INFORMATION SOCIETY & MULTIMEDIA

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Contemporary Multi-Media

Due to the fact that it is the engineers who develop the new communication technologies, it has become rather difficult for the theoreticians to entirely seize the characteristics of these technologies. The most productive way to bridge the gap is by developing specialists who are erudite about technology, informed of sociological theories and skilled at using as well as creating new communication tools. This condition aggrandizes the role and responsibility of the current communication higher-education institutions.

"The Global Information Society" demands full acquisition of the necessary knowledge and skills from each of its individual members, not only for their individual survival but also for the effective functioning and development of its new global program. In other words, the next generation of information professionals will be asked to conceptualize and construct the contemporary communication industries of the future. Those who fall distant to the opportunities and the amenities provided by the latest developments in information technologies seem to be heading towards estrangement from the social flux as well as face possible difficulties to continue professional business life. In order to achieve this enormous task they have to fully grasp the modern technology, consider the social environment based on relevant social theory, and blend these issues and convert them into socially beneficial practices. The task of educating individuals who can effectively take part in the "Global Knowledge Society" is the responsibility of educational institutions among which universities come forth with their leading role in the process. This is the challenge for leading schools of Journalism at this point in time.[1]

A relevantly new multi-media phenomena is electronic newspaper, delivered through the network of computers. Much of these electronic newspapers served the public through different types of subscription, furthermore, most major, and many minor, printed newspapers have electronic versions side by side to their traditional prints. Electronic distribution of these online newspapers eliminates the physical distance barrier that exists on regular printed newspapers.

An important potential of the internet may be sought in its transformation to a "public sphere," i.e. the democratic civic forum Habermas had tried to theorize as a model of idealized democratic debate (Baoill, 2000). If cleverly programmed, the "public sphere" in the virtual space can become much more effective. The context of "Online Awards" may fulfil these conditions and trigger the initiation of a lively Forum-On-Line. Here, we may always expect the emergence of revolutionary conjectures.

Printed periodical publications coupled with a website, on the other hand, can selectively document in a more permanent and carefully edited format the

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[1] McQuail, D., Challenges for Communication Theory in the 21st Century, Changing Media and Communications Concepts, Technologies, and Ethics in Global and National Perspective's, Moscow State University, Faculty of Journalism, Moscow, 1998, p. 43.

essence of all the various contributions. Those who refrain from becoming highly engaged with the excessive information and prefer to remain detached at a critical distance to the controversial climate of an interactive website will probably always be in majority. However contrary to all the reactionary complaints by the good old bibliophiles against the adverse effects of the internet, true academic research finds in it a very effective medium at last for the dissemination and discussion of new ideas and research results.

Print eventually turns out to be a very expensive and irrational medium except for commercial purposes. It may, for example, become quite meaningless to print and distribute in large numbers some long academic texts that would interest only a few people. POD (Print-On-Demand) books have been suggested as a serious solution to this problem (Poe, 2001). Publishing on the web might be much more successful, if selected high quality images are published in a printed periodical complementing the website. The New-Media Digest is intended to match these diverse tasks.

The question whether the internet will replace the book shows a most ignorant injustice that is presently done to this new medium, when we think of its future potential which will be beyond all our predictions (Lovink and Schneider, 2002). Internet is still at its infancy, and we are still bounded by the book or article format of the printed medium. To disseminate and to download all these texts for free is a fantastic development, but it is also true that this is only the beginning: we should expect much more radical changes not only in our conception of the written text or its presentation and reception, but in the very framework through which we conceive communicative action.

In terms of broadcast terrestrial television, telecommunications can be said to be experiencing serious challenges. Much of these challenges are driven from new forms of competitions arising from the cable and satellite television. These new media have the advantage of offering a wide range of information to the audience through interactive challenges based on new information and telecommunications technologies.

Thus, the network terrestrial television's role as a "window into the world" is under attack by newly emerging interactive multi-media.

In contemporary societies mass media crosses roads with the entertainment industry, where cultural demands of the society is satisfied, beyond the information needs. At this crossroads a process of transformation from classical information corporation into convergent companies, where information needs of the society merged with the mass culture, seem apparent. Without a doubt, modern journalism experiencing its own transformation within this larger framework. Even on a larger scale, starting from the 21st century, it is also possible to observe a similar transformation in the international arena of mass media (newspapers, magazines, radio and television). One vital factor leading into all these transformations is so called "information superhighways" which made internet and other electronic networks possible where new channels of obtaining information made possible to masses. However, the formation of the infrastructure and superstructure needed for these technology based new information channels are very complex and expensive. Thus, a new gap is emerging between the "developed world" which has the resources and know how to build the necessary infra and superstructure and the "under develop world" where such resources and know how do not exists. When compared to the "developed countries", in many "developing countries" the number of telephones is very limited, thus the access to the internet and other computer technologies is very inadequate, which makes these countries even more backward.[2]

[2] Zassoursky, Y.N., Changing Media and Communications, Changing Media and Communications Concepts, Technologies, and Ethics in Global and National Perspective's, Moscow State University, Faculty of Journalism, Moscow, 1998, pp. 21-23.
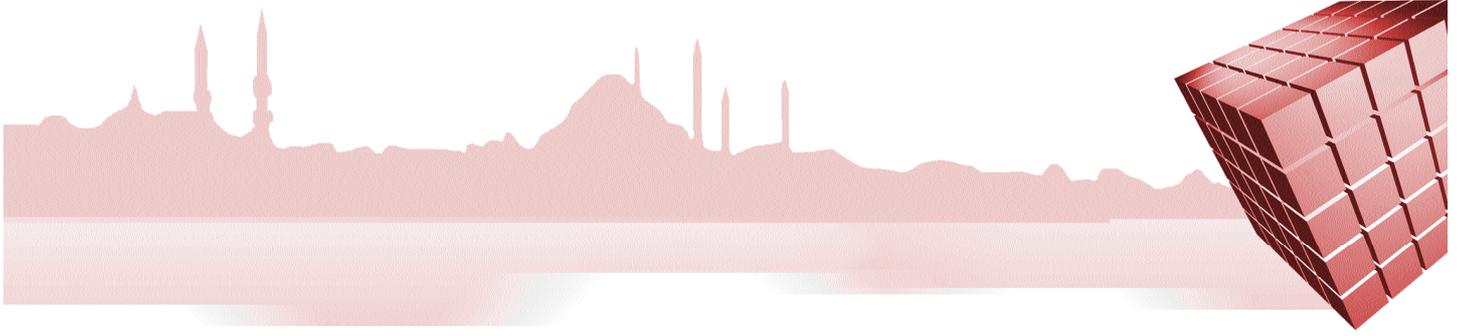
Technology refers to a set of complex relationships between men and machines, between machines and the market, and between men and the rest of the modern society where the use of machines are interwoven with traditional practices and ideas. Communication manifests itself on all levels, partly disguised as technology and partly as rules for social interaction and personal understanding. How a society integrates different activities depends on the three basic networks of energy, transport and communication. These networks are interdependent and can, to an extend, compensate for each other. Communication can replace transport and save energy. But only in modern time can people communicate without transport. Electronically transmitted images and representations have replaced the message and the messenger.[3]

The Role of Informatics

While the 20th century, in many respects, was considered to be the age of mass media, what kind of mass-media will continue to exist the 21st is hard to envision. The future shock of common media becoming relics of the past raises new but more basic questions: How susceptible are we to changes in our communication environment? How will our way of life differ, when interactions in electronic networks become part of daily life? Will the internet become an equalizer like the mass media once was, or believed to be, will it evolve into a barrier limiting our sensory experience with its "virtual reality"? Or will we psychologically vanish into private worlds without a given location or a polis and thus cause to exist as social and political men? The scenarios are many, and some are frightening.[4]

Within local, national and global organizations computer based information systems, as complex socio-technical entities, plays critical roles. These roles provide support for the goals attainment for the leaders of the organization and its management - strategic, tactical and operational- in a timely and cost effective manner.[5]

The contemporary information technologies changed the global information infrastructure and influenced our lifestyle as well as the professional methods of communicators. In recent times one can easily observe an immense alterations in speed, geography and quality of production and transmission of information. The power of hi-tech features penetrated also into the virtual and verbal text models. All these factors are presenting themselves as challenges for the traditional teaching methods, formulated by several generations of journalism trainers.[6]

While a "communication system" is necessary for all communication, an "information system" is also needed for all information exchanges. A "communication system" can be defend as "any set of physical, technological, electronic, or social structures that facilitate the exchange of messages between two or more people". This includes face to face communication taking place through a system—one, which uses the natural channels of light and air as the primary conduits for carrying messages. On the other hand, an "information system" is "any set of physical, technological, electronic, or social structures that facilitate the exchange of in-formation—between a person and an information system or between two or more information systems".

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[3] Hoyer, S., Media on the eve of the Third Millennium: Comparing Revolutions in Communication, Changing Media and Communications Concepts, Technologies, and Ethics in Global and National Perspective's, Moscow State University, Faculty of Journalism, Moscow, 1998, p. 47.

[4] Hoyer, S., Media on the eve of the Third Millennium: Comparing Revolutions in Communication, Changing Media and Communications Concepts, Technologies, and Ethics in Global and National Perspective's, Moscow State University, Faculty of Journalism, Moscow, 1998, pp. 66-67.

[5] Longeneker, Jr., H. E., IS'95 A Curriculum Model for Information Systems: A Report, and a Request for Involvement, Results of the Joint DPMA/ACM/AIS Task Force, IACIS, 1995, p.2.

[6] Loukina, M., Media Training in the Context of NewInformation Technologies, Changing Media and Communications Concepts, Technologies, and Ethics in Global and National Perspective's, Moscow State University, Faculty of Journalism, Moscow, 1998, pp. 195-196.

Although the technology of "information systems" is similar to "communication systems" in numerous ways, the way these systems are used differ significantly because unlike "communication systems", "information systems" are not designed for person-to-person communication. Although acknowledging the longrunning debate about the difference between data and information (see Machlup, pp. 641-671 for a review) in this work we prefer to avoid such a distinction. For the sake of simplicity, we refer to all inputs and all outputs from "information systems" as "information", and the action of inputting or outputting information as "information system manipulation". To avoid confusion, it should be noted that there are essentially two types of input and output activities when using an information system. The first involves what is traditionally considered information manipulation, retrieval, database creation, or data processing—manipulating an information system to perform a particular action on some set of data that is separate from the system software. The second is system (user interface) navigation, in which the user sends some input to the system, such as pressing a key, and the system responds in some way.[7]

Communication and Informatics

Some communication scholars may be skeptical that any model can successfully integrate both communication systems and information systems. Although "communication" is fundamentally different from "information manipulation" the propagation of electronic systems and quantity and quality of current interactive, multi-media continues to blur the distinction Thus, even for the experts in these fields it is becoming more and more difficult to distinguish "communication" from "information manipulation". Sophisticated "information systems" "speak" to us when we want information about airline flights or directory assistance—and they want us to "speak back" to them! For many people, these information transactions feel like "communication".

More significantly, all "electronic communication system" requires several of the very same behaviors from users that "information systems" require as well. When creating an electronic mail (e-mail) message, for example, we navigate the system and we manipulate information. One can question whether "communication" occurs when the message is sent, when it is received, or when the recipient has replied. Regardless, e-mail is considered a communication system. Even the telephone requires the user to interact with the system—by dialing—before "communication" can take place. Users of the telephone view it as a communication system. Yet the public switched telephone network, with its sophisticated electronic computers and databases that route network traffic, track every local and long distance call, and provide end-user features from "Call Waiting" to "Caller ID" is clearly an "information system" as well. The most fruitful approach is to acknowledge that the use of every "electronic communication system" requires "information system manipulation."[8]

Until recently the typical curricula for higher education in journalism incorporated the basic courses in philology, philosophy, economics, social studies etc. While a significant portion of the theoretical professional knowledge given to the students through lectures and seminars, the students are also expected to develop their own operational professional skills via practical internships in different media; news agencies, radio and TV organizations, advertising agencies. This in return, have been causing students to spent a significant amount of their educational time in practicing in media as trainees or salaried staff members which means, more often then non, missing half of the term in terms of in-class lectures and seminars.

The main purpose of this paper is to propose a basic outlines of educational model for a higher education in journalism. The educational model proposed here

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[7] Finn, A. T., Lane, D. R., A Conceptual Framework for Organizing Communication and Information Systems, International Communication Conference, July, 1998, Jerusalem, ISRAEL, p. 3.

[8] Finn, A. T., Lane, D. R., A Conceptual Framework for Organizing Communication and Information Systems, International Communication Conference, July, 1998, Jerusalem, ISRAEL, p. 4.
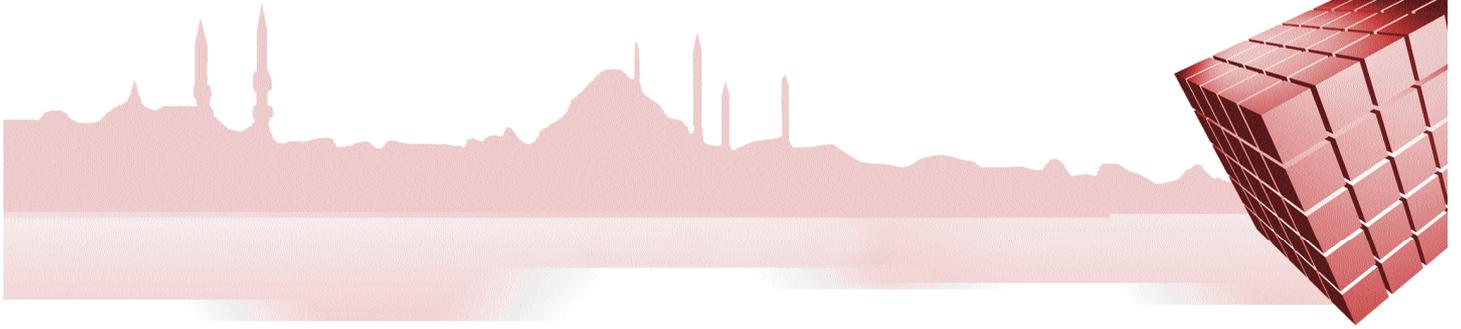
particularly aims to aid the society (especially the young generations) to adjusting to the rapid progress of the modern communication media, systems and organizations in terms of technology. Such an adjustment can only succeed if the social impacts cause by current developments in communication media is fully studied and integrated to the education model. Success in this effort means the next generation of information professionals are fully accommodated with the requirements of being a productive member of the so called "global information society" or "global village".

Before we proceed any further, we would like to represent our understanding of "informatics": It comprises the quantitative issues related to retrieving, transmitting and storing information.[9]

Today the increasing utilization of computers and computer networks has accelerated the need of "informatics education" at universities.[10]

The power of "information technology" is especially significant in press media training can be expressed as follows:
  1. Reduction in the process time (writing, editing & layout) through computer technology.
  2. Reduction of Publishing Expenses through consolidation of process space by utilizing hi-tech facilities.
  3. Reduction and/or elimination of replication and distribution through Web facilities (web-publishing)
  4. Improvement of excess to databases and other information sources thruguh www & e-mails.

In light of the above factors the higher education establishments in the schools of journalism needs to invest the necessary funds into proper information infrastructure support of the project: linking to the hot lines, subscriptions to the news bulletins, etc. By realizing these investments students can be given the opportunity to participate in the real communication process: to observe all the significant events in political, social and cultural life, to participate in press conferences, briefings, panels, etc.

This simple, yet clear statement indicates that in forming the "global village", to improve the unbalanced situation, between developed and developing world, in terms of social and economic aspects, technology and informatics have an essential role. The use of new technology in a reasonable and logical manner in higher education encourages students to turn their attention beyond their local environment and become an active participant in the global filed of multi-media. If they know how to use an internet browser program, it is unpredictable, to measure the amount information they can reach in a few hours of time.

The Present Situation in Turkey
While in some developing countries as well as in Turkey, the application of the new communication technology, to the educational system in general and higher education in particular and daily utilization of such technology is still under discussion, however, in North America and Western Europe, the scientific discipline called the "Informatics" or the "Information Sciences" has been included in the educational programs since 1960s.

Regrettably, the Council of Higher Education in Turkey (YÖK), as the lender of the last resort, has designed "Informatics" as a scientific sub-section of the "Department of Journalism". In addition to that, not all the "Communication Faculties" within Turkey established "Informatics" sub-section. In this work, it is proposed that "Informatics" as a subsection should be redesigned as an autonomous department by embracing all subject areas of the "communicative" and "information sciences".

[9] Orkan, A.L., Bilisim Teorisi-Information Theory, Marmara University TEF Press, 1992. Istanbul, TURKEY, pp.14-15.
[10] Sütçü, C.S., Computers and Computer Networks, M.U. Communication Faculty, Marmara ‹letiflim Journal, No: 5, 1994, Istanbul, TURKEY, pp. 145-151.

Informatics Department and its Program

Modern technology makes it possible to communicate with the most remote parts of our world through satellite data networks through internet and information channels. Witnessing a breakdown of arms conflicts on the other side of the world, watching sports event broadcast alive by the international television networks or accessing ones bank account thousands of kilometers away, or entering information sources by clicking the mouse button, are considered to be ordinary matters in our current way of life. All of these clearly indicate the significance of "informatics" in the 21st century society. One can easily observe that the prospect of mass communications will be dependent on the computerized multi-media. Consequently, autonomous departments of "Informatics" in the higher education which can play a critical role in embrace all the other departments' subject matters and become instrumental in keeping pace with the contemporary global developments and cooperation.

In these departments, future professionals can be trained to become "informatics experts", where as they will acquire the necessary skills and know-how to plan and command computerized communication. In order to fully benefit from the facilities of the new tech-nologies, such departments (of Informatics) should be designed with an interdisciplinary and intersectional organization framework in mind. Due to the limited financial resources of most Turkish higher educational institutions keeping up with advancements in the new technology and equipment is not possible. With this fact in mind, the higher education system should consider a drastic change in the direction how they serve the students. Instead of trying to teaching the most recent technology to the students, the focus should be teaching how to reach that technology, i.e. first, methods of logical reasoning, secondly, analytical thinking, and finally the methodology to search and learn information.

"Informatics" is a cross-scientific and multidisciplinary area in nature, and contains some of the elements of social and behavioral sciences as well as cultural information. Technological, social, cultural, political, legal and economic aspects of the subject matter need to be taken into account, and it must be evaluated with three facets in mind: "General System Sciences", "Informatics" and "Cybernetics".

"Department of Informatics" is composed of an information circle containing the following (See Fig.1.)

Sections and contents: Human Communication; Cybernetics and Information Sciences; Living Systems; Bionic and Social Systems; Human/Computer Communication; Library Systems; Organizational Controls; Instruction Systems; Universal Principles; Methods of Cybernetics.

Students who have developed basic end-user skills will have an opportunity to gain breadth in the fundamentals of the information systems discipline and will gain hands-on experience in the use of information technology. The courses (in this program) will provide an exciting glimpse into how information technology and information systems theory has ushered in the information age. They will demonstrate to the student why careers in computing information systems are stimulating and satisfying.[11]

The main aims of this educational program is cited below[12,13]:
- To inform the participants about the theories of informatics, general systems and cybernetic methods, and to instruct them about the rapid changes and the impacts of communications with regard to technology, dimension and content, within the framework of deduction theories.
- To instruct about the planning, functioning, processing and structure of the information systems.

[11] Longeneker, Jr., H. E., IS'95 A Curriculum Model for Information Systems: A Report, and a Request for Involve-ment, Results of the Joint DPMA/ACM/AIS Task Force, IACIS, 1995, p.39.

[12] Aydın, E.D., Communication and Informatics Education in Turkey, 1995 Annual Conference of the International Association for Computer Information Systems, September, 28-30, 1995, Toronto, Ontario, CANADA.

[13] Sütçü, C.S., Aydın, E.D., Orkan, A.L., Informatics Education in Turkey and its Role in Internationalization, 11th International Meeting of University Administrators, 6-10 January 1998, Auckland, New Zealand.
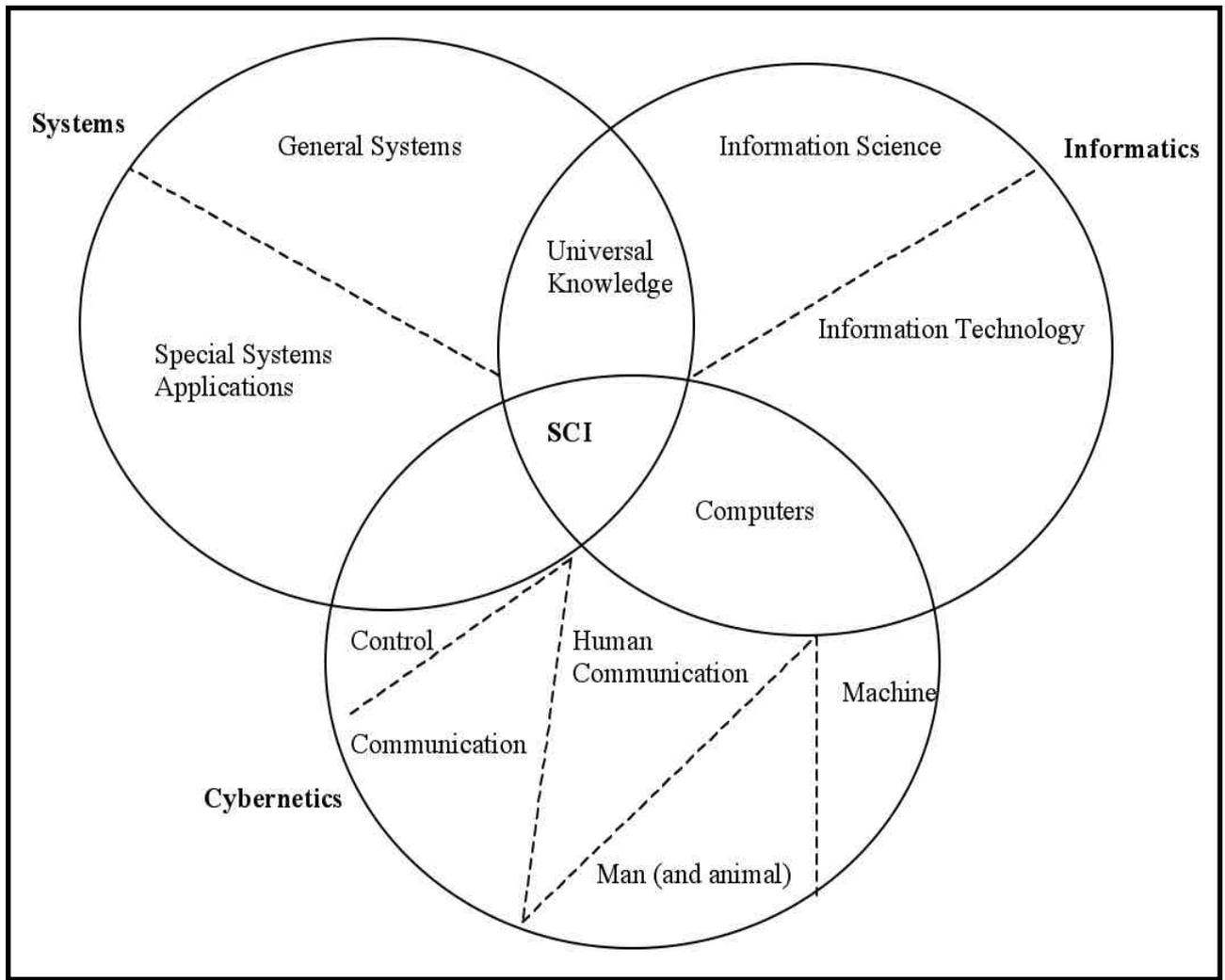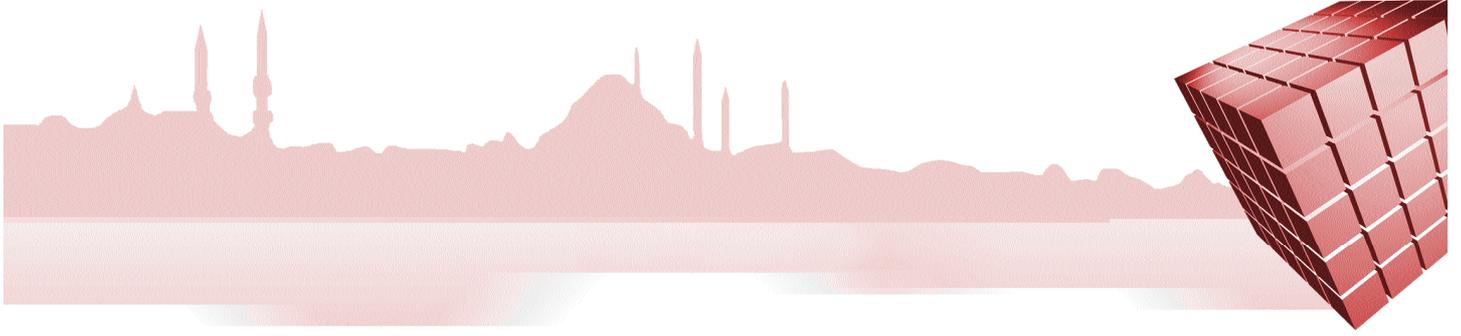
Fig.1. Systems, Cybernetics and Informatics as an Emerging Breed.

- To instruct about the social and economic utilization of the general system, structures and data-sources, communication systems /organizations /vehicles /channels and networks in society.

- To teach the terms and concepts about the information systems and the description of the databases and databanks which are permanently accumulated and updated in a large scale; and to scrutinize over their application areas and utilization in the functioning of informatics.

- To study various research and innovation projects in order to find solutions to the different application fields and practical informatics functions in an independent and critical approach; and to supply expertise on system analysis and synthesis.

- To supply information, related to the planning, innovation, application and integration of the international applications and practicing of information sciences.

- To obtain the understanding of the problems and efforts related to the security and completion of the information sciences /networks / and data.

- To evaluate and find out solutions about one dimensional information flow, and technological, cultural, political and legal dependency in the world.

- To supply information about the technological transfer from the point of view of functionalising its choice and application.

Master and Ph.D. program should be harmonious with the similar programs in the Western European and North American universities, In order to harmonize Turkish academic education with high-technology countries in its integration with the international new order of business and communication. The program course must be designed to contain the subjects demanded by the requirements of the international business and technology, which should be organized in consultation with the western universities' similar departments. The project also envisions academician and student exchanges, organization of seminars and conferences, establishing a database and a specialized on-line library.

The Method of the Project

Our working plan contains areas such as:

- To compile the educational programs and projects which the universities abroad are carrying out or planning to carry out, by keeping in permanent touch with them, and to adapt these programs to Turkey; and to establish a coordination between Turkish and foreign universities about it.

- To take opinion from all of the related educational organizations in order to establish a cooperation for associated action and research and to organize seminars, meetings and programs; also to prepare a report in conclusion with mutual opinion exchange and cooperation.

- To take opinion from the business sector in Turkey and try to establish a coordination between the requirements of the industrial/commercial/service sectors, and the educational program.

- In the light of these research and experiences, to make the necessary evaluations in order to construct the related educational model.

The Courses of the Program[14,15]

In this section, only a short list of courses of the whole program is given due to "number of pages" limitation. For a details please refer to the appendix.

1-General Systems, Cybernetics and In formatics
2-Introduction to Communication
3-Digital Telecommunications Networks and Satellite Communications Systems.
4- Computer Networks
5-Management of Information Technology
6-Informatics and Systems in Newspapers and Other Industries
7-Cable TV.
8-Contemporary Issues in Telecommuni-cation
9-The Security, Protection in Informatics Systems, Networks and Data.
10-21st Century Journalism
11-Electronic Commerce on Internet
12-Contemporary Communicator as an Individual and Professional
13-International Telecommunications Policy
14-Research Project (Undergraduate)
15-Human-Information Processing
16-Data Communications
17-Decision Support Systems
18-Information Systems in Business and at Home
19-Database Management Systems
20-Ergonomics in Automation
21-Computer Utilization in Arts and Tech-nology
22-Daily Utilization of the System Science
23-Thesis (Graduate)
24-Multimedia Information Systems
25-System Science Theory
26-Cyberlaw and Regulation
27-System Analysis and Design
28-Computer Assisted Instruction/ Educa-tion
29-System Simulation and Modeling
30-Effective Utilization of Imported Tech-nologies
31-General Research Project
32-Doctorate Thesis

Conclusion

On going advancements in the information and communications technologies will continuo to diminish the hindering affect of physical distances in human communication, thus making the glob seemingly smaller and smaller. With this development in mind, similar to the developed world, Turkish higher education system also starting to recognize the role of "informatics" in this regard. However, in order to catch up with the develop world in this area "informatics" needs be occupy a firm position in the higher education system within Turkey.
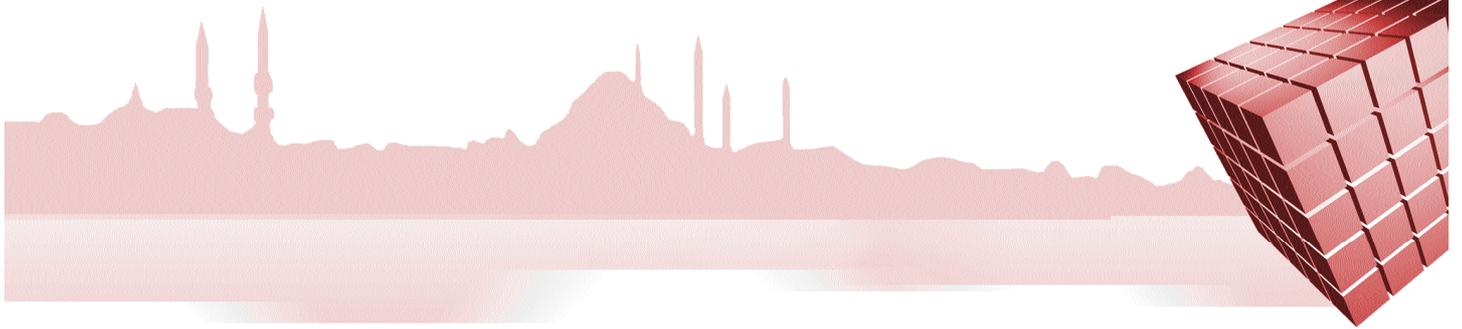
Technological developments, especially in information and communication facets, presents an opportunity for the "developing countries" to diminish the current gap between "developed world". Diminish this gap however, can only be achieved if these new technologies are carefully managed and successfully intergraded to the existing education system. Within this view point, "Informatics Education System" as a learning process, has the ability to aid students in acquiring the necessary skills to become productive members of the "global village". As it is currently conducted, such an education system requires significant amount of financial resources just to keep up with the tremendous amount of advancements in the new technology and equipment. Developing countries, which lacks such financial resources, needs to develop unique approaches to teaching "informatics." The approach offered here suggest the focus of "informatics education" should shift from teaching current technology to supplying the students with tools and skills to search for new technologies themselves by predominantly using logical reasoning, analytical thinking, and finally methodology to search and learn information.

In order to reach to success through this shift in education system a close tie should be established between the universities and the relevant business sectors in a co-operative framework. The potential synergy of such co-operations can yield benefits to both sides as well as the general society. Through university-industry co-operation students can have better opportunities to learn by actually using their theoretical knowledge into real-life conditions. On the other side, certain research projects that are within the area of interest of the business organizations can be carried out by faculty member in collaboration with the students.

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