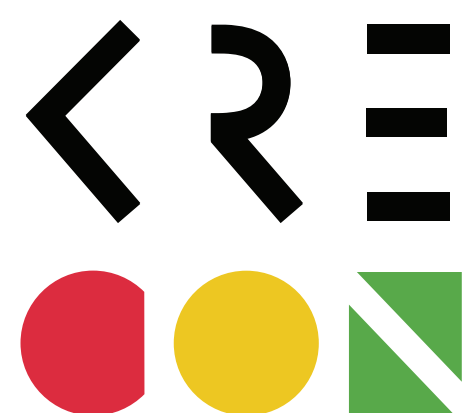
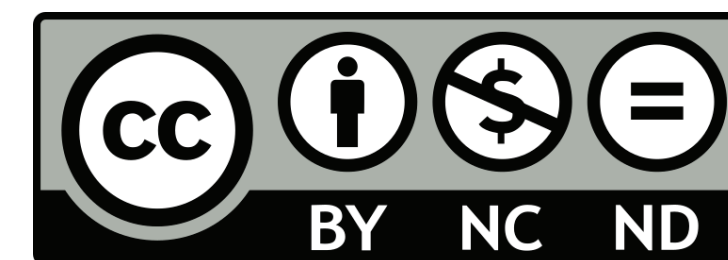




Knowledge
Research
Education
Conference
2025

13 – 14 November 2025
Cutting-Edge Research
Challenges and Opportunities



On Scientific Excellence

Gerd Folkers
ETH Zurich

NTK
50°6'14.083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology

National Centre for Information
Support of Research, Development,
and Innovation

MŠMT
MINISTRY OF EDUCATION,
YOUTH AND SPORTS



On „Scientific Excellence“

Gerd Folkers, ETH Zürich
KRECon Prague, November 13th, 2025

Editorial:

(...).Excellence depends on context. But scientists, funders and officials can do more to discuss and agree on some suitable basic principles. A news story last week, for example, revealed that more than three-quarters of research organizations in the United Kingdom have no policy for preventing the misuse of metrics in hiring decisions. Many of these universities consider themselves excellent. Others will disagree.[1](...)

[1] Nature 554, 403-404 (2018). doi: <https://doi.org/10.1038/d41586-018-02183-y>

Hiring Scientific Excellence@ ETH Zürich

established practice

ETH Domain Federal Department of Economic Affairs, Education and Research (EAER)

General Secretariat State Secretariat for Education, Research and Innovation (SEPRI)

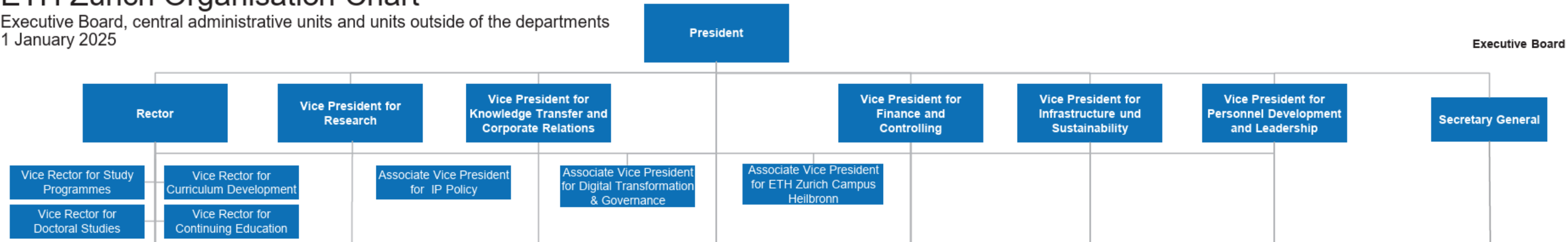
 **ETH BOARD** (strategic management and supervisory body)

The ETH Board consists of a President and ten other members, all of whom are elected by the Federal Council, including the presidents of ETHZ EPFL and PSI.



ETH Zurich Organisation Chart

Executive Board, central administrative units and units outside of the departments
1 January 2025



Appointments of professors

every professorship is
a new professorship

there is no
“succession”

long-term strategic perspectives,
including the planning of
professorships,
current strategic indicators
development,
status and potential of the branch
of study, impact and capacity for
innovation, integration and
competitiveness,
resources needed and their
availability

Appointments of professors

active search for candidates:

the corresponding department

the selection committee in charge of
assessing

the applications

the president

selection committee:

invites four to six candidates,
visits to ETH

formulates a recommendation
to the president

Appointments of professors

Criteria

[scientific excellence](https://ethz.ch/en/research/research-promotion/research-assessment.html)

<https://ethz.ch/en/research/research-promotion/research-assessment.html>

ability to teach with enthusiasm

[leadership skills](#)

establish an internationally visible research
group,

develop each individual team member
great commitment within the academic
community

renowned interest in the knowledge transfer to
the benefit of society and the industry.

Peer review & metrics

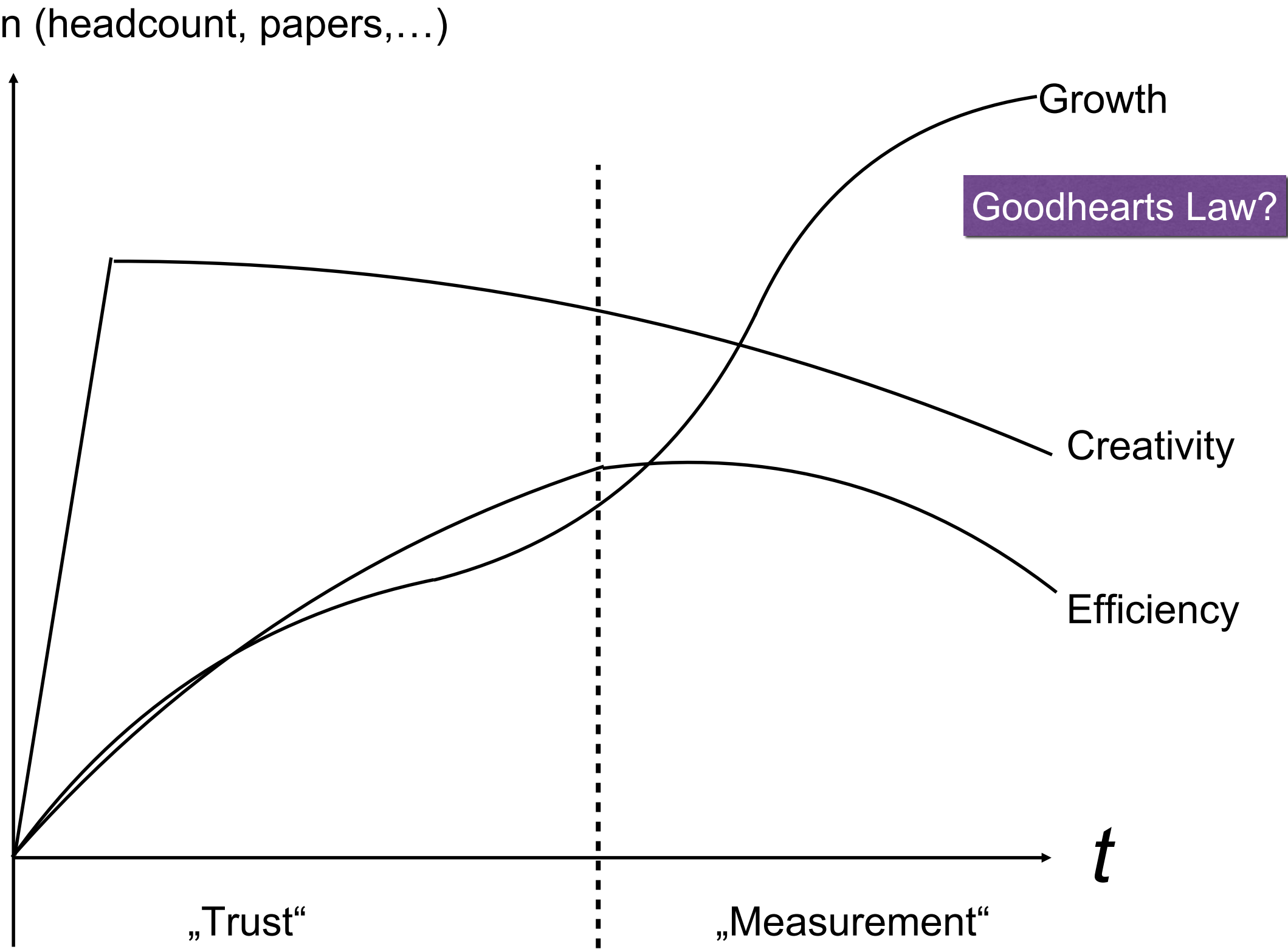
Some criteria for the evaluation of scientific work?

„To do research means to produce scientific knowledge about a subjective experience (...)

- a) ask WHY questions
- b) search for systematically ordered answers,
- c) proceed methodically ordered,
- d) justify statements by reasons and evidences in their validity
- e) leave behind strangleholds of ideology and false authority.“

Günter Abel, Die Transformation der Wissensordnungen und die Herausforderungen der Philosophie. Allgem. Zeitschr. f. Philosophie, 34, 2009, S. 5-28

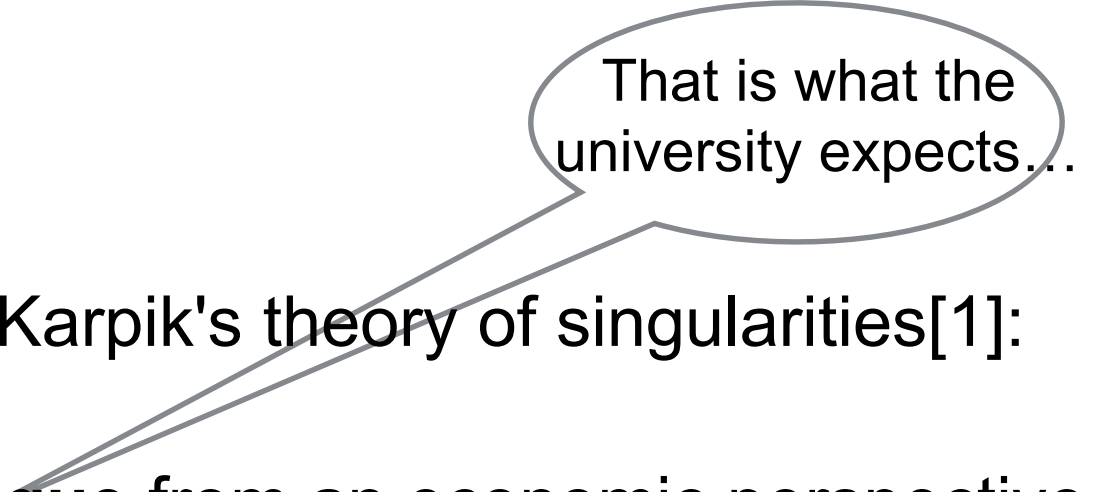
Science becomes an enterprise



- With the factual orientation toward KPIs, one incurs a systematic problem, because **Goodhart's Law** applies:
- «When a measure becomes a target, it ceases to be a good measure.»
- So, it says that when a measurable property is made a goal, it ceases to be meaningful as an indicator of the actual goal. If a certain citation index, h-value, etc. is necessary to obtain a position, many people will strive for this value and be able to show it when applying. Does this automatically mean they bring the quality the university needs or wants? It just says that they bring the quality of fulfilling the numbers required.

(My) Hypotheses

- To gain insight and uncover surprising new problems, instead of “merely” accumulating knowledge is the hallmark of scientific activity and must begin with Master students at the latest.
- Part of a scientist's attitude is the ability to radically question their entire "work" — a fundamental self-criticism. Research must incorporate this aspect in order to mature into true science.
- Peer's evaluation of scientists can find „excellent“ people **in their either discipline** but is not very successful in finding „excellent“ people **for the future** development of their discipline.



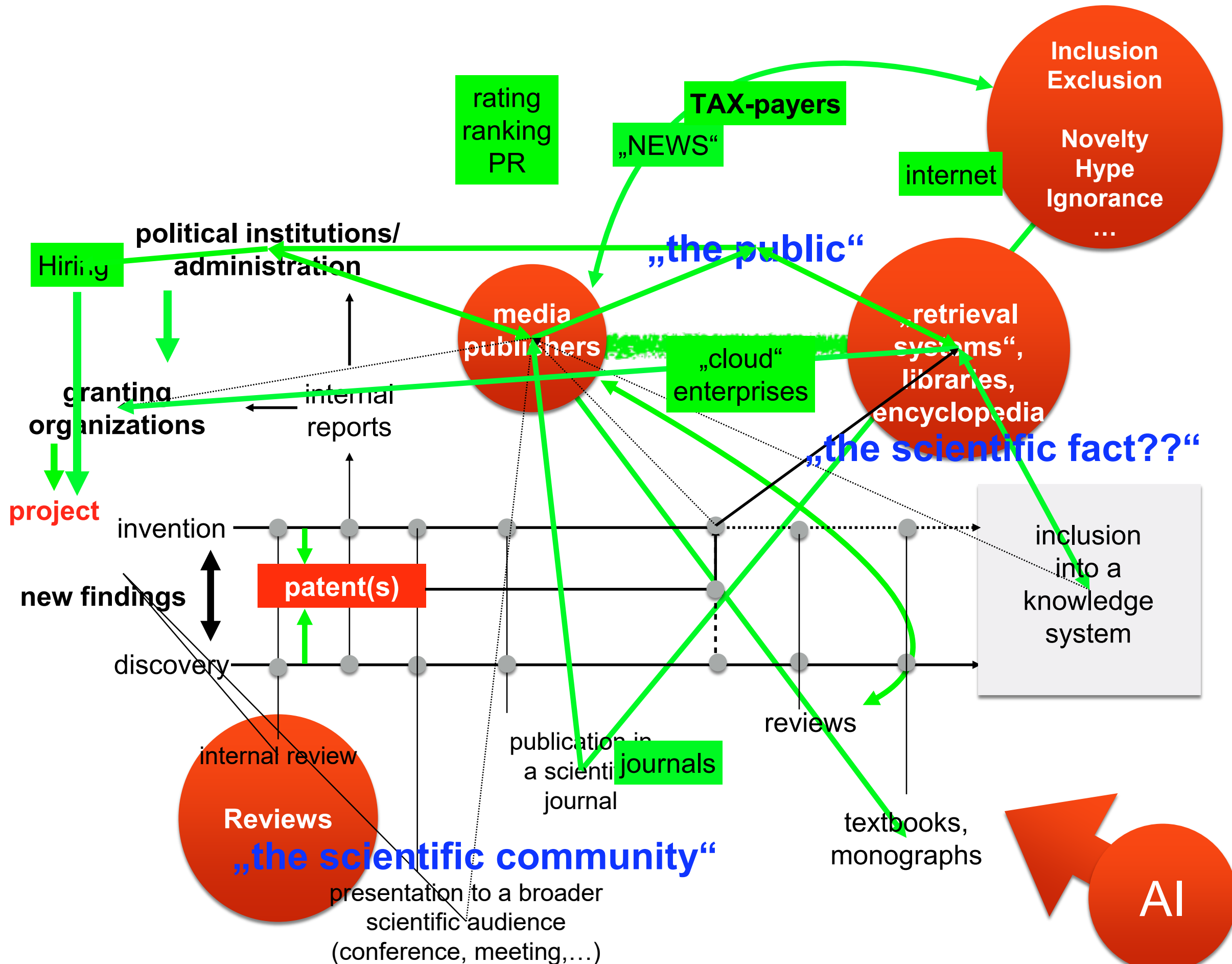
That is what the university expects...

- The hypotheses are supported by Karpik's theory of singularities[1]:
- Professorships are something **unique** from an economic perspective, which cannot be achieved with simple measurement methods (quantity, price, ...), can be judged like **commodities**, but their assessment depends on **judgement** devices, such as peer opinions.
- However, these peer opinions also come about differently in different disciplines. They reflect the research culture of the discipline.
- It inevitably follows from this that either the current form of the electoral commissions, in which the peers often prevail, must be questioned and replaced by a different procedure, or that the members of the electoral commission should also be psychologically empowered to resist the **fear of peers**, to give constructive criticism in the meeting and to endure controversy.
- [1] Karpik, Lucien.a) 2010. Valuing the Unique: The Economics of Singularities Princeton UP. b) 2011. What is the Price of a Scientific Paper? In The Worth of Goods. Valuation and Pricing in the Economy, eds. Jens Beckert and Patrick Aspers, 63–85. Oxford/New York: Oxford University Press.

Research Science

How? Why?

indices
rating
ranking



— scientific community
— economic drivers

(my) ideal type of an „independent“ scientifically active person: "high potential"

- ...for whom science is first and foremost a vocation and only secondarily a career.
- ... who identifies with the values of the institution and has an exemplary effect on his environment, and who, as researcher and teacher, return to a responsible teacher-student relationship in the classical sense, instead of a mere legal securitization of a dissertation, the critique and supervision of which is in the hands of other, often temporary, employees.
- ...builds a bridge between the natural and technical sciences because he/she is open and capable enough to transcend disciplinary boundaries.
- ...initiates a development in the direction of causal questions, instead of incremental, always the same, modal research.