

# Indicators of valorisation

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# Measurement of scientific performance is highly criticised

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Bibliometrics as common standard is biased (fields, language)

Only part of the performance story is shown by bibliometrics

numbers are misused, determine decisions without reflection

Outputs not outcomes/impact measured, value to society not recognized



# We should look for better approaches, not refuse performance measurement

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- refinement of bibliometrics
- integrate more aspects of performance into the multi-dimensional approach
- support decisions with data, not replace decisions
- and: look for indicators taking value to society into account



# Valorisation is an important concept to enlarge the scope of indicator sets

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Valorisation is the process of creating value from knowledge by making knowledge suitable and/or available for economic and/or societal use and translating that knowledge into competitive products, services, processes and entrepreneurial activity.

van Drooge et. al. (2013):  
Valuable – Indicators for valorisation

close to „applied sciences“ or  
„knowledge transfer“ – but stresses  
that it is an orientation for the whole  
process of knowledge production

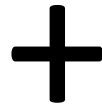


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# Looking at the use of valorisation indicators from two perspectives

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the usability and factual use of valorisation indicators in (international) comparative performance data systems



the relevance and implementation of process-oriented valorisation measurement supporting institutional strategies and decisions



# In existing international ranking and data systems we find hardly no valorisation indicators

THE ranking	
Indicators	weights (%)
teaching reputation	30
research reputation	30
citations	30
international staff + students	7,5
research income	2,5

Shanghai Jiaotong Ranking	
Indicator	Weight
SCI publications	20 %
Publications Science & Nature	20 %
Highly cited authors	20 %
Nobel Prizes & Field Medals	20 %
Alumni with NobelPrizes	10 %
Size	10 %

even few indicators relevant for HEI in Innovation Union Scoreboard (patent applications in societal challenges, public-private co-publications...)



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# There are three European projects trying to change this and integrate valorisation aspects

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U-Map

show activity profiles, „mapping“ of horizontal diversity (difference, not performance)

U-Multirank

show performance profiles, ranking of vertical differences

E3M

look for opportunities to integrate third mission activities into quantitative performance comparisons



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# U-Multirank contains indicators relevant for valorisation

## Knowledge Transfer

	Institutional ranking	Field-based ranking
• Income from private sources (service contracts, consultancies, licenses, royalties, trials, etc.)	●	●
• Joint research publications with industry*	●	●
• Patents (per fte academic staff)	●	●
• Co-patents with industry (per fte academic staff)	●	●
• Number of spin-offs (average over three year period)	●	
• Patent citations to research publications*	●	●
• Revenues from Continuous Professional Development	●	



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# U-Multirank contains indicators relevant for valorisation

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## Regional Engagement

	Institutional ranking	Field-based ranking
• Percentage of graduates working in the region	●	●
• Student internships in regional enterprises	●	●
• Degree theses in cooperation with regional industry		●
• Regional joint research publications*	●	●
• Income from regional sources	●	●



# U-Multirank made a critical evaluation of indicator usability (especially for international comparisons)

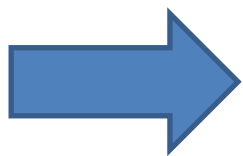
KNOWLEDGE TRANSFER	Rating of indicators (pre-pilot)						Feasibility score (post-pilot)				
	Relevance	Concept/construct validity	Face validity	Robustness	Availability	Preliminary rating	Feasibility score	Data availability	Conceptual clarity	Data consistency	Recommendation
Field-based ranking											
University-industry joint research publications *	▲	▲	▼	▲	▲	A	A	▲	▲	▲	
Academic staff with work experience outside HE	▲	▲	▼	■	■	A	B	■	■	■	
Joint research contracts with private enterprise	▲	▲	▼	■	▲	A	B	■	▲	▲	
Patents awarded **	▼	▲	▲	▲	▼	C	C	▼	▲	▼	Out
Co-patenting **	▼	▲	▼	▲	▲	B	C	▼	▲	▼	Out
Annual income from licensing	▼	▲	▼	■	▼	B	C	▼	■	■	Out
Number of licensing agreements	▲	▲	▼	■	▼	B	C	▼	■	■	Out

\* Data source: bibliometric analysis; \*\* patent analysis

# Valorisation indicators were also suggested in the European U-Map project

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- percentage of graduates from 2 years ago working in the region
- percentage of income coming from the region (public + private sources)
- numbers of exhibitions, concerts, performances in arts and architecture
- percentage of income from knowledge exchange (licensing agreements + research contracts + copyrights + CPD activities)
- patents filed / academic staff
- average number of start-up firms established



importance of adequate operationalisation,  
sometimes difficult to distinguish mapping  
from performance indicators



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# implementing valorisation indicators for institutional strategies and management needs a more comprehensive approach

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*Valorisation takes place and hence could be measured throughout the knowledge production process*



**other interactions with socio-economic environment**

quantitative indicators +  
qualitative information

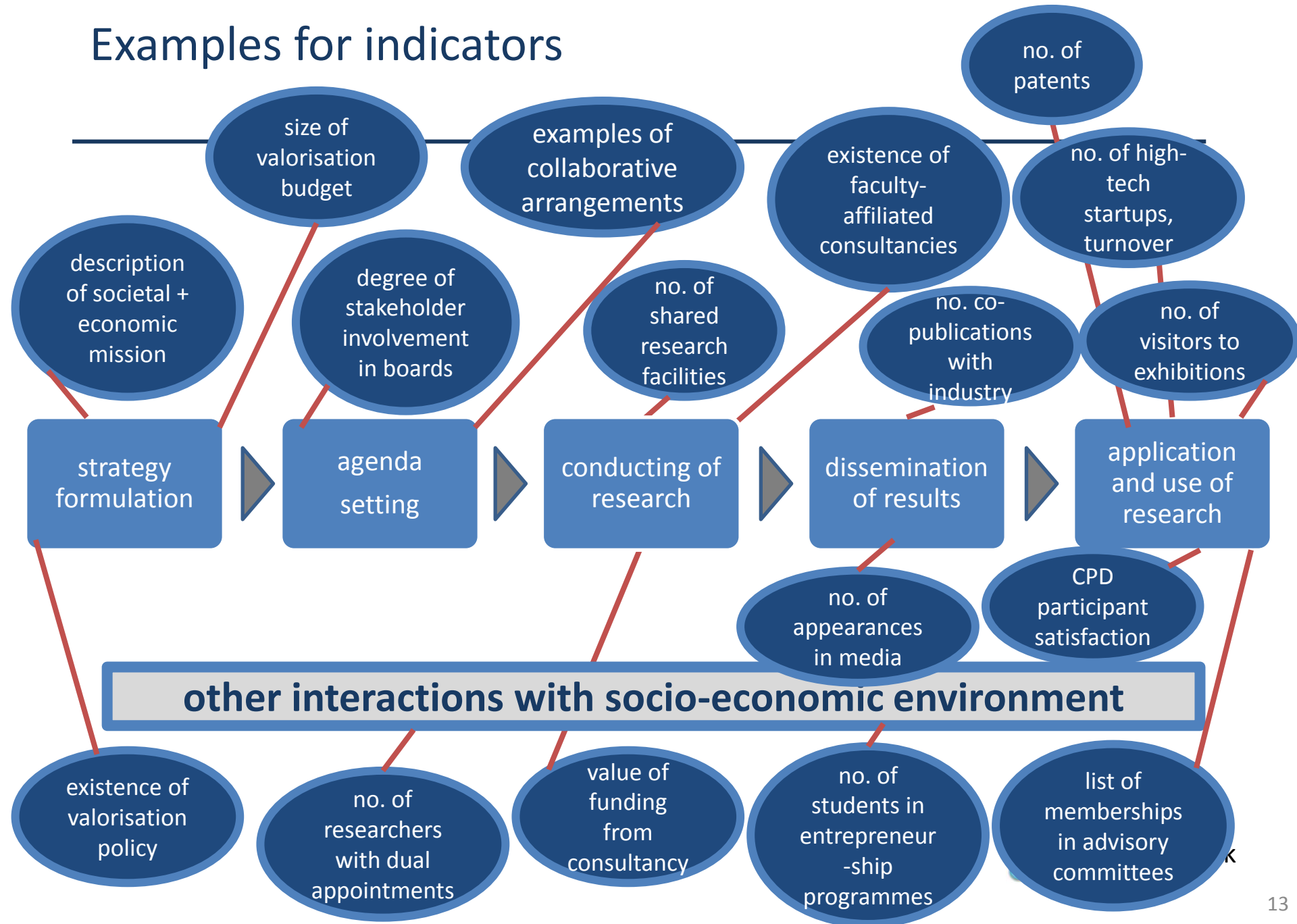


adapt to specific  
field and situation

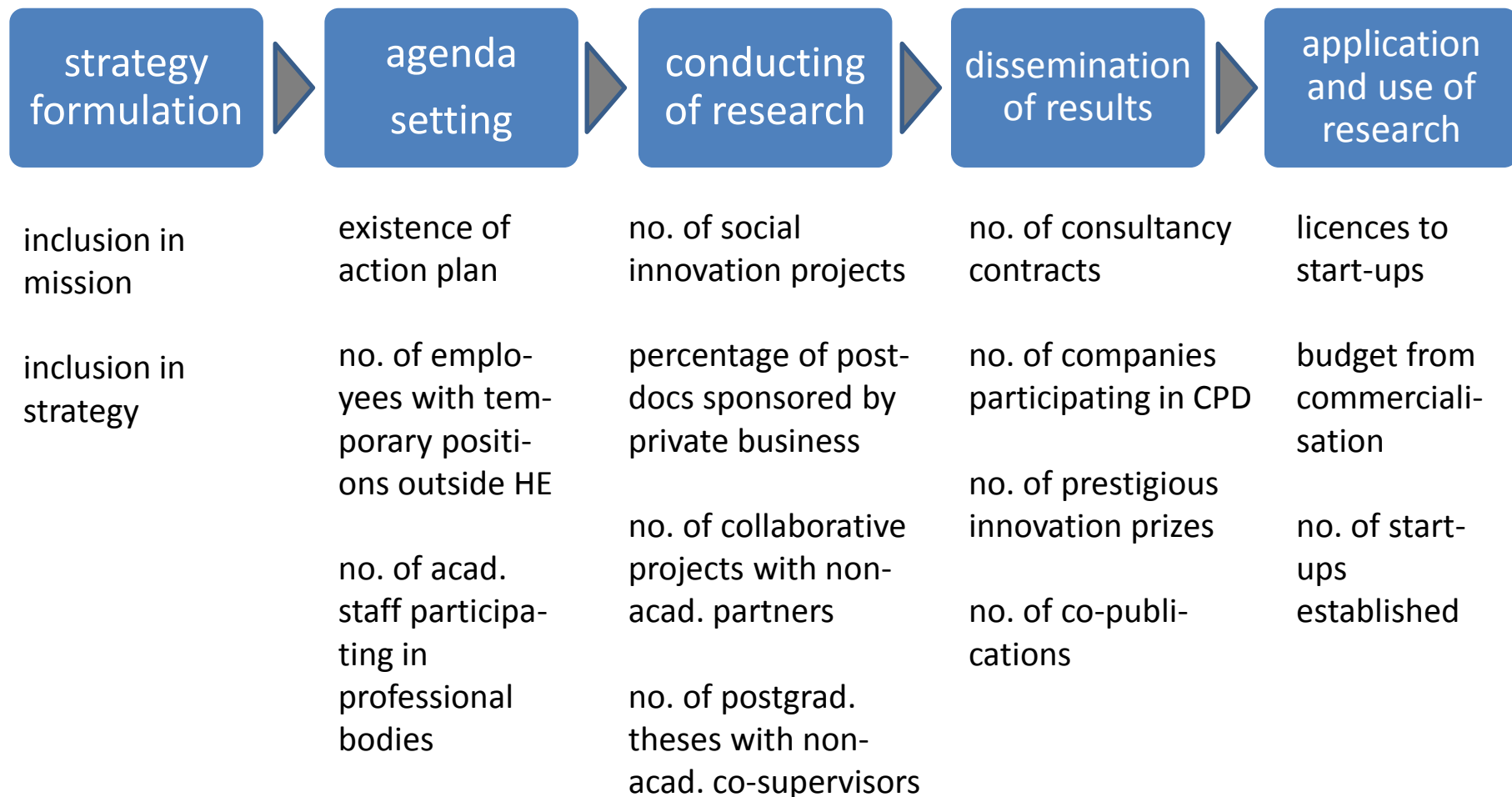


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# Examples for indicators



# the indicators suggested in the E3M project could also be structured with the process logic



E3M didn't manage to prove practicability



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# Tasks for application of valorisation indicators

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- **specify the object of analysis: indicator system made for specific**
  - actors/decision-makers
  - levels of aggregation (faculty, university, research council, ...)
  - disciplines
- **indentify the relevant indicators of valorisation, using the process model (easier without problem of international comparability, greater scope of usable indicators)**
- **link the indicator set adequately to discussions, decision-making and controlling processes**



# challenges

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- **lack of indicators for social and cultural innovation in existing indicator systems**
- **field-specific indicators, especially beyond technical fields**
- **measuring the impact of the whole eco-system city/region, taking into account the effect of being embedded into an eco-system**
- **how far to go below “the red line” (journal articles, peer esteem)?**





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