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***The Balancing Role of Evaluation in Organizational Governance: An International Comparison of Publicly Funded Research Institutions***

**Abstract:** Introduction

Publicly funded non-university research institutions are significant academic contributors to maintaining national innovation systems. They are expected to deliver excellent research, often problem-oriented, and also to provide scientific evidence for national policy-making. With these missions, their performance evaluation systems are designed to consider both legitimacy and justification of public funding, and the appropriateness of their own organizational strategies. We expect that the interests of diverse stakeholders, such as funding bodies, the wider scientific community, research funding councils, collaborating universities and enterprises, and the general public are reflected in the institutions' organizational governance and related evaluation motives. Do evaluation mechanisms and practices help to balance potential stakeholder conflicts, through which procedures and with what outcome?

We studied three umbrella organizations: the Max Planck Society (MPG) and the Helmholtz Association (HGF), two of the four German non-university research institutions, and the Chinese Academy of Sciences (CAS). All three are key non-university institutions publicly funded through stable institutional funding and external project funding, with numerous institutes conducting research in various domains. They are governed by central headquarters, while their research institutes enjoy varying degrees of autonomy and freedom. Their evaluation mechanisms have experienced decades of development and learning and now are integrated and mainstreamed in the organizational governance. Yet, each of the three institutions has its own sophisticated evaluation procedures which are closely in tune with particular organizational mission, strategy and orientations. Our research question is: do the Institute Evaluation Mechanisms (IEM) and practices implemented by the three institutions help to balance interests and expectations of the various stakeholders' concerning three aspects of organizational governance: strategy, funding and operation?

Increased S&T collaboration between Germany and China is opening up in mutually beneficial areas for long-standing relationships. The institutional examples of the CAS-MPG Partner Institute of Computational Biology since 2005 and the Helmholtz Beijing office opened in 2003 are included in this study.

**Methodology**

A logic chart drawn up for each case starts from the organizational mission and strategy to the purposes of institute evaluation. Then it goes to practical procedures and potential impact on internal decision-making and external policy implications. During the whole process (preparation, organization, implementation and reporting), the stakeholders' interaction and communication activities are analyzed around potential conflicts: strategy, funding and operation. Finally, a comprehensive analysis with comparisons tries to find out

whether and how the balancing function works in various contexts.

The IEM is defined in this study as a three-level hierarchical model. The macro-level is a central supervisory body (L1) that makes the regulations, organizes the inspection and analyze final reports. Specific research institutes (L2) at the meso-level are evaluated by review panels through a series of procedures with particular focus and concerns, and the micro level of individual participants (L3). Data were retrieved from literature and public documents on websites of the MPG, the HGF and the CAS. Qualitative data are from 57 in-depth individual interviews at the three levels of the respective IEM.

#### The MPG

The MPG has a mandate to expand the boundaries of knowledge by pursuing basic research at the highest level. Thanks to public funding, MPIs (Max Planck Institutes) are able to conduct knowledge-oriented research in an open framework and without ties to specific applications.

MPG's strategies and corresponding evaluation procedures entail the following:

- (a) Best research worldwide from person-centered research institutes
- (b) Fostering creative and potential talents
- (c) Globalized knowledge creation and transfer

#### Balancing role of IEM vis-à-vis stakeholders

The MPG's evaluation procedures and criteria are continuously reviewed in order to ensure the top knowledge-oriented research. Frequently and updated evaluative information reflects the current potential of the institutes and discussion of the Society's prospects. The MPG's governance of institutes allows for a high degree of independence and scientific freedom. Transparent evaluation principles and procedures with convincing involvement of stakeholders contribute to the external legitimation and justification of high public funding.

#### The HGF

HGF contributes to solving grand challenges of society, science and industry by performing top-rate research in strategic programmes in six particular fields. Its research focuses on systems of great complexity by using large-scale facilities and solid research infrastructures, with aims to preserve and improve the foundations of human life at the interface between science and public policies.

HGF strategies and corresponding evaluation procedures entail the following:

- (a) Programme-oriented Funding (PoF) for scientific research in six fields
- (b) Using complex infrastructures and unique large-scale facilities
- (c) Cooperation with national and international partners, talents training and technology transfer

#### Balancing role of IEM vis-à-vis stakeholders

The PoF sets overarching policy goals rather than a multitude of isolated measures through the Strategic Guidelines from funding bodies and Position Paper of each research field. They are the result of multi-level dialogues among science, politics and industry. The PoF evaluation balances the collaboration and competition of each programme and the

involving centers with different scales and strengths.

#### The CAS

As the national academy of natural sciences, CAS is a significant contributor for the national innovation system with governance features of strong central government leadership in setting strategic directions, objectives and policy frameworks.

CAS's strategies and corresponding evaluation procedures entail the following:

- (a) Major R&D outcomes from various institutes under the control of Headquarter
- (b) Training of high quality scientific talents and incubating high technologies in China
- (c) Accomplishment of Long-term S&T Programmes with policy orientation

#### Balancing role of IEM vis-à-vis stakeholders

Without any permanent structural units like Senates in Germany, external stakeholders from politics and business are much less involved in the CAS. The CAS as a whole is characterized by complex research orientations and abstract mission statement which is interpreted by individual institutes in flexible ways. The national policy requirements permeate scientific work of CAS institutes through specialized programmes or projects. The knowledge transfer from scientists to the general public is emphasized by all three, but the German organizations specifying it in evaluation criteria which affect final rating and recommendations, while the CAS does not.

#### Tentative Result

The three IEMs indeed consider and reflect governance conflicts in their procedural designs given their particular organizational missions and research orientations. The institutionalized evaluation procedures including stakeholders' communication and interaction all experience long-term learning processes. The German cases show active participation of different stakeholders as their structural "Senate" members. The MPG has the most frequent scientific evaluation with the least thematic and public policy requirements, which implies very few conflicts about strategy and operation on all three levels. And the Society as a whole is a legal entity which restricts the institutes' developmental autonomy. But its orientation towards curiosity-driven research boosts an open framework with adequate central support and promotes scientists' freedom. The HGF – as an association of quite heterogeneous research centers - faces the strongest top-down strategic impacts thematically and financially, and competition for additional funding among their centers via shared programmes. The PoF evaluation prioritizes strategic relevance as criteria for funding, and empowers the scientific quality control to the Mid-term Review of centers. The complex and scatted research orientations of the CAS result in strategic and financial conflicts under the typical top-down governance. The newly developing "One-Three-Five" Evaluation emphasizes major scientific outputs from institutes, aiming at increasing insufficient institutional funding to focused strengths and decreasing institutes' administration, which is expected to balance governance conflicts effectively. Although under significantly different contexts of politics, economics, and governance cultures, in all three cases the IEMs perform a balancing function. The communication and interaction patterns of involving stakeholders in the IEM help to mitigate conflicts about strategy, funding and operation to varying degrees. Specifically, the central supervisory body (L1) balances the external legitimacy and justification of public funding, and internal

governance of heterogeneous research. The institutes (L2) balance following organizational strategies and developing autonomously considering the characteristics and structure of each research field and discipline. The balancing role of evaluation in S&T organizational governance particularly implies experimental evidence for national STI policy-making and learning.