University, the academic environment of axiological values

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ABSTRACT

The study makes a presentation of universities functions, developed and customized for actual needs of the third millennium, of Information Age.

The universities are schools of education, also schools of research. But the primary reason for their existence is not to be found either in the mere knowledge conveyed to the students or in the mere opportunities for research afforded to the members of the faculty. Considering the current situation, that we live in a global knowledge economy and in a society based on processing information, universities are strong involved in this process, then the quality, effectiveness and relevance of the university system is directly related to the ability of people, society and institutions to develop. According to the technological development and in the context of a revolution in communication, the university becomes a central actor of scientific and technological change, but also of other dimensions: of the capacity to train a labor force adequate to the new conditions of production, management and research. Universities also become the critical source of equalization of chances and democratization of society by making possible equal opportunities for people –this is not only a contribution to economic growth, it is a contribution to social equality or, at least, lesser inequality. M. Castells asserts, “Something else is the university’s ability to develop new cultures; that is, to be the source of cultural renewal and cultural innovation which is linked to the new forms of living which we are entering” (Castells, 2009). Universities are affected by technological change. They are institutions that processes information, its own information and communication technologies are affecting deeply the functioning and the culture of the university, sometimes without the full knowledge of what is happening and without controlling these processes. Also, professor Castells emphasizes that “in spite of all these challenges, all these possibilities, all these opportunities for the university system, in many cases universities continue to be corporatist and bureaucratic, defending their own interests–particularly in terms of the professors –and extremely rigid in their functioning in terms of their administration” (Castells, 2009). But also in these circumstances, there are uncertainness, neutralities, fuzzy, confusions to chose the appropriate route for the future, that can be the neutrosophic e-function.

Keywords: university functions; neutrosophic e-function; collaboration; cooperation;

1. INTRODUCTION
University is associated with an institution of high education and research which grants academic degrees of all levels such as bachelor, master, and doctorate. The term university is derived from universitas (from which the English word “university” is derived) was originally employed to denote any community or corporation regarded under its collective aspect. When used in its modern sense, as denoting a body devoted to learning and education, it required the addition of other words in order to complete the definition—the most frequent form of expression being “universitas magistrorum et scholarium” (or “discipulorum”), meaning "community of teachers and scholars." *(Encyclopædia Britannica (11th ed.). 1911).*

The first universities established in Europe with a form of corporate/guild structure were the University of Bologna (1088), the University of Paris (c. 1150, later associated with the Sorbonne), the University of Oxford (1167), the University of Modena (1175), the University of Cambridge (1209), Harvard (1636). Universities were all of them theological schools first, which, in fact, were producers of values and social legitimating. The non-religious universities played a similar role in producing, for instance, imperial values in the case of some the major universities, of justifying domination, justifying western superiority in the colonial world (M. Castellas, 2009).

In their research, Smarandache & Vlăduțescu specify “that functions are ways of permanent structural changing-transforming of the university system in relation to the internal requirements and external needs” (Smarandache & Vlăduțescu, 2012). As specified Andrei Marga, university functions in society and fulfills “functions which develop along with the changes around them”. Following the same line of ideas, Andrei Marga takes into account “the multiple functions of university” (Smarandache & Vlăduțescu, 2012; apud Marga, 2009). In exercising these functions, the university is presented “as a powerful scientific research center… for acquiring and applying knowledge,” and “as a source of technological innovation, as an intellectual authority in critically examining situations; as a space for commitment to civil rights, social justice and reforms” (Smarandache & Vlăduțescu, 2012; Marga, 2009).

The main goals of university is teaching, learning and researching. To achieve them, in academic manner is obvious to structure and categorize the university activities. In this context scientist defined five directions of universities activities, customized in time according to goals, purposes, requirements of the moment. Nowadays, when informational technology advance rapidly, professor Smarandache and professor Vlăduțescu suggested the fifth function of university: “Neutrosophic E-function” of communication-collaboration-Integration of University in the Information Age.

### 2. UNIVERSITY FUNCTIONS

**2.1 The concept of university**

On the history, universities at their first set up in the Middle Age, was to produce theologians, lawyers and doctors of medicine, different of being communities of scholars. There were seven liberal arts of grammar, logic and rhetoric, followed by arithmetic, geometry, music
and astronomy, considered propaedeutic to the study of theology, law and medicine. These seven liberal arts were the major object of the student during the course for the B.A., finally giving him the licence to teach. D.W. Hamlyn asserts that “but the main concern of a university lay in what happened after the B.A., in the attainment of a mastership or in what was in effect the doctorate in one of the three areas”, theology, law and medicine (Hamlyn, 1996).

University is the organization with the oldest, the most solid and the most elaborate history of all existing institutions. University is a place of cognition and knowledge, it is a medium of self-understanding. Smarandache & Vlăduţescu show "it seems that the university does not have a clear and lucid self-awareness”, but “epistemologically, the university is the fountain, the criteria and the archive of knowledge”, in this context, “any knowledge that appears, implies a lack of knowledge”.

University participates in the development of society and extensively influence its thinking. In their study, Smarandache & Vlăduţescu define three directions of university concept: the meaning of university is the unknown, the awareness of the unknown and the awareness of the need for developing knowledge forms the energetic poles that feed the university system; understanding the current university as moving quickly in relation to the subject of knowledge and the actors of knowledge. University is an agile, insidious and versatile of all the institutions of knowledge; variability is the subject of entropy (measures the disorder of the system) and negentropy (negative entropy) and information. Therefore, the accuracy of self-knowledge induces an effect of vagueness that reinforces the impression of elusiveness (Smarandache & Vlăduţescu, 2012).

2.2 University as an organization


Basically, the organization carries out activities that lead to solving social problems. The first feature of the organization is to be an association of people interacting in the idea of preparing a group engaged in cultural, social, educational, and administrative activities. Members related to a set of values, are subjected to rules and accomplish shared tasks when performing roles and statutes. Organizations may be firms, companies, associations, governmental or nongovernmental entities, foundations, etc. The most important organizations have legal grounds. “When the activities of an organization and the social relations established by it acquire state importance, they are regulated by law, the organizations that acquire state importance or have national or supranational interest are legally recognized as institutions” (Smarandache & Vlăduţescu, 2012). The genesis of organization is not conceptual, but social. Through it, society solves social problems. Essentially, traditionally, university solves two categories of problems: knowledge and education. The first category includes the production and
transfer of knowledge. The other includes ethical, political, medical, economic-entrepreneurial education etc. Organizations are defined not by the tasks they propose, by the objectives they set or by the mottos they are acting under, but by the problems they solve. Organization is a social tool for solving problems. University is a fundamental scientific and educational institution of a state. Universities should contribute to more sustainable society: social mobility, economic and social development, mutual understanding between communities and cultures, democracy.

2.3 University as a system

The university is understood as a system with a complex organization based on inputs and outputs. The inputs would be of two kinds: “The first type is a resource input such as personnel, material, money, energy, and information. The second is external managerial information related to customer demands, consumer behaviors, marketing conditions, economic situations, etc.” (Smarandache&Vlăduţescu, 2012; apud Takahara Y., 2004). The management process is connected with the production process and together they made up a systemic unit. It is focused on ensuring the production performing “effectively and efficiently”: the fulfillment of tasks correctly and obtaining products with a minimum allocation of resources and execution of those activities that lead to achieving goals. In the same context, Professor Constantin Brătianu explains: “The process of management can be performed through its main functions: planning, organizing, leading and controlling” (Smarandache&Vlăduţescu, 2012; apud Bratianu, 2007). Topologically, the organization as a system is defined by several modules identified by the input, the output and the processes also the transformation rules. Collaterally, in order to designate activities performed between the input module and the output module it is used the concept of throughput. It is also used the term “throughput” to conceptualize a phenomenon that conditions the successful businesses. Throughput is “the movement of inputs and outputs through the production process”(Smarandache&Vlăduţescu, 2012; apud Bratianu, 2010). By throughput it is understood the module of activities which ensures the conversion of input (resources) to output (products and/or services). Any throughput converts an informational input in an informational output. The analitic throughput establishes an input/output with meaning ratio: if process ratio Input/Output is equal to 1, analysis is neutral, possibly an adding, or a summary; if process ratio Input/Output < 1, it is a gain of information, the output is qualitative superior to input; if the ratio Input/Output > 1, it is a loss of information, input information is lost and output quality is lower.

The system has potential for structural changes. It remains valid even when structural changes occur. In this coordinate, the system seems to be capable of allowing the evolution of elements and relationships, of components. At one point, the system has a structure, a status and a set of rules for transformation and development. The structure is the specific internal path of organizing the system elements. This is a “configuration currently stable and qualitatively determined of the connections between elements” (Smarandache&Vlăduţescu, 2012).
Students and teachers appear to define systemic academic components, “professors and students represent the most important resources”, they are engaged in an academic contract of didactic communication. In this context, Smarandache&Vlăduţescu state “the rights and obligations of the academic actors (students and teachers) bear the mark of university functions. In turn, academic institution exists through its factors and through didactic teaching and research actions carried out in the university” (Smarandache& Vlăduţescu, 2012).

2.4. Institutionalized functions of the university

The Humboldtian educational model was oriented on teaching, learning and research. The core of the functional Humboldtian model is that scientific issues are never “completely solved” and that, therefore, the university must remain “engaged in constant research.” The first of university system emerges in the eleventh century and the twelfth century. Its elements are the teachers and students. The function of the system is one of knowledge transfer (knowledge is validated and scientific information is consecrated and preserved). The teachers do not create, do not innovate, do not discover. They take knowledge and new knowledge elements and they teach them. The new elements of knowledge are generated outside academia. Another function is utility and social engagement. During the early twentieth century, the external environment required that universities to have a stronger orientation toward utility. University transfer generates a system of high education that should acquire a more remarkable social, economic, financial and moral utility.

Entrepreneurial function/Entrepreneurial Paradigm refers to the functional development of the university that has its main purpose the performance and the competitiveness. Modern and post-modern universities are financed either by public funds or private funds or have a double funding. Private universities were the first who raised the question of self financing. Related, the research function included an economic efficiency criterion. Therefore, having at least this double causality, the commercial, and economic entrepreneurial function has enforced in the set of functions. This remodeled the principal functions too, the ones of “teaching, learning and researching.” High education institutions have also assumed the entrepreneurial task function. The concept of “the entrepreneurial university ” was launched by Henry Etzkowitz in 1983, in the article “Entrepreneurial Scientists and Entrepreneurial Universities in American Academic Science”. The concept of “entrepreneurial university” was considered lucrative and was developed so that, in 2007, David Woollard, Oswald Jones and Michael Zhang realized that this feature (generally accepted as a function) is, along with “teaching and researching the third mission” (Smarandache&Vlăduţescu, 2012; apud Woollard D., Zhang M., Jones O, 2007), meaning “commercialization of science”.

2.5 Collaborative-Communications Paradigm: Smarandache&Vlăduţescu Neutrosophic e-function of communication, collaboration-integration
The functions of the university system are related to the demands required by the internal environment and by the needs to adapt to the external environment” (Smarandache&Vlăduțescu, 2012). These functions are initially mission assumed by the management structure. Once proven, the practical validity and the mission effectiveness, for a longer period and in several universities, it becomes a function of the global university system.

Functions are ways of permanent structural changing-transforming of the university system in relation to the internal requirements and external needs. University functions are, generally, enforced and “institutionalized” by the laws that give to university the character of institution.

“The Bologna Declaration” (1999) notices many of the functions of the university, “teaching, research and a predicted communication-dissemination function”. The University functions in the societies having different organization are the consequence of different geographical and historical conditions, and represents an institute that critically interprets and disseminates culture by the way of research and teaching.

The globalization of economic, financial, social phenomena is, on the one hand, the result of knowledge development, of creativity and innovation, and on the other hand, of their putting into practice. The world is in the Information Age. There has been a digital revolution that has succeeded everywhere. Interaction, networking, connectivity that is always the engine of society and acquires new values in the new context. Social relations are digitally imprinted. Some of them even develop completely or partially, as mediated by computers. People increasingly organize their meaning not around what they do but on the basis of what they are. Meanwhile, on the other hand, global networks of instrumental exchanges selectively switch on and off individuals, groups, regions and even countries. “Our societies are increasingly structured around a bipolar opposition between the Net and the Self” (Smarandache&Vlăduțescu, 2012; apud Castells M., 1996,).

The fundamental nuclear functions of the university are teaching, learning and researching. In the existing space, the university must place itself as the main generator and supplier of knowledge. The relevant context of the current university system is structured mainly by the action of three factors: Computing, technology, rapid innovation (prefigured by and currently under development by Gordon Moore's law: “the computing power of microchips doubles every 18 months”); accelerated extension of the information-communication systems, (categories of users increase, diversify and amplify their importance: according to Robert Metcalfe’s postulate: “a network's value grows proportionally with the numbers of users” and according to George Gilder’s law “the total bandwidth of communication systems triple every 12 months”); Development and accreditation of a collaborative and disseminating academic environment (the transition from unilateral projects to international and multilateral projects, the application of the principle of “shared knowledge,” the liberalization of flows of knowledge and the setting of new dissemination channels), (Smarandache&Vlăduțescu, 2012).

According to the Oxford strategy - 2020, management assures (“ensure”) in connection with the involvement in reforming, the functions of “teaching” and “research”: “facilitate the integration of research and reaching” and “commitment to”... “teaching integrated with both
research and cutting-edge practice.” Related to this, Smarandache&Vlăduțescu suggest a commitment to “promote inter-disciplinarily and diversity”, also for a direction with a functional touch is the decision that the university should be “international in our orientation: in our curriculum, our staff, our student body and our partnership” (Smarandache&Vlăduțescu, 2012). If for the first already accredited four functions are mentioned, this latter functional commitment is specific to the Information Age world: “an increasingly interdependent world” referring to “neutrosophic e-function” (Smarandache&Vlăduțescu, 2012).

“Our thesis is that - asserts Smarandache&Vlăduțescu, in the context of the Digital Age, - the university system must assume new functions adaptively. These functions are not surprising occurrences. They have been preliminarily mentioned in the university strategies, either incidentally as vision, mission and values or as precise missions” (Smarandache&Vlăduțescu, 2012).

In the twenty-first century university is forced to face many challenges regarding functions: “the implementation of the Bologna Declaration (1999), globalization, the sustainability and the identity of a university, the autonomy, the quality assurance, the Phenomenon of “brain drain,” the issue of multiculturalism of leadership, the climate of change, the overcoming of relativism, and the recuperation of the vision based on knowledge“ (Smarandache&Vlăduțescu, 2012, apud Marga A., 2008).

Smart organizations are characterized, among other things, by flexibility, learning and a high potential for change. As the most important pole of knowledge and as a decisive development pole, the university is among the most intelligent organizations. In this context, Smarandache&Vlăduțescu show “that university systems will even take on new functions according to the Digital Age opportunities…the challenges should become necessities. The new paradigm of a pure specificity for the Information Age will be a collaborative communicational paradigm…the current university system will connect into a single network under a title like “Universities Global Network” (Smarandache&Vlăduțescu, 2012).

University collaborative platforms will be open in specific areas and disciplines. The integration of university research will start by regional, national projects and will expand globally. Collaborative platforms will allow the dissemination and unification of knowledge in areas and disciplines. In this manner, a knowledge base will arise for each discipline to avoid knowledge, research, parallel investigation or discovery in some places of old discoveries made in other units of knowledge. “On the platforms, virtual research teams may rise which can synthesize all relevant knowledge on a specific subject and to continue research on behalf of the entire community of specialists. Researchers from different universities will work on joint projects in virtual teams in collaboration platforms” (Smarandache&Vlăduțescu, 2012). Interdependence of the world will be so fully visible regarding the interdependence of research and learning too. Research will be better and more equitable and professional and student performance indicators will gain a unique and relevant basis for reporting and evaluation. At this
moment it has already achieved the digitization of some of the activities induced by the use and occurrence in university of the traditional university-canonical function.

“Finally, it is arguable, conclude Smarandache\&Vlăduţescu, that it is about a global e-university in a global system and that e-communication and collaboration function applies not only to universities, but to all institutions, and even to individuals entering the electronic global communication system” (Smarandache\&Vlăduţescu, 2012).

3. THE CHANGING ROLE OF UNIVERSITY IN OUR SOCIETY

University being an institution for teaching, learning and research it is in the same measure confronted by the millennium items: Climate change (catastrophes and opportunities), Demographic change (baby boom / pappy boom), Globalization (communication, transport, migration), Economic change (size: from a 1,5 to a 6 billion market in 20y; nature: knowledge economy), Innovation (ICT, bio- and nanotechnologies), New emerging powers (China, India, Brazil, South Africa, …), Urbanization, city / region with the consequences on the other side: Increased inequality, Migration, Energy crisis, Depletion of natural resources, Highly turbulent world economy, Financial instability, Global epidemics, Exacerbated identities, Renewed religious and spiritual quests, Global trafficking, Terrorism, a more and more unpredictable world. If the university was considered “The Ivory Tower”, it must change the status to become “A Watch Tower”. By its functions, university is a source of the production of values, selection of the elite establishing a social stratification in society and making sure that the elites would go through the selection functions in academic environment. A university is a laboratory for the development of a progressive society. This is seen through the institutions ideals in all fields of human thought and endeavor, and by the development of education and research programs that promote these ideals. A university needs to have a handle on the problems confronting society and a clear understanding of its own role in cultivating the ideals for its progress.

The current universities were developed in the past era to satisfy the needs of that time. In industrial countries, the today's main issue is to open up the elite university, to encourage the values to the masses of young people and to adjust to today's democratic, pluralistic society, and at the same maintain the standard of teaching and level of research. In developing countries universities have been built more or less according to Western models and, sometimes, even as branches of old European institutions. However, the subjects and methods of science, the models, correspond to the society in which they were generated: American and European universities meet the interests of current or past American and European industrial societies. Research projects and methods are centered around Western problems, needs, and conditions. As a consequence, universities all over the world face with the same transition, from being universities for only a few, to universities for many (Boulton, 2010). The university is essentially concerned with “useful knowledge”, but that useful knowledge should not be interpreted merely as the immediately applicable. One of the important roles of the university is to prepare the knowledge that an unpredictable future may need.
A university that moulds itself only to present demands is one that is not listening to its historians. “Today's preoccupations are inevitably myopic, often ephemeral, giving little thought for tomorrow. History is at its most illuminating when written with the full consciousness of what people wrongly expected to happen” (Boulton, 2010). Even in the domain of high technology, future developments only a few years away have been shrouded from contemporary eyes. The ideas, the thoughts, the technologies, that tomorrow will need or that will forge tomorrow, are hidden from us. Universities in their creative, free-thinking mode, and their students who acquire these habits, are vital resources for that future and an insurance against it. “The policies being increasingly pressed upon universities, however, implicitly assume a knowable future or a static societal or economic frame” (Boulton, 2010).

Generation by generation universities serve to make students think. They do so by feeding and training their instinct to understand and seek meaning. True teaching disturbs complacency. They are taught to question interpretations that are given to them, to reduce the chaos of information to the order of an analytical argument and to seek out what is relevant to the resolution of a problem. They learn progressively to identify problems for themselves and to resolve them by rational argument supported by evidence: and they learn not to be dismayed by complexity but to be capable and daring in unraveling it.

Why do teaching and research belong together? It is because the best research and the best teaching depend upon a culture and individual attitudes that value curiosity, skepticism, serendipity, creativity and even genius. They are values that are crucial to the university educational process at its most profound, and are most readily acquired in an environment of free-ranging speculation and research (Boulton, 2010).

CONCLUSIONS

The justification for a university is that it preserves the connection between knowledge and the zest of life, by uniting the young and the old in the imaginative consideration of learning. The university imparts information, but it imparts it imaginatively. At least, this is the function which it should perform for society. A university which fails in this respect has no reason for existence. This atmosphere of excitement, arising from imaginative consideration, transforms knowledge. A fact is no longer a bare fact: it is invested with all its possibilities. It is no longer a burden on the memory: it is energizing as the poet of our dreams, and as the architect of our purposes( Whitehead, 1927). The trouble with our times is that the future is not what it used to be.- Paul Valery

In the last two decades, higher education worldwide has moved from the periphery to the centre of governmental agendas. Universities are now seen as crucial national assets in
addressing many policy priorities, and as: sources of new knowledge and innovative thinking; providers of skilled personnel and credible credentials; contributors to innovation; attractors of international talent and business investment; agents of social justice and mobility; contributors to social and cultural vitality; and determinants of health and well-being.

The concepts of Aristotle, Humboldt, and Newman are still valid, as well as the message of Magna Charta Universitatum, signed by hundreds of universities over the entire world. “If we should not have a clear idea where we want to get when reforming universities, if we should not have a clear goal, we should not reform at all. Society’s hope lies in the generations of students who keep on starting their university education, some of them even because they want to learn something” (Drew Gilpin Faust, 2010). Related to a phrase often attributed to Albert Einstein, about figuring out what counts as well as what can be counted, Drew Gilpin Faust, explains that the meaning is about “remembering what we have forgotten, now in a new context; it is about hearing and seeing what is right in front of us that we could not before hear or see; it is about wisdom that must be stirred and awakened time and again, even in the wise”( Drew Gilpin Faust, 2010)

References


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