ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

Α.ΔΙ.Π.

ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ
ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

HELLENIC REPUBLIC

H.Q.A.A.

HELLENIC QUALITY ASSURANCE AGENCY
FOR HIGHER EDUCATION

EXTERNAL EVALUATION REPORT

DEPARTMENT of INFORMATICS & COMMUNICATIONS

TEI of SERRES

September 15th, 2010

Final Version

TABLE OF CONTENTS

External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Informatics and Communications of the Technological Educational Institute of Serres consisted of the following four (4) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005:

1. **Professor Vangelis Paschos**

   LAMSADE, Universite Paris-Dauphine, France

2. **Professor Christos Politis**

   Kingston University London, UK

3. **Dr Kleio Kallimani**

   OTE, Athens, Greece

4. **Dr Michalis Scoutelis**

   ANCO S.A., Greece

Introduction

The External Evaluation Procedure

The external evaluation committee (EEC) met from the 21st to 26th of June 2010 to complete the external assessment of the 'Informatics and Communications (I&C)' Department – TEI of Serres. The summary of the EEC programme was as follows; After being briefed by HQAA in the morning of the 21st, travelled to the town of Serres in Northern Greece, where later in the afternoon the EEC met at the Hotel reception with the head of the I&C Department and the chair of OMEA (Internal Evaluation Team). The EEC had a first discussion with these two representatives of the I&C department regarding institutional support, long term academic planning, research and teaching. On the 22nd and 23th of June the committee had lengthy discussions with all members of the department (tenured and tenure-track), administrative and technical staff and students (existing and graduated), visited several labs of the three divisions (1. Computational Techniques and Systems, 2. Telecommunications and Networks, 3. Computing Architectures and Industrial Applications), the library, solicited comments and input from all stakeholders. The committee also met with the president and vice president for academic affairs of TEI and had a friendly chat about the Institution and its future. A preliminary debrief of the findings was made to the school and department heads, chair of OMEA and divisions heads on June 23th. The following three days after their return to Athens, the EEC met at the HQAA premises to discuss and compile the evaluation report.

In summary the EEC visited the following sites in the TEI:
- The I&C departmental facilities
- The library
- Teaching classes and amphitheatres
- Labs of the three divisions
- The Senate building

The committee met with the following representative of the TEI:
- The President, TEI Serres (Prof. Dimitris Paschaloudis)
- The Vice President of academic affairs, TEI Serres (Prof. Anastasios Moisiadis)
- Chief Finance Officer, TEI Serres (Assoc. Prof Dimitrios Ioannidis)
- The head-elect of the School of Technological Applications (STEF), TEI Serres (Prof. Charalampos Strouthopoulos)
- The head of I&C department (Assistant Prof. Stelios Tsitsos)
- The tenured/tenure-track members of the department (Profs. Papatsoris, Kazarlis, Hilas, Efstathiou, Kalomiros)
- Administrative Personnel (Marantidou, Iakovou)
- Librarian
- Lab instructors / technical support personnel (Patsiakos, Ziogas, Manos)
- Student representatives
- Graduate Students

The committee was also given access to:
- The program of Undergraduate studies and its revised version (Greek/English edition 2010)
- Internal Self-Evaluation/ Assessment Report (revised edition, January 2010)
- Revised (draft) program of studies (2010 edition)
- Detail breakdown of course marks (as part of the internal assessment report)
- Student final year project dissertations (six copies)

- Statistical distribution of student population

Comments from the EEC on the external evaluation procedure

The EEC is aware that perhaps some of the proposals/suggestions may not meet the existing institutional and legal framework in Greece.

A. Curriculum
To be filled separately for each undergraduate, graduate and doctoral programme.

APPROACH

The department of Informatics and Communications in the Technological Educational Institute of Serres offers a four years undergraduate program.

The undergraduate program includes modules of general content and specialised modules after the 5th semester. There are in total 30 modules in the first 5 semesters of general direction (Genikis Kateuthinsis) and 10 modules per division (3 divisions in total) of specialised direction (Eidikis Kateuthinsis). The three divisions are:

1. Computational Techniques and Systems

2. Telecommunications and Networks

3. Computing Architectures and Industrial Applications

Therefore the total number of modules to pass in order to obtain the undergraduate degree/ qualification is 40.

The UG program has been revised and it will become operational starting from September 2011 (autumn semester 2011).

The department's theory modules are primarily taught using the black-board/whiteboard with the use of visual aids (power point slides). A large number of courses have exercise and laboratories sessions too. These modules are taught by first providing an overview of the associated theory followed by the respective laboratory exercises/experiments.

The nominal student to faculty permanent members' ratio is very high, compared to average ratio reported by peer institutions. The actual ratio, as reported in the internal self-assessment report takes under consideration only the currently active mass of students (633), but the total number is much higher (1173) mostly due to inactive/idle students (limnazontes foitites). Therefore, this inflated number of enrolled students creates, occasionally as it was reported by student representatives, crowded conditions in labs and classes. However, it should be noted that the current infrastructure, both in terms of physical space and equipment, is adequate and reasonable for the current active mass of students. The committee is concerned that the number of total student enrolments will increase dramatically as the number of graduated students from 2004 till 2009 were only 17 while the total number of registered students was 1437 during the same period. The academic staff suggested that the total number of students registered for the first time in the department should be decreased to around 120 students per year. Though the EEC thought that teaching methods and assessments should be revised in order to allow a certain degree of leniency and equalise the ratio of graduated versus registered students. However, given the current policies in the educational system, the number of first year registered students will increase substantially. Thus the department should be provided with human resources and financial support in order to cope with this phenomenon. The Committee after meeting with student representatives recorded various concerns related to the inequality of levels between the academic staff and the student population, i.e. high calibre academics to teach a quite weak student population. Students claimed that they found the course too theoretical and not according to the scope of the department, which is technology oriented The Committee recommends to the I&C department to increase the number of support (crash) courses in order to assist weak students.

Infrastructure is on par with the infrastructure in peer institutes and at times better

(e.g. labs had excellent equipment and infrastructure). It is should be noted that due to the nature of the department and the need for specialised equipment, centralised procurement procedures administered by the institute's central administration office may not be the most appropriate course of action.

The department does extensive use of the web-page course management software for distribution of course related information (syllabus, class-notes and announcements). The students seem to use the system extensively.

The performance of the students is assessed in a number of ways, which depend on the classes. This includes both mid-term and final exams as well as coursework that the students need to take at certain time-points during the various modules. The final mark is determined as a weighted sum of the sub-marks achieved by the students at the various performance assessment exercises employed by the module leaders.

There were no plans presented for a postgraduate programme of studies.

The overall impression is that the scope, structure and content of the programs are not consistent with the strategic objectives of the department, since it was observed a didactic dividend between the two main subject areas of the department, Informatics and Communications. Although there is a quantitative balance in the number of modules dedicated to each subject area, emphasis has been placed on telecommunications.

IMPLEMENTATION

The program of studies strives to provide in breadth and depth across the field of informatics and communications and to integrate the theory and practice as per standard policy. Although the currently implemented curriculum is deemed by the committee adequate, further improvements are possible. The limited available human resources mainly, in terms of permanent staff, inhibit the department's ability to implement the current curriculum. It is the committee understanding that the current institutional structure imposes a rather stringent set of curriculum specifications on the department. However, there is a trend from academic members to push the boundary between the two main study areas towards their own division (1, 2 or 3) but without a unified approach according to a predetermined policy.

The overall work load of the current curriculum is rather high, especially in the first five semesters. There a number of factors contributing to this issue: First, the number of modules that the students need to take in the first five semesters appears to be rather high. This often puts high demands on the freshman class of students, as they transition into the college life and being away from their familiar environment. Second, the courses are primarily theory-focused (e.g. Physics, Maths) and they do not sufficiently/effectively motivate students. In the committee's view the curriculum should better integrate theory/foundation modules with the subsequent specialised modules and better explain their utility within the field of studies. Third, the educational background in mathematics, physics, informatics of the incoming students is diverse and it ranges from students having a solid foundation in the above topics to students having no or weak foundation. As a result, a considerable percentage of students find it extremely difficult to follow the material, which negatively impacts both the perception of the program, their subsequent education, and potentially self-esteem; all of which leads to high failure rates that are observed in the department.

There is a number of infrastructure and personnel requirements to effectively implement the curriculum. At present the department has twelve full time faculty members (three professors, two associate professors, five assistant professors and two lecturers). However, even if the planned positions are taken into account, the

number of permanent faculty members is highly insufficient. As a result, the program relies for over 75% of the credit-hours on temporary instructors. This number is expected to drop after the recommendations for new faculty members will materialise. This is an extremely high percentage and creates numerous problems. Even if the quality of the temporary instructional personnel is high (which appears to be the case), its temporary nature and the fact that they do not reside in the department, limits their accessibility by the students and creates discontinuities in terms of teaching philosophy, policy consistency, familiarity between students and their teachers, and additional administrative burdens. It is critical to substantially reduce the percentage of credit-hours that are being taught by temporary instructors. There are three obvious solutions to that problem: (1) double the number of permanent faculty in the department, or (2) reduce the number of new entrant students, or (3) combine the two solutions. It is the committee's recommendation that the hybrid approach is pursued.

Now that the admission legislation changed and students are only registered in the Autumn semester, the department could offer special topic courses or postgraduate studies that are specifically designed to address requirements of small but important technology segments.

The academics of the department are well qualified with doctorates to teach all modules and to work towards meeting the goals and objectives of the programs. However, the culture in the department although dynamic it does not appear too collegiate and collaborative among members of the three divisions. Although the department is staffed with high calibre academics, it seems that there is lack of constructive collaboration and exchange of ideas among them. Therefore, the vision for the development and implementation of the strategic priorities of the department is not drawn properly.

The EEC observed some difficulties related to the Final Year Project/dissertations, despite the fact that the department has in place structured information and clear criteria which define what is expected from the students.

The recommendation from the ECC is to organize and structure dissertation work as a module e.g. with clear start date, dates for supervision, date for final presentation and defending of the dissertation. A formalized and structured process will contribute to making students aware of what is expected from them and focus their effort. Also it is important to blend learning outcomes and assign cross-division final year projects.

The implementation of the programs is supported by laboratories, computer software, ICT, library facilities, recently furnished study rooms. The present rate of students' attendance is high in laboratories (since this is compulsory) but quite low in classes that are theory based.

At the same time it is important to bear in mind that an essential ambition of the programs is to prepare students for future work and in doing so enhance considerably their employability and skills.

The EEC therefore wishes to make the following recommendation. The department should pay attention to a blended learning approach that engages as much as possible companies and organizations. This may take the form of site visits to companies, placements, internships, case studies, presentations from project managers, as well as a series of seminars which could invite prominent managers from the local, national or international arena to present the state-of-the-art in the field. Hopefully

such blended learning and integration would attract students closer to the department and classroom especially when dealing with more theoretical/ mathematical oriented modules which are less attractive.

RESULTS

The department is quite mature (it was inaugurated in 1999) but has not graduated too many students. The latest numbers included 500 graduates (since 1999) according to the draft document that was delivered to the EEC by the OMEA; even though it is difficult to assess the number of students that were attending modules in these years (as opposed to simply being registered), the number of graduates is relatively low. This reflects the difficulties that students have in following through the curriculum. Part of the problem is the poor academic background in mathematics and physics of some students. This significantly delays them (from the very first year) and causes delays in their graduation. Another part of the problem is that the curriculum is front-loaded, which makes it hard for students with insufficient backgrounds to catch up. Finally, the most significant component of the problem is that students seem to be content in learning material through their interaction in lectures and laboratories, but without any (or little study) on their own.

The department understands the above problems (especially the fact that students can enter the department through four different tracks; three different concentrations from Lyceum and from the technical schools) but has not yet taken any steps in addressing it. One possibility is for the department to consider offering optional preparatory modules in basic mathematics, physics, and programming to students that have insufficient backgrounds. This will of course require some extra resources but can significantly aid in the implementation of the curriculum.

The department should take steps to increase the number of permanent staff, and continue to recruit (a smaller number of) external instructors; at the same time, however, it should better engage these external instructors in the department. The academic staff needs also to understand the realities that are in place with regards to the quality and diversity of the student population. They need to think about ways of addressing the insufficient background that some students have in mathematics, physics, and computer skills (e.g., by offering preparatory courses or short courses). Another problem with the curriculum is the fact that although it appears to be balanced between the two study areas (Informatics and Communications), it seems that the three divisions heads want to tip the balance towards their direction creating confusion to themselves and other stakeholders. Nevertheless, the department needs to take a careful look at their curriculum without trying to compare it or match it with curriculums at similar departments in other equivalent institutes in Greece and abroad.

It is important to follow and pay attention to the students during their studies and after they have completed their degree i.e. how many students attend the modules and classes in the normal duration of their studies, why they may have stop studying or intercalating, how many get a degree and find work in a related to their degree jobs, the opinion of the employers who recruit graduates from the department, how well the project management approach is suitable to develop knowledge and skills corresponding to societal and environmental needs.

IMPROVEMENT

The department does not have proposals for new master programmes but they have submitted a new revised curriculum. The committee feels that this curriculum is reasonable but the right balance between the two study areas should be defined and

determined by the faculty members. Additionally, we propose that a new master programme should be drafted by the faculty and submitted to the relevant authorities for approval.

The department pursues the recruitment of 10 additional permanent faculty members (tenure track positions) and additional lab supervisors in order to improve faculty student ratio, and respond to the rapid changes of fast changing curriculum in the area of informatics and communications. The departmental plan includes provisions, where possible, so that part time faculty and external collaborators are reduced by substituting them with fulltime permanent staff.

The department has adopted a curriculum that supports two directions: informatics and telecommunications. However, international practice dictates a first degree curriculum should be focused on one subject area (e.g. computing science), whereas specialisation in the other areas (e.g. telecommunications) should be offered as a postgraduate course. . The committee felt that the department's inclination is towards telecommunications.

The committee suggests that the department should consolidate their efforts and support the curriculum. With teamwork, cross-division collaboration and blend learning policies, they could turn the department and thus the TEI of Serres to a Balkan and European centre of excellence in teaching and research.

B. Teaching

APPROACH

The current curriculum appears to have been based on International standards for an undergraduate program in Informatics and Communications, with tree divisions of specialization in the two last semesters of study:

1. Computational Techniques and Systems
2. Telecommunications and Networks
3. Computing Architectures and Industrial Applications

The students have to choose one of the three divisions, in the sixth semester, in order to follow the appropriate set of modules and laboratory sessions. The EEC finds facilities, laboratories and equipment satisfactory for educational purposes.
Classical, quite up to date teaching methods are followed – supported by nice rooms and some lecture theatres.

Students seem to have the opportunity to apply and use in a lab environment special software packages which enhance students' experience and provide real opportunities for practical benefits to students.

The student versus permanent staff ratio is relatively high and remains stable since 2003.

The following table summarises the annual intake/enrolments and the graduates per year:

	Intake-Enrolments	Graduates
2000-2001	225	96
2001-2002	232	80
2002-2003	246	75
2003-2004	270	50
2004-2005	267	16
2005-2006	268	1
2006-2007	242	0
2007-2008	234	0
2008-2009	224	0

There seems to be a very low ratio between graduate and enrolled students that must be considered seriously by the department. The average time of studies before graduation seems to be 13 to 14 semesters, i.e., near the double of the normal duration of studies.

The existing infrastructure in terms of buildings, rooms, computing equipment is good and well used but network infrastructure needs some improvements.

The teaching assessment approach seems to be the standard one which presumably is used by the sector across the country. It could be improved considerably by implementing a number of procedural steps.

- ✓ Adopting an assessment strategy that perceives assessment as part of the learning experience.
- ✓ Enhancing the feedback provided to students from their assignments.

✓ Rethinking the whole issue of the final project and the 6 months compulsory stage, thus providing clear links and a degree of integration between the two.

IMPLEMENTATION

The program of studies strives to provide is breadth and depth across the field of study and to integrate the theory and practice as per standard policy. The program is targeted to cover a wide area of topics in Informatics and Communications separately instead of covering only the topics that are common in both Informatics and Communications. It is the committee understanding that the current institutional structure imposes a rather stringent set of curriculum specifications on the department and it is better focused on the communications course instead of the modules in Informatics despite the fact that the emphasis of the title of the Department is on the Informatics. Another problem is also the large number of external instructors currently recruited annually for supporting the needs of the program introduces not only considerable administrative overhead but can potentially impact the quality of the program (i.e. limited interaction with students, lack of coherence in mode of deliverance).

The number of modules that the students need to take in the first five semesters appears to be rather high. This often puts high demands on the freshman class of students, as they transition into the college life and being away from their familiar environment. Second, the courses are primarily theory-focused (e.g. Physics, Maths) and they do not sufficiently/effectively motivate students. Third, the educational background in mathematics, physics, informatics of the incoming students is diverse and it ranges from students having a solid foundation in the above topics to students having no or weak foundation. As a result, a considerable percentage of students find it extremely difficult to follow the material, which negatively impacts both the perception of the program, their subsequent education, and potentially self-esteem; all of which can lead to increased failure and drop-out rates.

The level and quality of teaching and teaching preparation seems to be good. The level of textbooks and on-line help is good (satisfactory e-library and e-journal subscription and excellent new library facilities for the whole TEI). The course content has been recently updated. The course material is structurally coordinated, in the sense that the subsequent modules build on previously taught concepts.

Faculty and Student mobility to other institutions is very limited. Indeed only 4 international collaborations are mentioned in the internal assessment report. They both should be encouraged and expanded.

Student employment seems to be working relatively well. However, it is recommended that closer relationship with the graduates/alumni who can act as ambassadors for the department should be formally developed.

The students regularly are asked to evaluate the academic staff and the modules through a formal procedure. Nevertheless, we note that the outcome/findings are not used to further enhance the departments' performance since there is no formal

procedure to discuss and reflect on these results and in doing so develop ways to integrate the voice of the students to the curriculum development.

There is a number of infrastructure and personnel requirements to effectively implement the curriculum. At present the department has twelve full time faculty members and around 88 temporary instructors. There are also 3 technicians and one more is expected to be recruited. However, the number of permanent faculty members is insufficient. As a result, the program relies heavily on the temporary instructors. Even if the quality of the temporary instructional personnel is high (which appears to be the case), its temporary nature and the fact that they do not reside in the department, limits their accessibility by the students and creates discontinuities in terms of teaching philosophy, policy consistency, familiarity between students and their teachers, and additional administrative burdens. The problem is enhanced by the fact that the new-coming students are allowed to register at first or second semester and the result of this is the modules are repeated at both semesters. However, this is expected to change next year due to new legislation. It is critical to substantially reduce the percentage of credit-hours that are being taught by temporary instructors.

RESULTS

The department is mature (it has operated since 1999) and 500 have graduated since then; even though the total number of students that have registered are approximately 2,500. Some of them cannot follow the modules due to personal reasons but others have difficulty in following through the curriculum. Part of the problem is the quality of some students as well as the fact that some students get in with insufficient background in mathematics and physics. This significantly delays them (from the very first year) and causes delays in their graduation. Finally, the most significant component of the problem is that students seem to be content in learning material through their interaction in lectures and laboratories, but without any (or little study) on their own.

The department understands the above problems (especially the fact that students can enter the department through four different tracks; three different concentrations from Lyceum and from the technical schools) but the academic staff are determined to keep the level of studies high instead of increasing the number of graduates by lowering it. Some academic members of the staff offer optional preparatory modules in basic mathematics, physics, and programming to students that have insufficient background. This solution has proved to benefit a lot the students. The EEC proposes that this trend is undertaken by all involved academics with a small financial contribution by the government.

The students are in general positive about the efficacy of the teaching, especially from the permanent faculty members. However, some students raised some issues about the eagerness by which some of the instructors were willing to respond in depth to clarification-related questions raised by the students during the lectures.

The large number of drop-outs, the prolonged duration of studies, about 7 years, and

the large number of students registered in the first five years, has created difficult conditions for the academic staff.

The EEC has also noted that marks appear to be leaning towards medium or low levels and the percentage of students scoring about or above 7 out of 10 is very small. On the other hand, and this is a good thing, the average graduating grade is globally stable although there is a slight decline since 2006.

The length of studies beyond 6 years is not justified; the academic staff has provided several arguments and reasons not well documented, but more convincing answers have to be prepared.

The department is fully aware of their strengths and weaknesses in terms of their teaching and learning competencies; the faculty members are concerned and interested in their teaching approach and they constantly seek opportunities for improvement.

Finally, the department has elaborated a system of equivalencies of teaching credits for its modules according to the ECTS system.

IMPROVEMENTS

The department would like to see teaching load reduced, at least as a first step. The EEC strongly supports this demand that would certainly improve quality of teaching. The department and the EEC are concerned with the fact that from the 2010-11 students with 10 or below on the overall exam will be given the opportunity to enrol and study.

The Department has been following the same curriculum since 2005. It is going to re-organise the program next year. The EEC has suggested that they renew the content of the courses so as the students are taught the latest technologies and developments on telecommunications and informatics areas.

Some recommendations regarding teaching:

- ✓ The very low attendance in certain modules by students is a concern that may also contribute to the slow and low graduation rates. Thus, in the modules that the assessment is based only on exams and as such minimum attendance is not required, the EEC would encourage the department to reflect and consider ways that this can be changed (i.e., mid-term exams, assignments, formative assessment and so on).
- ✓ Introduce a yearly formal procedure for updating the module outlines and descriptions for all modules. Currently, this rests on the goodwill of the academic staff.
- ✓ The department should consider and formalise ways to assist the weaker students when they enrol. The faculty and the EEC felt that the acceptance of students scoring less than 10 as an entry requirement is a negative and highly dangerous development (to be re-introduced in 2010-2011 academic year).
- ✓ The high ratio of ad-hoc non permanent part- or full-time staff; 88 persons

of such staff for 12 permanent staff is not a healthy feature and cannot fulfil the long term objectives of the department.

Mobility of students abroad has to be encouraged and intensified. For this, the department must elaborate a vast strategy of development of its international relations that seem to be very elementary at the present time.

C. Research

For each particular matter, please distinguish between under- and post-graduate level, if necessary.

APPROACH

The basic problem for the department is that there is not organised or systematic (institutional, national or local) funding for research, or postgraduate studies. Furthermore, there is no clear vision about such programs and the alliances that must be developed with other institutions for realising them. The department is behind other institutions in last two points. Implicitly, this makes a viable and permanent research activity impossible in short terms. As a result, the department has not a clear research policy and coherent profile. Research here is the sum of the personal research activities of its staff. Also, the department has not federative research structures, i.e., either as Research Commission/council and/or a research seminar series.

On the positive side, the fact that TEI's academic library is part of the national consortium for access to several digital libraries largely facilitates electronic access to a good number of scientific journals and conference proceedings.

IMPLEMENTATION

A good number of the permanent and non-permanent members of the department are active in research and this despite their heavy teaching and administrative load. Most of their publications are the result of external collaborations and, for the younger among them; it seems to be the continuation of their PhD researches. The committee thinks that internal collaborations must be built urgently.

From 2003 to 2008, 83 scientific papers have been published in refereed journals and 85 papers in refereed conference proceedings. It appears that the number of the publications decreases since 2006 but this fact may be circumstantial. There is no information provided for the 2009 research activities. More precisely, the productivity of the department for the above mentioned period is shown to the following table:

	Books	Journals	Refereed Proceedings	Book Chapters
2008	1	13	6	1
2007	1	19	21	1
2006		25	26	1
2005		7	20	
2004	2	13	12	
2003		10	8	1

The books are rather lecture notes (in Greek) than research monographs, while the book chapters are research-oriented.

Also, a member of the department is holder of 3 patents (1 in 2003 and 2 in 2007).

The department regularly participates in several (applied) research projects. Actually, the EEC has noticed 8 such participations. During the discussions, the members of the department have also mentioned around ten participations to ΑΡΧΙΜΗΔΗΣ and ΘΑΛΗΣ calls.

During the external evaluation of the I&C Department there was no mention of scientific events that have been organised by the department since 2003. This is a further sign of an unclear research profile of the department.

As it has already been noticed above, most of the publications are outcomes of external collaborations started during the PhD studies of the authors abroad. It should be beneficial for research if the members of the department cultivate internal collaborations. This is important for both the development of a clear and readable research profile of the department and the improvement of social relations and ambiance between the members of the department.

Finally, there is no clear information about research activity in the web site of the department.

RESULTS

The EEC considers that given the available infrastructure and the absence of collective research goals in the department, research outcome and production as sum of individual activities are satisfactory.

The recognition of the research conducted in the department is further certified by citations of the published papers. The global recognition of research (expressed by citations, participation to editorial boards and conference committees, invitations) as it can be seen in the following table can, according to the committee findings, be considered satisfactory.

Year	Citations	Conference committees	Editorial boards	Seminar invitations
2008	104			
2007	104		1	1
2006	157	2		
2005	163	1		2
2004	144			7
2003	91			10
Total	*659*	*3*	*1*	*20*

Another element of the good scientific visibility of the department is the recent par-

ticipations in joint research programs mainly within the ΑΡΧΙΜΗΔΗΣ and ΘΑΛΗΣ calls.

Scientific activity followed by publications in journals and conference proceedings should be continued and intensified. Furthermore, higher impact scientific journals should be targeted.

IMPROVEMENT

The EEC thinks that the main issue that has to be urgently considered is permanence of research and development of common research themes between the members of the department. This does not seem to be possible from the actual state in the department and needs intensive discussions between its members for the establishment of clear and common accepted research priorities and vision. Also, the department must develop collaborations and participation in postgraduate programs (research oriented if possible). The absence of such programs is crucial for the establishment of research in the department.

During the last 5 years the department has participated in 7 projects with local and regional authorities and/or industries. This is a very good practice even if the EEC has no information about the real nature of these projects (research or consultancy). But the relatively small number of these collaborations may be a sign that the department's research expertise remains somewhat unknown at the regional level. It is up to department's staff to reverse this image by communicating its research skills and expertise and showing its utility and pertinence for the region and its economy. This is important for both research funding of the department and societal and economic development of the region of Central Macedonia.

As mentioned above, publications in journals and conference proceedings should be continued and intensified. Furthermore, scientific journals of higher esteem should be targeted. Also, the department within the limits of its financial resources must increase and encourage participation of its members in scientific conferences as well as short period research stays abroad.

A research seminar must be created with broad invitations of researchers from other academic institutions. This could help the exchange of ideas and development of new ones. It may also be helpful in establishing common research axes.

A Scientific/Research Council should be created in the department, for defining research priorities, structuring research activities and, more generally, leading research effort.

Finally, research should appear in the department's website.

D. All Other Services
For each particular matter, please distinguish between under- and post-graduate level, if necessary.

APPROACH

The TEI Serres provides to each department a number of common services, the following: (1) Wireless local area network (WiFi) available to all academics, students and visitors, (2) secretarial support, (3) e-secretary for both academics and students, (3) central library, (4) career office funded by the EC and (5) computer centre.

IMPLEMENTATION

The library is a two floor building of 2500 sq.m. It has safety and security infrastructure to deter theft and vandalism. There are three experienced librarians. The library is open daily from 8am till 7pm and there are over 48000 titles covering all the disciplines of the TEI.

There are 8 PCs for thematic search of titles and 4 PCs designed for special needs people, while one can access the databases via the Internet. Users can access an online public catalogue (OPAC), which is accessible over the internet (http://lib.teiser.gr). The library is spatially divided over two areas: the documents and the study areas.

Emphasis has been given to the role of the I&C departmental secretariat by providing them with equipment and software tools to facilitate their mission. The administration office is open for public two hours daily and consists of three persons: one assigned to the teaching staff, one for departmental administrative work and one for students. The secretariat also covers the administration load of recruiting non-permanent staff: there are 300 applications submitted each year. A further considerable load is the recruitment of the so called 'bi-hourly employed' students, there are 120 applications each year.

The mission of the secretariat is supported electronically by dedicated software for storing personal data and academic records for each student and staff.

The lab space, although recent, lacks basic facilities such as air-conditioning, local area network, in-building cabling and pseudo-floor where deemed necessary.

Regarding technical support and computer upgrades, there are installation delays despite the fact that a large number of computer equipment has been delivered to the department. The technical staff is responsible for reviewing the lab exercises every six months as well as for upgrading the academic computer network. However, the technical staff is not offered relevant seminars on new technologies and developments. Computer equipment with certain software applications is being upgraded by the vendors.

RESULTS

The library is adequately equipped and emphasis has been placed on allowing spacious work environment. There is electronic search of books and documents by using keywords on titles.

The role of the career office is very important for ensuring transition of students from academia to employment. The EEC did not manage to a meet with representative of this office. As a result of the consultation process with stakeholders, the EEC recommends that the effort of the career office should be intensified.

The quality of services offered by the secretariat might diminish due to the retirement of the most experienced member of staff and the lack of additional staff. There is also increasing need for student administrative support. The work load of the secretariat can be facilitated by new software applications that will allow the self-service of students.

The lack of air-conditioning in the labs and teaching rooms of the department creates in the summer months stifling atmosphere and affects the performance of academics and students alike.

The lack of seminars for the technicians affects the improvement of teaching. The novel technique of Virtualisation would also have a positive effect in the running cost of lab.

IMPROVEMENTS

The department should examine the possibility of employing at least one new member of administrative staff with necessary skills to support the role of the secretariat. At the same time the already existing technical staff should be offered continuous training on new technologies and applications. It is worth mentioning that vendors free seminars and workshop on their product upgrades.

Application of novel computer architectures would diminish some departmental costs.

The exploitation of e-book services would enhance the quality of offered studies and services.

E. Strategic Planning, Perspectives for Improvement and Dealing with Potential Inhibiting Factors

For each particular matter, please distinguish between under- and post-graduate level, if necessary.

It is too unfortunate that the self-assessment document provided by the OMEA does not contain a long term strategic planning and vision for the department but rather a short term one (pages 34-35 of the internal assessment report). So, no real information exists about how the academic staff sees its contribution to the areas of computer science and telecommunications. There are no more elements of vision about how the department can contribute to the establishment and enhancement of the profession of computer science and telecommunications in the region. There is no consideration of short, medium and long-term objectives. Consequently, we cannot detect an importance and risk register alongside timing of such objectives, and a clear allocation of duties to various bodies of the department alongside expected outcomes and time horizons.

It is not clear what area between informatics and communications is dominant in the department. The overall impression of the committee is that it is rather telecommunications than informatics. The EEC believes that informatics in the department is a widely used tool rather than a real discipline. There is no visible osmosis between the three divisions of the department neither in education nor in research. The department seems not to have clear teaching and research orientation and objectives.

Finally as regards to the teaching strategy of the department it is important to mention the absence of a plan for a postgraduate programme.

Mean duration of studies tends to be 13 semesters instead of 8 that is the nominal duration. The academic staff must spend considerable time and effort to well understand and explain this phenomenon and try to remedy this.

It is however true that the department has no clear strategic advantages: it is not unique among other tertiary institutions. There is a clear need for management to:
- ✓ revisit the principles that provide differentiation advantage of this department and more importantly diffuse these principles amongst those that really care for the fulfilment of what may be included within an excellence model of quality in education;
- ✓ clarify its training and research profile and based on this clarification develop further curricula and research activities;
- ✓ build internal dynamics by promoting internal collaborations.

On the positive side as mentioned in page 34 of the internal assessment report,

several perspectives and possibilities of collaboration in both training and research domains with other Balkan countries will be explored. The EEC finds this perspective extremely interesting and strongly encourages the department to quickly proceed to this direction.

F. Final Conclusions and recommendations of the EEC

For each particular matter, please distinguish between under- and post-graduate level, if necessary.

The key challenges that the department faces are the following:

Internal challenges

1. Current high student population versus permanent staff ratio.
2. Low quality student intake which is expected to become lower in the near future.
3. Very low attendance of lectures.
4. Small number of graduations.
5. Development of internal cross-division collaborations.
6. Clarification of the departmental scientific profile and the priority between its constitutive scientific domains.
7. Absence of post-graduate curricula.
8. Very small number of permanent academic staff and abnormally high number of non-permanent staff.
9. Small number of administrative and technical support personnel.

External challenges

1. Competition from Universities and other neighbouring TEIs with similar or analogous programmes that substitute the need for a TEI graduate of Informatics and Communications.
2. Significant competition for resources within the TEI of Serres even if the central administration seems to support the department.

Opportunities for the department are the following:

1. An increased need for computer science and telecommunications skills by organisations and companies.
2. Opportunity to enhance the quality of student intake and the employability of graduates by mobilising the alumni network.
3. Proximity with Balkan countries which gives the department a very big advantage for building alliances with these countries in all the sectors of its activities (under- and post graduate curricula developments, research, joint participations to European research projects, etc.). Such alliances should also help the department to enhance the quality of its student population by attracting Balkan and other European students.

Bearing in mind what is documented in the previous pages, alongside the above mentioned achievements, challenges and opportunities the EEC would like to recommend the following as a matter of priority.

As regards the overall strategy of the Department I&C.

1. The department needs a better clarification of its strategy so as it becomes compatible with its overall mission, aims and objectives.

2. A strategy of external strategic alliances with other educational establishments of similar interests and orientation would allow them to increase their visibility and impact towards the academic development of the field and ensuing profession.

3. Creation of a strategic advisory board, with the inclusion of employers and key stakeholders.

4. Finally, we recommend that the department adopts a "student centric approach" and in collaboration with local authorities and organisations enhances employability of its graduates.

As regards teaching and curriculum development.

1. Regular formal evaluation of the curriculum (i.e. every three years), by employing a process where faculty, current students, employers and alumni engage in constructive dialogue.

2. Development and implementation of formal procedures and guidelines to assist the operation of the various teaching related committees of the department.

3. Formal boards of examiners to assess and appreciate performance of each student throughout the year; followed by feedback to students thus helping them to understand their weaknesses and improve their performance.

4. Explore ways to link the final project/dissertation to the compulsory work placement.

5. Consider formative as well as cumulative forms of assessment as part of the overall students' learning experience.

6. Develop blend learning techniques and allow the cross-fertilisation of the teaching and research outcomes of the three departmental divisions.

7. Enhance student feedback both in terms of quantity and quality of education.

As regards research.

1. Consider the establishment of a Research Committee which will aim at creating clear priorities for future research, allocating the required resources and developing partnerships with other academic institutions.

2. Clarify the research profile of the department and establish research priorities and main research axes and build common research projects between the members of the academic staff.

3. Develop (hopefully research oriented) post graduate curricula.

4. Enhance participation in national and international research projects.

5. Set up a Research Seminar Series, supported by internal and external con-

tributors.

6. Create Knowledge Transfer Partnerships with local organisations.

As regards other services.

1. Request and support the further development of the careers office.
2. Set up and fully engage the Alumni network.
3. Recruit at least one additional administrative staff.

As regards the implementation of all the recommendations in this report, the EEC had no doubt whatsoever, that additional human and financial resources are required. To this end, the EEC fully supports the expansion plans of the department.

To conclude, the EEC found the visit interesting and productive. There is no doubt that the personal scientific value of the members of the staff is very high and largely certified at international level. But the department dynamics cannot be the sum of the individual values. It is urgent that real team spirit is being built and nourished and this ought to be the priority of all academic staff. We hope that our recommendations provide useful steps towards this trajectory and vision.