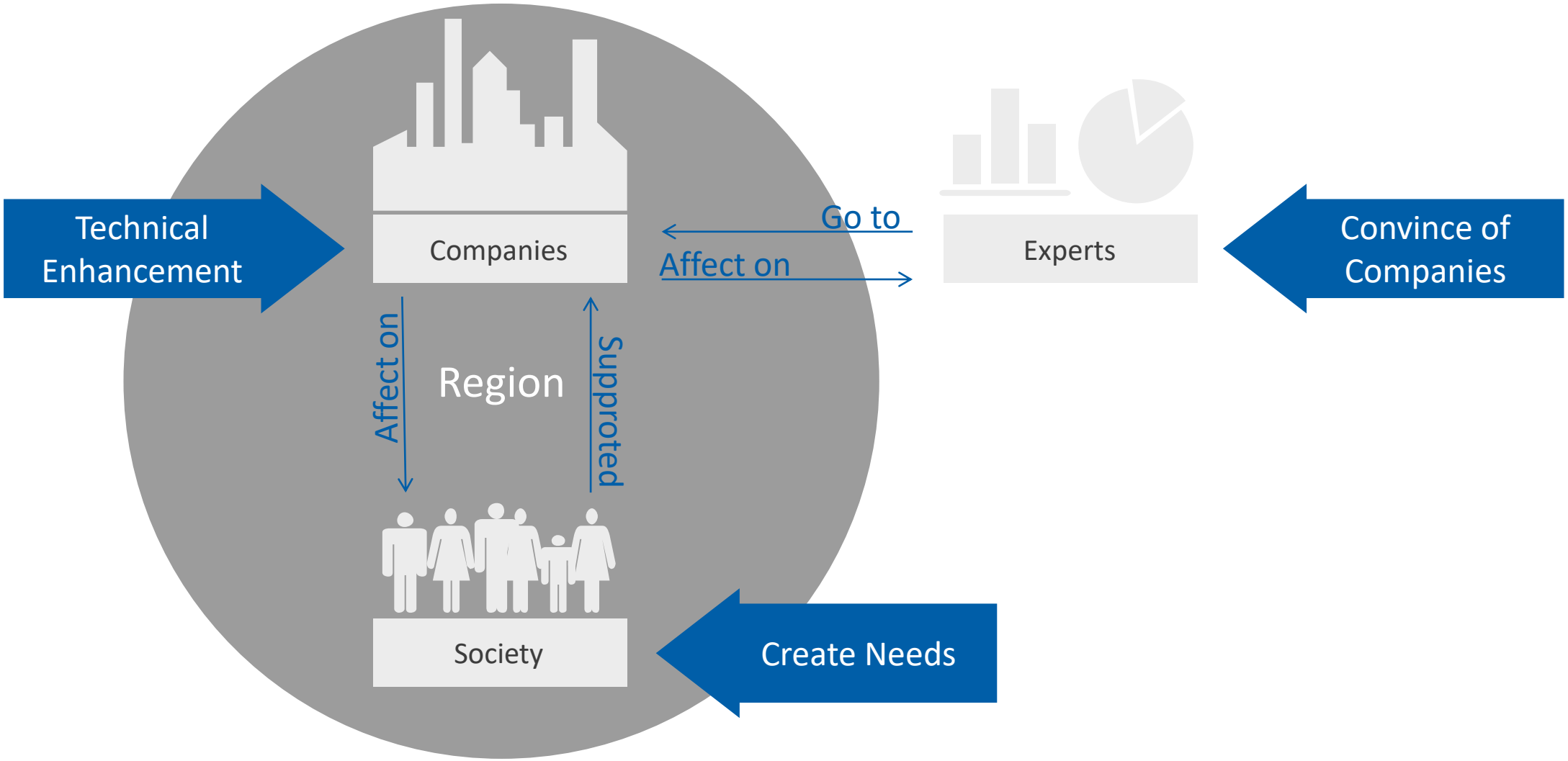
Leading Edge Cluster MAI Carbon

Objectives

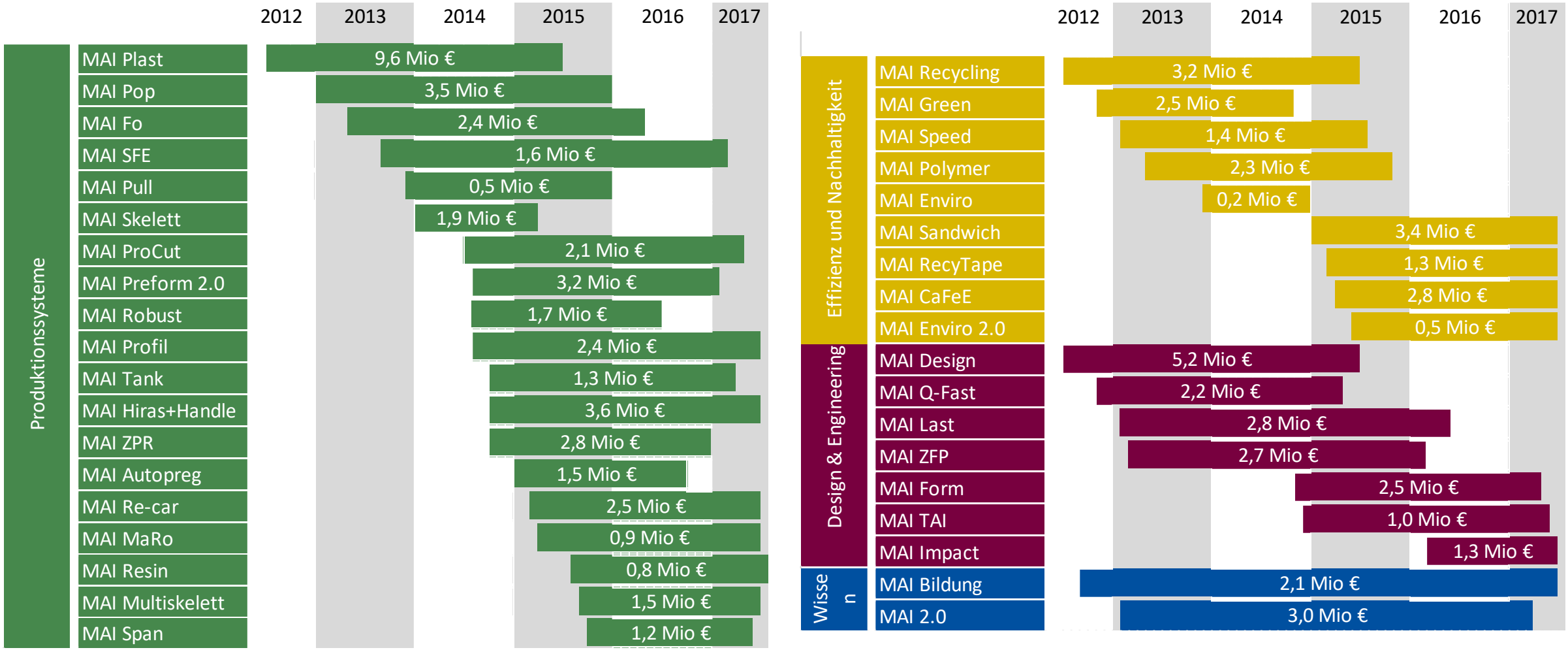
- High volume production ability
- 90 % reduction of process costs
- 60 % - 80 % of value added production in Germany
- Support SME-Industry
- “Public Relation” for Carbon Composites



Why Leading Edge Cluster Program



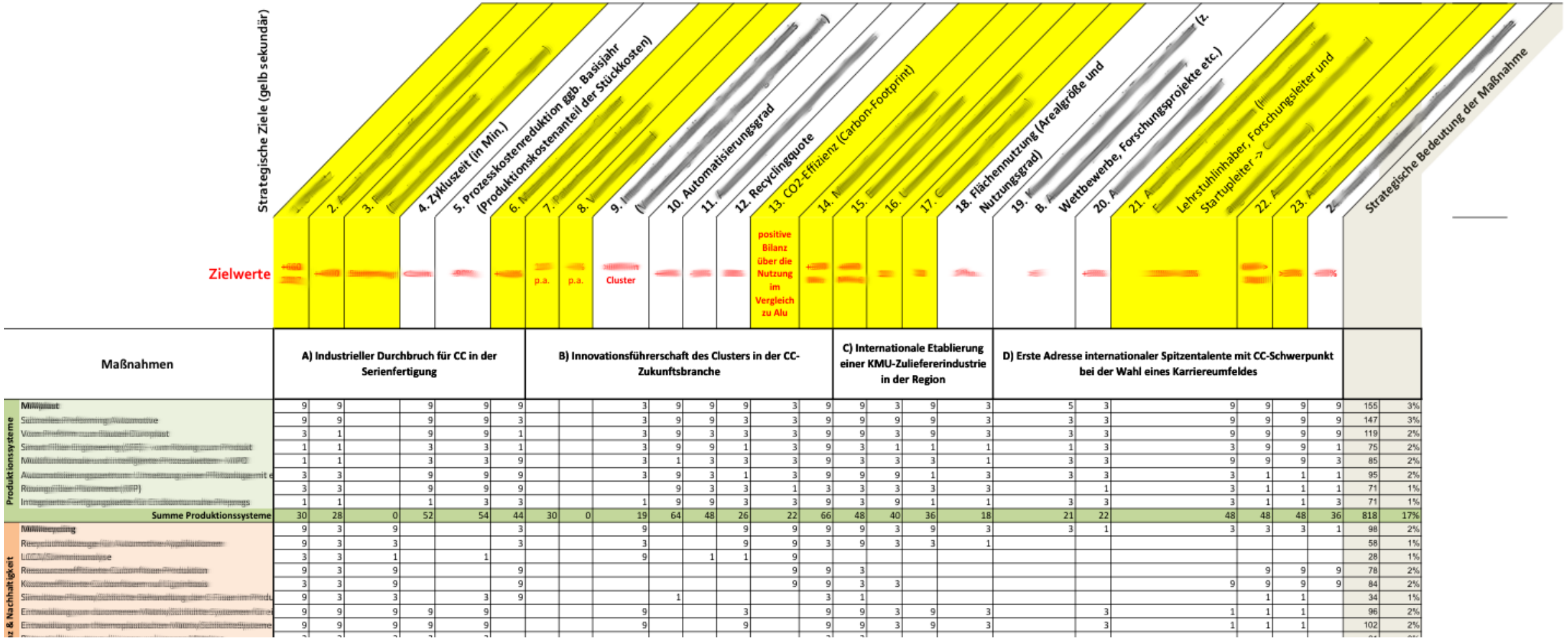
Technical Enhancement of Companies



Information of Society

- Exhibition in Deutschen Museum München, Deutschen Museum Bonn as well as Textil- and Industrialmuseum Augsburg
- More than 300.000 visitors
- Development of exhibition in the children area at Deutsches Museum

How to measure success?



Strategische Ziele (gelb sekundär)

	1. [illegible]	2. [illegible]	3. [illegible]	4. Zykluszeit (in Min.)	5. Prozesskostenreduktion ggb. Basisjahr (Produktionskostenanteil der Stückkosten)	6. [illegible]	7. [illegible]	8. [illegible]	9. [illegible]	10. Automatisierungsgrad	11. [illegible]	12. Recyclingquote	13. CO2-Effizienz (Carbon-Footprint)	14. [illegible]	15. [illegible]	16. [illegible]	17. [illegible]	18. Flächennutzung (Arealgröße und Nutzungsgrad)	19. [illegible]	8. [illegible]	Wettbewerbe, Forschungsprojekte etc.)	20. [illegible]	21. [illegible]	Lehrstuhlinhaber, Forschungsleiter und Startupleiter ->	22. [illegible]	23. [illegible]	24. [illegible]	Strategische Bedeutung der Maßnahme
Zielwerte	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	p.a.	p.a.	Cluster	[illegible]	[illegible]	[illegible]	positive Bilanz über die Nutzung im Vergleich zu Alu	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Maßnahmen	A) Industrieller Durchbruch für CC in der Serienfertigung								B) Innovationsführerschaft des Clusters in der CC-Zukunftsbranche						C) Internationale Etablierung einer KMU-Zuliefererindustrie in der Region				D) Erste Adresse internationaler Spitzentalente mit CC-Schwerpunkt bei der Wahl eines Karriereumfeldes											
Produktionssysteme																													
[illegible]	9	9		9	9	9			3	9	9	9	3	9	9	3	9	3	5	3	9	9	9	9	155	3%			
[illegible]	9	9		9	9	3			3	9	9	3	3	9	9	9	9	3	3	3	9	9	9	9	147	3%			
[illegible]	3	1		9	9	1			3	9	3	3	3	9	9	3	9	3	3	3	9	9	9	9	119	2%			
[illegible]	1	1		3	3	1			3	9	9	1	3	9	3	1	1	1	1	3	3	9	9	1	75	2%			
[illegible]	1	1		3	3	9			3	1	3	3	3	9	3	3	3	1	3	3	9	9	9	3	85	2%			
[illegible]	3	3		9	9	9			3	9	3	1	3	9	9	9	1	3	3	3	3	1	1	1	95	2%			
[illegible]	3	3		9	9	9				9	3	3	1	3	3	3	3	3		1	3	1	1	1	71	1%			
[illegible]	1	1		1	3	3			1	9	9	3	3	9	3	9	1	1	3	3	3	1	1	3	71	1%			
Summe Produktionssysteme	30	28	0	52	54	44	30	0	19	64	48	26	22	66	48	40	36	18	21	22	48	48	48	36	818	17%			
[illegible]																													
[illegible]	9	3	9			3			9			9	9	9	9	3	9	3	3	1	3	3	3	1	98	2%			
[illegible]	9	3	3			3			3			9	9	3	9	3	3	1							58	1%			
[illegible]	3	3	1		1				9		1	1	9												28	1%			
[illegible]	9	3	9			9							9	9	3							9	9	9	78	2%			
[illegible]	3	3	9			9							9	9	3	3					9	9	9	9	84	2%			
[illegible]	9	3	3		3	9				1				3	1							1	1		34	1%			
[illegible]	9	9	9	9	9				9			3		9	9	3	9	3		3	1	1	1		96	2%			
[illegible]	9	9	9	9	9				9			9		9	9	3	9	3		3	1	1	1		102	2%			

M-A-I CARBON

Technical Objectives

Topic	Target Level 2020	Current Status
Cycle time	< 1min.	90 sec*
Production Costs (compared to 2010)	-90 %	-70 %
Efficiency of Production	+60 %	
Cut offs during production	< 10 %	< 5%*
Recycling rate	80 %	posibile
Carbon footprint	Positive Balance	-75 % CO_2

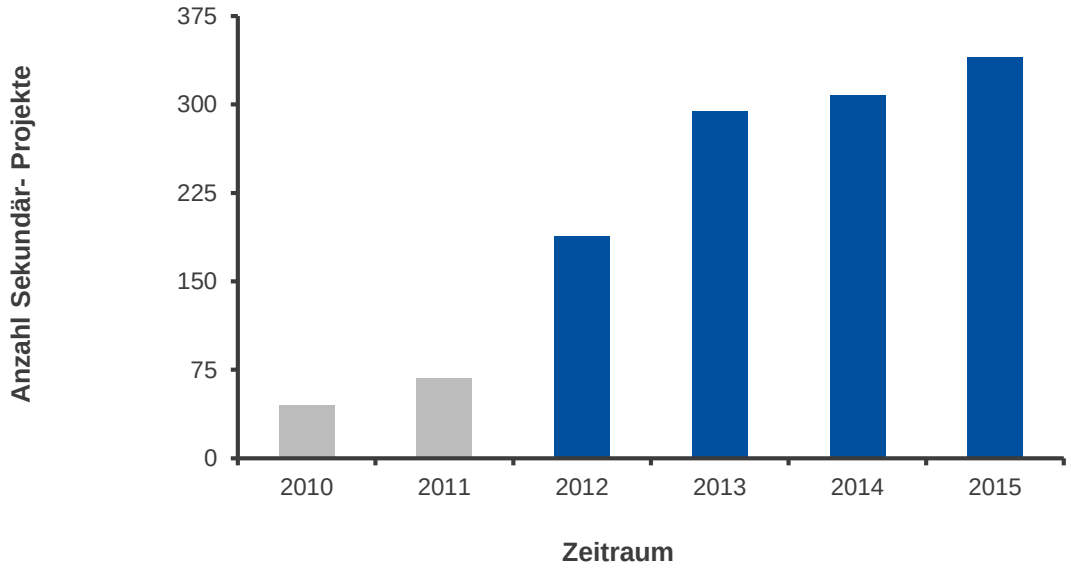
* At different Processes

Industrial Targets

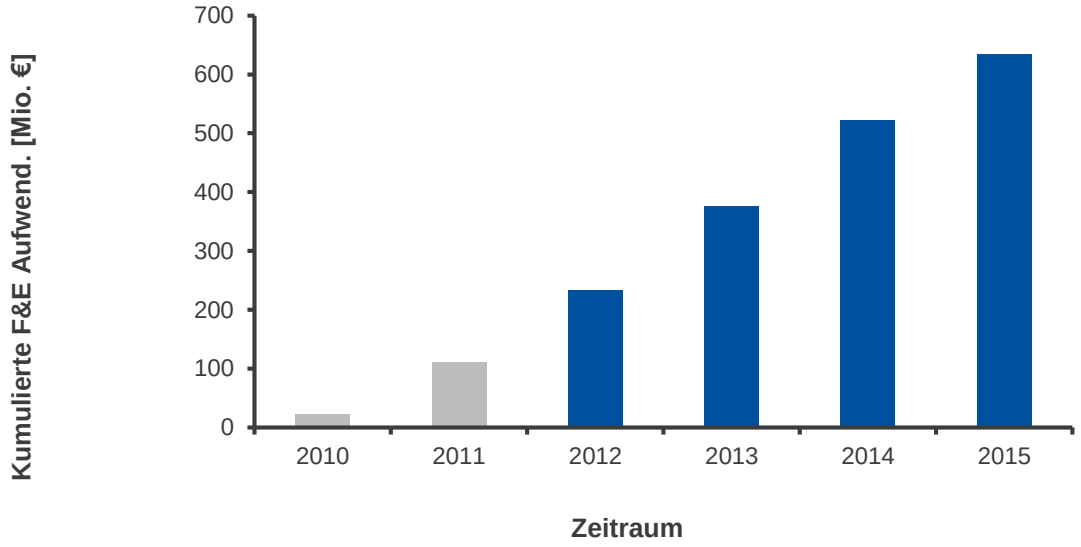
Survey once a year

High effort for companies

Additional R&D Projects



Investments in R&D



Industrial Targets

Index	Value 2016	Increase since 2010*
Turnover with CC-Products	705 Mio. €	148%
Investments (accumulated)		768 Mio. €
R&D spending (accumulated)		728 Mio. €
Additional R&D Projects between the Cluster Partners	332	260%
Jobs	5775	67%**
Number of Students	1025	160%

* normalized with respect to the increase of members, ** based on 2012

Outcome

Outcome for the Projectpartners

Outcome for the Society

Vielen Dank!

GEFÖRDERT VOM

Bundesministerium
für Bildung
und Forschung

INVENTED IN GERMANY

Gefördert durch

Bayerisches Staatsministerium für
Wirtschaft und Medien, Energie
und Technologie

go-cluster
EXZELLENT VERNETZT!

GOLD
Cluster
Management
Excellence
PROVEN FOR CLUSTER EXCELLENCE

M-A-I
CARBON

Emporio I Room

Measuring outcome of academic-industrial collaborations

Dr. Jörg Hellwig

Analytical Services Germany, Elsevier

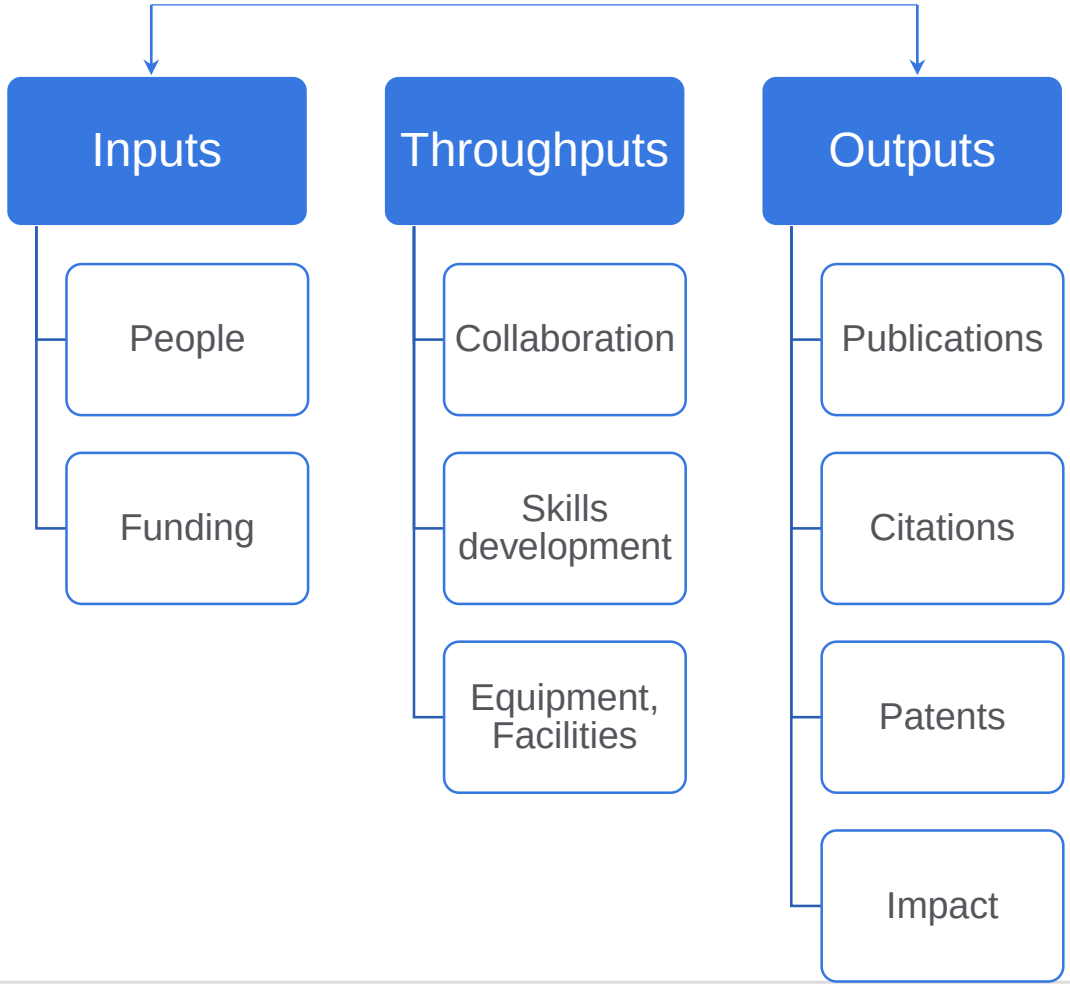
AESIS

A Framework for Knowledge Exchange

Societal outcome of Academic – Industrial Collaboration

September, 2018
Dr. Jörg Hellwig

Bibliometrics in use (in Academia) - simplified

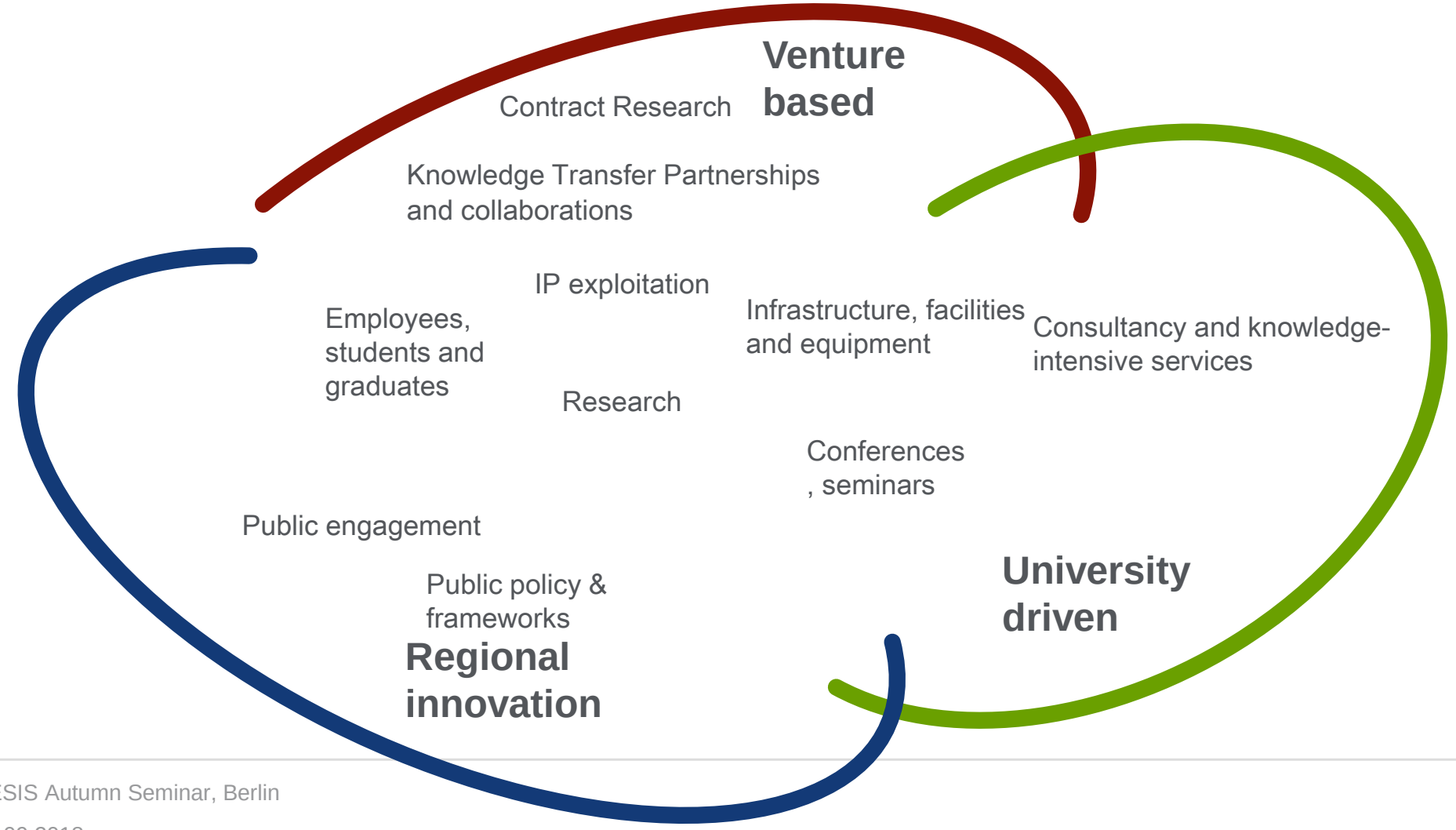


Issues:

Knowledge sits with people, not institutions

- Collaborations
- Mobility

KE and Innovation Ecosystems



Motivations for Participation

- What are the benefits for each sector to participate?

- How to balance between self-interest
- and ‘societal good’?

➢ How and what can we measure?

- Lots of possible metrics and indicators out there

Productivity metrics
Scholarly Output
Outputs in Top Percentiles
Publications in Top Journal Percentiles

Citation Impact metrics
Citation Count
Citations per Publication
Cited Publications
Number of Citing Countries
h-indices (*h*, *g*, *m*)
Field-Weighted Citation Impact
Citing-Patent Count
Patent-Cited Scholarly Output
Patent-Citations Count
Patent-Citations per Scholarly Output

Usage metrics
Views Count
Views per Publication
Field-Weighted Views Impact
Outputs in Top Views Percentile

Societal Impact metrics
Mass Media
Media Exposure
Field-Weighted Mass Media

Economic Impact metrics
Citing-Patents Count
Patent-Cited Scholarly Output
Patent-Citations Count

Metrics and Indicators

Two Golden Rules of using research metrics give a balanced, multi-dimensional view for decision-making

Always use both qualitative and quantitative input into your decisions

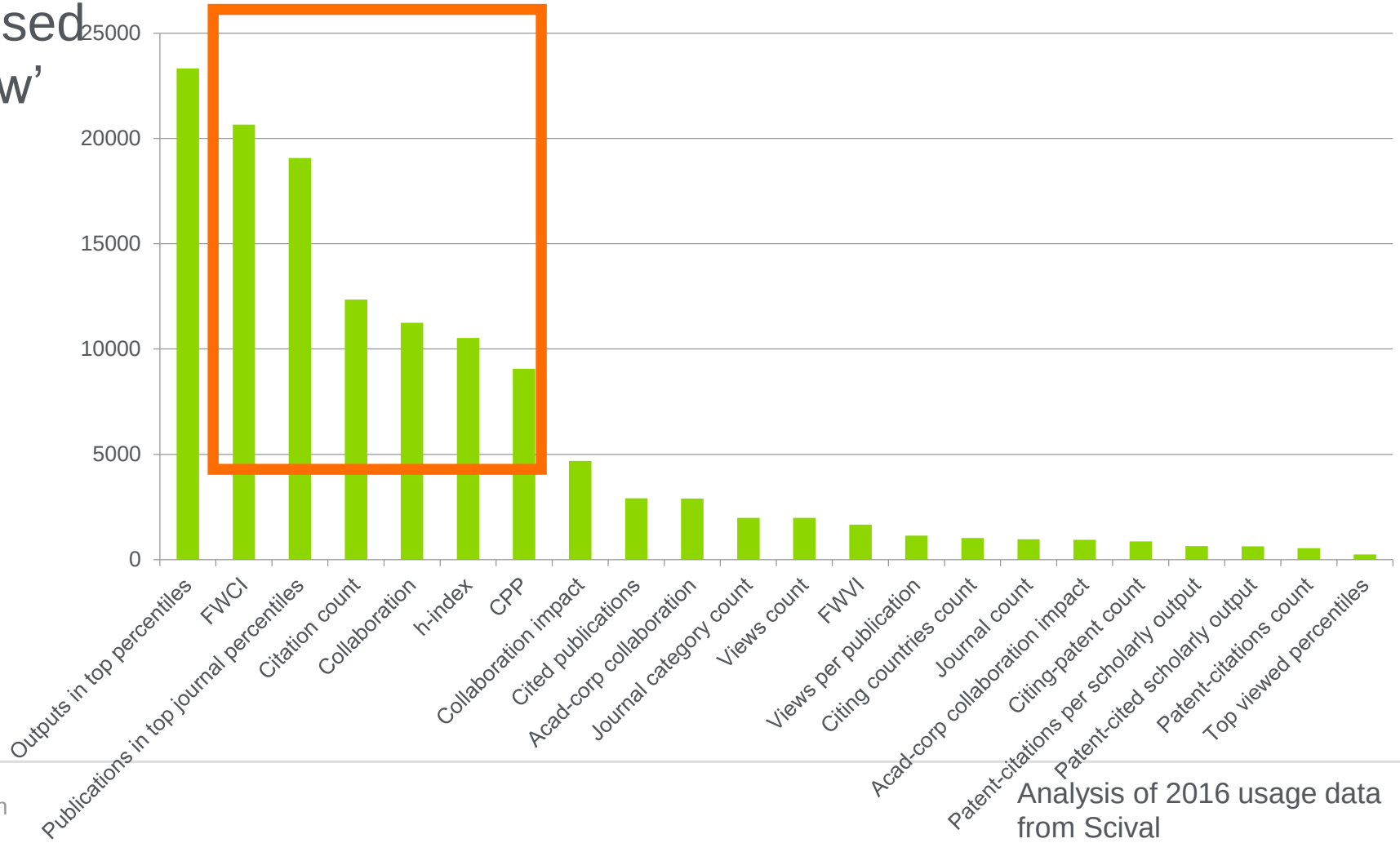
Always use more than one research metric as the quantitative input

Measure everything what you are after

Metric usage

Publications focused metrics may ‘skew’ the questions

Top 7 metrics account for 82% of all metrics usage



Analysis of 2016 usage data from Scival

ELSEVIER

ELSEVIER

Thank you

20 September 2018, Berlin

Emporio I Room

Measuring outcome of academic-industrial collaborations

Dr. Rikke Nørding Christensen

Scientific Officer Impact Assessment, Novo Nordisk Foundation, Denmark

AESIS

Societal Impact of Novo Nordisk Foundation Grants 2017

novo nordisk fonden

Rikke Nørding Christensen
Scientific Officer, Ph.d.
Novo Nordisk Foundation
AESIS Seminar
September 20, 2018

It began with insulin

THE SCIENTISTS
Marie Krogh and August Krogh

THE CLINICIAN
H.C. Hagedorn

THE INVESTOR
August Kongsted

THE ENTREPRENEUR
Thorvald Pedersen

THE ENTREPRENEUR
Harald Pedersen

Independent Foundation with corporate interests

novo nordisk fonden

Dividende

100% AKTIER

novo holdings
Investors in life science

Dividende

75% VOTES

70.9% VOTES

novo nordisk®

novozymes®
Rethink Tomorrow

Grant-awarding

New grants in i 2017:
DKK 5.2 bn
(EUR 0.7 bn)

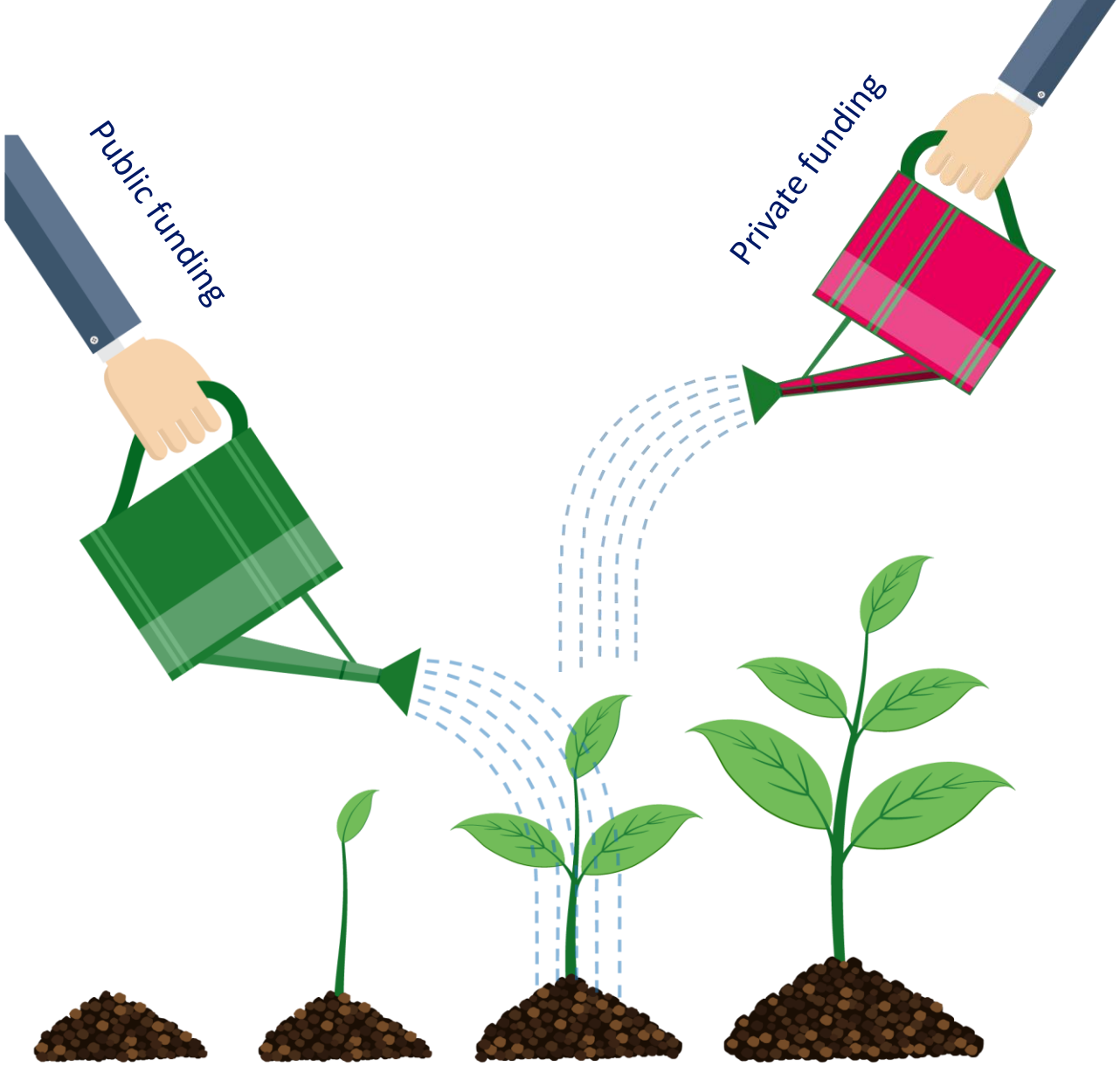
Scientific research
Diabetes treatment
Innovation
Education and outreach
Humanitarian and social purpose

Investments

Net profits in 2017:
DKK 19.1 bn
(EUR 2.6 bn)

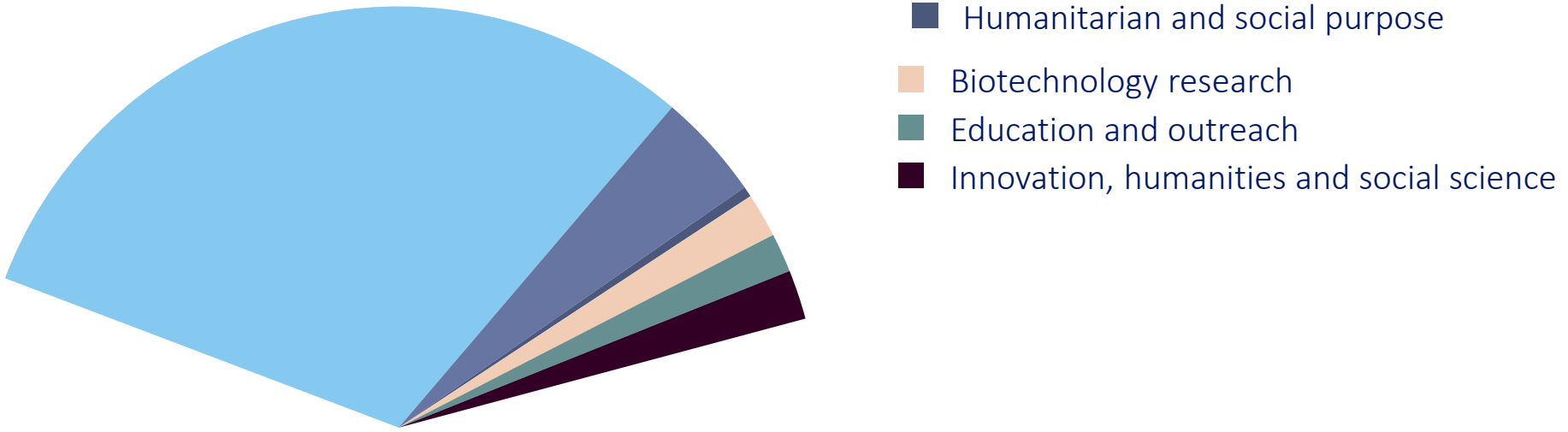
Principal investments
Venture investments
Seed investments
Financial investments

ROLES OF PRIVATE FOUNDATIONS



AREAS OF SUPPORT

”…to improve the health and welfare of people.”



2017

EUR 173 million paid out (awarded grants for EUR 0,77 billion)

WHY IMPACT ASSESSMENT?

To support the development of effective funding strategy

To promote responsible management of funds

4 A'S OF RESEARCH IMPACT ASSESSMENT

To demonstrate the benefits of research, education and innovation to society

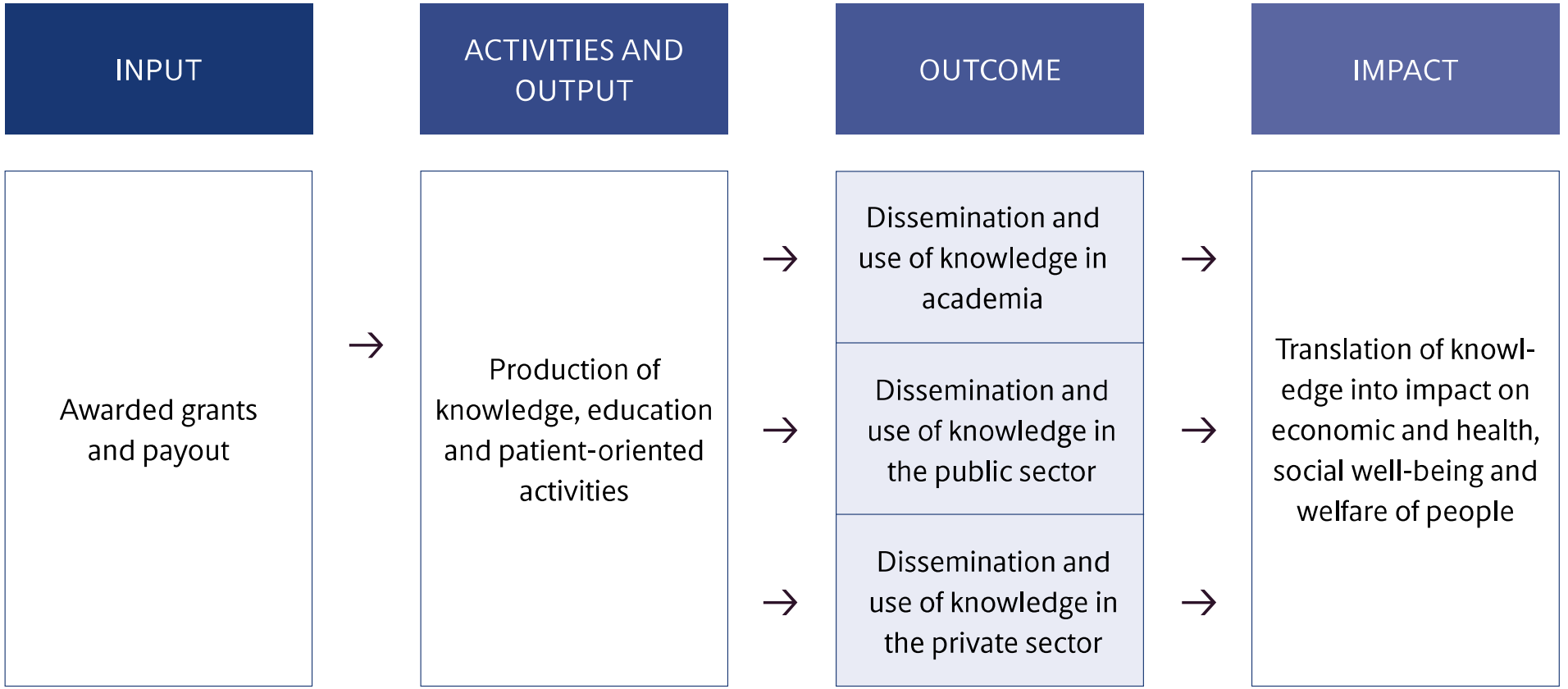
To answer questions about 'what works'. Make improvements based on data

Jonathan Grant
King's College

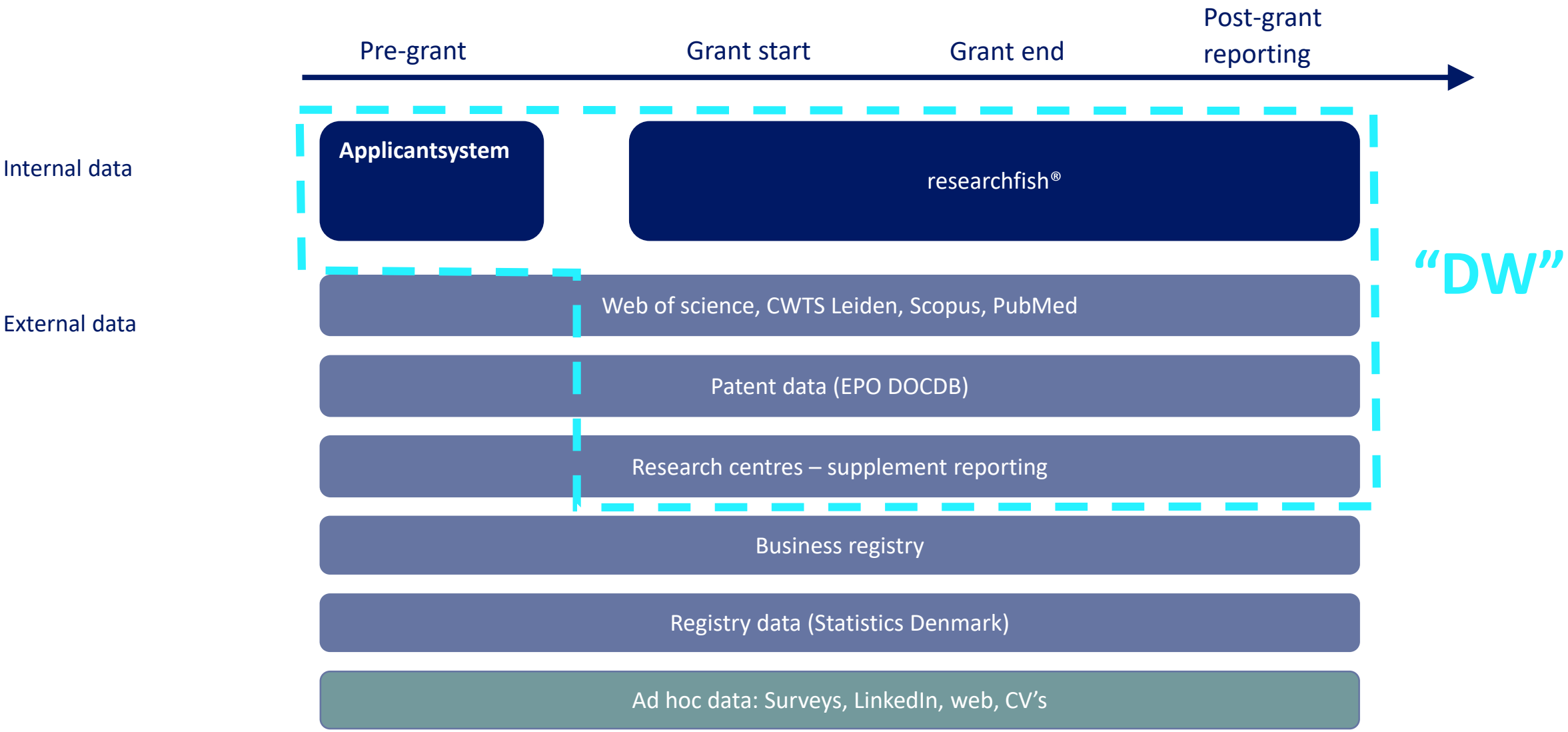
The purpose of impact assessment in the Novo Nordisk Foundation

- Develop novel and research-based impact assessment, analysis of funding science and capacity building
- Document and measure the impact of public research in Denmark
- Develop, collect, process and analyse information on all activities the Foundation supports

The model of impact



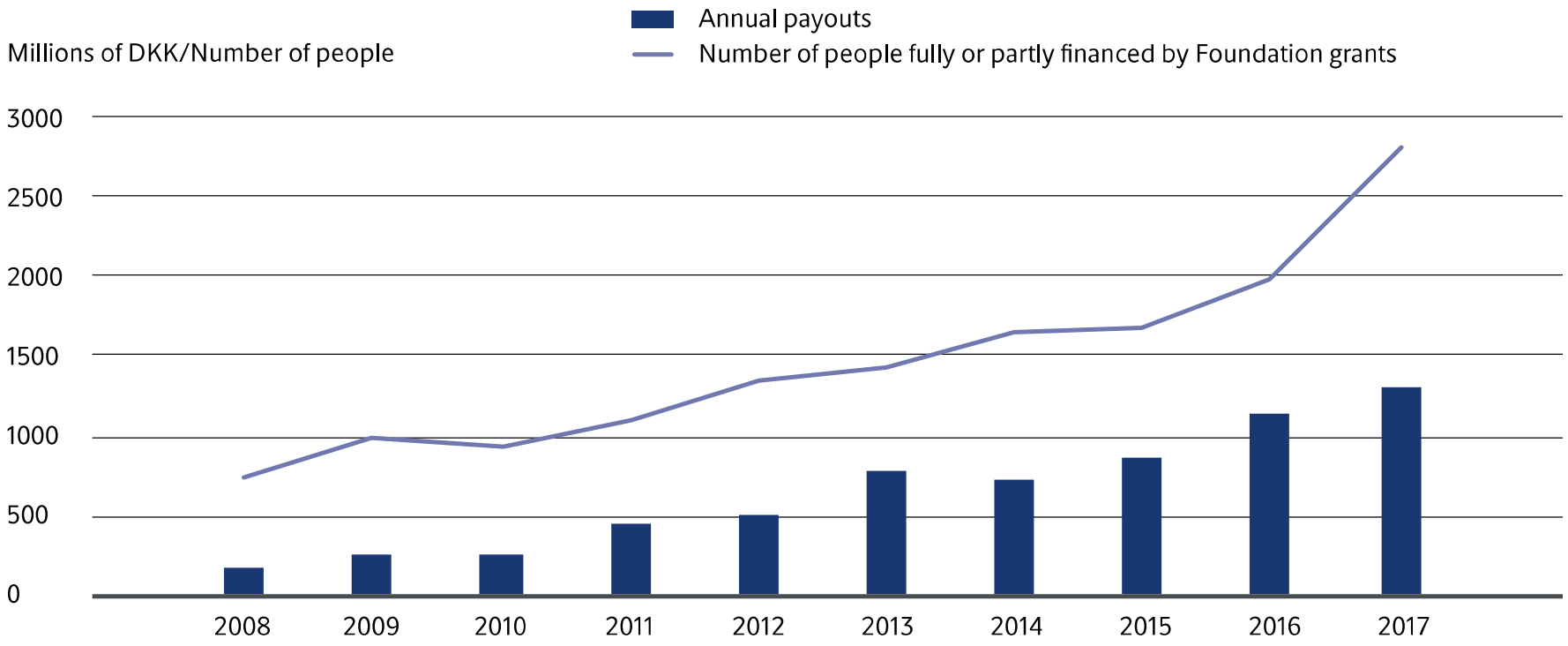
Collection of data



We use it for…

….counting

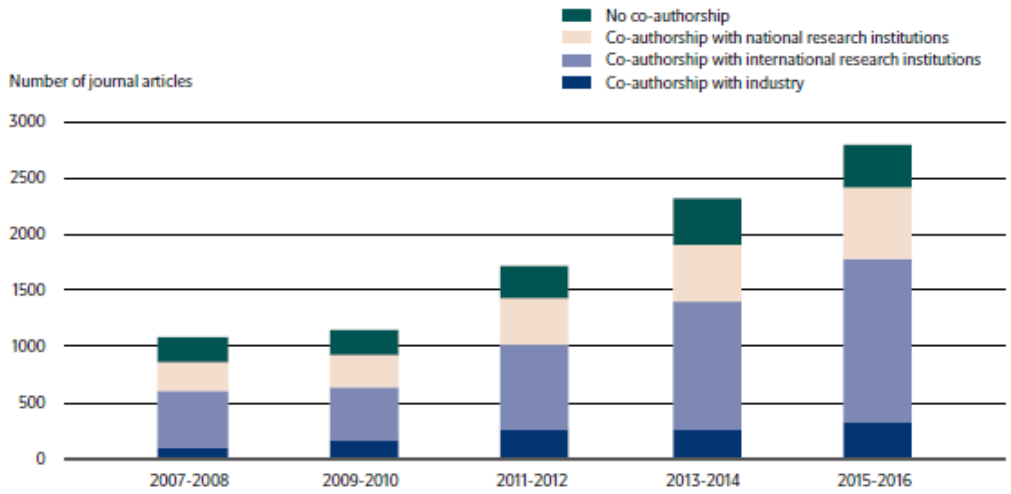
Payouts and people fully or partly financed by NNF



We use it for…

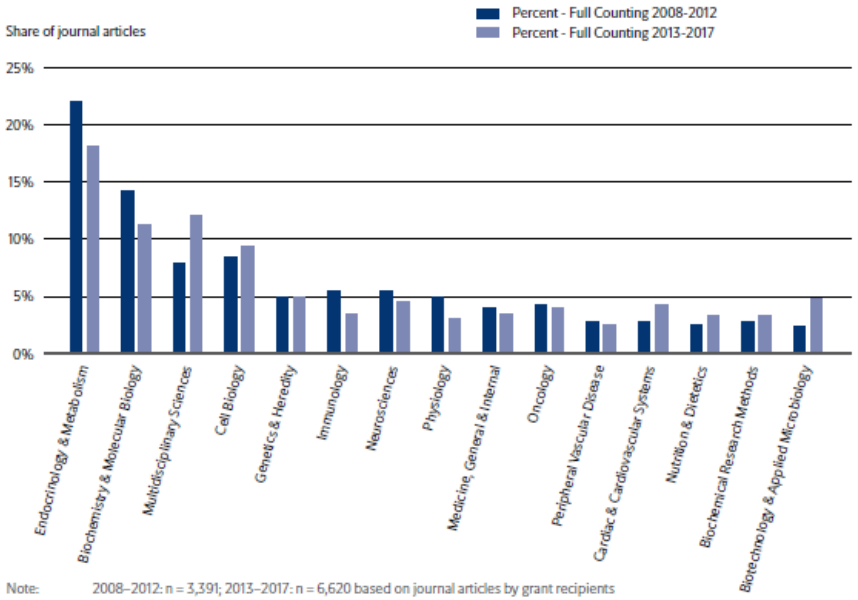
….academic output and citation impact

Number of journal articles by co-authorship, 2007–2016



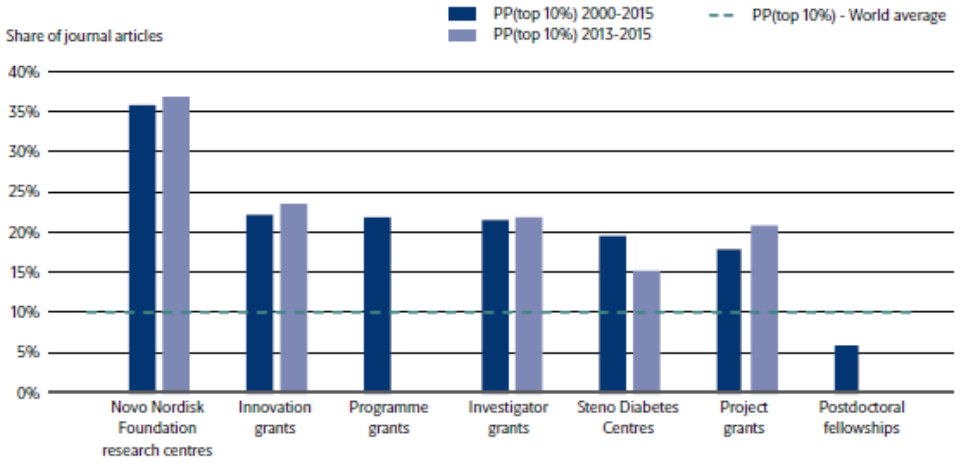
Note: The graph is based on journal articles from the Foundation's publication database validated in Web of Science.
Sources: Novo Nordisk Foundation/researchfish® and Danish Centre for Studies in Research and Research Policy.

Distribution of journal articles by grant recipients published in the 15 most common subject categories, 2008–2012 and 2013–2017



Note: 2008–2012: n = 3,391; 2013–2017: n = 6,620 based on journal articles by grant recipients registered in Web of Science. The figure above shows the 15 most frequently used subject categories.
Sources: Novo Nordisk Foundation/researchfish® and Danish Centre for Studies in Research and Research Policy.

Citation impact of all journal articles reported by grant recipients, by type of grant - PP(top 10%), 2000–2015 and 2013–2015



Note: For specification of the grant types, please visit http://novonordiskfonden.dk/en/ansogning.
For some grant areas, there are too few publications in the period 2013-2015 to reliably calculate PP(top 10%).
Sources: Novo Nordisk Foundation/researchfish® and Danish Centre for Studies in Research and Research Policy.

We use it for…

….narratives

Classification and prognostification of colorectal cancer

Colorectal cancer is known to have great inter-tumour diversity which means that the cells in the tumors can be very different. Tumours at the same stage can equally be very diverse and unpredictable. Due to this great diversity in colorectal cancer prognosis and response to treatment can be difficult to predict leading to both under- and overtreatment.

The research group under Jesper Bertram Bramsen has found a molecular-subtype-specific biomarker that can be used to improve the prognosis for patients with colorectal cancer. The research group has analysed 1,100 colorectal cancer samples, discovered three different cancer cells and five tumour archetypes and made it possible to find specific subtype-biomarkers. This subtyping-framework and the newly discovered biomarkers can be an important factor in improving the treatment and prognostics for colorectal patients.

There is annually 4,500 new cases and 1,900 deaths of colorectal cancer in Denmark, which accounts for 3.7% of all deaths. The findings are published and thereby other researchers can use the new subtypes-framework in their research.

3D printed, patient-fitted, resorbable bone implants

Associate Professor Morten Østergaard Andersen and his team have developed a new method and biomaterial for creating 3D-printed implants for replacement of resected or destroyed bones. The method involves designing a 3D model of the bone-implant from a computed tomography (CT) or magnetic resonance imaging (MR) scan of the patient. Based on the 3D model, the specific bone for the patient can be 3D-printed. The bone is printed in a structure that allows room for blood vessels, nerves and bone marrow that are essential for the bone to function. The biomaterial is resorbable in the body, and the 3D bone will degrade slowly and be replaced by natural living bone.

This invention is expected to reduce the rate of complications and pain related to bone implants and reduce healthcare expenditure. The Exploratory Pre-seed Grant from the Foundation has funded a clinical trial on pigs. If the results are positive, the next step is to provide the first implants for human patients. The team has created the start-up company Particle 3D to continue the development of the technology, and Martin Bonde Jensen, another founder of the start-up, has been recognized by *Forbes magazine* for his work as a leading talent under 30 years old within science and healthcare.

We use it for…

….tracking journal article citations in guidelines and use for treatment

Public research activity

Research activity conducted by the recipients of Foundation grants and published in journals. Grant recipients have published 14,429 journal articles since 2000.

Clinical guidelines

53% of the diabetes guidelines and 18% of the cardiovascular disease guidelines in Denmark and elsewhere reference journal articles by recipients of Foundation grants.

General practitioners

General practitioners continuously update their knowledge from multiple sources.

79% of general practitioners acquire knowledge about the treatment of diabetes and cardiovascular diseases from clinical guidelines; 65% acquire knowledge from journals, and 28% from journal articles.

Patients

74% of the general practitioners say that clinical guidelines have resulted in more uniform treatment of their patients.

23% of the general practitioners say that using clinical guidelines has improved the health of their patients, and 33% say that using guidelines has made treatment more effective.

We use it for…

….tracking journal article citations in patents

Public research activity

Public research funded by the Foundation.

Collaboration

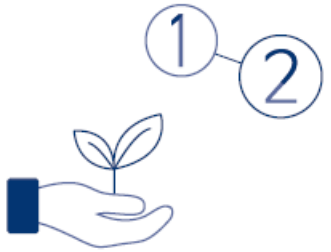
In 2017, recipients of Foundation grants collaborated with 266 companies in 351 collaborations; 26% of the companies were Danish.

Journal articles

Grant recipients publish their research in scientific journals.

Industrial researchers co-authored 11% of Foundation-funded journal articles.

Patent activities and citings



1 of 16 funded journal articles cited in patent applications and patents.

2600 citings of funded journal articles in more than 2100 patent applications and patents.

Recipients of Foundation grants reported 115 patent applications and 13 patents between 2013 and 2017.

Summary and conclusion:

- Linking input data to research outputs
- The importance of public research in the private sector
- Next step:
  - Ex-ante evaluation of new programs/initiatives (Interdisciplinarity, international collaboration)
  - Follow up analysis on industry collaboration
  - Identify measures of quality research

Thank you for your attention

novo nordisk fonden

20 September 2018, Berlin

Emporio I Room

Panel Discussion

Prof. Dr. Stefan Hornborstel (chair)
Dr. Tjark von Reden
Dr. Jörg Hellwig
Dr. Rikke Nørding Christensen

AESIS

20 September 2018, Berlin

Emporio I Room

Measuring outcome of academic-industrial collaborations

Chaired by: Prof. Dr. Stefan Hornborstel

Recommendation

Next up:

15.00-15.30	Tea & Coffee Break	Wintergarten B
15.30-17.00	Closing Panel: Conditions for creating a sustainable framework	Emporio I Room