# GOVERNANCE ASPECTS IN THE EU RESEARCH POLICY TO SUPPORT INNOVATION

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## Abstract

The paper is devoted to the governance issues in the implementation of EU research policy. Part of the research was carried out within the framework of the European Union 7th Framework Programme (FP7) Project "The Ethical GovernAnce of Technologies" (EGAIS *http://www.egais-project.eu/*) at the University of Namur, Belgium. Our attention was focused on the ethical issues in the implementation of the respective EU policy, since ethics has become an indispensible part of today's EU research policy. The collected and analysed empirical data within the EGAIS project research have provided material for our furthter research in the field. The author has continued her research at the University of Latvia, and her interest has been targeted at more recent developments and challenges in the EU research policy with the related governance issues. It concerns, among other things, the governance regarding the framing and implementation of innovative approaches in research and development, linked to the notion of responsible research. It is particularly challenging due to the potential risks that need to be addressed in the public administraiton of research and innovation, especially under the conditions of high degree of uncertainty that the world faces today.

In the paper the author traces certain tendencies that become visible in the continuosly changing governance apporaches in support to innovative research and development, including the inherent ethical aspects.

## Introduction

Today the public policy making is changing in a fundamental way, also due to the introduction of digital media, and due to the impact of modern technologies on the society as a whole. On the one hand, the public policy making has to take this into consideration when implementing its research policy. On the other hand, the public policy making and public administration is itself subject to these new developments. Consequently, the public administration cannot be viewed separately from these tendencies. Technological development, society and public administration have become mutually contingent, including the ethical dilemmas that emerge in the context of technological research.

As pointed out in the Work program 2011 "Science and Society", in the terms of the Seventh Framework Programme, activities in the field of Science in Society aim to "stimulate, with a view to building an open, effective and democratic European knowledge-based society, the harmonious integration of scientific and technological endeavour, and associated research policies in the European social web, by encouraging pan-European reflection and debate on science and technology and their relationship with the whole spectrum of society and culture" [8].

The present paper will be based in the initial findings yielded from the author's research within the framework of the European Union FP7 Project "The Ethical GovernAnce of Technologies" (EGAIS http://www.egais-project.eu/) at the University of Namur, Belgium regarding the involvement of various stakeholders in securing ethically sound innovative technological developments and the views of relevant public administrators regarding the challenges that need to be addressed in this context. Further on and proceeding from these findings the author will attempt to present other findings and conclusions based on continued studies on the changes in modern governance patterns, especially regarding responsible research and innovation.

**Involvement of Multiple Stakeholders**

Research policies and the respective governance issues with their ethical implications today has become part of public discourse – as political, legal and social debate. At the same time "the rise of ethics as a public discourse may be interpreted as a symptom of the moral crisis arising in complex modern societies that can neither be solved by an implicit or explicit moral tradition nor by state policy alone"[9]. The novelty of the present situation is that "ethics is considered to belong to the public debate at an institutional political level"[9]. Thus, we can see that ethical discourse on science and technologies is not any more a prerogative to any particular social, religious, academic or political group, but has become contingent on multiple stakeholders.

While recognizing society as an important actor in the debate on research and development, we have to point to several important aspects of general nature that create difficulty in addressing the potential problems, including the ethical issues. In the context of the new global risks and the unprecedented degree of uncertainty people find it difficult to position themselves regarding what is an ethical action or approach in relation to technological development, and in what way and how far our individual responsibility reaches.

Consequently, we are faced with the dilemma of our individual versus collective role responsibility. These are the two sides of the dilemma – to face the inherent potential uncertainty of the effects of technological developments and to chose the best possible way for action at individual and also societal level. As argued by Kimppa, it is important to address these issues in order to preserve an ethically viable society: "The unintended consequences of rapid technological development and explosive knowledge creation have decreased the area of personal ethical choice by directing the possibilities open to us and at the same time closing other possibilities. Personal and institutional changes – increases in roles and in institutions – have also decreased opportunities for personal ethical choice. Since role responsibility – which follows from these – is clearly not enough for the new technologically and socially complex

times, we need an ethics of collective responsibility. Discourses, fact analysis, foresight, even constitutional change may be needed to ensure an ethically viable society" [3].

In order to addrees these problems in a concrete way, within the framework of the EGAIS project an empirical study was carried out, based on the theoretical framework developed within the EGAIS project. In the subsequent chapter of the present paper we will present the analytical grid the author of the paper developed within her EGAIS project research in order to be able to prepare a questionnaire for the interviews with the relevant EU officials. The interviews became an important source of information regarding the implementation of ethical framing of FP7, including the governance issues. Based on the results of the interviews we were able to draw conclusions regarding our research problems. Further on the background of our empirical study will be presented and the key approaches for yielding results outlined.

## Empirical Study – Based on the Analytical Grid

As a result of our empirical study through interviews [11] with relevant EU officials we were able to identify the key challenges in the governance of the EU research policy within the framework of the EU 7th framework program, as perceived by these stakeholders. Here we will shortly present our analytical grid. It was based on the theoretical framework of the research within the EGAIS project. The analytical grid was necessary for the development of the questionnaire for the field study (interviews). The questionnaire had to be based on a solid theoretical background, in order to collect data for analysis regarding the ethical framing of the FP7 research policy. The key steps in the development and implementation of the analytical grid were:

1) determining the domains for analysis:
    a) ethical issue identification and specification; b) governance arrangements; c) implementation; d) ethical approach; e) reflexivity;
2) specifying the parameters within each particular domain;
3) formulating the questions for the questionnaire (for interviews) – in order to yield data and material in compliance with our parameters in each specific domain for analysis;
4) creating a grid for analysis of our empirical findings by taking into consideration:
    a) our field of inquiry – the representation of ethics and governance reflexivity in technological research and development, as part of EU (FP7) ICT research policy within the EU 7th Framework Program; b) our research problem – the effectiveness of ethical reflexivity in FP7 ICT research projects as part of the implementation of EU research policy; as well as the focus of the present thesis on the governance arrangements in the implementation of the FP7 framing.

Further on we will mainly concentrate on the domains for analysis and the questionnaire, since these are the issues relevant for our present paper.

*Domains of analysis and parameters.* The parameters we were interested in were organised according to the domains (aspects) of analysis outlined above. We did not intend to give an exhaustive description of the content within each domain, but instead we intended to give an orientation by presenting the parameters as basis for our questionnaire.

1. Ethical issue identification and specification

In this domain it was envisaged to identify – how policy makers determine what ethical issues to look for and how to identify them in general terms. Our interest was focused on – what sort of framework is used to decide what issues are ethical.

2. Governance arrangements

In this domain it was envisaged to identify the governance arrangements and approaches. Our interest was focused on – what institutional arrangements were implemented within FP7 to deal with ethical issues. The key institutional arrangements we were potentially implying were:

- *Ethical guidelines*
  a) to assist proposers in identifying potential ethical issues arising from the proposed ICT research.
- *Ethics check list*
  a) to identify the main ethical dilemmas that arise in research and indicates how each topic might be addressed to ensure compliance;
  b) to promote identifying the expert(s) within project promoter's organisation or consortium that can provide further advice.
- *Experts and expert panels*
  The experts evaluate the projects as to the existence of ethical issues.
  Expert panels come to a uniform approach.
- *Ethical Committees*
  a) These are National Ethical Committees which verify the compliance of the research to the specific national legislation;
  b) Thet ensure ongoing discussion and deliberation on ethics and ethical framework in research.
- *Ethical Review procedure and Ethics Review report*
  a) a procedure to secure compliance with the FP7 ethical framework.
  b) assistance to project promoters.
- *Ethical follow up and audit*
  a) a monitoring and preventive measure;
  b) assistance to projects.
- *Public consultations*
  a) carried out in the process of adoption of certain relevant documents within the FP7 ethical framing. For example, when adopting the Ethical Guidelines;
  b) used when discussing controversial research issues.

3. Implementation

In this domain it was envisaged to look at the implementation of the FP7 ethical framing. Our interest was focused on – in what way the FP7 ethical framing is being implemented in practice and if the results of implementation are in compliance with the intended effect.

4. Ethical approach

In this domain it was envisaged to look at the theories, approaches or principles that have been used in the development of the FP7 ethical framing. Our interest was focused on – what have been the underlying assumptions when developing the specific ethical framing.

5. Reflexivity

In this domain it was envisaged to look at the different levels of reflexivity existing within the respective institutional settings and in the development and implementation of the ethical framing (if there is also second order reflexivity present). Our interest was focused on – not only the way how ethical issues are being determined but also if there is reflection on the very process of determining of what an ethical issue is (what is the role of experts and ethical committees, should ethical guidelines be used etc.). Our interest also lies in determining if the governance arrangements are suited to address potential ethical issues before they arise and are there arrangements that allow the involved actors (stakeholders) to overcome the presuppositions of specific framings.

*The questionnaire.* The questions that arose within the domains according to the parameters were incorporated into the questionnaire. The questionnaire potentially involved responses allowing for analysis of he nature of the construction of the ethical norms and the existence of ethical reflexivity in the respective EU research policy and within its governance arrangements.

*Implementation of the analytical grid.* This exercies (that we performed during our research in the EGAIS project only partly bears link to the research interest of the present paper. Therefore, only key issue swill be presented for more comprehensive information purposes.

By the implementation of the analytical grid we understood the yielding of data and material from our field study (results of the analytical grid). After the results had been obtained, we had to assess these results, so that we could determine the effectiveness of addressing ethical issues in EU research policy regarding FP7. We also wished to assess the effectiveness of institutional governance arrangements.

What we were especially interested in was to discover the extent of reflexivity in the respective governance arrangements, specifically, how the framing of the problem is being addressed and whether reflexivity is present. Were also interested whether there was reflexivity on the conditions of discussion and whether there is reflexivity of the reversibility of the construction of the norm (i.e., the construction of the parameters that will condition the insertion of the norm into a concrete world) – these were specific EGAIS prioject research questions. Finally, we wanted to see if the relationship between the context and the norm is being constructed, and what are these relationships.

We also tried to see if in the governance approaches by the European Commission a particular issue had any particular effect on the ethical framing (ethical trajectory change) or changed the governance procedures.

We would like once more to point out that our analysis was rather qualitative than quantitative. Therefore, we much relied on the empirical material obtained through our interviews in order to: identify the various governance tools; asses their effectiveness; see how justified is the use of these tools. This enabled us to see how ethical issues are being determined, how the problems are framed, and how change in the framing is carried out regarding for improved and innovative governace arrangements.

**Some of the Results of the Empirical Data Analysis**

As a result of the empirical data analysis we were able to identify certain problems as perceived by the relevant EU officials in relation to governance issues in the context of innovative research policies. The key challenges and drawbacks referred to by EU policy makers in their interviews were stated or implied as follows (in order to present an overview we performed some generalisation of the presented problems according to our research interest):

1) The unprecedented level of uncertainty in research has created a new technological culture and also ethics needs to be addressed in a new way;
2) Ethics is being seen as a questionable field for legally binding norms;
3) The historically novel contradictions that exist between the value spheres cannot simply be eliminated through political decisions, and political system must react independently of the subjective will of political actors;
4) Limitations by individual decision making;
5) Limitations of collective decision making;
6) Negotiations with social groups under the conditions of unequal power;
7) The question of the relationship of ethics and the effectiveness of respective legally binding norms regarding ethics remains open;
8) Non-ambiguous roles and capacities (mandates) of various stakeholders;
9) The very democratic procedure may not any more be an answer in principle regarding the various interests of stakeholders;
10) The divide between the ethical and scientific communities;
11) The current mode of institutionalisation of ethical expestise.

Apart form these empiricla findings, we did relevant literature search, including EU policy papers. Much in compliance with our empirical findings, Von Schomberg, for example, points out that "the need for a differentiation of authorized discourses stands at odds with the impossibility of such differentiation on the level of actual problems" [4]. Thus, clearly, there is an indication that the problem of ethics cannot be addressed purely on the level of content, but structurally new solutions need to be sought. Furthermore, according to Schomberg, the major ethical challenge we face today is that "techno-scientific applications can remain ethically problematic even in cases where scientists and engineers have the best possible intentions and users have not conscious intention to misuse or abuse" [5].

As pointed out by Schomberg, "as a minimum we would require an ethical framework that addresses both the aspect of unintended side consequences (rather than intentional actions) and the aspect of collective decisions (rather than individual decisions) with regard to complex societal systems" [5].

According to Von Schomberg "a successful response to uncertainty is not a question of what the better political option might be, but rather a structural reaction to the growing problem of uncertainty, which could usher in a new evolutionary stage of social development [4]. Consequently, we could come to a conclusion that the challenges of governance of technological research we identified during our empirical study are much in compliance with the theoretical approaches presented in relevant EU research and innovation policy papers. This strengthened our interest in further studies in the field, and in the subsequent parts of the paper

we will discuss some possible approaches for further discussions and research in the field of ethically sound research governance.

## Is Compromise at Moral Level a Solution?

To develop further on on some innovative approaches to ethical public administration of research and innovation (and being aware that processes in society cannot be controlled or directed by arbitrary means and being aware of a need for a comprehensive and in a sense "realistic" approach), we would like here to present the notion of 'compromise' with all its implicit positive and negative connotations. In the context of public deliberation, according to Bohman, "compromise in an ordinary sense is all about coming to an accommodation or making concessions". It involves tradeoffs and balances of interests – making concessions of one's own for equal by others. If these interests are backed by moral reasons, we often evaluate such tradeoffs or concessions as involving "compromising" ones beliefs or losing integrity [2]. At the same time Bohman points out that "in cases where 'common human reason' gets us no further, there is no other choice but to reach a compromise at moral level [2].

Moreover, for deep conflicts Bohman sees some form of public compromise as inescapable. He argues that "cultural disagreements do not only have their source in difference in values. Different cultural frameworks may assign various problems or issues to different forms of reason; these disputes are about justification and adjudication themselves and thus give rise to the need for the exercise of public reason" [2]. Consequently, we can conclude that the complexity of the issue of ethics is not rooted solely in the difference of values (which by itself is an important aspect in the overall EU policy), but is heavily rooted in the potentially different forms of reasoning. This should be taken into account also when deliberating on the various forms of governance, also with regard to ethics in research and technological development.

## Capacitation of Actors versus Moral Compromise and the Role of Learning

Once again reflecting on the policy deliberation and public discussion in the context of the governance in technological cultures, we should recognize the role of knowledge and the role of learning regardless of the status of the actor or stakeholder, or more precisely, regardless the role someone might wish to ascribe to the particular actor. As pointed out by Bijker, "citizens, stakeholders, patients, and users all have their own views, opinions, and knowledge of this society with its science and technology [1].

Democratic governance of technological cultures requires that those forms of knowledge and experience are recognized and allowed to play a role, together with the specific – but in a newly recognized sense limited – expertise of scientists and engineers [1]. To be more specific, and in regard to the above argument by Bijker, we would like specify one of our key findings regarding the role of learning in the process of the implementation of ethics. Within democratic governance, in order to minimize the need for the unavoidable moral compromise (as cited above), the ways for "capacitation" of the various actors and stakeholders should be sought, thus promoting the implementation of the second order reflexivity in the process of the construction and implementation of ethical norms in respective context. This is also closely

linked to 'social learning' which is "highly interrelated with the generation, construction and representation of scientific knowledge and the openness, flexibility and variety of the governance systems of collective decision making" [13]. Through this the real capacitation of actors takes place.


**Suggested Ways for Improved Ethical and Innovative Governance – Recommendations**

As pointed out in the Policy Synthesis of EU Research, Results on Science, Governance and Society: "With all its [science] great benefits, and its central role in 'the knowledge economy', it is recognised to need something for its control and governance, external to its own institutions, and more effective than the existing governmental institutions have hitherto provided. This other force we call, for lack of better term or idea, 'society'" [7].

Having carried our respective research and analysis, we do not have the pretension here to advise the European Commission on the approaches to the ethical framing of FP7. On the contrary, being aware of the complexity of the task and having observed the high level of the policy deliberation and the clear and well functioning legal framework with respective procedures put in place for the implementation of the respective EU policy, in the first place we would like to recognize the enormous commitment on the part of the respective EU institutions and their structural units in securing a smooth and well justified implementation of the FP7 ethical framing.

However, based on our theoretical framework and our respective research, we would like to present the following suggestions:

*At the level of EU Commission*
1) to review and reconsider the role and functions of national ethical councils (NECs), given the fact that historically these committees were established primarily in the context of medical research; today the scope of the activities of NECs is much broader, and thus the member states should be encouraged to reconsider their scope of activity, paying much more attention to ethics in research in general (also the titles of these committees should not be medicine or biomedicine specific, as is the case in many member states). Also regarding the functions of NECs, apart from securing the compliance to the national legislation, more reflexive and deliberative approaches should become part of the activities of NECs;
2) new approaches to the issue of scientific and ethical expertise should be sought, in order to address more effectively the recognized gap between the scientific committees and NECs, and to promote deliberation on the issue of what ethical expertise means in the context of today's technological culture;
3) the FP7 projects should be more be encouraged to have ethical advisory boards as part of their projects ethics institutional aspect; more encouragement should also be given to projects to envisage specific ethical components in their work packages (as well as an assessment mechanism of their ethical reflexivity impact). This would promote the reflexive and deliberative processes as well;

4) more cooperation should be encouraged between the FP7 projects which are specifically dealing with ethical issues. This could generate high level discussions on innovative ethical frameworks in EU research policy;

5) new and realistic approaches should be sought to institute ethics also beyond the well established and possibly indispensable legal frameworks;

*At FP7 project level*

6) by bottom-up approach and pro-activity, to stimulate discussion with the European Commission regarding the implementation of ethics in FP7 as a meaningful process (as opposed to fulfilling formal requirements), as well as discussion with NECs;

7) to stimulate relevant discussion within project consortiums, with an involvement of various stakeholders in order to raise awareness and stimulate pro-activity and mutual learning.

As an integrating element to these two levels, the learning function might become of key importance (learning as a potential "solution" was also mentioned in most of the interviews with the EU officials). Possibly, the "learning operation" could take the form of joint workshops among EU officials, academic representatives, project researchers, experts, general public and other stakeholders, and would concern specific case studies in order to ground the learning in actual practice and promote the implementation of the second order reflexivity approaches among the participants.

More specifically, we would suggest that:

1) the role of NECs should be promoted in safeguarding the deliberation (and the corresponding conditions for deliberation) at national level (with respect to the subsidiarity principle). Given the existing good co-operation links between the European Commission and NECs, more "uniform" approaches might be promoted in the EU and among various stakeholders;

2) the role of ethicists in various institutional contexts should be reconsidered and enhanced, given the need to adhere to a normative horizon (with the ethical imperative in mind) during the discussion or deliberation process. By this also the impact of ethical reflexivity could be assessed more effectively;

3) the approaches to technology assessment should be reviewed in the above mentioned context, in order to avoid misinterpreting and replacing ethics by social acceptance;

4) the status of ethics in EU research should be promoted through empowering the role of ethics in the decision making on EU research. This is, however, feasible only through a continuous awareness raising and integrated endeavours at the level of governments of EU member states at the EU level.

It should be pointed out that our pretension is not to resolve the issues, which is clearly the question of high level policy and research agenda. At the same time, we would like to point out that the increasing tendency for the involvement of various stakeholders, including the civil society, in EU funded research (both, as an object and subject for research), is an indicator that public discussion and policy deliberation approaches are a force to be counted with. As argued by Bijker "the role of scientific advisory institutions is thus different form what it was centuries ago, when they were government's one and only window to the truth about scientific matters.

But they are still crucially important as one element in the broader governance of technological cultures [1].

Thus, by being able to determine the new role of scientific (and/or ethical expertise/knowledge), also the new approaches to democratic governance of new technologies and their ethical frameworks will be enhcnced and enriched greatly. According to Bijker "…relation between scientific advice and the wider`democratic governance of technological culture – more specifically, about how to characterize concrete risk situation in which political decisions are needed and scientific advice is called for. This characterization is an important element in the articulation of the public issues, and it will constitute to the shaping of political objects [1]. Or alternatively, as pointed out by Luks and Siebenhüner, one crucial factor in this context is the relationship between governance and the production of knowledge – and the fact that the line between these two realms has become blurred [13]. Research and innovation increasingly has to become ' responsible', and in compliance with the latest EU policy developments, the following working definition for responsible research and innovation has been proposed: responsible research and innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society) [10]. At the same time „effective … governance must thus be *adaptive* in … dynamic environment. This requires an integrated framework allowing governance to evolve in ways that are fair and respectful of participants and their interests, as well as broader constituencies…" [14]. As also corporate governance arrangements "thus seem relevant in the context of innovation management, we can derive implications for both policy makers and innovation researchers" [15]. This brings us further in our understanding what ehically sound EU research and innovation policy is, and what the corresponding governance arrangements to support these policy developments are.


**Conclusion**

Having found and being aware that a comprehensive and well functioning system has been put in place in the European Union with regard to the development and implementation of the ethical framing of FP7, and recognising that one cannot overlook the need for the conventional institutional and legal mechanisms to secure a sound operation of this system from the juridical and managerial point of view, as well as from the point of view of European democratic tradition, we would like here to refer to one of the key terms within our research – the second order reflexivity. No system can be perfect, and in our opinion, the relevant issue is to secure a continuous discussion and deliberation on this system with the involvement of a broad spectrum of stakeholders. Only in such a way we can speak of foresight knowledge, as well as colour positively the term of 'moral compromise' and the make an attempt to approach the desired moral horizon as closely as possible.

Thus, society can be viewed as a powerful force in today's technological culture, provided the key challenges are being adequately addressed to capacitate this powerful actor in relation to the existing cognitive framings. Consequently, and in compliance with our research findings, 1) awareness raising on ethics should be further promoted among the scientific,

academic, policy making communities, as well as among other relevant stakeholders, including the general public; 2) reflexivity, and especially second order reflexivity should be promoted to become an inherent part of the policy making and policy implementation process; 3) learning should be implemented at all levels and stages in addressing ethics in EU research; 4) new mechanisms should be sought that would allow for comprehensive governance approaches with an effective stakeholder involvement, taking into consideration the above mentioned challenges and their addressing.

Our research with its rich empirical material has shown us that the ethical framing of the EU research policy is a broad and fascinating field for future studies. Given the limited scope of the present work, we have been able to analyse this field within our set limits in regard to our specific research problem. At the same time, the collected empirical material and the acquired competences and skills is a good precondition for relevant future studies.

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