Academic Values into Practice: Universities as a Catalyst for Technology Governance with Ethical Codes

Europe offered to the world the renaissance model for higher education, the so called Universitas approach. According to this model only free and educated people can be useful for society, and therefore academic freedom concerning course syllabi and knowledge offered by the Universities and chosen by the students is a prerequisite. Furthermore, a basic principle of this educational model argues that research should be in the center of academic activities, offering the basis for a high teaching level and creating with teaching a continuous and inseparable entity.

Over the last centuries Universities opt to satisfy their mission and contribute to society by developing the broader personal and societal virtues of the teaching- researching faculty and of the students through:
- cultivating the skills for autonomous access to knowledge, synthesis, research, communication and collaboration
-developing holistic personalities, who not only possess up to date and at the same time renewable scientific knowledge but also behave and act as conscious responsible citizens
- offering continuous and effective contribution in satisfying the scientific, technological, cultural and social needs both on a local and on an international level

Core academic values in exerting the above activities is the freedom of thought and expression, that allows different controversial views to be presented, and the freedom from discrimination that allows diversity of people and perspectives.The anchor of academic activities in ethics and human welfare, the deep commitment to integrity and meritocracy in all aspects of behavior and activities, the pursuit of scientific excellence, the encouragement of a questioning approach and a challenging spirit, the contribution to society through disseminating and applying knowledge and research results in practical needs are only a few of the additional academic values that are expected by society to characterize the course and development of a University.

These are the kind of academic values, that determined the trust that society allocated to Universities throughout the ages for facing various practical and philosophical problems, as they appeared. These are the academic values, constantly examined and "measured" by society to confirm that this trust for an approach serving the public good is still justified. Thus, it will not be a surprise if society turns – sooner or later - to Universities to face the moral problems arising from the continuously increasing use of artificial intelligence. Even more, perhaps Universities have the moral obligation to address society on this issue, as argued in the sequel.

It is undisputable that the applications of artificial intelligence offer tremendous possibilities for the development of a better world. At the same time though, they pose very important concerns in relation to the moral codes and more generally the governance of this exceptionally powerful technology.Due to the fact that the accountability mechanisms are still under consideration, it is evident that even the most carefully developed artificial intelligence tools can have negative repercussions on the social and economic development of certain parts of population, leading against inclusive growth.

It is clear that there is a need for the formation of a governance context that will ensure a fair and acceptable application for artificial intelligence. This context should focus on moral codes adopted, on the quality of data used for the algorithms development and on the degree of action autonomy these algorithms is accepted to have. And of course when these algorithms are involved autonomously in decision making procedures, issues of accountability and integrity are a priority in the governance of these applications.

In this effort Universities can play a key role. Universities are independent institutions, which operate within societies with diverse characteristics, create and assess knowledge and disseminate it through teaching. They have always been ideal places where different views and perspectives meet each other and are mutually evaluated and they have always acted – at least the large majority of European Universities- as depositories of the humanist tradition in the direction of the universal renaissance model. As a consequence, Universities could and should be involved in the development and the governance of artificial intelligence, with various activities that can be allocated in groups. The most important of these groups are analyzed below.

Universities, acting as independent institutions oriented towards the public good can have a dominant role in the accountability issues related to the development as well as the governance of artificial intelligence. This can be achieved by the development through systematic research of suitable means/procedures for the measurement of the accuracy and the impartiality of the machine learning algorithms. New concepts, new methodologies, new measurement units and new criteria are required as inputs to new evaluation mechanisms, evaluating not only the logic of the algorithms' procedures but also other more "innocent" looking parameters, like the way data are acquired.

Universities can also play a key role in the handling of the data required for the development of the algorithms. In a world with myriads of data it has become a moral obligation that for datato be used as input in machine learning applications they should be processed with integrity and fairness. Furthermore, it should be ensured that these data are accessible without any exclusions. Universities could, on the basis of their academic values, be the guardians of both the above moral obligations. Furthermore, by extending this concept it is argued that it should be arranged by official state agreements that their digital infrastructure and their faculty's digital skills are accessible without exclusions, to public organizations and social interest entities for tackling any artificial intelligence issues concerning them, as it is almost impossible for the latter to develop their own required infrastructure and expertise.

Another mission for the Universities in the context of artificial intelligence governance is to bridge the gap of information and knowledge between the technology experts and the rest of society. Universities should "translate" to all citizens exposed, deliberately or not, to these technological influences the operations, the risks, and the social and economic implications using simpleterms and concepts, easily understood by society. This is required urgently, so that people are well informed when taking decisions as users, clients or citizens of democratic societies in relation to "products" of the artificial intelligence applications.

Finally, Universities, on the basis of their academic excellence and integrity commitment are the most suitable institutions to develop methodologies for the social and economic assessment analysis of the artificial intelligence repercussions. This is a research challenge, requiring multiple scientific backgrounds from engineering, mathematics and humanist studies that can be found in the required diversity and quantity only in Universities. Thus, Universities

have all the prerequisites but also the social trust to validate the technological applications impacts and thus validate the final decision or strategy proposed on the basis of artificial intelligence.

It is obvious from the above analysis, that the academic values and scientific excellence of Universities ensure that these institutions are in an advantageous position to act as catalysts for the formation of an integratedplatform, bridging views and approaches of different scientific backgrounds, different social groups and different geographical locations of the world, without exclusions, targeting the social interest and the general public good.

All analyses indicate that in the development and the governance of artificial intelligence, the existence ofparallel monologues from different scientific expertise have led to numerous practical problems, that expose to risk basic citizen rights. The confrontation of these problems require the elimination of the isolation among different scientific backgrounds, so that all technological aspects are dealt with simultaneously with all social and ethical issues arising from the technological developments. University is the place, where this effort should start.

However, Universities, apart from proceeding with the above elimination, are required to look from a new viewpoint the academic syllabi, so that a future scientist of any background gets acquainted with all these parameters of different nature and scientific origin during his studies. In this way he develops a more integrated scientific "personality", as soon as possible in his professional lifetime.

More specifically, when it comes to engineering it should be noted that advanced technology applications have brought in the frontline significant concerns related to moral, integrity, fairness, accountability, security and other dilemmas. Engineers and generally technology developers should be well aware of their social responsibility and their actions and decisions should abide by a sum of updated ethical codes. Traditional philosophical and ethical views developed during the last millenniums should be taken into account in all stages of technology development by professionals. This can be achieved only if Universities introduce this issue during student life, by enhancing the significance of humanist studies in the course programs of Engineering Departments. In this way the valuable concepts of classic studies will be

inherent in all educational phases of the engineering and mathematical directions and not added afterwards in an effort of soldering different views and approaches.

Ladies and gentlemen,

The above analysis showed through a very interesting example, how the academic values of Universities, can place them in the frontline of dealing with very difficult practical or theoretical issues that interest society. The concept of these values, which were analyzed in the beginning of this presentation, are still valid, unchanged through the centuries. However, given today's complex societal changes and challenges, application of these values in practice should adapt on the new conditions dictated by this new emerging global environment.

In this effort it should be stressed that University remains one of the few institutions, which retain a consistently high public trust. It is accepted by all sides as impartial, it retains relative flexibility and it constantly strives for new concepts, i.e. has most of the required properties to help society. Universities can definitely play a more active role in linking natural sciences, classical studies and other disciplines (e.g. engineering) to sensible and fair policies. This becomes of high importance when concerted external actions attempt to lead to decisions negative for society or counterproductive in the broader economic context.

In claiming such roles Universities should take extreme care that they don't lose credibility, freedom of thought and that they maintain integrity and their strict ethical code by acting always on the basis of the best documented scientific result, living aside personal opinions or factors external to their mission.