ETHICS ISSUES IN THE MANAGEMENT OF THE PROJECTS

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Abstract: *The ethics issues in the research projects is sometimes neglected or superficially treated. The management of any project in the field of the scientific research has specific duties in order to assure the application of the ethical principles.*

The paper is emphasizing the main principles and the possible ethical problems that might occur into a project. In this respect an analyse has been done using a project abstract, i.e. the case of the project called Innovative mechatronic systems intended to micro-hydro-centrals for efficient exploitation of the hydrologic potential in isolated zones, as an example for how the ethical issues might be run by the project management.

Keywords: ethics, ethical principles, project management, innovative mechatronic systems

JEL Classification**:** K42, K49, L94

1. Introduction

The most common way of defining *ethics* is "norms for conduct that distinguish between acceptable and unacceptable behaviour" (http://www.niehs.nih.gov/).

In accordance with the Romanian law regarding the Status of the personnel implied in research and development (http://www.demap.usv.ro/), the researchers have specific obligations, among the followings:

- to respect the ethics and deontology of the research-development activity;
- to respect the intellectual property rights and the confidentiality agreed with the research collaborators and financers;
- to avoid creating a conflict of interests or unfair competition in the case of holding more than one job;
- to develop the scientific, technological or innovation activity without human wrights and freedom violation.

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These obligations are based on moral principles and procedures gathered in the Code of ethics and professional deontology of the research-development personnel (www.legestart.ro/).

According to the law the right behaviour in the research and development excludes:

- ✓ hiding or eliminating the unwanted results;
- ✓ fabrication of results;
- ✓ replacing the results with fictitious data;
- ✓ deliberated distorted interpretation of the results and conclusions deformation;
- ✓ plagiarism of the results or other authors publications;
- ✓ deliberated distorted results of other authors;
- ✓ unfair attribution of the paternity of a paper;
- ✓ introduction of false information in the applications for grants;
- ✓ hiding conflict of interests;
- ✓ research funds embezzlement;
- ✓ poor data storage and retention;
- ✓ lack of information of research team before project start up regarding salary wrights, responsibility, co-authors, intellectual wrights on the research results, financing sources and associations;
- ✓ lack of objectivity in evaluation and inobservance of confidentiality conditions;
- ✓ the repeated publication or financing of the same results as scientific news.

The Code of Ethics for Engineers (http://www.niee.org/) specifies that it is required honesty, equity, impartiality and dedication to health protection, safety and public welfare to any researcher. In the USA, the dishonesty issues practiced by the researchers are usually found in seven areas: plagiarism, fabrication and falsification, nonpublication of data, faulty data-gathering procedures, poor data storage and retention, misleading authorship, and sneaky publication practices. „Three frames of reference for engineering ethics are discussed—individual, professional and social—which can be further broken down into "microethics" concerned with individuals and the internal relations of the engineering profession and "macroethics" referring to the collective social responsibility of the engineering profession and to societal decisions about technology" (Herkert, 2001, pp.403-414).

Several cases of dishonesty could be listed in every research centre or university and most of them are found in the students' research papers. They probably have not studied the ethical principles and behaviour rules.

A survey of doctoral candidates and faculty raises important questions about the ethical environment of graduate education and research conducted in the USA (Swazey, Anderson & Louis, 1993, pp. 542-553) emphasised that "scientific misconduct, as narrowly defined to include plagiarism and data falsification, takes place less frequently than other types of ethically wrong or questionable behaviour by faculty and graduate students... At the same time, however, exposure to plagiarism and data falsification is not extremely rare...". Some issues of dishonesty have been registered among other researches. Hinman (2002, pp. 211-213) discussed in details the moral issues in his book and proposed a checklist for personal moral beliefs.

In the last 20 years, the issues of dishonesty in research have been detailed and the obligation for reporting the suspected misconduct was introduced in the Guidelines for responsible conduct of research (http://www.provost.pitt.edu/). When European Union states formulated the strategies for researchers they took into consideration the European Charter for Researchers (http://www.euraxess.ro/).

2. General ethical problems in the project management

The main ethical issues that might be approached into a project management are:

- Fraud in science: the deliberated action of fabrication, falsification, plagiarism or illicit alienation of the scientific research;
- Data fabrication: registration and data presentation from imagination that are not obtained by using research methods;
- Falsification: falsify the research materials, equipment, processes or results; data or results omission of the kind to misinterpret the research results;
- Plagiarism: ideas, methods, procedures, technology, results and papers belonging to other person appropriation, indifferent of the way that have been obtained, presented as personal creation;
- Conflict of interests: situation of incompatibility in which a person is having a personal interest that influences the impartiality and the objectivity of its activities in evaluation, monitoring, realisation and reporting the research and development activities.

In addition, in any project approach the project manager has to provide all required information to the research team before the project starts.

3. Specific ethical problems in the case of the analysed project

In order to give an example of practice in using ethical issues in project management a project abstract was taken form the website, i.e. *Innovative mechatronic systems intended to micro-hydro-centrals for efficient exploitation of the hydrologic potential in isolated zones* (http://www.scribd.com/).

The major objective of the project (to obtain innovative systems to facilitate the efficient using of the micro hydro energetic potential) is going to be reached out in three phases:

Phase 1: the identification of the actual stage of research in the field, the collection of data regarding the hydro energetic potential of the region and the formulation of the requirements

Phase 2: the generation of new conceptual alternatives for amplifiers and the control system designing;

Phase 3: the analyse and the multicriteria evaluation of the proposed alternatives, the selection of the concept, the design, the manufacture of the prototype, the integration of the mecatronic system, the implementation and the portable system testing.

For the project realization during four years 33 activities are drafted 10 specific objectives.

In the followings the main ethical issues that the project manager might have into the consideration are summarized in the tables 1-3, considering the three phases of the project.

The analysis presented in the tables consists in bringing the 10^{th} objectives of the research and applying judgment on them using the ethical issues that the project manager has to avoid. The findings of the analysis are presented in the tables below.

Table no. 1

The identification of the actual stage of research in the field, the collection of data regarding the hydro energetic potential of the region and the formulation of the requirements

No.	Activity	Ethical issues
1	Identification of the requirements and limits of the actual stage in the field of the research	➢ plagiarism of the results or other authors publications ➢ unfair attribution of the paternity of a paper ➢ deliberated distorted interpretation of other authors results ➢ misleading authorship or source of information
2	Identification of limits and ways of optimisation of mechatronical transmission applicable in micro-hydro-centrals	➢ lack of objectivity in evaluation and inobservance of confidentiality conditions ➢ unclear limits deliberated emphasised regarding the actual stage of research ➢ selection of information that leads to a wrong basis of further research

Table no. 2

The generation of the new conceptual alternatives for amplifiers and the control system designing

No.	Activity	Ethical issues
3	Creation of data base concerning water courses in Brasov region	➢ hiding or eliminating the unwanted results ➢ fabrication of results ➢ superficial study of the hydro-energetic potential of the region ➢ not considering the impact on the environment and the selection of the measures to avoid environment damage In acquisition of equipment for debit and water fall measure: ➢ hiding conflict of interests ➢ research funds embezzlement

4	Configuration of the micro hydro-energetic system adequate to the chosen water course	➢ Deliberated wrong estimation and requirements ➢ Deliberated wrong statistics ➢ Inadequate selection of the standardized modules offered on the market; conflict of interests
5	Generation of new conceptual alternatives of the turation amplifiers to respond to the requirements	➢ plagiarism of the results or other authors publications ➢ hiding or eliminating the unwanted results ➢ fabrication of results ➢ lack of objectivity in evaluation and inobservance of confidentiality conditions ➢ lack of environment protection issues

Table no. 3

The analysis and the multicriteria evaluation of the proposed alternatives, the selection of the concept, the design, the manufacture of the prototype, the integration of the mecatronic system, the implementation and the portable system testing

No.	Activity	Ethical issues
6	Conceptual control solutions generation adequate to the micro-hydro-energetic system	➢ plagiarism of the results or other authors publications
7	Selection and validation of the conceptual solution of the micro-hydro-energetically system	➢ plagiarism of the results or other authors publications ➢ lack of objectivity in evaluation and inobservance of confidentiality conditions ➢ hiding or eliminating the unwanted results ➢ fabrication of results ➢ replacing the results with fictitious data ➢ deliberated distorted interpretation of the results and conclusions deformation ➢ deliberated distorted results of other authors

8	Construction design of the conceptual solution	➢ predimensioning deliberated distorted ➢ unfair attribution of the paternity of a paper ➢ deliberated distorted interpretation of the results and conclusions deformation from the numerical simulation and the presentation of the incorrect advantages ➢ lack of objectivity in evaluation and inobservance of confidentiality conditions ➢ hiding or eliminating the unwanted results ➢ fabrication of results ➢ replacing the results with fictitious data
9	Physical prototype realization, implementation and experimental testing	*In acquisition*: ➢ hiding conflict of interests ➢ research funds embezzlement *In process*: ➢ misleading authorship in technologies using *In testing*: ➢ hiding or eliminating the unwanted results fabrication of results ➢ fabrication of results ➢ poor data storage and retention ➢ replacing the results with fictitious data ➢ deliberated distorted interpretation of the results and conclusions deformation *In implementation*: ➢ hiding or eliminating the unwanted results fabrication of results ➢ replacing the results with fictitious data regarding the diagrams obtained
10	Results dissemination and utilisation recommendations	➢ hiding or eliminating the unwanted results ➢ fabrication of results ➢ replacing the results with fictitious data

		➢ deliberated distorted interpretation of the results and conclusions deformation ➢ the repeated publication or financing of the same results as scientific news

4. Final considerations

The case study approached highlights the complexity of the ethical issues that a project manager has to take into account when s/he is running a project.

The ethical research principles are not only obligations to be fulfilled, but it is a matter of moral for any researcher (Stefanescu, C., Doval, E., 2010, p. 38). The main four principles that stay at the basis of any research activity are: the respect for human dignity, the utility of a project, the precaution against risks that might affect the safety, health and social welfare and the justice.

In the analysed project the ethical principles could be respected whether the project manager and the researchers:

- are devoted to their profession;
- constantly improve their knowledge;
- have the courage of opinion and reciprocal respect;
- have team spirit in their activity;
- develop the research activity with responsibility and honesty towards institution, client and financer.

In any project preventive actions against ethical principles and dishonesty issues are needed, such as: altruism, recognition, financial benefits, peer review, institutional evaluation and financer evaluation.

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